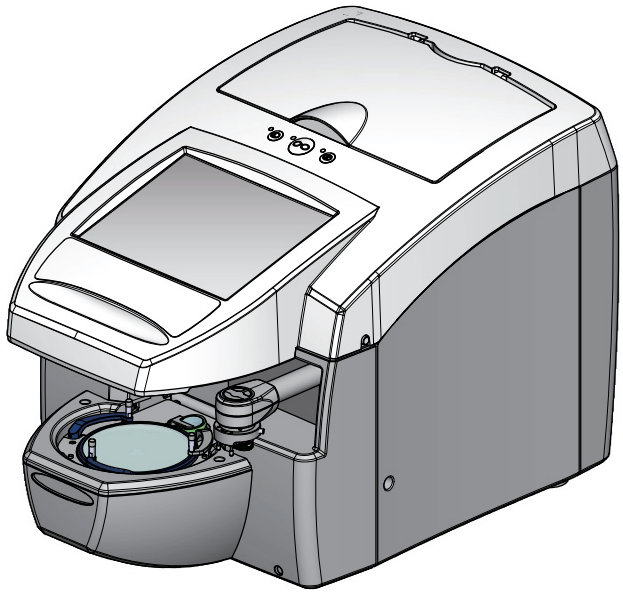
NIDEK

Intelligent Blocker

ICE-1500 / ICE-1500NT

OPERATOR'S MANUAL



Be sure to read the SOFTWARE LICENSE AGREEMENT (page II) before using this product.

Original instructions

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Before Use

This Operator's Manual contains information necessary for the operation of the Nidek Intelligent blocker ICE-1500 / ICE-1500 NT.

This manual includes operating procedures, safety precautions, specifications, and information about maintenance. This manual is necessary for proper use. Especially, the safety precautions and operating procedures must be thoroughly understood prior to the operation of the instrument.

Keep this manual handy for reference.

If you encounter any problems or have questions about the instrument, please contact Nidek or your authorized distributor.

IMPORTANT - READ CAREFULLY

THIS AGREEMENT APPLIES TO THE NIDEK SOFTWARE AND ACCOMPANYING DOCUMENTS. PLEASE READ THIS AGREEMENT CAREFULLY AND THOROUGHLY BEFORE USING SOFTWARE.

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The Software and NIDEK hardware product (collectively, "NIDEK product") may include a third party's software which is linked, whether dynamically or statically, with the Software (the "Third-Party-Software"). The Third-Party-Software shall not be included in the definition of the "Software" in this Agreement. The rights and title of the Third-Party-Software belong to the third party, and the terms of use of the Third-Party-Software are set forth separately from this Agreement. The terms in this Agreement will not apply to the use of the Third-Party-Software except as expressly stipulated herein.

By using or installing the Software, you agree to be bound to the terms and conditions of this Agreement. If you do not agree with this Agreement, please do not use or install the Software and return the Software to the company from which you obtained the Software.

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1.1. Subject to the terms and conditions set forth in this Agreement, NIDEK grants to you, and you accept, a limited, non-transferable and non-exclusive license to use the Software.

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4. CONDITIONS OF USE

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4.2. If you enter data into NIDEK product or obtain data by the use of NIDEK product, you shall obtain and save backup of such data.

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5.1. If you export or re-export, directly or indirectly, the Software, you must comply with applicable export laws and regulations of Japan and other countries, and obtain any licenses or approvals required by governmental authorities.

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6.1. The Software and/or the Third-Party-Software may be, at NIDEK's own discretion, changed, updated or modified from time to time without any prior notice to you. If such changes, updates, and modifications are applied to the Software licensed to you under this Agreement, such changes, updates, and modifications will be deemed a constituent part of the Software, and the terms and conditions of this Agreement will apply to such changes, updates, and modifications.

6.2. NIDEK may, at its own discretion, make amendments to any provisions of this Agreement (the "Amendments"), if NIDEK deems that:

a) such Amendments are appropriate in terms of interests for customers of this Software; or

b) such Amendments are commercially reasonable and not contrary to the objective of this Agreement, even if such Amendments are disadvantageous to you.

Prior to the amendments, NIDEK will notify you of the terms and the effective date of such Amendments on the website or by any other means.

6.3. If you use the Software after the effective date of such Amendments, you shall be deemed to have agreed to such Amendments.

7. TERMINATION

7.1. This Agreement is effective until terminated. If you breach any term or condition of this Agreement, NIDEK may, without giving any prior notice to you, terminate this Agreement with immediate effect. Upon termination of this Agreement due to the breach of this Agreement, NIDEK reserves all the rights to claim damages resulting from such breach.

7.2. If this Agreement is terminated in accordance with the provision of 7.1., you must immediately cease the use of the Software, and delete, destroy and erase all the Software. Any fees paid by you for the license of the Software will not be refund for any reasons.

8. NO WARRANTIES

8.1. NIDEK MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, CONCERNING THE SOFTWARE AND THE THIRD-PARTY-SOFTWARE, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT OF THIRD PARTY RIGHTS, INCLUDING, WITHOUT LIMITATION, THIRD PARTY INTELLECTUAL PROPERTY RIGHTS, ACCURACY, RELIABILITY OR AVAILABILITY, ABSENCE OF OR RECOVERY FROM ANY INTERRUPTION, ERROR-FREE OPERATION OR CORRECTION OF DEFECTS OR MALFUNCTIONS.

9. LIMITATION OF LIABILITY

9.1. EXCEPT OTHERWISE EXPRESSLY STIPULATED IN THIS AGREEMENT, IN NO EVENT WILL NIDEK BE LIABLE FOR ANY INCIDENTAL, INDIRECT, SPECIAL, PUNITIVE, OR CONSEQUENTIAL DAMAGES, LOSS, CLAIMS OR COSTS WHATSOEVER, INCLUDING, WITHOUT LIMITATION, ANY LOST DATA, PROFITS, REVENUES, BUSINESS OPPORTUNITIES OR INFORMATION, LOSS OF USE OF ANY PRODUCT, PROPERTY OR EQUIPMENT, DOWNTIME COST , COST OF PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES, OR ANY CLAIMS BY A THIRD PARTY, ARISING OUT OF OR RELATED TO THE USE OR INABILITY TO USE THE SOFTWWARE AND/OR THE THIRD-PARTY-SOFTWARE, CHANGES, UPDATES OR MODIFICATIONS OF THE SOFTWARE AND/OR THE THIRD-PARTY-SOFTWARE, OR MAINTENANCE OR REPAIR SERVICE OF THE SOFTWARE IF ANY (collectively, the "DAMAGES"). THE ABOVE LIMITATIONS WILL APPLY REGARDLESS OF THE FORM OF ACTION, WHETHER IN CONTRACT, TORT, STRICT PRODUCT LIABILITY, OR OTHERWISE, EVEN IF NIDEK IS NOTIFIED OF THE POSSIBILITY OF SUCH DAMAGES.

9.2. THE LIMITATIONS PROVIDED IN THE PROVISION OF 9.1. SHALL NOT APPLY IN THE CASE WHERE THE DAMAGES ARE ATTRIBUTABLE TO NIDEK OR NIDEK IS LIABLE FOR SUCH DAMAGES IN ACCORDANCE WITH THE LAWS. EVEN IN SUCH CASE, NIDEK SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL, INDIRECT, INCIDENTAL, PUNITIVE OR SPECIAL LOSS OR DAMAGE. NIDEK'S TOTAL AGGREGATE LIABILITY FOR THE DAMAGES SHALL NOT EXCEED AN AMOUNT ACTUALLY PAID BY YOU FOR PURCHASE OF NIDEK PRODUCT; PROVIDED, HOWEVER, THAT THE LIMITATION OF THE AMOUNT SHALL NOT APPLY IN THE CASE WHERE THE APPLICABLE LAW PROHOBITS SUCH LIMITATION OR THE DAMAGES ARISING FROM NIDEK'S GROSS NEGLIGENCE OR WILLFUL MISCONDUCT.

10. GOVERNING LAW AND ARBITRATION

10.1. This Agreement will be governed by and construed in accordance with the laws of Japan.

10.2. All disputes arising between you and NIDEK relating to this Agreement or the interpretation or performance thereof will be finally settled by binding arbitration in Tokyo in accordance with the Commercial Arbitration Rules of The Japan Commercial Arbitration Association. Judgment upon the award rendered by arbitration will be final and may be entered in any court having jurisdiction thereof.

11. SEVERABILITY

11.1. If any provision or any portion of any provision of this Agreement will be held to be invalid or unenforceable, that provision will be severed from this Agreement and such invalidity or unenforceability will not affect the remaining provisions of this Agreement. The remaining provisions of this Agreement will continue in full force and effect.

12. SURVIVAL

12.1. The provisions of 2, 3, 5, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19 and this provision will survive the termination of this Agreement and will be binding after the termination of the Agreement.

13. ASSIGNMENT

13.1. This Agreement or any part of this Agreement may not be assigned or transferred without prior written consent of NIDEK. The permitted assignee or transferee must agree to all the terms and conditions of this Agreement prior to the assignment or transfer.

13.2. This Agreement will be binding upon the permitted assignee or transferee and be enforceable by NIDEK.

14. ENTIRE AGREEMENT

14.1. This Agreement constitutes the entire agreement between you and NIDEK concerning the Software, and supersedes any prior written or oral agreement between you and NIDEK. No modification of this Agreement will be binding unless otherwise agreed in writing.

15. NO WAIVER

15.1. The failure of NIDEK to enforce at any time or for any period the provisions hereof in accordance with its terms will not be construed to be a waiver of such provisions or of the rights thereafter to enforce each and every provision.

16. NO THIRD PARTY RIGHTS

16.1. This Agreement is intended to be solely for the benefit of you and NIDEK and is not intended to confer any benefits upon or create any rights in favor of any person other than you and NIDEK.

17. HEADINGS

17.1. All headings are for convenience only and will not affect the meaning of any provision of this Agreement.

18. LANGUAGE

18.1. The license agreement for the Software may be provided in multiple languages. In such event, unless otherwise agreed in writing, the following shall apply:

a) If you use the Software in any countries outside Japan, the license agreement for the Software shall be executed and delivered in a text using the English language. The text using the English language shall prevail and control; and

b) If you use the Software in Japan, the license agreement for the Software shall be executed and delivered in a text using Japanese language. The text using the Japanese language shall prevail and control.

19. APPLICATION OF SOFTWARE LICENSE AGREEMENT

19.1. If the terms and conditions of the "Software License Agreement" included in operations manuals for NIDEK product are inconsistent with the terms and conditions of the "Software License Agreement" displayed on NIDEK product, the terms and conditions of the "Software License Agreement" included in operations manuals for NIDEK product prevail.

Table of Contents

1 SAFETY PRECAUTIONS

1.1 For Safe Use

⚠ BEFORE USE, READ THIS MANUAL.
Cautions for safety and operating procedures must be thoroughly understood before using the system. Keep this manual handy for reference.

In this manual, signal words are used to designate the degree or level of safety alert. The definitions are as follows.
⚠ WARNING Indicates a potentially hazardous situation which, if not avoided, might result in death or serious injury.
⚠ CAUTION Indicates a potentially hazardous situation which, if not avoided, might result in minor or moderate injury or property damage accident.
Even situations indicated by ⚠ **CAUTION** may result in serious injury under certain conditions. Safety precautions must be strictly followed at all times.

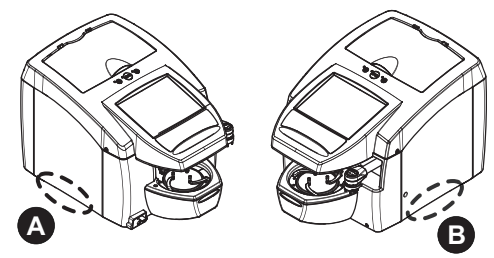
1.2 Usage Precautions

Before use

⚠ WARNING

- When lifting or moving the instrument, use both hands to hold the instrument by the base indicated with A and B as shown to the right.

  Failure to do so may cause the instrument to fall resulting in injury or malfunction.



- Be careful not to get fingers caught when setting the instrument down.

  Fingers may get caught between the table and instrument resulting in injury.

- Be sure to use an outlet equipped with a ground terminal.

  Electric shock or fire may occur in the event of malfunction or power leakage.

⚠ CAUTION

- Do not use the instrument for purposes other than those intended. Nidek will assume no responsibility for accident or malfunction caused by improper use.

  For the intended purpose of the instrument, see *"2.1 Outline of Instrument" (page 9)*.

- Do not modify the instrument. Never touch the interior of the instrument.

  Electric shock or malfunction may result.

- Operate the instrument under the specified use conditions.

  " Environmental conditions (during use)" (page 223)

- Install the instrument in a location with an adequate operating area as shown in *"[Operating area and maintenance work area]" (page 5)*.

- Install the instrument in a location that meets the following conditions.
  Malfunction, electric shock, or fire may result.
  - A location not exposed to moisture.
  - A stable and level location free from vibration or shock.
  - A location not exposed to air-conditioning.
  - A location that does not block the cooling fan in the rear and maintains a clearance of 10 cm or more in the rear.
  - A location free from strong electromagnetic waves.
  - An environment free from caustic material such as corrosive gases, acids, or salts.

- Install the instrument on a level and stable table.

  Failure to do so may cause improper blocking.

- Install the instrument on a table with a height that allows comfortable operation.

  Continued use in an awkward posture may result in backache.

⚠ CAUTION

- When connecting the power cord, be sure to follow the precautions below.
  Malfunction, electric shock, or fire may result.
  - Be sure to use a power outlet which meets the power specification requirements.
  - Fully insert the main power plug into a power outlet.
  - Install the instrument in an area where the outlet that the power plug is inserted into is easily accessible during use. In addition, ensure that the power cord can be disconnected without the use of any tool.
  - Do not place heavy objects on the power cord.
  - Do not use a multiple socket-outlet or extension cable to supply power to the instrument.
  - Do not use a power cord other than that provided. Also do not connect the provided power cord to any other equipment.
  - Before connecting a communication cable or LAN cable, turn off the power switch and disconnect the power cord from the power outlet.

During use

⚠ WARNING

- Only personnel authorized by Nidek or Nidek distributors are allowed to remove the cover fastening screws and covers. Do not attempt to disassemble, repair, or reconfigure the instrument.
  Electric shock, injury, or malfunction may result.

⚠ CAUTION

- In the event of smoke or strange odors, immediately turn off the instrument and disconnect the power plug from the power outlet.
  Once it is confirmed that the smoke has stopped, contact Nidek or your authorized distributor.
  Use of the instrument under such abnormal conditions may cause fire or electric shock. In case of fire, use a dry chemical (ABC) extinguisher.
- Immediately replace the power cord if its internal wires are exposed, power is intermittent when the cord is moved, or the cord and/or plug are too hot to touch.
  Electric shock or fire may result.
- In the event of malfunction, disconnect the power cord from the power outlet. Do not touch the interior of the instrument and contact Nidek or your authorized distributor.
  Electric shock or fire may result.
- Be careful not to get fingers caught when a lens is blocked and the blocking arm returns to the original position after blocking.
  Injury may result.
- Do not apply excessive pressure on the stylus of the tracing unit.
  The stylus may bend or break.

⚠ CAUTION

- When connecting and disconnecting the USB flash drive, be sure not to touch the terminal area directly by hand. Also, make sure that the terminal area does not contact any metal objects.

  The data may lost or corrupted as it is recorded by static.

- To prevent data loss or corruption due to damage to the USB flash drive, back up data to other media periodically.

  Nidek is not responsible for data loss or corruption due to lack of backup.

- Never press on the screen with a hard object such as a ball-point pen. Keep magnetic objects away from the LCD screen.

  The system may be damaged.

- Do not operate the LCD panel with wet hands.

  Water seeping into the instrument may result in failure of the device.

After use

⚠ CAUTION

- When the instrument is not in use, turn it off, close the tracing unit lid, place the lens table cover a on the lens table, and place the dust cover over the instrument.

  If dust accumulates, it may affect the measurement accuracy.

- Do not pull the power cord to disconnect it from the power outlet. Always hold it by the plug.

  This can damage the metal core of the cord and may result in electric shock, short circuit, or fire.

- Periodically clean the prongs of the power plug with a dry cloth.

  If dust settles between the prongs, short circuit or fire may occur.

- If the instrument is not to be used for an extended period, disconnect the power cord from the power outlet.

  Fire may result.

- Maintain the surrounding temperature and humidity within the following ranges during transport and storage of the instrument.

  “ Environmental conditions (during transport and storage)” (page 223)

- When transporting the instrument, use the special packing materials to protect it from impact.

  Excessive impact to the instrument may cause malfunction.

Maintenance

⚠ CAUTION

- Be sure to check the instrument before and after use. It is recommended to have periodical inspection.

  Periodical inspection must be performed by service personnel. For details, contact Nidek or your authorized distributor.

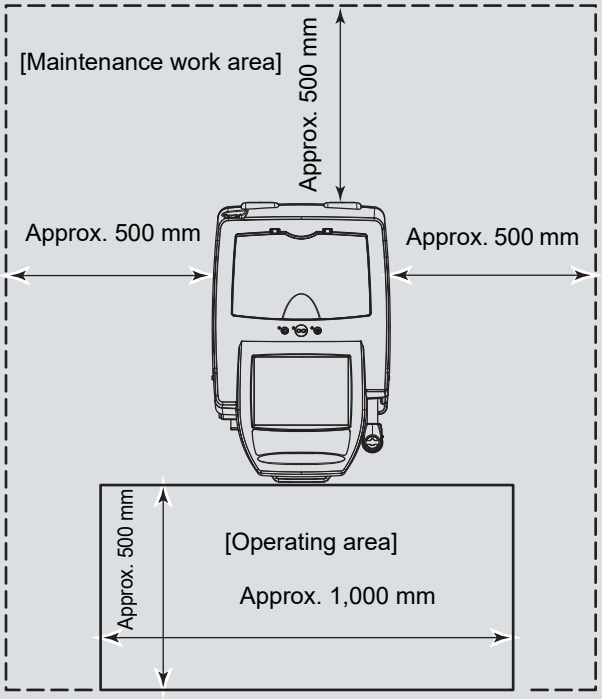
- Use the specified fuses to replace the old ones. Before fuse replacement, turn off the instrument and disconnect the power cord from the power outlet.

  Fire or electric shock may result.

- When performing maintenance work, secure a sufficient maintenance space.

  Maintenance work in an insufficient space may result in injury.

[Operating area and maintenance work area]



* A maintenance work area of 750 mm above the table surface on which the instrument is put is required.

Disposal

⚠ CAUTION

- Follow the local ordinances and recycling regulations regarding disposal or recycling of the components.

  It is recommended to commission the disposal to a designated industrial waste disposal contractor.

  Inappropriate disposal may contaminate the environment.

- When disposing of packing materials, sort them by material and follow local ordinances and recycling regulations.

  Inappropriate disposal may contaminate the environment.

Other cautions

- Connect the cables securely maintaining the correct orientation of the cable connector.
- Be sure to make the correct material selection for the lens material being processed.

  The lens may break or the lifetime of the processing wheels may be reduced substantially.
- Do not block the lens on the condition that no lens is placed on the lens table.

  Doing so could cause contact of the cup holder to pins of the lens table.
- Do not use organic solvents such as paint thinner to clean the instrument.

  This could damage the surface.

Note

- There may be a few defective (black dots) or constantly-lit pixels in the display. This does not represent a failure of the display. This is due to manufacture limitations of liquid crystal displays.

1.3 Labels and Symbols

■ To call attention to users, some labels and indications are provided on the instrument.
If labels are peeling off, characters are fading, or otherwise becoming illegible, contact Nidek or your authorized distributor.

	Indicates that caution must be taken. Refer to the operator's manual before use.
	Indicates the risk of hands or fingers getting caught.
	Indicates that the operator is advised to refer to the related instructions in the operator's manual.
	Indicates that the instrument must be supplied only with alternating current.
	Indicates fuse.
	Indicates that power is supplied to the instrument.
	Indicates that power is not supplied to the instrument.
	Indicates the date of manufacture.
	Indicates the manufacturer.
	Indicates that this product shall be disposed of in a separate collection of electrical and electronic equipment in EU.

2 BEFORE USE

2.1 Outline of Instrument

■ The Nidek intelligent blocker ICE-1500 / ICE-1500NT is intended to attach (block) a lens cup for lens processing. This instrument detects optical center, cylinder axis, segment position of bifocal lenses, marking, and printed eye point mark/angle of the progressive lenses, and blocks a lens cup at a proper position.
In addition, pupillary distance and axis can automatically be entered using a Nidek lensmeter or refractor, and whether the blocked lens is proper can be confirmed. For use in this manner, the optional 2D barcode scanner is required. For details, contact Nidek or your authorized distributor.

● Two model types

Model name	Tracing unit
ICE-1500	Equipped
ICE-1500NT	Not equipped

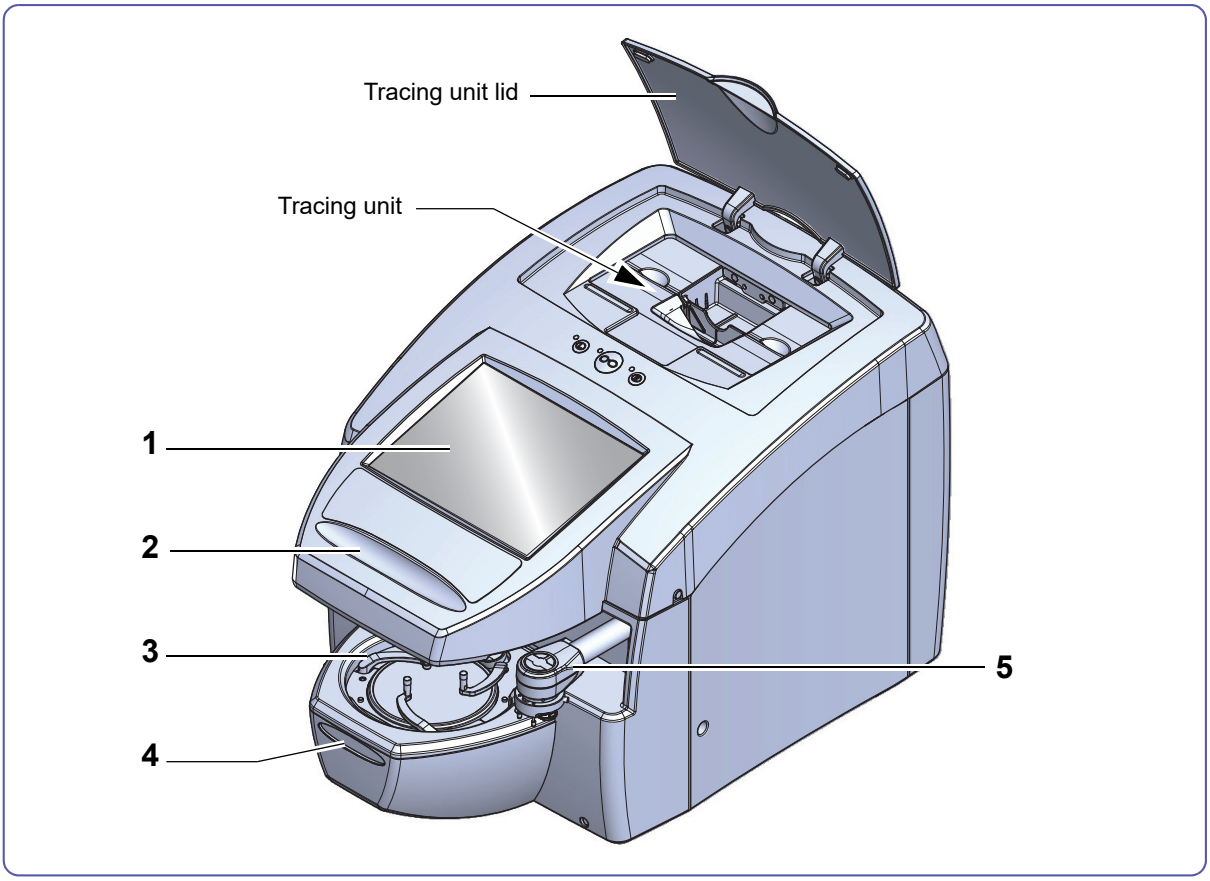
* In this manual, the ICE-1500NT is referred to as the NT model.

● ALM (auto lensmeter) function

This instrument is equipped with the ALM function that detects the optical center of a single vision lens. This function allows the operator to block a single vision lens without marking the optical center of the lens using a lensmeter.

- The ALM function is for obtaining the optical center and cylinder axis required for blocking. Do not use this function to measure lens diopters since it is different from a lensmeter.

2.2 Configuration



1 LCD touch screen

This 800 × 600 pixel color LCD touch screen displays various items that have been entered.

2 Touch pen tray

The touch pen is placed here.

3 Lens table

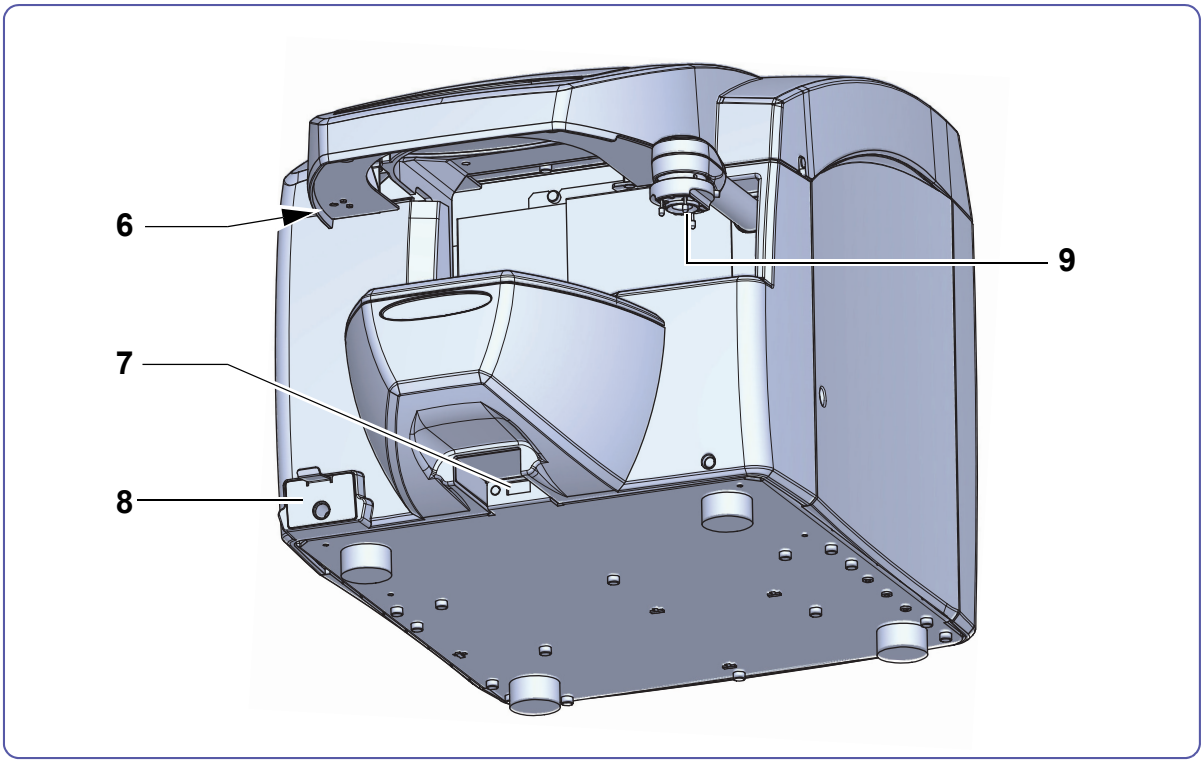
Place a lens with the convex surface up.

4 Barcode scanner (optional)

This built-in barcode scanner scans a barcode (JOB code) of a job ticket.

5 Blocking arm

Moves automatically to the right, left, front, back, up, and down to block a lens with a lens cup. In addition, the arm rotates the cup holder to align the lens axis. The blocking pressure is 2.5 kgf.



6 Touch screen calibration switch

There is a switch inside the hole. Turning on power to the instrument while pressing this switch with the touch pen activates touch screen calibration mode.

7 USB port

Used to connect the USB flash drive for saving the job data and pattern data.

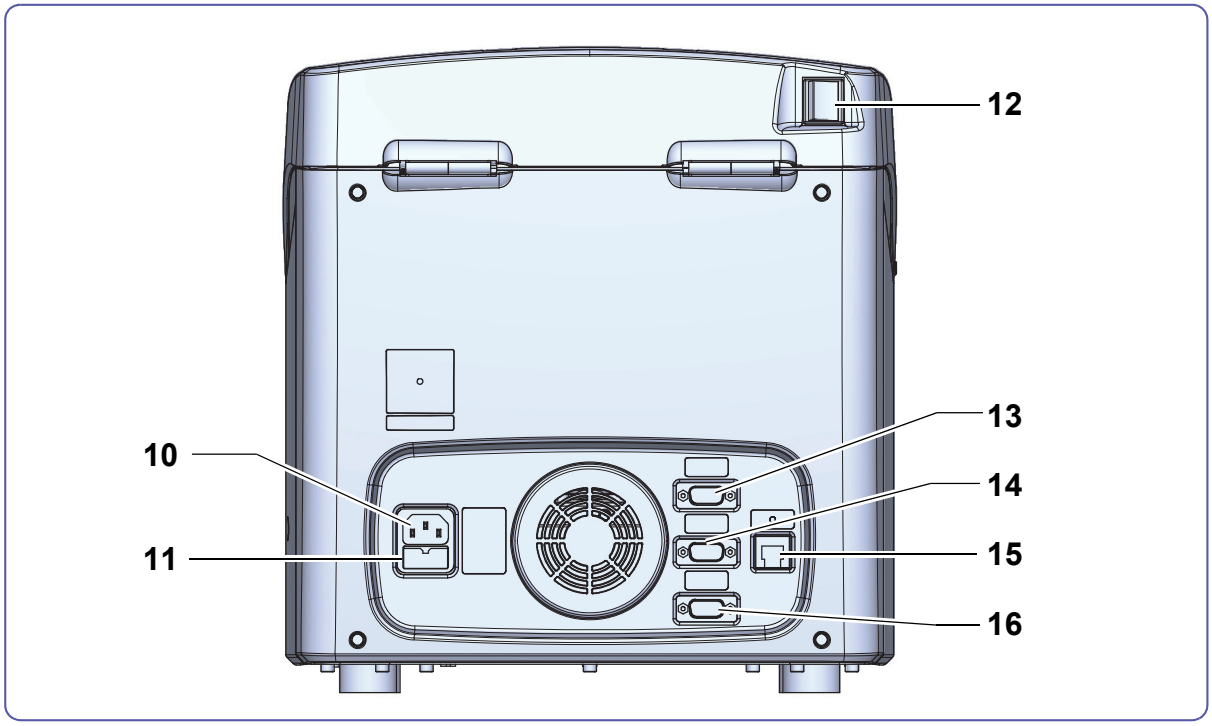
- Only operation using the USB flash drive provided by Nidek is guaranteed.
- When connecting or disconnecting the USB flash drive, be sure to turn off power to the instrument.

8 Pattern setting unit stand

Holds the pattern setting unit when not in use.

9 Cup holder

Attaches a lens cup.



10 Power inlet

Used to connect the power cord.

11 Fuse holder

"6.3 Fuse Replacement" (page 212)

12 Power switch

Used to turn on and off the instrument.

13 EDGER 1 connector

Used to connect a lens edger.

14 EDGER 2 connector

Used to connect a second lens edger.

For the NT model, the LT-980 tracer can be connected.

15 LAN port

Used to connect a LAN cable when configuring the Extended Lab system or Blocker VCA system on an Ethernet*1 LAN. Use the LAN port when connecting two or more lens edger units in the Mini Lab system configuration or the LEXCE.

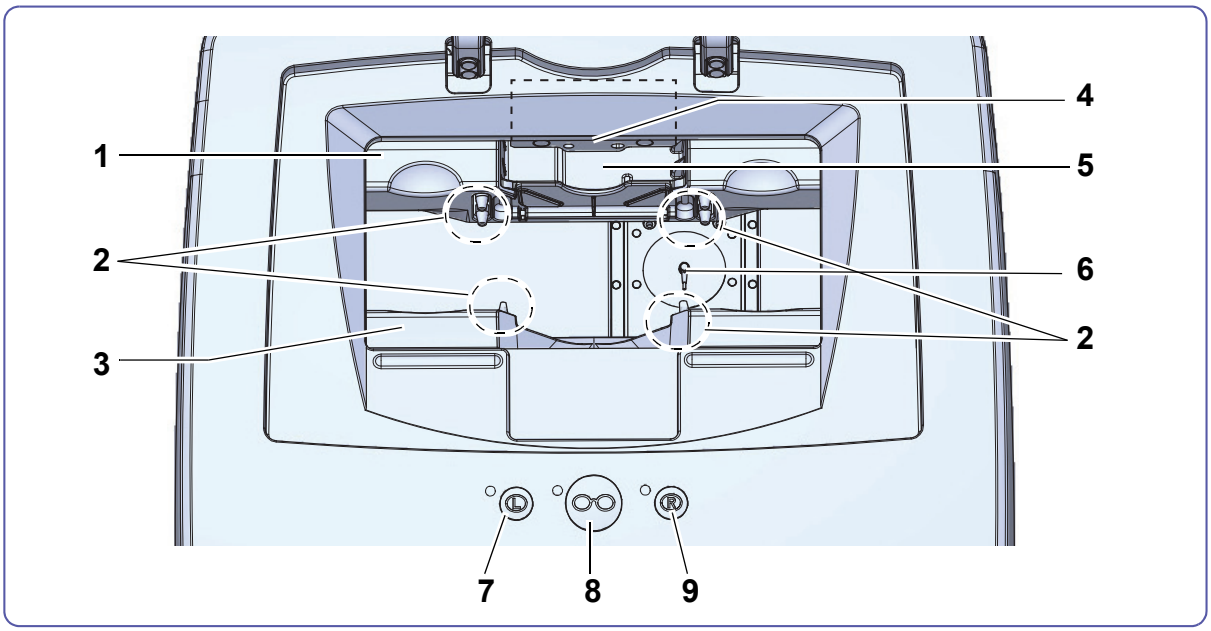
16 BARCODE connector

Used to connect the barcode scanner (handy type / optional).

*1. Ethernet: Standards on wiring, and access to the wiring to allow mutual accessing of various information processing terminals to the LAN. The ICE-1500 transfers and receives data through 10BASE-T/100BASE-TX cables.

- Tracing unit (except for NT model)

  For the NT model, this part is used as accessory box.



1 Upper slider

Frames are fastened between the upper and lower sliders.

2 Rim clips (four positions)

Hold the rims of frames.

3 Lower slider

Frames are fastened between the upper and lower sliders.

4 Pattern setting unit support

Attach the pattern setting unit set with a pattern or demo lens.

5 Storage space

The pattern setting unit is stored here when not in use.

6 Stylus

Measures the shape of frames or pattern.

7 Ⓛ Left-eye tracing button

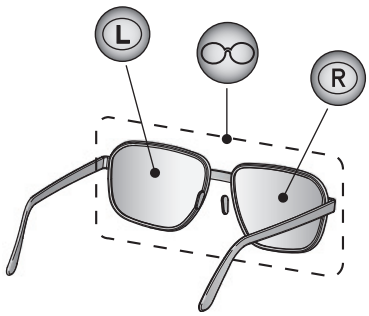
Starts left-eye tracing.

8 Both-eye tracing button

Starts both-eye tracing. Pressing this button during tracing stops tracing.

9 Ⓡ Right-eye tracing button

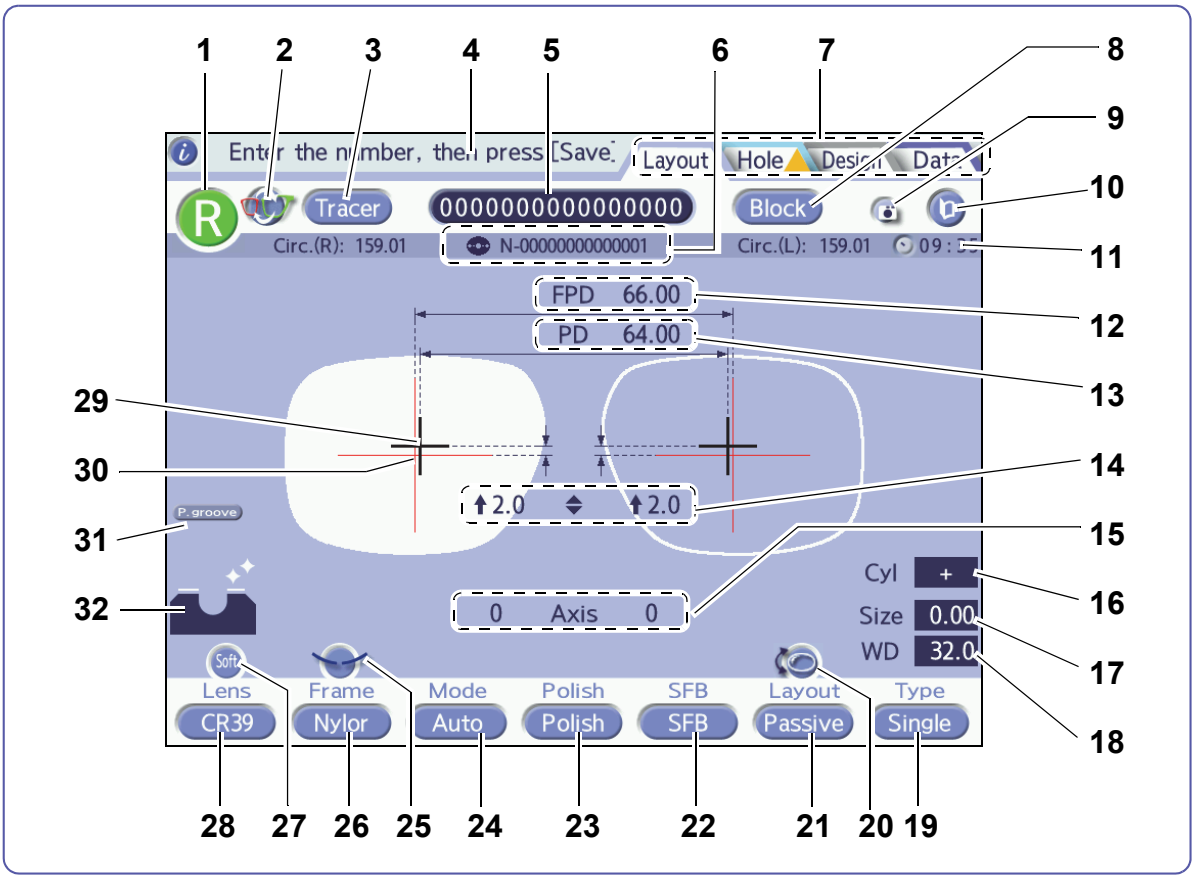
Starts right-eye tracing.



2.3 Screen Configuration

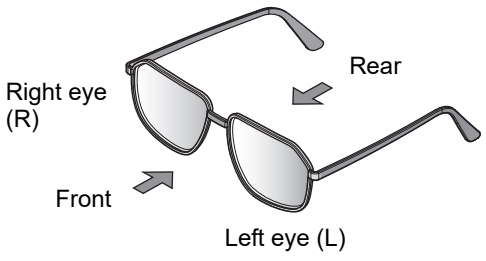
2.3.1 Layout screen

Screen for entering lens layout data and processing conditions.



Note

- The references to right and left in this operator's manual are those viewed from the rear as shown in the figure to the right.
- When viewed from the rear, the right eye (R) and left eye (L) are oriented as shown in the figure to the right.



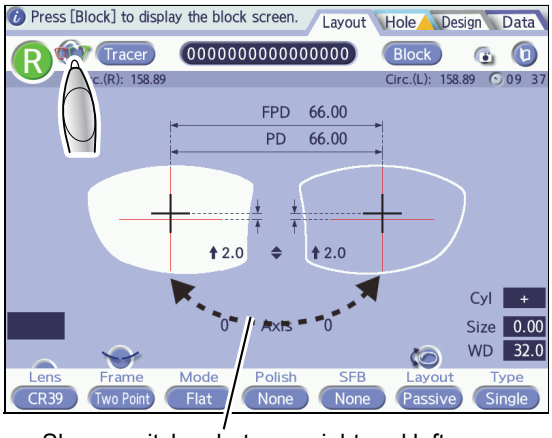
1 R, L Right or Left button

Selects the lens to be displayed between R (right) and L (left).

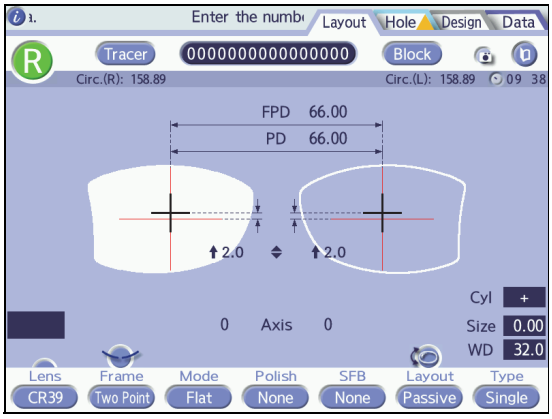
2 Shape R/L switching button

After measuring the shape or tracing the pattern (demo lens), is displayed on the Layout screen.

When this button is pressed, a confirmation message asking whether to switch the shape between right and left is displayed. Pressing Yes switches the shape between right and left. This function is used when the measured or traced side (R or L) of the pattern or demo lens was not the side intended.



Shape switches between right and left.



After the shape is switched, disappears.

3 Tracer button

Loads the shape data measured with the tracing unit to the display panel.

4 Information bar

Displays the current operation status or next operation.

5 JOB/PTN code field

Opens the keyboard screen for saving and loading data.

6 PTN code display

When the pattern data is saved or saved pattern data is loaded, the PTN code is displayed.

7 Screen change tabs

Changes the screen from among the Layout screen, Hole Editor screen, Design screen, and Data management screen.

8 Block button

Changes the screen to the Blocking screen.

9 Screen save button

Saves the current screen as an initial screen.

10 Menu button

Displays the Parameter screen.

11 Time

Indicate the current time. Pressing here displays the Clock screen.

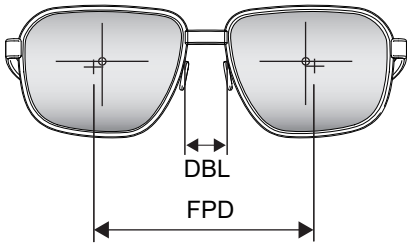
"6.4 Date and Time Setting" (page 213)

12 Frame pupillary distance (FPD)

Distance between right and left frame centers

The FPD is calculated by the boxing system.

For the DBL (width between the nasal ends of the left and right frames), see the Note below.



Note

- The DBL value should be regarded as a reference value.

  When DBL is entered, as the lens width and frame warping angle become larger, the accuracy of PD will be increasingly off. This deviation is caused by conversion from DBL to FPD.

  Thus, take DBL as a reference value and it is recommended to enter FPD that does not cause such a deviation.

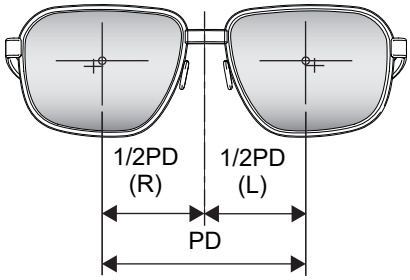
  When measuring DBL with a vernier caliper or such, use the following calculation formula to determine and enter FPD.

  DBL + shape width x cos (frame warping angle) = FPD

13 Pupillary distance (PD)

Enter the prescribed pupillary distance.

Entering the monocular PD (1/2 PD) is also possible.

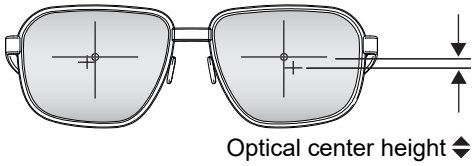


14 Optical center height

Enter the vertical distance to the optical center.

There are three entry methods: ▲▼, PD ▲▼, and BT ▲▼.

"● Entering the vertical distance from the lowest point on the lens shape." (page 110)



15 Cylinder axis (Axis)

Enter the prescribed cylinder axis.

16 Cyl

Switches CYL mode (+, -, +/-).

CYL mode initially displayed can be set by the Initial CYL mode parameter.

Loading the next shape resets CYL mode to the parameter default setting.

17 Size

Sets the lens size to increase or decrease by the input value while maintaining the overall lens shape.

This increase or decrease amount (mm) is applied to the width, but is also reflected in the height.

18 WD

When Single is selected for the lens type, set the distance between the vertical lines of the alignment scale.

For easy alignment, enter WD according to the distance between the markings on the lens.

When Multi is selected for the lens type, set the width of the segment.

For easy alignment, enter WD according to the width of the segment.

When Progressive is selected for the lens type, set the width of the hidden markings.

For easy alignment, enter WD according to the distance between the hidden markings.

19 Type button

Changes the lens type [Single, Multi, Progressive, or Demo lens] to be blocked.

20 Shape rotation button

Pressing this button displays the shape rotation screen.

The button appears only when lens shapes are displayed.

21 Layout button

Changes the layout mode [Active or Passive].

22 SFB button

The selectable options depend on the connected lens edger. Set them by the Polish/SFB Setting parameter.

- When the Polish/SFB Setting parameter is set to LE/LEX/LEXCE:
  The selectable options are SFB and None.
  When set to high curve, safety beveling is set to None.
- When the Polish/SFB Setting parameter is set to Supra/ME:
  The selectable options are Small, Medium, Large, Special, and None.
  When set to high curve, safety beveling is set to None.
- When the Polish/SFB Setting parameter is set to SE-1:
  The selectable options are Small, Medium, Large, Special, and None.

23 Polish button

The selectable options depend on the connected lens edger. Set them by the Polish/SFB Setting parameter.

- When the Polish/SFB Setting parameter is set to LE/LEX/LEXCE:
  The selectable options are to polish (Polish) or not to polish (None).
  When Glass is selected for the lens material, polishing is set to None.
  When set to high curve, polishing is set to None.
- When the Polish/SFB Setting parameter is set to Supra/ME or SE-1:
  The selectable options depend on whether safety beveling is SFB or None.
  When safety beveling is off, the options are Polish and None.
  When safety beveling is on, the options are Polish, None, Pol (Edge), and Pol (SFB).
  When Glass is selected for the lens material, polishing is set to None.

24 Processing mode button

Selects the processing conditions according to the frame type.

Frame type	Processing mode
Metal/Plastic/Optyl	Auto, Guide, HC Auto, HC Guide, Step Auto, Step Guide
Two Point	Flat
Nylor	Auto, Guide, Flat

* To send the Optyl setting to a lens edger, the software of the lens edger must be compatible.

25 Frame information change button

Pressing this button displays the frame data edit screen.

26 Frame type button

Selects the frame type [Metal, Plastic, Optyl[*1], Two Point, or Nylor].

27 Soft processing mode button

Toggles soft processing between on 

and off  .

28 Lens material button

Specifies the lens material [CR39, Hi-index, Polyca., Acrylic, Trivex, Urethane, or Glass].

29 Optical center mark

Indicates the optical center of the lens.

In Active mode, this mark is displayed in red and in Passive mode, this mark is displayed in black.

30 Frame center mark

Indicates the center of the lens shape (frame center).

31 Design indicators

When any data of partial grooving, partial beveling, design cut, facet, or partial step exists, this indicator is displayed.

When letters are displayed in white	Design data exists and processing is performed.
When letters are displayed in gray	Design data exists, however, processing is not performed. Check the processing conditions.

32 Processing image

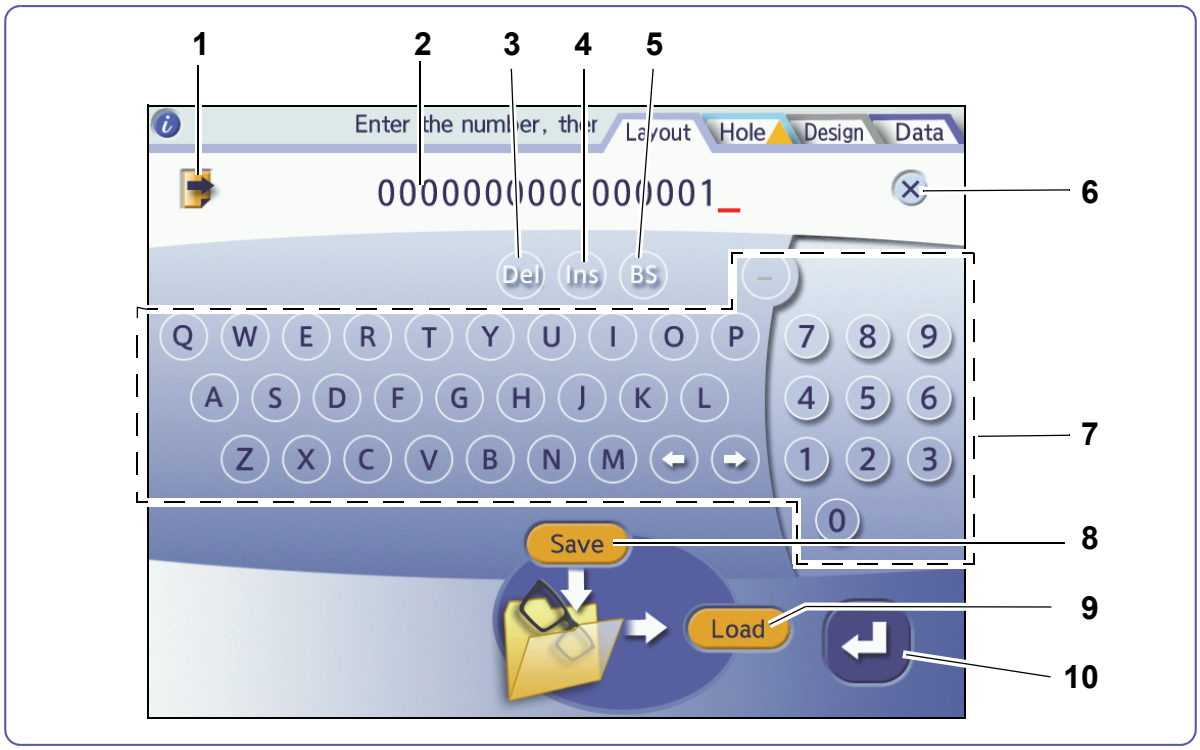
Image display of processing mode, polishing, and safety beveling currently set.

*1. An optyl frame is made of epoxy resin.

2.3.2 Keyboard screen

- For Blocker Lex, Mini Lab system, and Extended Lab system

Screen for saving or loading job data (pattern data).
To display this screen, press JOB/PTN code on the Layout screen. Or scan the barcode.



1 Brand list button

Displays the brand list saved in the ICE-1500.

"● *Using the brand list on the keyboard screen*" *(page 68)*

2 JOB/PTN code display

Displays the file code of job data (pattern data) to be saved or loaded.

3 Delete button

Deletes one character to the right of the cursor.

4 Insert button

Toggles between overwriting or inserting a character at the cursor position. While in insert mode, the button is red and cursor appears as a triangle (▲).

5 Back Space button

Deletes one character to the left of the cursor.

6 Close the keyboard button

Cancels the entered JOB/PTN code and closes the keyboard screen.

7 Keyboard

Enter alphanumeric characters.

8  **Save button**

Saves job data (pattern data).

When no shape is displayed on the Layout screen,  is not displayed when the keyboard screen is opened.

9  **Load button**

Loads job data (pattern data).

10  **Enter button**

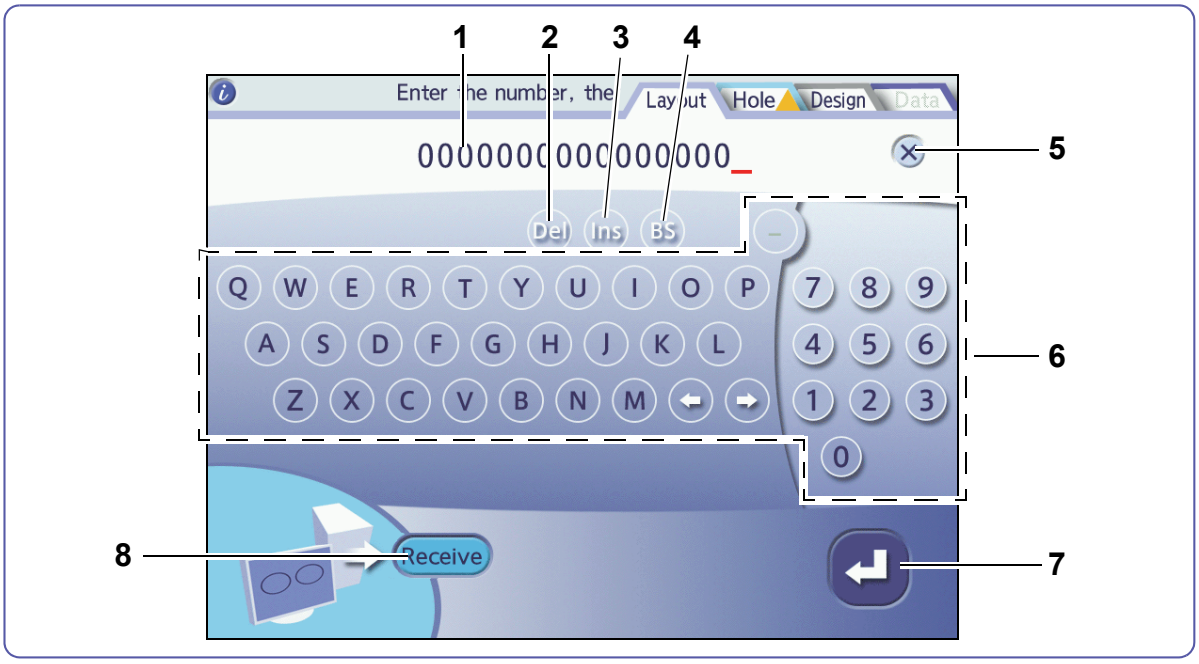
Confirms the entered JOB/PTN code and closes the keypad screen.

This button does not save or load data.

- For Blocker VCA system

Screen for receiving job data.

To display this screen, press JOB/PTN code on the Layout screen.



1 JOB code display

Displays the file code (JOB code) of job data to be received.

2 Del Delete button

Deletes one character to the right of the cursor.

3 Ins Insert button

Toggles between overwriting or inserting a character at the cursor position. While in insert mode, the button is red and cursor appears as a triangle (▲).

4 BS Back Space button

Deletes one character to the left of the cursor.

5 Close the keyboard button

Cancels the entered JOB code and closes the keyboard screen.

6 Keyboard

Enter alphanumeric characters.

7 Enter button

Confirms the entered JOB code and closes the keyboard screen. This button does not receive, save, or load data.

8 Receive Receive button

Receives job data from the server.

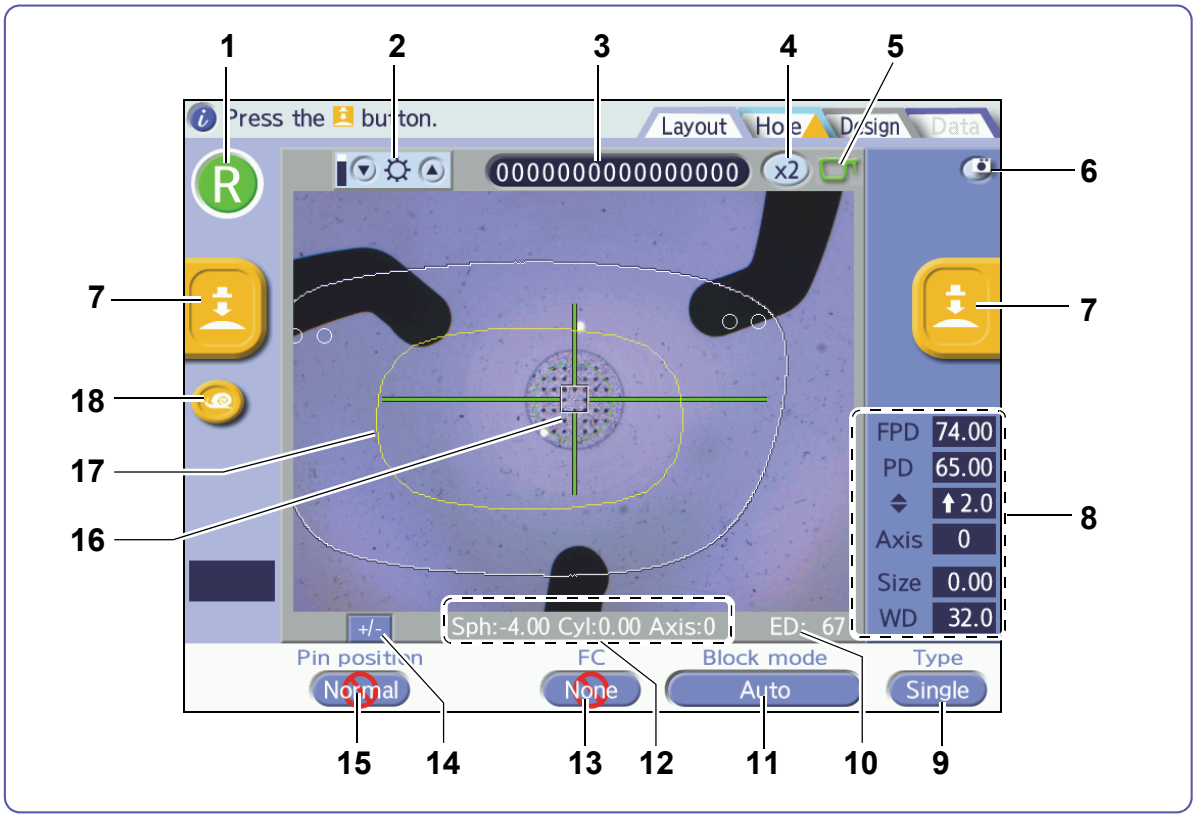
2.3.3 Blocking screen

Screen for blocking.

To display this screen, press Block on the Layout screen.

- Blocking screen (Single)

This is the blocking screen when Single is selected for Type.



1 R, L Right or Left button

Specifies whether the lens is right (R) or left (L).

2 , Camera brightness button

Sets the camera image brightness at five levels. When it is set to the darkest level, the LED turns off.

The bar graph to the left of the buttons shows the brightness setting.

3 JOB code

Displays JOB code specified on the Layout screen.

4 Magnification buttons

Displays a magnification of the camera image. Pressing this button toggles between x1 and x2.

x1 is used to check the shape in actual size.

5 R/L frame mark

Indicates the nasal side of the shape currently displayed.

6 Screen save button

Saves Block mode on the current screen to be the initial screen for each Type setting.

7 Blocking start button

Starts blocking.

8 Layout data

The layout data entered on the Layout screen is displayed.

9 Type button

Changes the lens type [Single, Multi, Progressive, or Demo lens] to be blocked.

10 ED

This is a reference value of the minimum lens diameter required for processing.

11 Block mode button

Selects the lens detection mode.

Auto	*"● For Auto mode" (page 124)*
Point mark	*"● For Point mark mode" (page 124)*
Manual	*"● For Manual mode" (page 124)*

The Block mode initial setting can be saved to be the setting for each Type by pressing .

"4.3 Initial Screen Save Function" (page 192)

12 Lens measurement values

When Type is set to Single and Block mode is Auto, the lens measurement values are displayed.

This measurement is for obtaining the optical center and cylinder axis required for blocking. Do not use this function to measure lens diopters since it is different from a lensmeter.

13 FC button

Press this button when blocking a lens for which the frame will be changed and set it to Exec.

The setting is changeable only when Block mode is Manual.

14 +/- CYL mode inversion button

Inverses CYL mode of lens measurement between + and - when Type is set to Single and Block mode is Auto.

When CYL mode is inversed, the indication of the button becomes +/-.

15 Pin position button

Selects the intervals between the lens table pins from among Wide, Normal, and Narrow (cannot be selected depending on the Block mode and FC settings as shown the table below.)

When the lens diameter is small, select Narrow.

When and are displayed, the intervals between the pins can be precisely adjusted using these buttons.

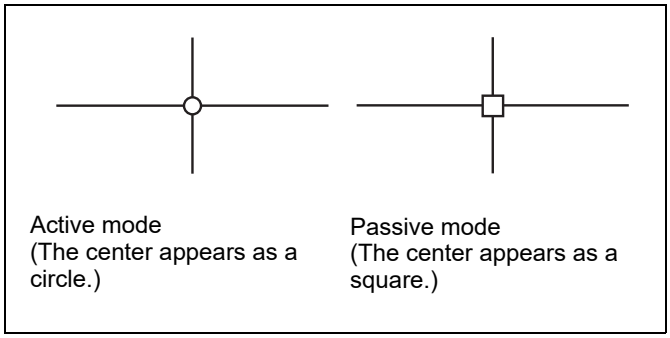
Block mode	FC	Pin position
Auto	None (fixed)	Not selectable
Point mark, Manual	None	Wide, Normal, Narrow
Manual	Exec	Not selectable

16 Optical center mark

Indicates the optical center and cylinder axis of the lens.

The shape differs depending on Layout mode.

When the optical center is not detected or it is not inside the blocking area, the mark is displayed in red. At this time, blocking is not available.



Active mode
(The center appears as a circle.)

Passive mode
(The center appears as a square.)

17 Cup mark

Displays the outer shape and position of the lens cup to be blocked.

Select the lens cup, according to the specifications of the lens edger to be used, by the Cup mode parameter.

18 Slow blocking button

Used when blocking a demo lens. Lenses are blocked at a slow speed.

After blocking, the blocking arm remains at the lowest position. Pressing OK in the “Complete blocking.” message displayed on the screen returns the blocking arm to the original position.

19 Available blocking area

Indicates the area where blocking is possible.

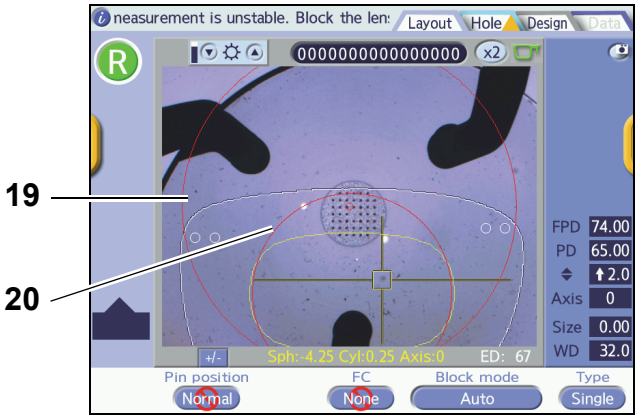
This is displayed when blocking is not possible.

20 Cup holder

Indicates the cup holder position. Place the lens so that the mark is inside the available blocking area.

This is displayed when blocking is not possible.

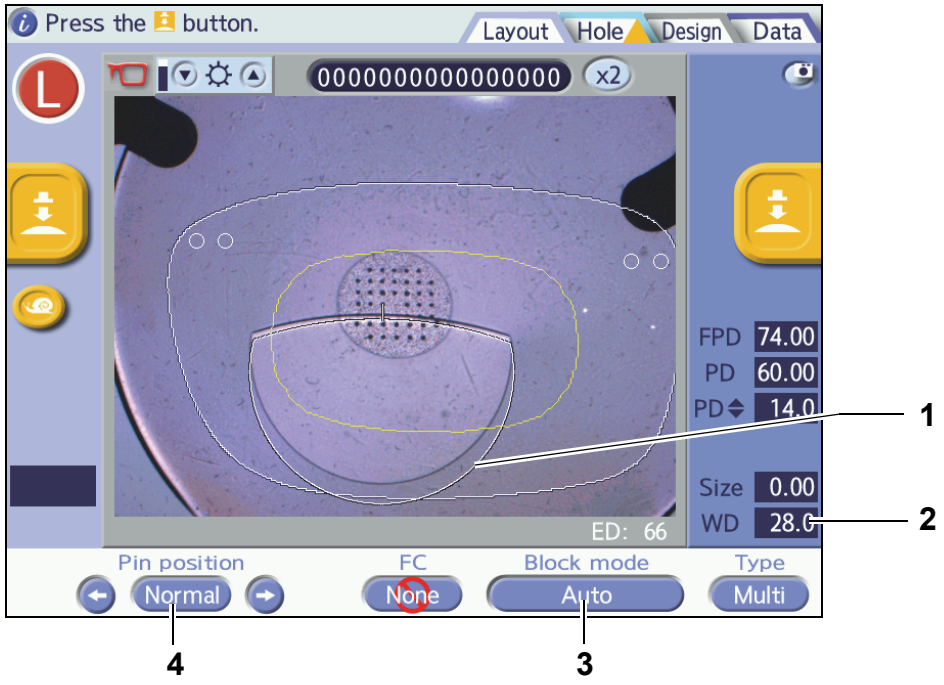
[Screen displayed when blocking is not possible]



- Blocking screen (Multi)

This is the blocking screen when Multi is selected for Type.

* The items not described in the following are the same as *"● Blocking screen (Single)" (page 22)*.



1 Segment mark

Indicates the detected segment position.

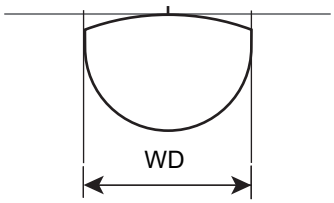
The segment display types (curve top / flat top) can be selected by the parameter.

"O Setting the segment mark shape" (page 133)

2 WD

Sets the width of the segment alignment mark (unit: mm) that is displayed in Manual mode.

For easy alignment, set the width according to the segment size.



3 Block mode button

Selects the lens detection mode.

Auto	*" ● For Auto mode" (page 130)*
Manual	*" ● For Manual mode" (page 130)*

4 Pin position button

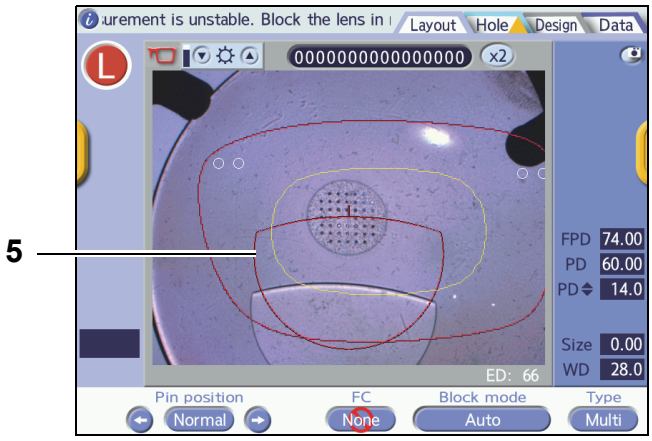
Selects the intervals between the lens table pins from among Wide, Normal, and Narrow
When the lens diameter is small, select Narrow.

The intervals between the pins can be precisely adjusted with and .

5 Segment alignment mark

Align the lens segment to this mark.

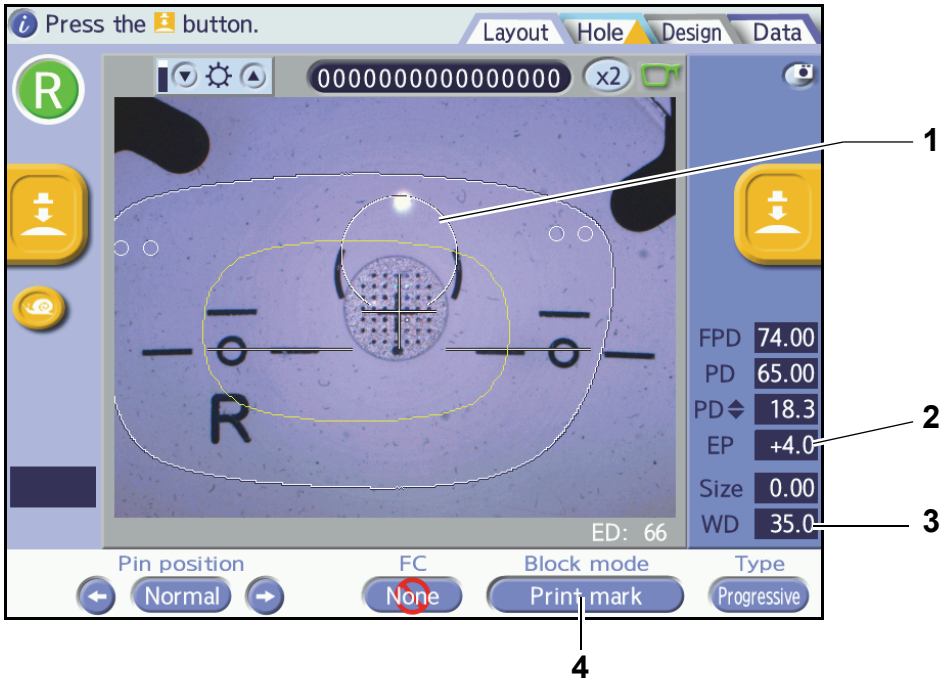
[Screen displayed when blocking is not possible]



- Blocking screen (Progressive)

This is the blocking screen when Progressive is selected for Type.

* The items not described in the following are the same as *"● Blocking screen (Single)" (page 22)* and *"● Blocking screen (Multi)" (page 25)*.



1 Print Mark

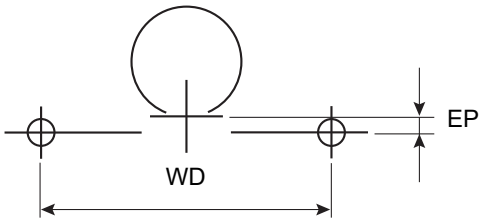
Displays the position of the detected print mark.

2 EP

Sets the height of the distance eyepoint (unit: mm).

3 WD

Sets the distance between hidden markings (unit: mm).



4 Block mode button

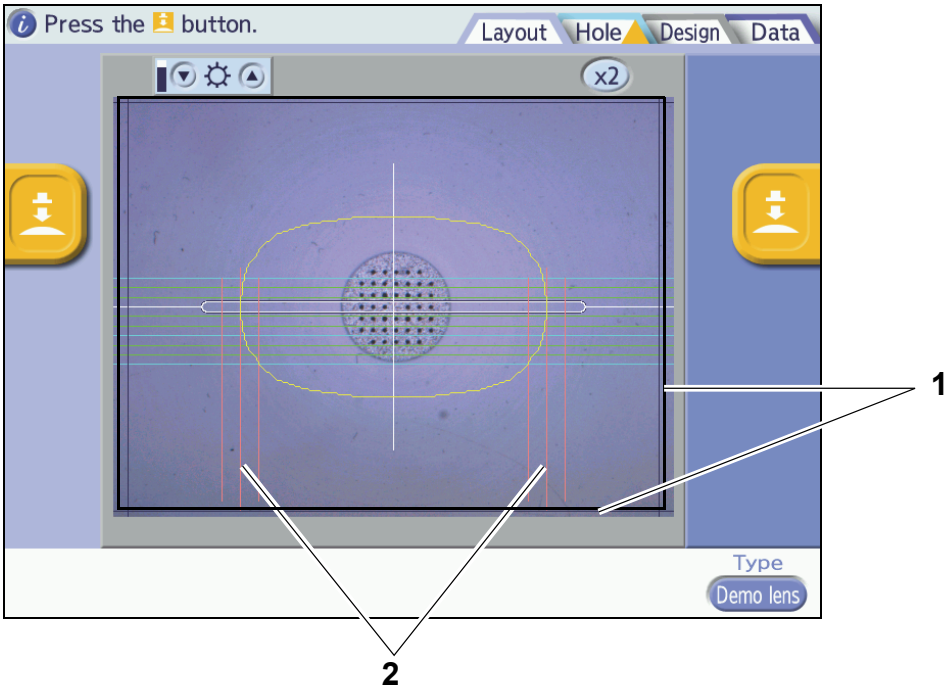
Selects the lens detection mode.

Print mark	"● *For Print mark mode" (page 135)*
Print mark (angle)	"● *For Print mark (angle) mode" (page 136)*
Point mark	"● *For Point mark mode" (page 136)*
Manual	"● *For Manual mode" (page 137)*

- Blocking screen (Demo lens)

This is the blocking screen when Demo lens is selected for Type.

* The items not described in the following are the same as *"● Blocking screen (Single)" (page 22)*.

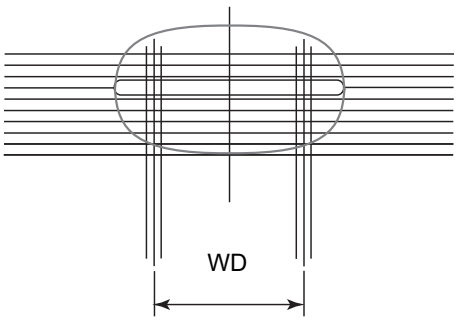


1 Horizontal/vertical line

By dragging the horizontal or vertical line with the touch pen, the line can be aligned on the shape outline.

2 WD mark

The width of the marking changes according to the WD value entered on the Layout screen.



Note

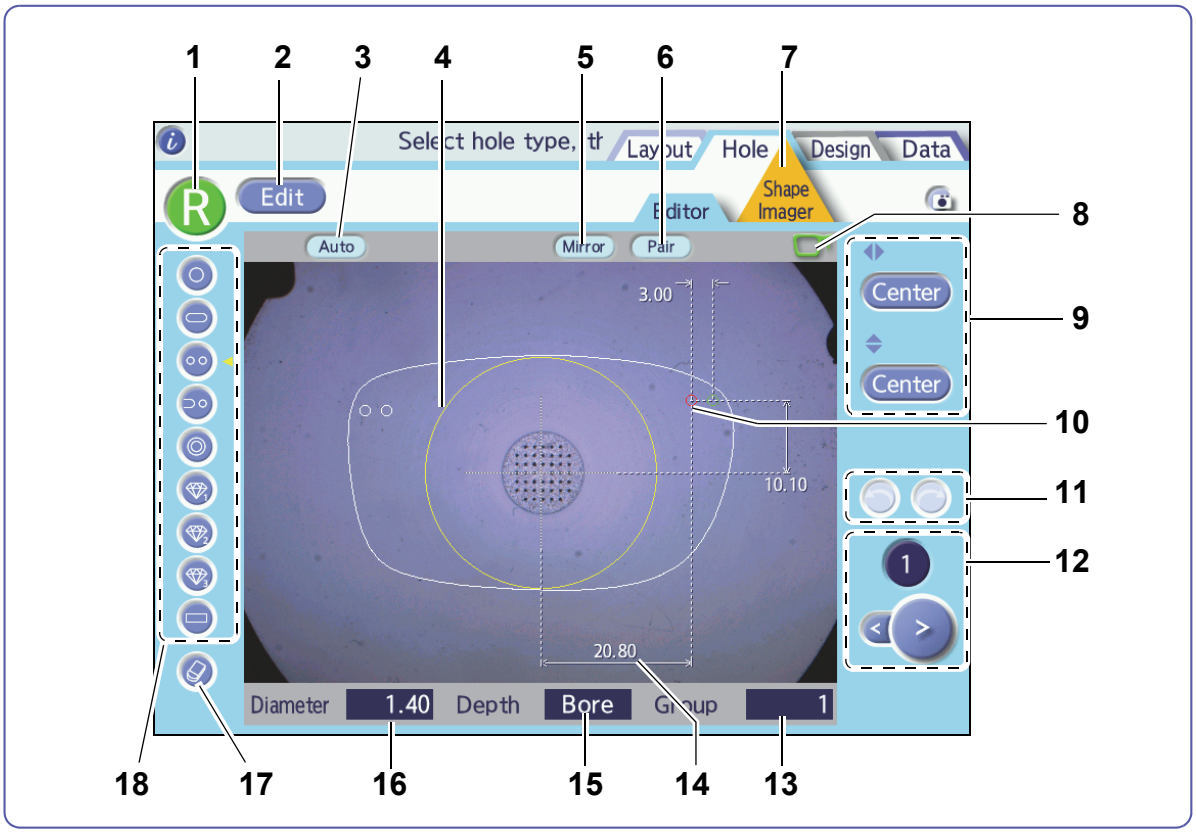
- On this screen, blocking is performed at a slow speed.

  After blocking, the blocking arm remains at the lowest position. Pressing OK in the "Complete blocking." message displayed on the screen returns the blocking arm to the original position.

2.3.4 Hole Editor screen

Screen for editing hole data. The demo lens outline and the hole position are also detected.

To display this screen, press the Hole tab on the Layout screen.



1 R, L Right or Left button

Selects the lens to be displayed between R (right) and L (left).

2 Edit Edit/Adjust button

Hole Editor screen: This is the screen to view the entire lens and add or delete hole data.

Adjust screen: This is the screen to precisely adjust the hole position on the lens.

3 Hole angle button

Selects the hole angle. Select from among Auto, Angle, X-Y, X Auto, and Curve.

Auto	A hole is drilled in the lens front vertically to the hole position.
Angle	Enter the tilt angle.
X-Y	Enter the tilt angle of the X axis (horizontal direction) and Y axis (vertical direction).
X Auto	The tilt angle in the Y axis (vertical) direction is specified.
Curve	A hole is drilled vertically according to the entered curve value.

4 Hole setting invalid range

Holes cannot be specified within the yellow circle.

5  **Mirror button**

Turns the mirror function on or off.

Turn the mirror function on to drill the holes symmetrically in the right and left lenses.

When the button color is light blue, the mirror function is on. When the button color is gray, the mirror function is off.

6  **Pair hole button**

Displayed for pair hole, notched hole, and counterbored hole. This button releases pair specification for holes or notches.

Holes released from pair specification can be moved individually.

7 Shape Imager tab

Displays the Shape Imager screen.

8 R/L frame mark

Indicates the nasal side of the shape currently displayed.

9 Hole position coordinate buttons

There are six types of coordinate display methods according to the selection of the horizontal and vertical reference positions.

The method can be selected for each hole.

"O Hole position coordinate display" (page 148)

10 Hole position indication

Displays the current hole position and hole type. The currently selected hole is displayed in red.

11 Undo and redo buttons

Undoes the last change or restores the change by undo.

Undo	Undoes the last change (undo function). Up to five changes can be undone.
Redo	Restores the change by undo (redo function). Cancels the undo operation.

12 Hole No. display buttons

Displays the hole number of the currently selected hole. Press  or  to select a different hole.

13 Group field

Displays the group No. of the currently selected hole.

Pressing the numeric field displays the numeric keypad to change the group No.

An indication of None means that the hole is not grouped.

14 Hole position coordinate indication

Displays the hole coordinates of the currently selected hole.

Pressing the coordinate indication value displays the numeric keypad to change the hole position.

The coordinate display method of the hole position can be changed with the hole position coordinate button.

15 Hole depth field

The hole depth of the currently selected hole is displayed.

Pressing the numeric field displays the numeric keypad to change the depth.

For a through hole, enter “0.0”.

Each hole depth of Jewel hole 1 to Jewel hole 3 depends on the connected lend edger settings.

“● Hole type and available settings of position and size” (page 153)

16 Hole diameter field

The hole diameter of the currently selected hole is displayed.

Pressing the numeric field displays the numeric keypad to change the hole diameter.

Each hole diameter of Jewel hole 1 to Jewel hole 3 depends on the connected lens edger settings.

“● Hole type and available settings of position and size” (page 153)

17  Hole delete button

Deletes the currently selected hole.

18 Hole add buttons

Specifies the type of the hole to be added.

Press with the touch pen the desired position on the lens shape where the hole of the selected type is to be added.

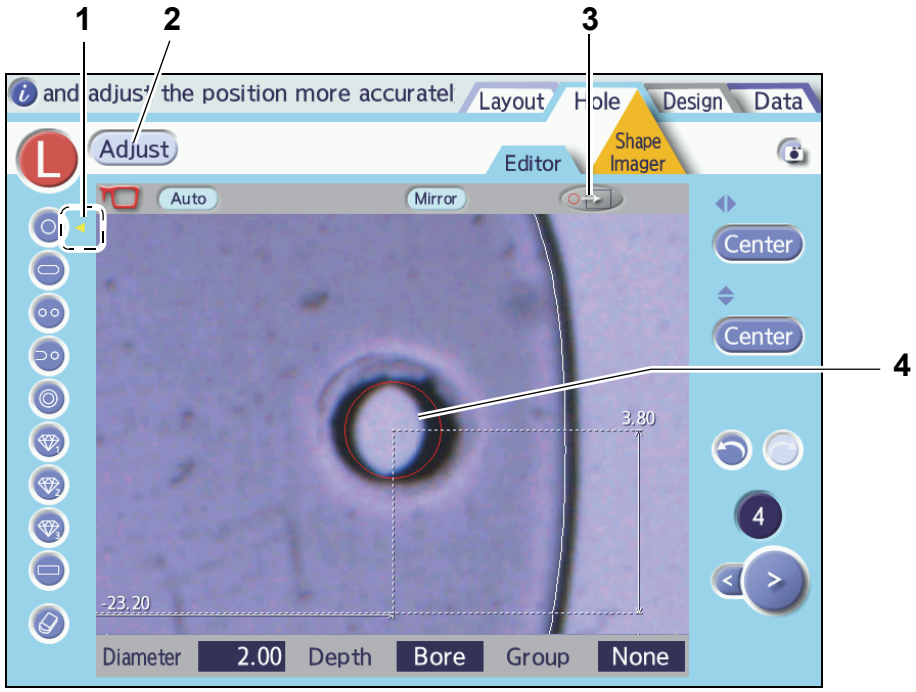
Holes of the selected type can be added successively until the selected button is pressed again or another button is pressed.

* The mark ◀ is displayed to the right of the button of the selected hole type.

- Adjust screen

Magnify the camera image (still image) and hole image to specify the hole position and diameter precisely.

To display the Adjust screen, press Edit on the Hole Editor screen.



1 Hole type indication

Dragging this indication ◀ allows the hole type to be changed from among Simple hole, Slotted hole, Jewel hole 1, Jewel hole 2, Jewel hole 3, and Rectangular hole.

2 Adjust Edit/Adjust button

Changes between the Adjust screen and Hole Editor screen.

3 Selected hole position move button

The position of the selected hole (displayed in red) is moved and displayed in the center of the screen.

When a slotted hole or rectangular hole is selected, the starting position of the currently selected hole slot or rectangle is moved and displayed in the center of the screen.

This button is used when the selected hole is off the screen.

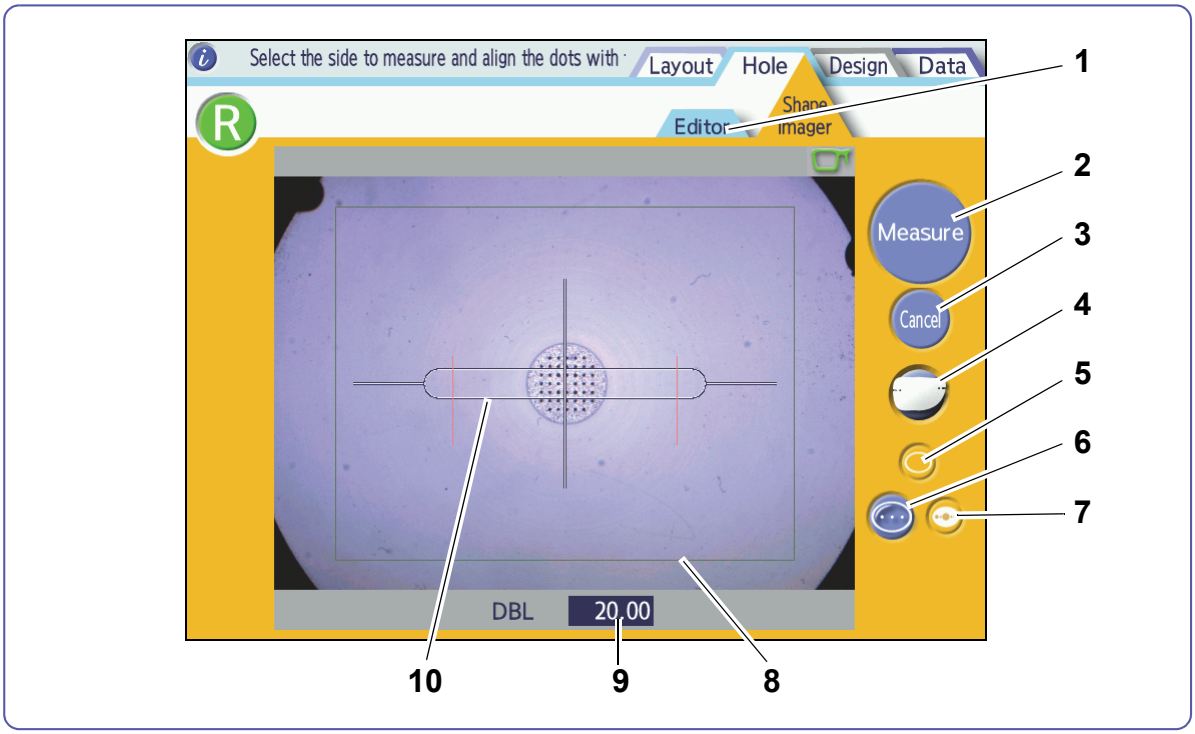
4 Hole position indication

The selected hole position is displayed as a red circle (or slotted hole, rectangle).

- Shape Imager screen

On the Shape Imager screen, the outline or hole position of a demo lens or pattern placed on the shape measurement table can be measured (read).

To display the Shape Imager screen, press the Shape Imager tab on the Hole Editor screen.



1 Editor tab

Changes to the Hole Editor screen.

2 Measure button

Starts measuring (reading) the outline and hole position of a demo lens or pattern.

After measurement, the button changes to OK.

Pressing OK confirms the measurement result and the Hole Editor screen is displayed. Enter the hole data.

3 Cancel button

After measurement, Cancel is displayed. Press this button to reject the measurement result and retry measurement.

4 Measurement mode button

Selects two point measurement mode, design cut measurement mode, or partial measurement mode according to the shape of the demo lens.

Each press of the button toggles measurement mode.

5 **Manual alignment button**

This button is pressed to manually align the lens marking or horizontal reference line on the lens to the scale for measurement.

6 **Demo lens (marking detection) button**

Press this button to measure the outline of a marked lens.

7 **Pattern detection button**

Press this button to measure a pattern.

8 **Layout range mark**

Locates the lens in the range of rectangle.

9 **DBL field**

After measurement, the DBL field is displayed. Enter the DBL value.

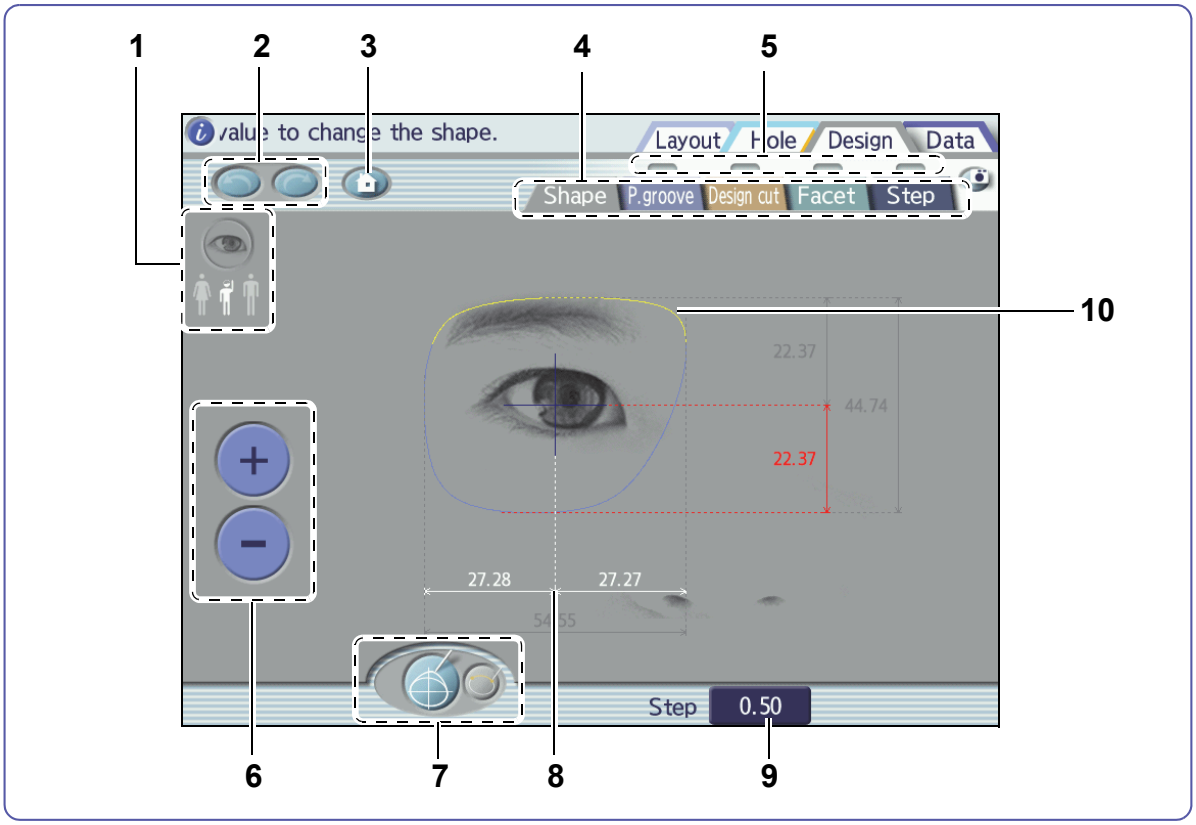
10 **Alignment scale**

Align the marking on the demo lens, horizontal reference line, or pattern hole to this scale.

2.3.5 Shape Editor screen

This screen is used to change the lens shape data into the desired shape.

To display this screen, press the Shape tab on the Design screen.



1 Eye image button

Switches the eye image between display and hide.

There are three types of eye image: woman, child, and man, which can be selected with the human-form icon ( ).

2 Undo and redo buttons

Undoes the last change. Restores the change. These can be performed a maximum of five times.

3 Initialize button

Clears the changes and displays the original shape data.

4 Design screen change tabs

Switches the screen among the Partial grooving and partial beveling screen, Design cut screen, Facet screen, and Step Editor screen.

5 Design indicators

When any data of partial grooving, partial beveling, design cut, facet, or partial step exists, the corresponding indicator turns yellow.

6 ⊕⊖ button

Increases or decreases the selected size of the lens shape.

The buttons are displayed by selecting the size while any increment is indicated in the Step field.

7 Outline change / fix area button

Switches between outline change mode and fix area mode.

Outline change mode	Change the lens shape by changing the size or dragging the shape outline.
Fix area mode	Select the area not to be changed by dragging. Pressing off cancels the fixed area.

8 Size indication

Displays the size of each part of the lens shape.

The size can be changed with the numeric keypad or ⊕⊖.

The size displayed in gray cannot be changed.

9 Step field

Select the increment for changing the size with ⊕⊖ from among 0.10, 0.25, and 0.50 mm.

When Tenkey is selected, enter the value with the numeric keypad.

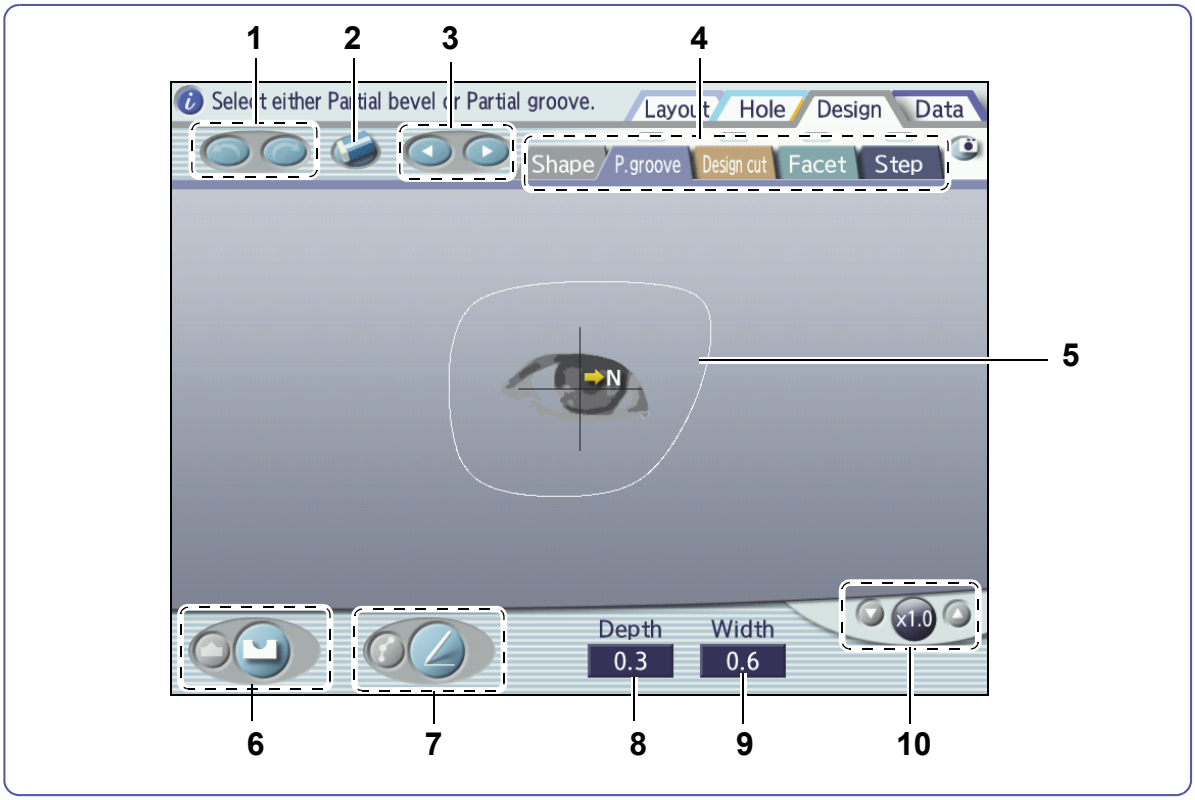
10 Lens shape

Gray line	Lens shape before change
Yellow line	Fixed area specified in fix area mode
Blue line	Lens shape after change

2.3.6 Partial grooving and partial beveling screen

This screen is used for specifying the partial groove or bevel (width and depth).

To display this screen, press the P.groove tab on the Design screen.



1 Undo and redo buttons

Undoes the last change. Restores the change. These can be performed a maximum of five times.

2 Delete button

Deletes the selected data.

3 Data selection buttons

Changes the data to be edited.

4 Design screen change tabs

Switches the screen among the Shape Editor screen, Design cut screen, Facet screen, and Step Editor screen.

5 Lens shape

Specifies the partial beveling and grooving areas and groove width and depth to be changed.

6 Partial groove/bevel button

Switches between partial grooving mode and beveling mode.

Pressing this button in edit mode switches between the groove and bevel of the selected data.

Partial grooving mode	Enter partial grooving data.
Partial beveling mode	Enter partial beveling data.

7 Add/edit button

Switches between add mode and edit mode.

Add mode	Specify the partial grooving or beveling area.
Edit mode	Change the partial grooving or beveling area.

8 Depth field

Displays the selected groove depth.

Pressing the numeric field displays the numeric keypad to change the depth.

9 Width field

Displays the selected groove width.

Pressing the numeric field displays the numeric keypad to change the width.

10 Magnification buttons

Select the magnification of the layout area. Each press of ▼ or ▲ to the left or right of the value switches the magnification.

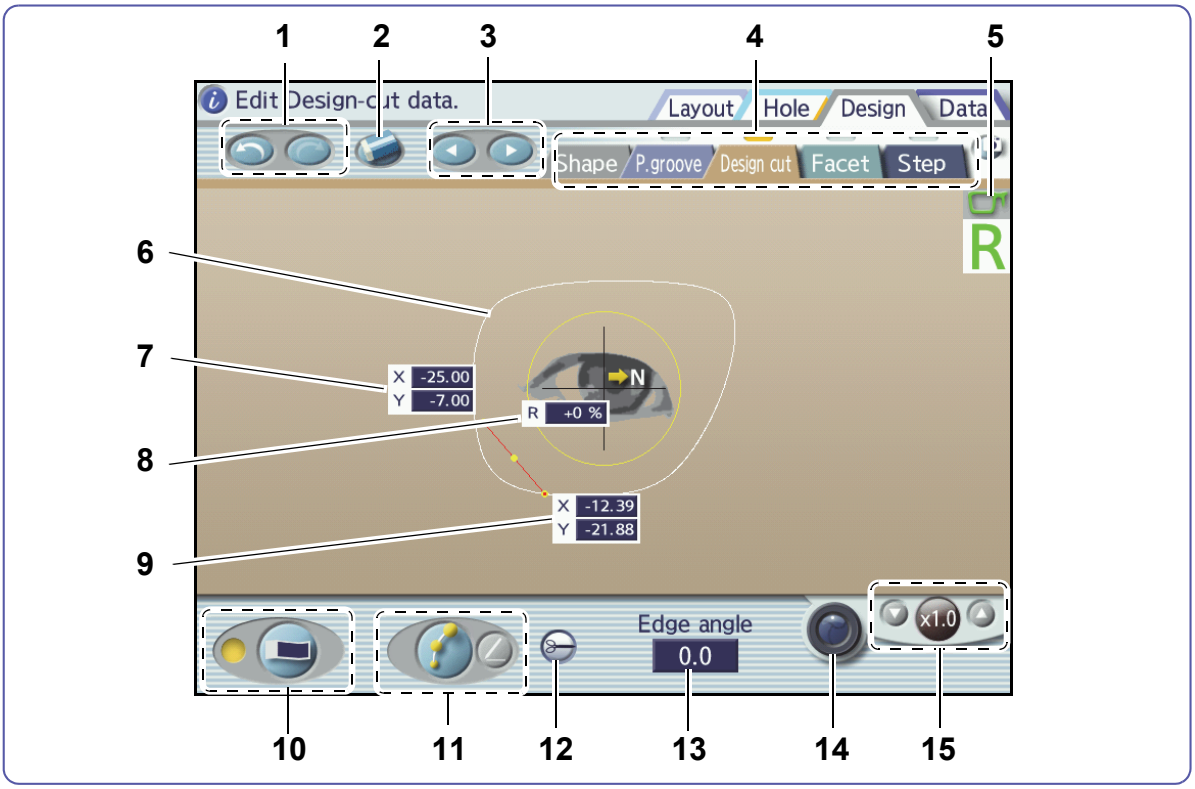
▲	[×1.0] → [×1.5] → [×2.0] → [×4.0]
▼	[×4.0] → [×2.0] → [×1.5] → [×1.0]

When a magnification other than [×1.0] is selected, the lens shape can be moved by dragging.

2.3.7 Design cut screen

This screen is used for editing the line for design cut and specifying it in the lens shape data.

To display this screen, press the Design cut tab on the Design screen.



1 Undo and redo buttons

Undoes the last change. Restores the change. These can be performed a maximum of five times.

2 Delete button

Deletes the selected data.

3 Data selection buttons

Changes the data to be edited. The selected data is displayed in red on the shape.

4 Design screen change tabs

Switches the screen among the Shape Editor screen, Partial grooving and partial beveling screen, Facet screen, and Step Editor screen.

5 R/L frame mark

Indicates the nasal side of the shape currently displayed.

6 Lens shape

Displays the front side edge of the design-cut lens.

7 Start point coordinates field

Display the coordinates of the start point in the selected design cut data.

The coordinates can be changed with the numeric keypad.

8 Curve

Displays the curve of the selected design cut data.

The value can be changed with the numeric keypad.

When 0% is selected, the start and end points are connected with a straight line.

9 End point coordinates field

Display the coordinates of the end point in the selected design cut data.

The coordinates can be changed with the numeric keypad.

10 Field on/off button

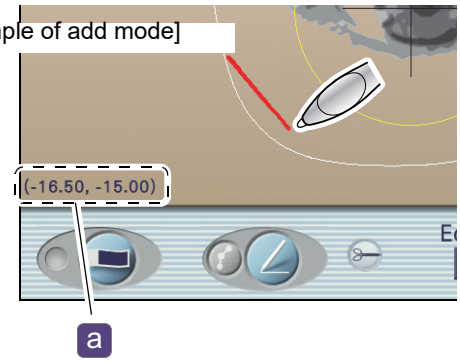
Displays or hides the start and end point coordinates and curve field.

11 Add/edit button

Switches between add mode and edit mode .

When the line for design cut is dragged in add mode, the X-Y coordinates a of the dragging end point are displayed to the lower-left of the screen.

[Example of add mode]



12 Data split button

Splits design cut data in two data sets for fine adjustment.

13 Edge angle field

Displays the edge angle of the data currently edited.

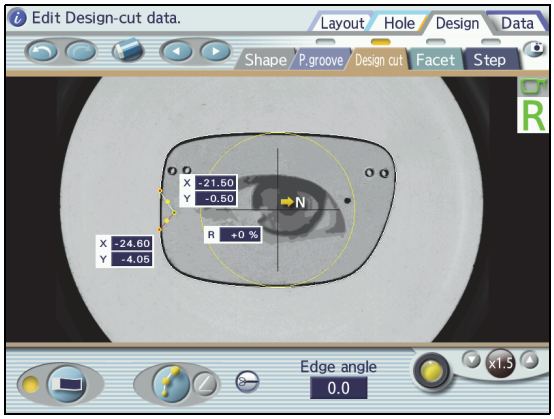
Pressing the numeric field displays the numeric keypad to change the angle in the range of 0 to 30º.

14 Camera display switching button

Switches on and off the display of overlay of the camera image.

After shape measurement, a still image of the shape measurement is overlaid.

Otherwise, a live camera image (video image) is displayed for magnification ×1.0, whereas still images are displayed for each of the other magnifications.



15 Magnification buttons

Select the magnification of the layout area. Each press of or to the left or right of the value switches the magnification.

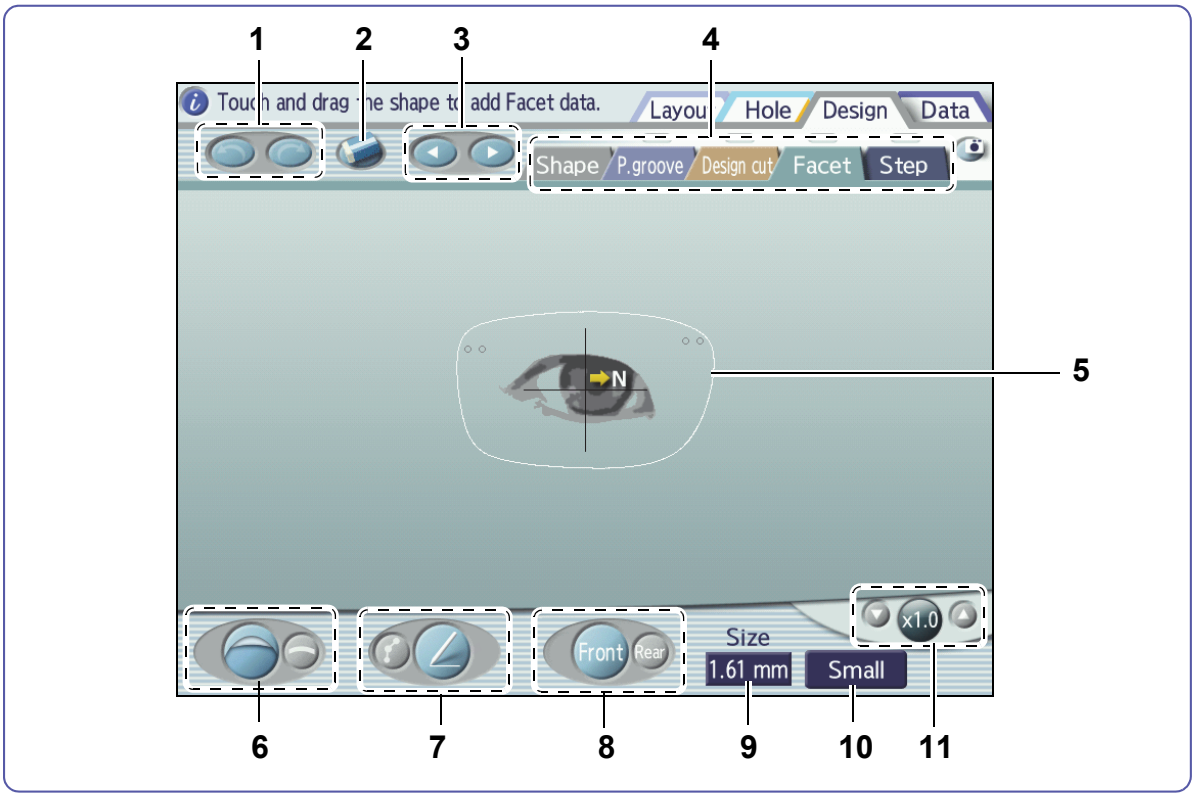
	[×1.0] → [×1.5] → [×2.0] → [×4.0]→ [×8.0]
	[×8.0] → [×4.0] → [×2.0] → [×1.5] → [×1.0]

When a magnification other than [×1.0] is selected, the lens shape can be moved by dragging.

2.3.8 Facet screen

This screen is used for faceting the front and rear surfaces of lenses.

To display this screen, press the Facet tab on the Design screen.



1 Undo and redo buttons

Undoes the last change. Restores the change. These can be performed a maximum of five times.

2 Delete button

Deletes the selected data.

3 Data selection buttons

Changes the data to be edited. The selected data is displayed in red on the shape.

4 Design screen change tabs

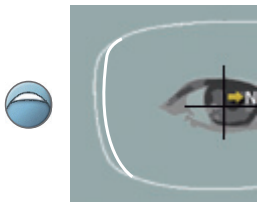
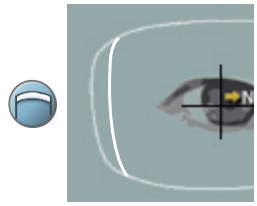
Switches the screen among the Shape Editor screen, Partial grooving and partial beveling screen, Design cut screen, and Step Editor screen.

5 Lens shape

Displays the lens shape viewed from the front or rear and the facet area.

6 Facet shape button

Selects the shape of both edges to be faceted.

	The faceting is deeper around the center of the selected area.
	The faceting width is nearly the same throughout the selected area.

7 Add/edit button

Switches between add mode and edit mode .

8 Front/Rear button

Selects between the front side Front and rear side Rear in which the facet data is entered.

The data is entered in the side displayed on the button.

9 Size field

Specifies the maximum facet amount in the selected data.

Pressing the numeric field displays the numeric keypad to change the maximum facet amount.

* The facet amount may automatically be reduced according to the lens thickness in processing.

10 Safety bevel amount button

Selects the safety bevel amount of the part not to be faceted from among Small, Medium, and Large.

11 Magnification buttons

Select the magnification of the layout area. Each press of or to the left or right of the value switches the magnification.

	[×1.0] → [×1.5] → [×2.0] → [×4.0]
	[×4.0] → [×2.0] → [×1.5] → [×1.0]

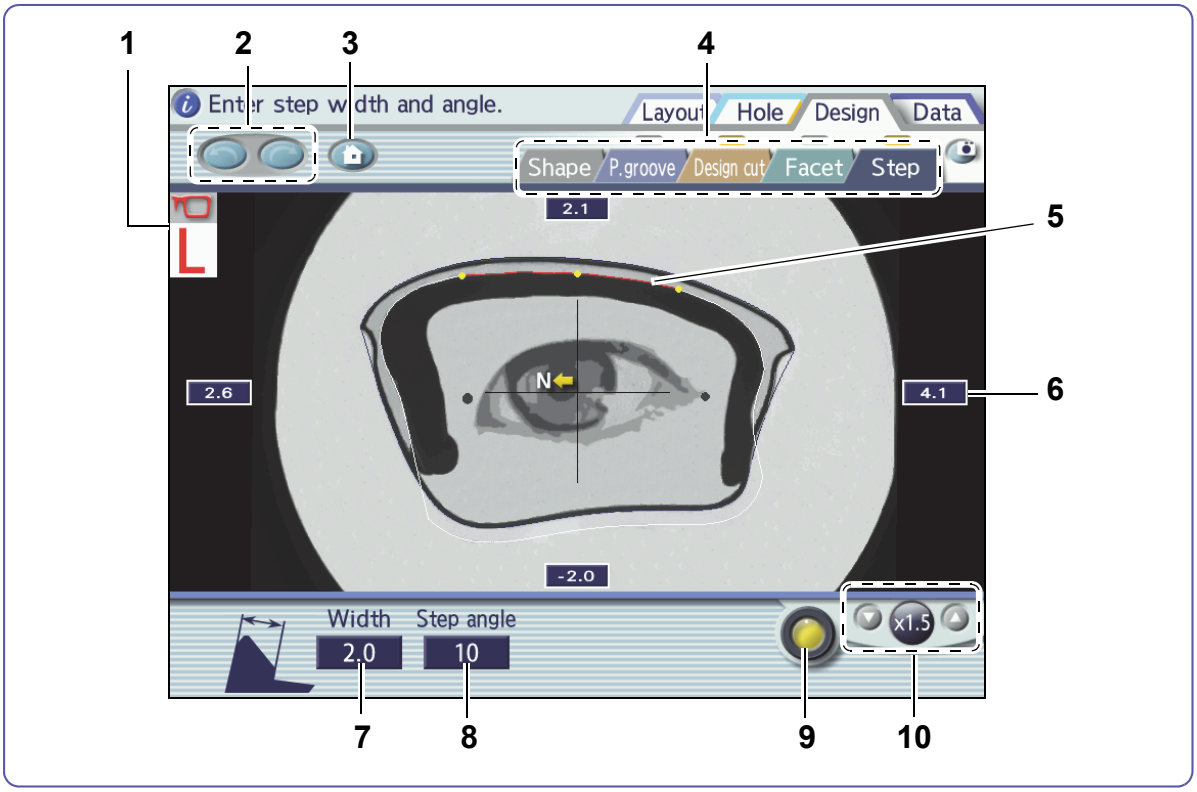
When a magnification other than [×1.0] is selected, the lens shape can be moved by dragging.

2.3.9 Step Editor screen

This screen is used to edit step data.

Edit step data should any discrepancy occur between the step data detected during shape measurement and the border of the special clay or when step height, width, or angle needs to be changed.

To display this screen, press the Step tab on the Design screen.



1 R/L indication display

Indicates whether the currently displayed lens is R (right) or L (left). The display cannot be changed.

2 Undo and redo buttons

Undoes the last change. Restores the change. These can be performed a maximum of five times.

3 Initialize button

Resets the step width, height, and angle to the initial values.

4 Design screen change tabs

Switches the screen among the Shape Editor screen, Partial grooving and partial beveling screen, Design cut screen, and Facet screen.

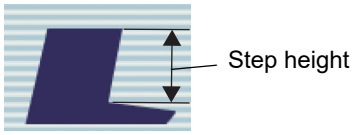
5 Step change indication

The range in which the step height is to be changed is set by dragging the handles at both ends, and the step height is set by dragging the middle handle.

6 Step height fields (four positions)

Specify the step height for the area where step processing is performed.

Height input range: -2.0 to 5.5 mm (0.1 mm increments)

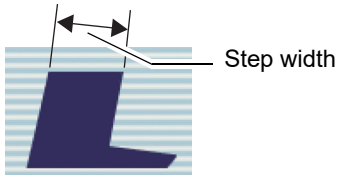


These fields are displayed only when the magnification is set to ×1 or ×1.5.

7 Width field

Specifies the lens edge width for the area where step processing is performed.

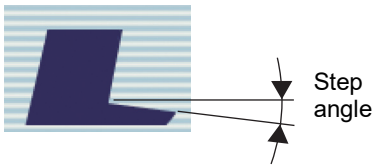
Width input range: 0.5 to 5.0 mm (0.1 mm increments)



8 Step angle field

Specifies the lens edge angle for the area where step processing is performed.

Angle input range: 5 to 15° (1° increments)



Note

- The step angle initial value for step processing can be set by pressing the Screen save button .

"4.3 Initial Screen Save Function" (page 192)

9 Camera display switching button

Switches on and off the display of overlay of the camera image. For the Step Editor screen on *(page 43)*, the overlay of the camera image is displayed.

After shape measurement, a still image of the shape measurement is overlaid.

Otherwise, a live camera image (video image) is displayed for magnification ×1.0, whereas still images are displayed for each of the other magnifications.

10 Magnification buttons

Select the magnification of the layout area. Each press of or to the left or right of the value switches the magnification.

	[×1.0] → [×1.5] → [×2.0] → [×4.0]→ [×8.0]
	[×8.0] → [×4.0]→ [×2.0] → [×1.5] → [×1.0]

When a magnification other than [×1.0] is selected, the lens shape can be moved by dragging.

2.3.10 Data management screen

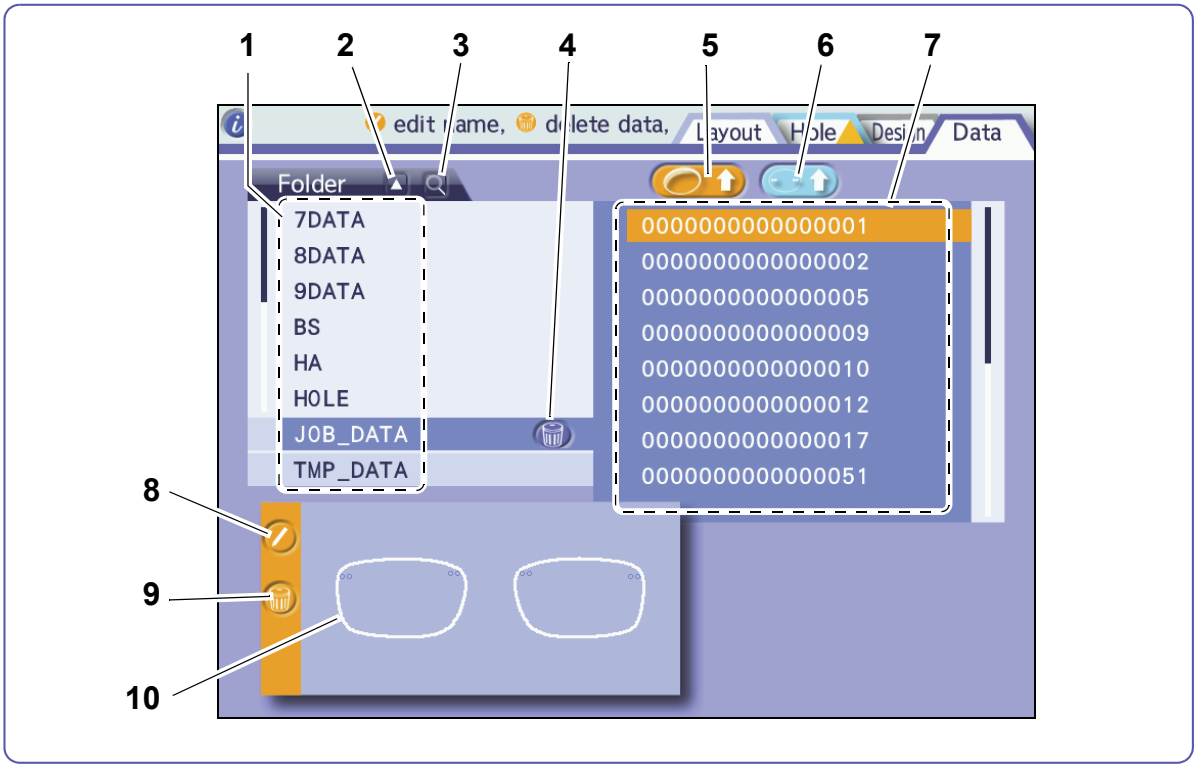
Screen for managing data.

A maximum of 500 folders with up to 1,000 data items per folder can be saved in the internal memory.

To display this screen, press the Data tab on the Layout screen.

When using with the Blocker VCA, this screen cannot be used.

After blocking, job data is automatically saved to the TMP_DATA folder when the JOB/PTN code is 0.



1 Folder list

Indicates the folder of the stored shape data.

2 Ascent/descent button

Sorts the folders in the ascending order and descending order.

3 Folder search button

Searches a folder.

4 Folder delete button

Deletes the selected folder.

5 Data load button

Loads the selected data to the Layout screen.

6 Hole import button

Pressing this button imports hole information of the selected data to the shape displayed on the Layout screen.

7 Data list

Data items in the selected folder are listed.

8  **Rename button**

Changes the selected data name.

9  **Data delete button**

Deletes the selected data.

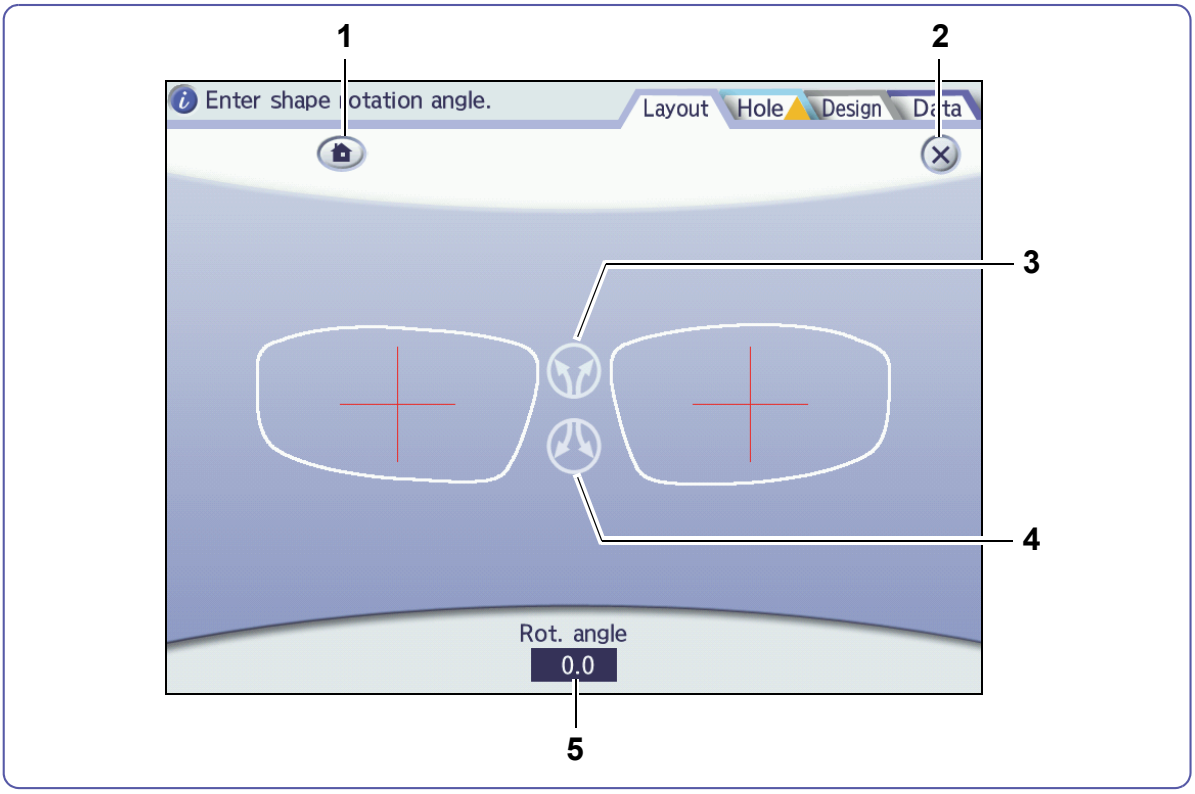
10 Lens shape image

The image of the selected lens shape data is displayed.

2.3.11 Shape rotation screen

This is the screen for rotating lens shapes.

"O Rotating lens shapes" (page 102)



1 Initialize button

Clears the changes and displays the original shape data.

2 Close button

Confirms a shape rotation angle and returns to the Layout screen.

3 Up rotation button

Each press of rotates the shapes 1° in the direction of the arrows indicated on the button.

Shapes can be rotated up to +30°.

4 Down rotation button

Each press of rotates the shapes 1° in the direction of the arrows indicated on the button.

Shapes can be rotated down to -30°.

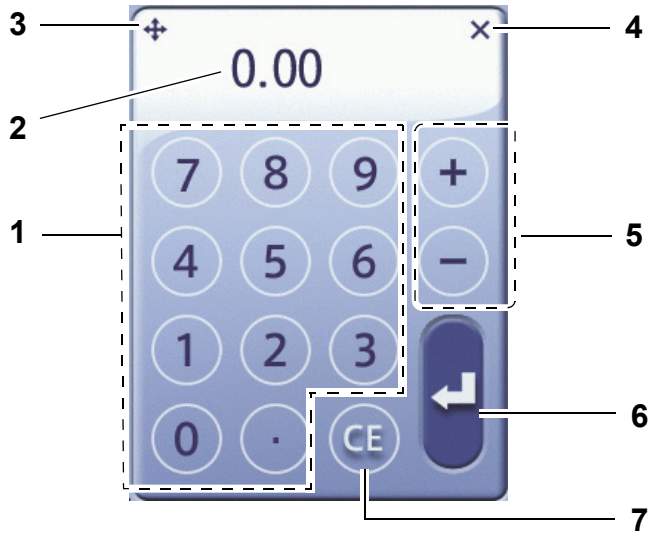
5 Rot. angle field

Indicates the shape rotation angle.
Pressing the numeric field displays the numeric keypad to change the rotation angle within the range of -30.0º to +30.0º.

2.3.12 Numeric keypad

■ Screen for entering the numeric data such as FPD, PD, ⇕, axis, size, WD, and DBL.

Press any numeric field on the touch screen to display the numeric keypad. Enter a value with the numeric keypad and press ↵.



1 Number keys

2 Input value display field

3 ✥ Move button

Dragging this button moves the numeric keypad.

4 ✕ Cancel button

Discards the entered value, restores the previous value, and closes the numeric keypad.

5 ⊕⊖ button

Enters the positive sign or negative sign.

6 ↵ Enter button

Confirms the entered value and closes the numeric keypad.

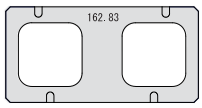
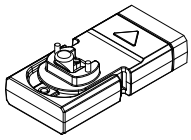
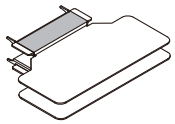
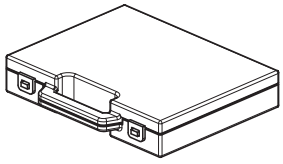
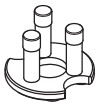
7 CE CE button

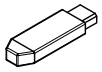
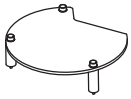
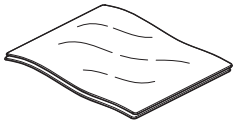
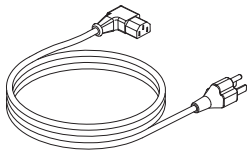
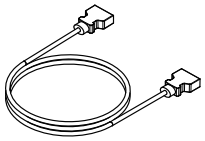
Deletes the number most recently entered.

Another press of this button after deleting all numbers restores the previous value and closes the numeric keypad.

2.4 Packed Contents

The following are included as the standard accessories. Be sure to check them before use.

Part name	Quantity	Appearance
Touch pen	1	
Spare fuse	2	
Hexagonal wrench (except for NT model)	1	
Standard frame (except for NT model)	1	
Standard pattern (except for NT model)	1	
Stylus cover (except for NT model)	1	
Pattern setting unit (except for NT model)	1	
Frame support attachment (except for NT model)	1 set	
Accessory case	1	
Lens clamp	1	
Frame change holder	1	

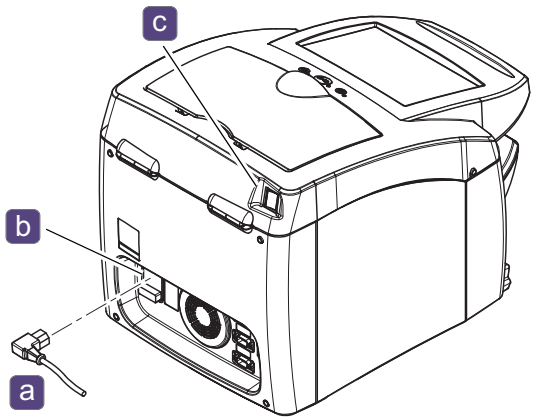
Part name	Quantity	Appearance
USB flash drive	1	
Shape measurement table	1	
Dust cover	1	
Power cord	1	
RS-232C cable	1	
Ferrite core for LAN cable	1	
Operator’s manual	1	
Installation manual	1	

3 OPERATING PROCEDURES

3.1 Startup

1 Connect the power cord a to the power inlet b.

2 Confirm that the power switch c is turned off (○) and connect the power cord to a power outlet.



⚠ CAUTION

- Be sure to use an outlet equipped with a ground terminal.
  Electric shock or fire may occur in the event of malfunction or power leakage.
- Never overload the electrical outlet.
  A branch outlet that is concurrently used with other instruments may cause overheating or fire.

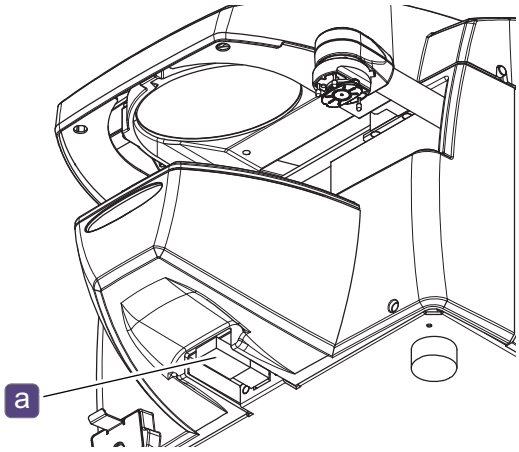
3 Confirm that the cables from the connected instruments are securely connected to the ICE-1500,and the power for each instrument is turned ON.

"5.2 Connection" (page 203)

4 Confirm that the provided USB flash drive a is connected to the USB port.

If the USB flash drive is not connected, connect it to the USB port. If the power switch is turned on with the USB flash drive unconnected, the following occur.

- The screen is displayed in English.
- Job data and pattern data cannot be saved or loaded.

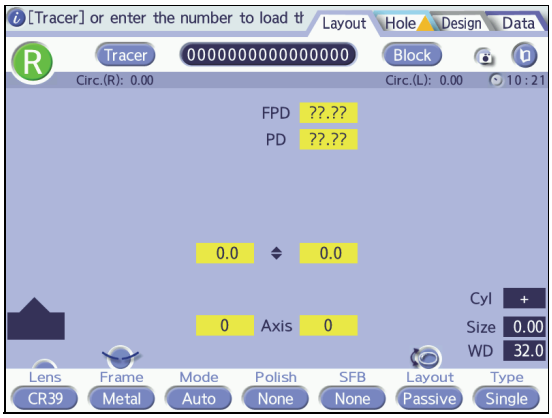


5 Confirm that any lens or the shape measurement table is not placed on the lens table.

6 Confirm that no frames are set in the tracing unit. (except for NT model)

7 Turn on (|) the power switch.

After a short interval, the Layout screen is displayed.



* The ICE-1500 is now ready for use.

Note

- The contents displayed on the Layout screen when power is turned on can be set depending on the usage.

"4.3 Initial Screen Save Function" (page 192)

8 When exiting the ICE-1500, turn off the power switch (○) while tracing is not performed.

3.2 Operating Procedures

■ Operating procedure differs depending on the system in which the ICE-1500 is used. This section describes each operating procedure for the following systems.

- Mini Lab system: Lab system with the ICE-1500 as the server
- Extended Lab system: Job data is saved and managed by an external server computer.
- Blocker VCA system: Job data is saved and managed by an external server computer.
- Blocker Lex system: The system connects the NT model and lens edger on a one-to-one or a one-to-two basis.

3.2.1 Operation of Mini Lab system

- In the Mini Lab system, the data is managed by the ICE-1500 as data server.
- Connect the ICE-1500 with the ME-1500 or such to configure the system.
- Before blocking, load the trace data or job/pattern data, then set processing conditions and enter layout data. For the NT model, perform tracing with the LT-980.

1 Turn on（ | ）the power switch to start the ICE-1500.

"3.1 Startup" (page 51)

2 Display the trace data or job/pattern data on the Layout screen.

● When tracing with the built-in tracing unit

1) Trace frames or a pattern.
2) After tracing, press Tracer on the Layout screen.
   The trace data is displayed on the Layout screen.

● When tracing with the LT-980 tracing unit (for the NT model)

1) Trace frames or a pattern with the connected LT-980.
2) After tracing, press Tracer on the Layout screen.
   After tracing, the trace data is automatically transferred from the LT-980 to ICE-1500 and displayed on the Layout screen.

● When loading job or pattern data saved in the ICE-1500

1) Press the Data tab on the Layout screen to display the Data management screen.
2) Select a file on the Data management screen.

"3.3.3 Loading job data saved in ICE-1500" (page 66)

Note

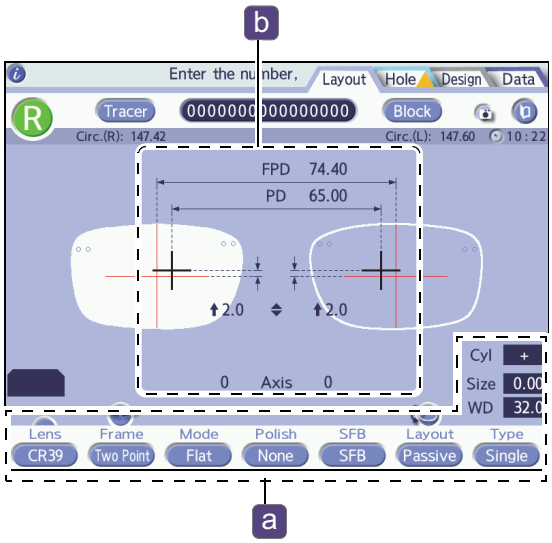
- When job data is loaded for which both eyes are already blocked, blocking cannot be performed. Also when job data is loaded for which one side, R (L), has already been blocked, that side, R(L), cannot be blocked.

3 Set processing conditions a.

"3.6 Entering Processing Conditions" (page 94)

4 Enter lens layout data b.

"3.7.1 Entering layout data for single vision lenses" (page 107) to "3.7.3 Entering layout data for progressive power lenses" (page 116)



Note

- When blocking only one side lens, press the Right or Left button to display that side of lens.
- Enter the grooving or drilling settings as necessary.

"3.6.1 Grooving Settings" (page 104)

"3.9 Drilling Settings" (page 146)

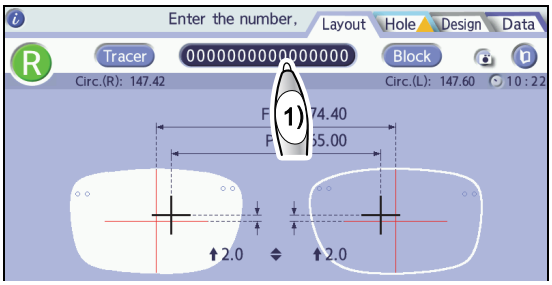
- Using the optional 2D barcode scanner enables automatic entry of PD and Axis by reading the QR code printed by a Nidek lensmeter/refractor.

"3.7.4 Reading QR code for PD and Axis" (page 118)

5 Enter the JOB code.

Enter the JOB code if necessary.

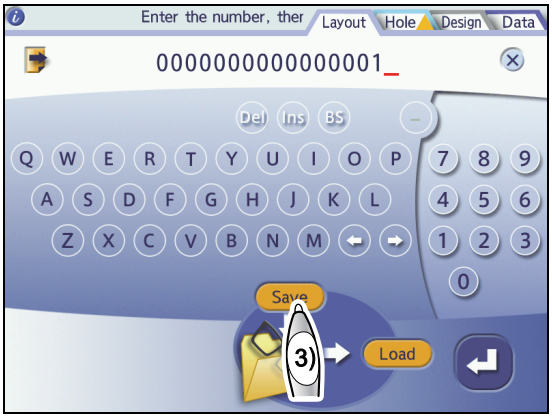
1) Press the JOB/PTN code field on the Layout screen to display the keyboard screen.



2) Enter the JOB code.

If the barcode scanner is connected, scan the barcode.

3) Press Save to save the data.



6 Place the right-eye lens on the lens table and block it.

"3.8 Blocking" (page 119)

7 Block the left-eye lens.

Note

- Processing conditions that differ between the right and left lenses cannot be set to the same job.
  The processing conditions of the latter blocking are saved to the job.
- Repeated blocking of the same side lens, right or left, cannot be conducted.

8 Store the blocked lens in a tray or such marked with the JOB code.

Identify the stored lens as right or left.

Note

- If a number of lenses are to be blocked without processing, return to Step 2 and repeat the procedure. Be sure not to repeat JOB codes.
  If JOB codes are repeated, the job contents are overwritten with the data most recently entered and the previous data is lost.

* This concludes the operation in the ICE-1500. Operations after data transfer are performed with a lens edger. The procedure for the ME-1500 is used in the following explanation.

9 Load the processing data from the ICE-1500 to the ME-1500.

1) Load the JOB code with the ME-1500 barcode scanner in standby mode (not processing mode). A data transfer request is sent to the ICE-1500.
2) The ICE-1500 that has received the request transfers the data corresponding to the JOB code to the ME-1500.
3) The transferred data is displayed in the ME-1500.

10 Process the lens with the ME-1500.

Enter the size, bevel curve, and bevel position as necessary and process the lens.

When processing the right and left lenses, process them successively.

3.2.2 Operation of Extended Lab system

In the Extended Lab system, job data is saved and managed by an external server computer.

When processing conditions are set, layout data is entered, and blocking is performed in the ICE-1500, the data is transferred and saved to the server computer.

Only blocking can also be performed in the ICE-1500 using job data already saved in the server computer.

The process until job data is displayed in the ICE-1500 differs between when job data is created in the ICE-1500 and when it is loaded from the server computer.

○ When creating job data in the ICE-1500

The following is the blocking procedure when job data is entered in the ICE-1500.

1 Turn on（ | ）the power switch to start the ICE-1500.

"3.1 Startup" (page 51)

2 Trace frames.

Trace frames or a pattern.

"3.5 Tracing (except for NT model)" (page 84)

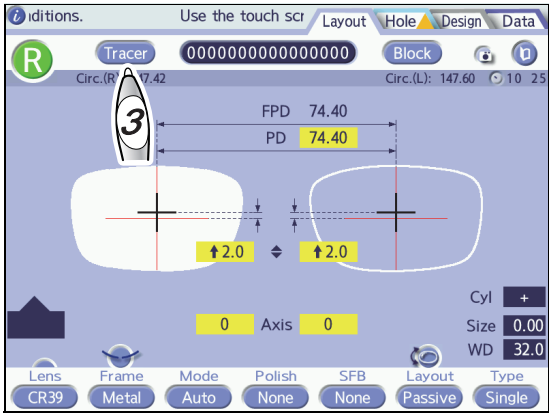
For the NT model, perform tracing with the LT-980.

When using the registered shape data without performing tracing, see *"3.3.4 Loading pattern data saved in ICE-1500" (page 67)*.

3 Press Tracer to load shape data.

The lens shapes are displayed in actual size on the screen. When both eyes of the frames are traced, the FPD value is also displayed.

When the LT-980 is used with the NT model, press Tracer after confirming the completion of tracing.

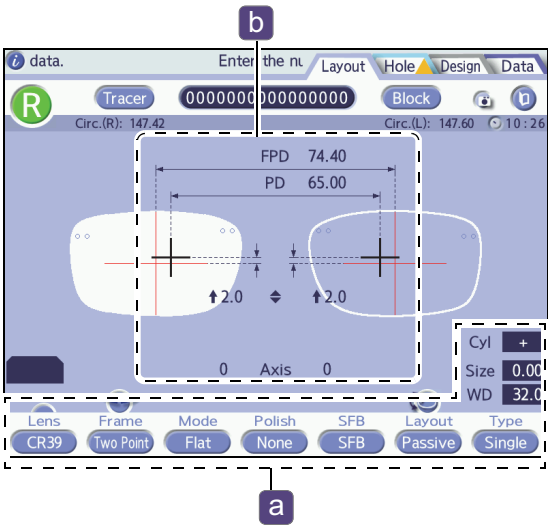


4 Set processing conditions a.

"3.6 Entering Processing Conditions" (page 94)

5 Enter the layout data b of the right and left lenses

"3.7.1 Entering layout data for single vision lenses" (page 107) to "3.7.3 Entering layout data for progressive power lenses" (page 116)



Note

- When blocking only one side lens, press the Right or Left button to display that side of lens.
- When the ICE-1500 is connected to the ME-1500, LEX-1200/Lex Drill system, SE-9090 Supra/AHM-1000 system, or LEXCE, enter the grooving or drilling settings as necessary.

  "3.6.1 Grooving Settings" (page 104)

  "3.9 Drilling Settings" (page 146)

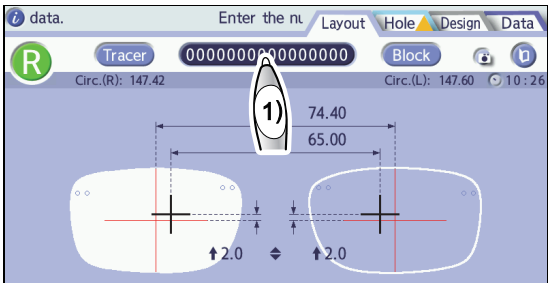
- Using the optional 2D barcode scanner enables automatic entry of PD and Axis by reading the QR code printed by a Nidek lensmeter/refractor.

  "3.7.4 Reading QR code for PD and Axis" (page 118)

6 Enter the JOB code.

Enter the JOB code if necessary.

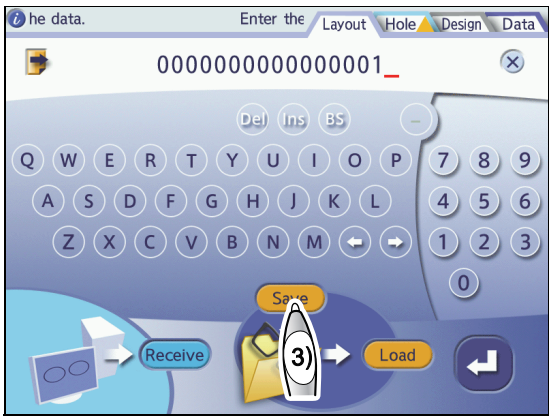
1) Press the JOB/PTN code field on the Layout screen to display the keyboard screen.



2) Enter the JOB code.

   If the barcode scanner is connected, scan the barcode.

3) Press Save to save the data.



7 Place the right-eye lens on the lens table and block it.

“3.8 Blocking” (page 119)

The right and left lens shapes, processing conditions, and layout data are transferred to the server computer when the lens is blocked. The server computer saves the transferred job data to the database.

8 Block the left-eye lens.

The right and left lens shapes, processing conditions, and layout data are transferred to the server computer again with the same JOB code when the lens is blocked.

The server computer overwrites the previous job data in the database with the newly transferred data.

Note

- Processing conditions that differ between the right and left lenses cannot be set to the same job.
  The processing conditions of the latter blocking are saved to the job.
- Repeated blocking of the same side lens, right or left, cannot be conducted.

9 Store the blocked lens in a tray or such marked with the JOB code.

Identify the stored lens as right or left.

Note

- If a number of lenses are to be blocked without processing, return to Step 2 and repeat the procedure. Be sure not to repeat JOB codes.
  If JOB codes are repeated, the job contents are overwritten with the data most recently entered and the previous data is lost.

* This concludes the operation in the ICE-1500. Operations after data transfer are performed with a lens edger. The procedure for the ME-1500 is used in the following explanation.

10 Load the processing data from the server computer to the ME-1500.

1) Load the JOB code with the ME-1500 barcode scanner in standby mode (not processing mode).
   A data transfer request is sent to the server computer.
2) The server computer that has received the data transfer request transfers the data corresponding to the JOB code to the ME-1500.
3) The transferred data is displayed in the ME-1500.

11 Process the lens with the ME-1500.

Enter size, bevel curve, and bevel position as necessary and process the lens.

○ When loading job data from the server computer

The following procedure is for when only blocking is performed in the ICE-1500 by loading job data already saved in the server computer.

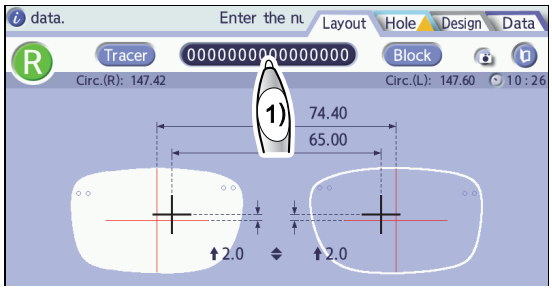
1 Turn on（ | ）the power switch to start the ICE-1500.

"3.1 Startup" (page 51)

2 Load job data from the server computer.

- When entering JOB code manually

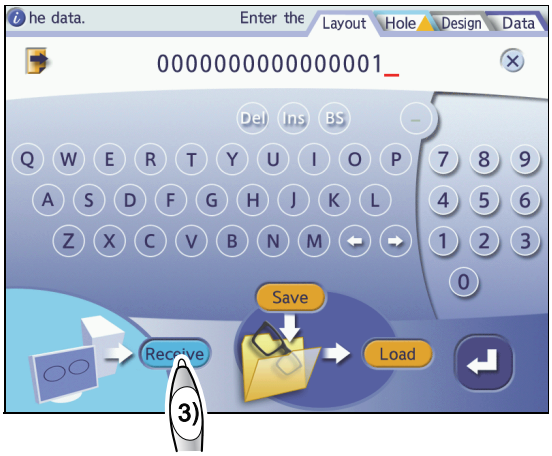
1) Press the JOB/PTN code field on the Layout screen to display the keyboard screen.



2) Enter the JOB code.

3) Press Receive.

4) The job data is transferred from the server computer to the ICE-1500 and displayed on the Layout screen.



- When scanning JOB code with the barcode scanner

1) Scan the barcode with the barcode scanner connected to the ICE-1500.

2) The job data is transferred from the server computer to the ICE-1500 and displayed on the Layout screen.

3 The subsequent procedure is the same as that for when job data is created in the ICE-1500.

Perform the procedure from Step 7 as in *"O When creating job data in the ICE-1500" (page 56)*.

3.2.3 Operation of Blocker VCA system

In the Blocker VCA system, job data is saved and managed by an external server computer.
Perform only blocking in the ICE-1500.

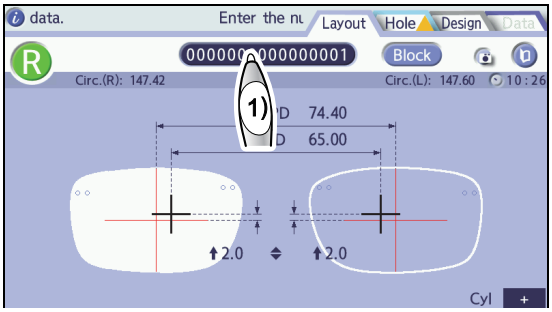
1 Turn on（ | ）the power switch to start the ICE-1500.

"3.1 Startup" (page 51)

2 Load the job data.

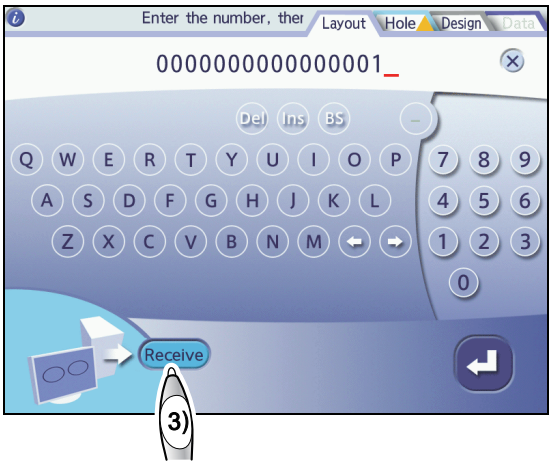
- When entering JOB code manually

1) Press the JOB/PTN code field on the Layout screen to display the keyboard screen.



2) Enter the JOB code.

3) Press Receive.
The job data is displayed on the Layout screen.



- When scanning JOB code with the barcode scanner

1) Scan the barcode with the barcode scanner connected to the ICE-1500.

2) The job data is transferred from the server computer to the ICE-1500 and displayed on the Layout screen.

Note

- When the barcode scanner is connected, job data can be received by scanning the barcode without pressing the JOB/PTN code field.

3 Place the right-eye lens on the lens table and block it.

"3.8 Blocking" (page 119)

4 Block the left-eye lens.

Note

- Processing conditions that differ between the right and left lenses cannot be set to the same job.
- Repeated blocking of the same side lens, right or left, cannot be conducted.

5 Store the blocked lens in a tray or such marked with the JOB code.

Identify the stored lens as right or left.

Note

- If a number of lenses are to be blocked, return to Step 2 and repeat the procedure. Be sure not to repeat JOB codes.

* This concludes the operation in the ICE-1500. Operations after data transfer are performed with a lens edger. The procedure for the ME-1500 is used in the following explanation.

6 Load the processing data from the server computer to the ME-1500.

1) Load the JOB code with the ME-1500 barcode scanner in standby mode (not processing mode).
   A data transfer request is sent to the server computer.
2) The server computer that has received the data transfer request transfers the data corresponding to the JOB code to the ME-1500.
3) The transferred data is displayed in the ME-1500.

7 Process the lens with the ME-1500.

Enter size, bevel curve, and bevel position as necessary and process the lens.

3.2.4 Operation of Blocker Lex system

- Connect the ICE-1500NT and lens edger (LEXCE or LEX-1200) to configure the system.
- Before blocking, load the trace data or job/pattern data. Set processing conditions and enter layout data.
- Perform tracing with the built-in tracing unit of the lens edger.

1 Turn on（ | ）the power switch to start the ICE-1500.

"3.1 Startup" (page 51)

2 Display the trace data, job data, or pattern data on the Layout screen.

- When tracing frames or a pattern

1) Trace frames or a pattern with the connected lens edger.

2) After tracing, the tracing data is automatically transferred from the lens edger to ICE-1500 and displayed on the Layout screen.

- When loading job data or pattern data saved in the ICE-1500

1) Press the Data tab on the Layout screen to display the Data management screen.

2) Select a file on the Data management screen.

"3.3.3 Loading job data saved in ICE-1500" (page 66)

Note

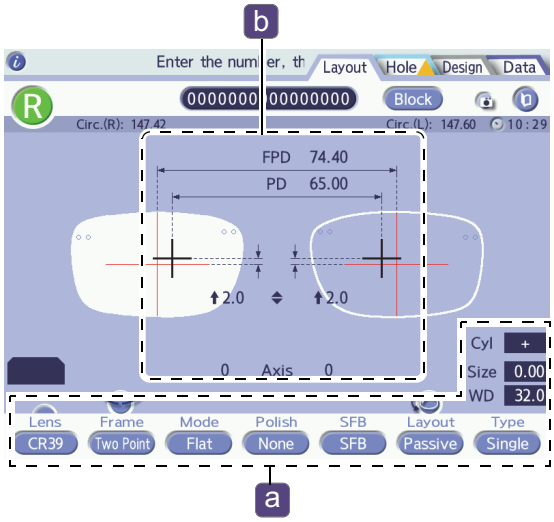
- When job data is loaded for which both eyes are already blocked, blocking cannot be performed. Also when data is loaded for which one side, R (L), has already been blocked, that side, R (L), cannot be blocked.

3 Set processing conditions a.

"3.6 Entering Processing Conditions" (page 94)

4 Enter lens layout data b.

"3.7.1 Entering layout data for single vision lenses" (page 107) to *"3.7.3 Entering layout data for progressive power lenses" (page 116)*



Note

- When blocking only one side lens, press the Right or Left button to display that side of lens.
- Using the optional 2D barcode scanner enables automatic entry of PD and Axis by reading the QR code printed by a Nidek lensmeter/refractor.

"3.7.4 Reading QR code for PD and Axis" (page 118)

5 Place the right-eye lens on the lens table and block it.

"3.8 Blocking" (page 119)

6 Block the left-eye lens.

Note

- Processing conditions that differ between the right and left lenses cannot be set to the same job. The processing conditions of the latter blocking are saved to the job.
- Repeated blocking of the same side lens, right or left, cannot be conducted.

7 Store the blocked lens in a tray.

Identify the stored lens as right or left.

* This concludes the operation in the ICE-1500. Operations after data transfer are performed with the lens edger.

8 Load the processing data from the ICE-1500 to the lens edger.

Perform the operations in the table below with the lens edger in standby mode (not processing mode).

ME-1500	Press  .  is displayed when "Not specify" is selected for "Specify process data by number" in the "General-2" parameters.
LEX-1200	Press  with "000" displayed in the JOB code field.
LEXCE	1) Press  on the Home screen to display the Data management screen. 2) Press  .

* Specifying the JOB code can also load the processing data saved in the ICE-1500.

9 Process the lens with the lens edger.

Enter the size, bevel curve, and bevel position as necessary and process the lens.

When processing the right and left lenses, process them successively.

3.3 Data Saving, Loading, and Management

■ In the ICE-1500, lens shape data can be save to the provided USB flash drive. This section describes the methods for saving, loading, and deleting data.

3.3.1 For job, pattern, and TMP data

There are three types of shape data: job data, pattern data, and TMP data.

○ Contents of job data

Trace data, all processing conditions, and layout information are included in job data. WD is not included.

○ Contents of pattern data

Trace data, FPD, size, passive/active, lens material, lens type, frame type, polishing data, and safety beveling data are included in pattern data. PD, optical center height, axis, Cyl mode, EP, and WD are not included.

○ Contents of TMP data

When blocking is performed while the JOB/PTN code field indicates 0, the data is automatically saved to the TMP folder.

The saved data is the same as job data.

TMP data is used when there is no saved data.

3.3.2 Saving job, pattern, and TMP data to USB flash drive

○ Code application rules

Select among from JOB, PTN, and TMP and save it by each rule of code application.

	Code entry	Data storage amount
JOB	Alphanumeric characters not including hyphen (-) (16 characters maximum)	A maximum of 500 folders with up to 1,000 data items per folder can be saved.
PTN	Alphanumeric characters including hyphen (-) (16 characters maximum)	
TMP	When the JOB/PTN code field indicates 0, the file number (date, time) is set automatically.	Up to 30 data items can be saved to the TMP folder. If the number of data items exceeds 30, the oldest data is overwritten by the new data. This file number (date, time) is not relevant to the parameter setting (date format).

○ Applying PTN code

Example: NIDEK-0000000100

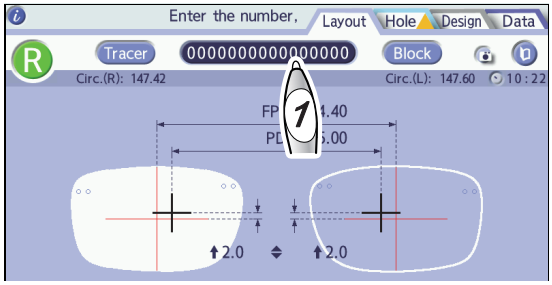
Brand name　　Number

- The PTN code is specified by “brand name – number”. A maximum of 16 characters including hyphen (-) may be specified.
- The brand name may contain a maximum of 12 characters but must contain at least one alphabet letter.
- The brand name becomes the folder name. When a folder with the specified brand name does not exist, the folder is automatically created.
- If the entered PTN code is less than 16 characters, leading zeros are added.

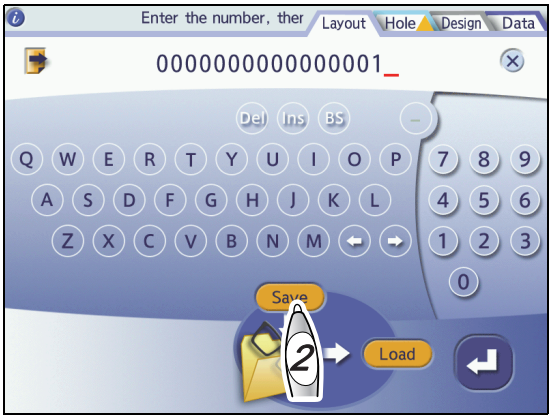
For example, if “NIDEK-12” is entered, it is saved as “NIDEK-0000000012”.

○ Data saving procedure

1 Press the JOB/PTN code field on the Layout screen to display the keyboard screen.



2 Enter the JOB code or PTN code and press Save to save the data.



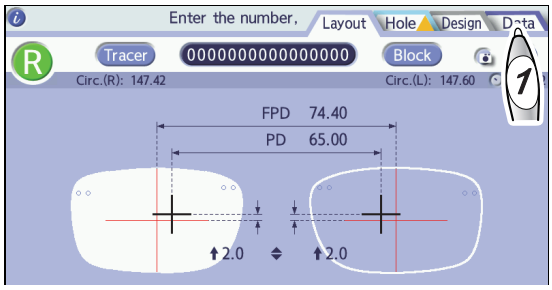
Note

- When the message, “The number of brands is full (500).” is displayed in the information bar, the number of brand folders reaches the limit (500). Delete unnecessary folders.

3.3.3 Loading job data saved in ICE-1500

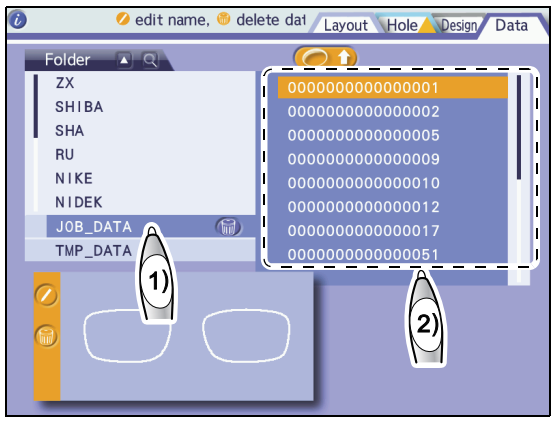
○ Loading data on the Data management screen

1 Press the Data tab on the Layout screen to display the Data management screen.



2 Select job data to be loaded on the Data management screen.

1) Select the JOB_DATA folder with the touch pen.
2) Select job data with the touch pen.



3 Press  to display the job data on the Layout screen.

Set processing conditions and enter layout data on the Layout screen as necessary.

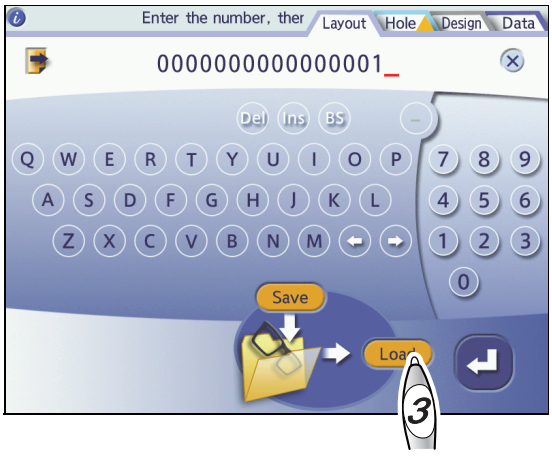
○ Loading data on the keyboard screen

1 Press the JOB/PTN code field on the Layout screen to display the keyboard screen.

2 Enter the JOB code.

3 Press Load to display the job data on the Layout screen.

Set processing conditions and enter layout data on the Layout screen as necessary.



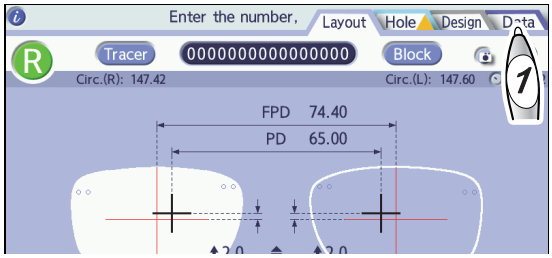
3.3.4 Loading pattern data saved in ICE-1500

For the ICE-1500, the data repeatedly used such as two point frame shape can be saved in the USB flash drive.

For blocking, load the pattern data saved in the USB flash drive instead of tracing.

O Loading data on the Data management screen

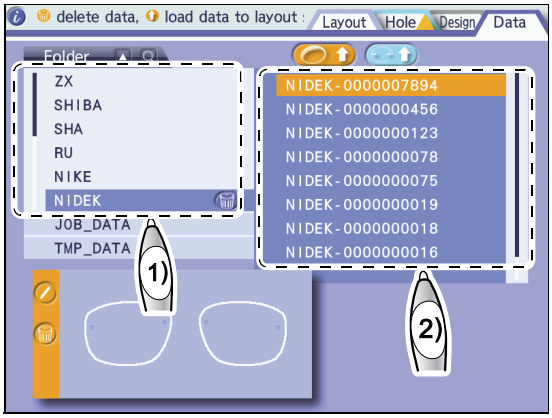
1 Press the Data tab on the Layout screen to display the Data management screen.



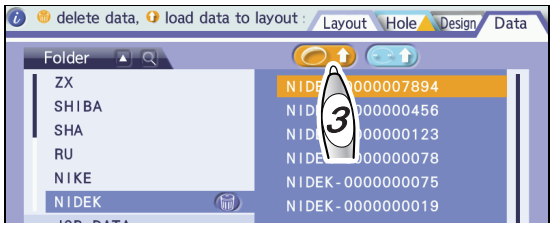
2 Select pattern data to be loaded on the Data management screen.

1) Select a PTN folder (brand name) with the touch pen.

2) Select pattern data with the touch pen.



3 Press  to display the pattern data on the Layout screen.



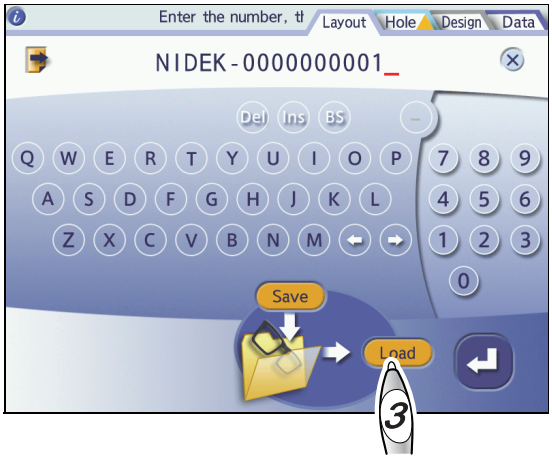
O Loading data on the keyboard screen

1 Press the JOB/PTN code field on the Layout screen to display the keyboard screen.

2 Enter the PTN code.

"O Applying PTN code" (page 65)

3 Press Load to load the pattern data to the Layout screen.



- Using the brand list on the keyboard screen

On the keyboard screen, the desired PTN code can be selected using the brand list.

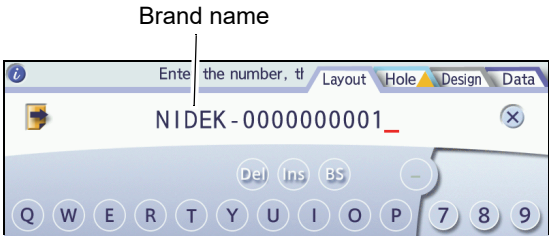
Pressing to the upper left of the screen displays the brand list a saved in the ICE-1500.

The display of the brand list is fixed in the ascending order regardless of whether the order is set to ascending or descending on the Data management screen.

When brands cannot be displayed on one page, the page switching buttons b become active.

When any brand is selected from the brand list, the brand name (ex.: NIDEK) with a hyphen is displayed on the keyboard screen.

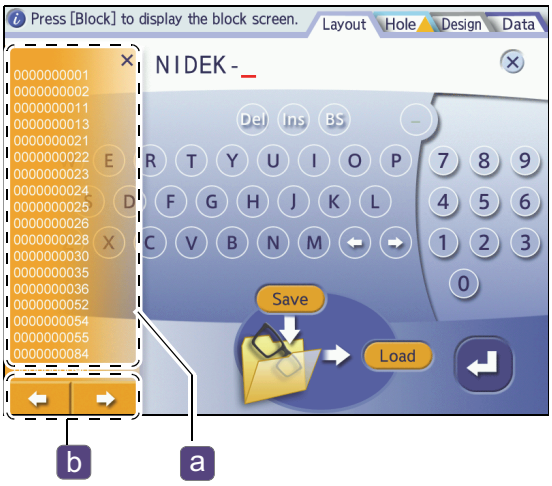
To select a different brand, press BS to delete the entry then press .



With a brand selected, pressing again displays the data name list for the brand a. The display is in the ascending order.

If the data cannot be displayed on one page, the page switching buttons b become active.

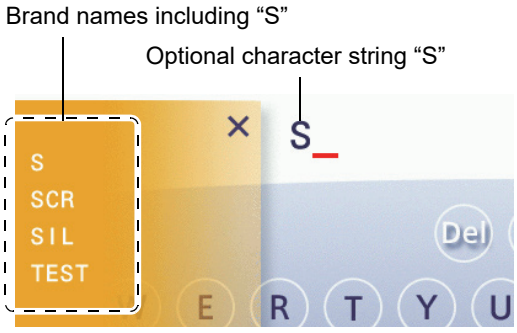
When any data is selected from the data list, the data name is added after the hyphen following the brand name.



Entering a character string instead of pressing lists the brand names or data names for which the string is included (partial match search). (For example, entering “S” lists all brand names including “S” as shown to the right.)

When corresponding data is not saved, “No data” is displayed.

Pressing [x] to the upper right of the list closes the list without selecting any brand name.



This function also allows the operator to check for open numbers for pattern data to be saved without displaying the Data management screen as well as to search for a partially remembered brand name.

3.3.5 Data backup

Data is saved in the USB flash drive. Back up data periodically.

⚠ CAUTION

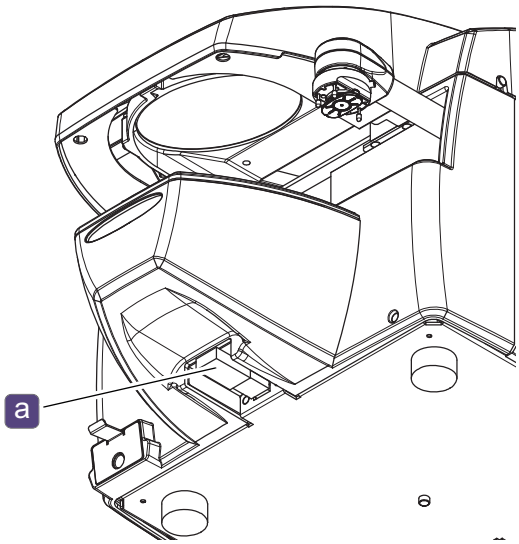
- To prevent data loss or corruption due to damage to the USB flash drive, back up data to other media periodically.
  Nidek is not responsible for data loss or corruption due to lack of backup.
- Never disconnect the USB flash drive while the ICE-1500 is turned on. Instrument malfunction or data corruption in the USB flash drive may result.
- Orient the USB flash drive properly when connecting it to the ICE-1500 or a computer. Forcing the USB flash drive in the wrong orientation causes a malfunction.
  If it does not fit easily, flip it over.

- Only operation using the USB flash drive provided by Nidek is guaranteed.

1 Pull out the USB flash drive a toward the operator with power turned off.

2 Connect the USB flash drive to the computer. Copy all data in the USB flash drive to other media.

3 Disconnect the USB flash drive from the computer and reconnect it to the USB port of the ICE-1500.



3.3.6 Deleting pattern/job data saved in ICE-1500

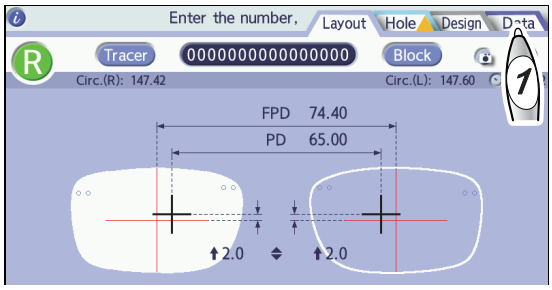
This section describes the procedure for deleting pattern data or job data saved in the USB flash drive of the ICE-1500.

Note

- As the amount of data in the USB flash drive increases, the time required for saving or loading also increases, therefore, delete unnecessary data.

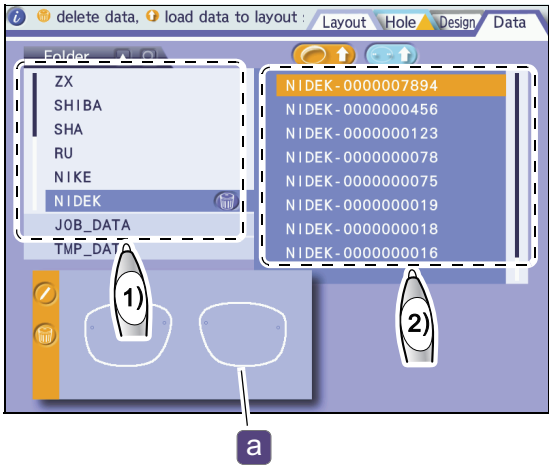
○ Selecting and deleting pattern data or job data

1 Press the Data tab on the Layout screen to display the Data management screen.

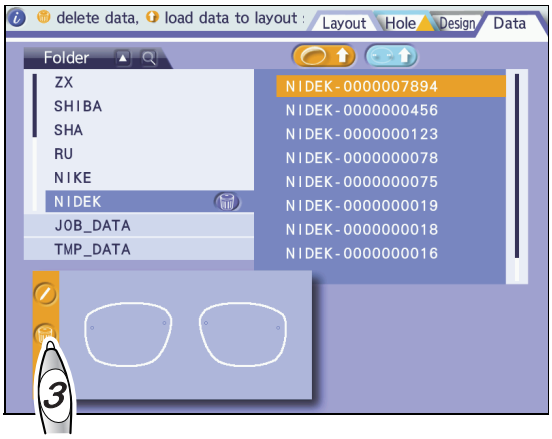


2 Select data to be deleted on the Data management screen.

1) Select a folder with the touch pen.
2) Select pattern data or job data with the touch pen.
3) Check the shape outline a to confirm that the data to be deleted is correctly selected.



3 Press  .



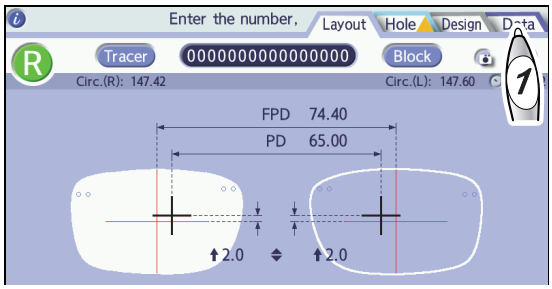
4 Confirm that a delete confirmation message appears. Press Yes.

The data selected in Step 2 is deleted.

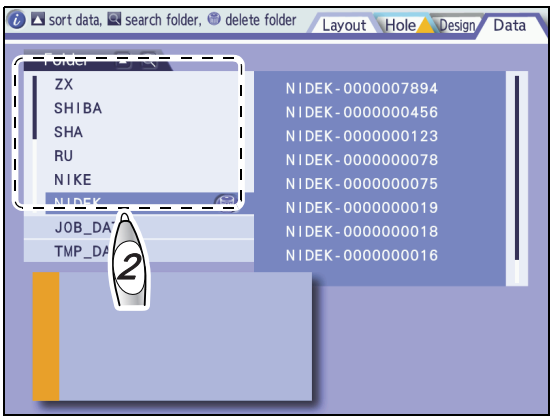
○ Deleting a PTN folder

When a PTN folder (brand name) is deleted, all pattern data in the folder is also deleted.

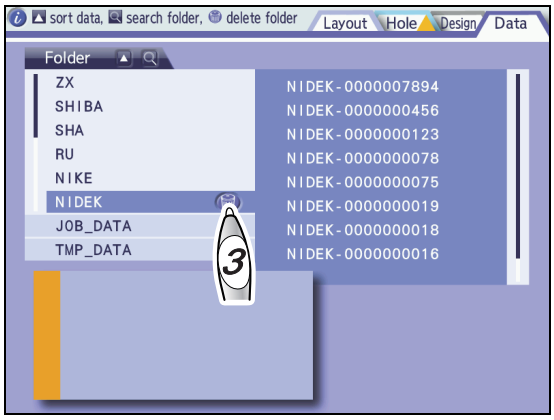
1 Press the Data tab on the Layout screen to display the Data management screen.



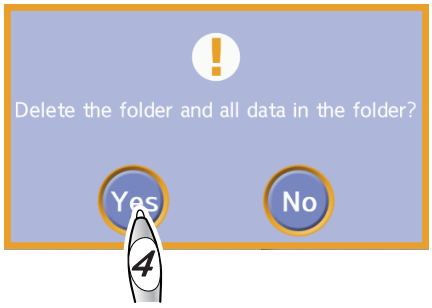
2 Select a PTN folder with the touch pen.



3 Press .



4 Confirm that a delete confirmation message appears. Press Yes.



5 Confirm that a confirmation message appears again. Press Yes.

The PTN folder selected in Step 2 is deleted.

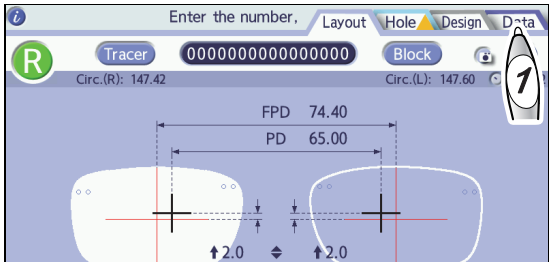
3.3.7 Changing data name

This section describes the procedure for changing the name of data (PTN code or JOB code) saved in the USB flash drive.

Note

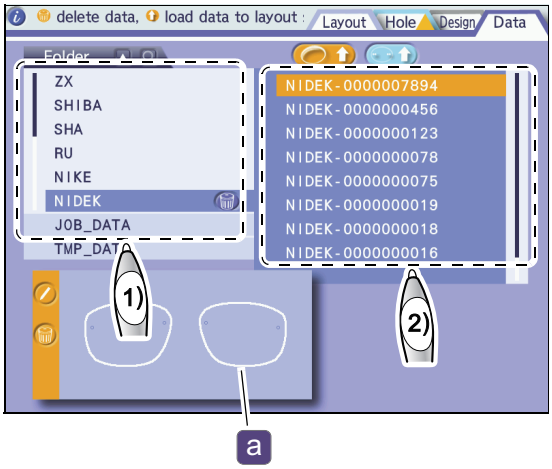
- Data cannot be renamed from PTN (JOB) to JOB (PTN).
- If new data is given a different brand name, the data is transferred to the specified brand folder.
- If there is no folder with the entered brand name, create and save a new folder.

1 Press the Data tab on the Layout screen to display the Data management screen.



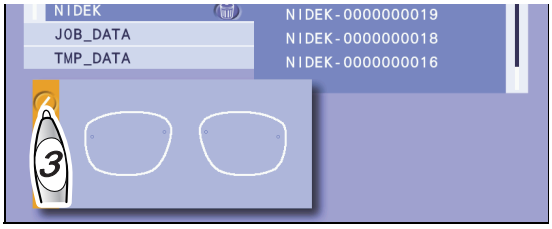
2 Select data on the Data management screen.

1) Select a folder with the touch pen.
2) Select pattern data or job data with the touch pen.
3) Check the shape outline a to confirm that the data whose name is to be changed is correctly selected.

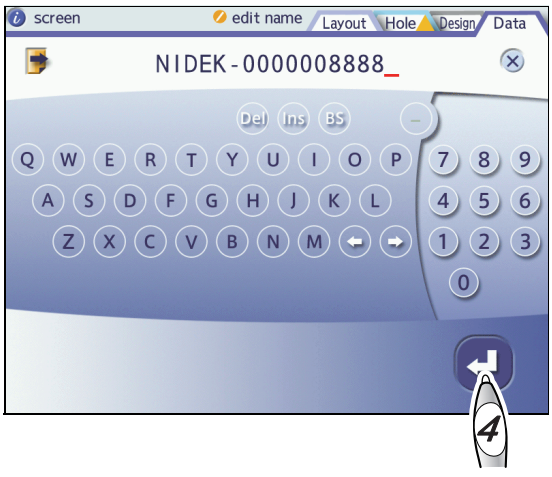


3 Press .

The keyboard screen is displayed.



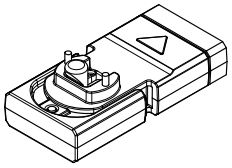
4 Enter a new data name and press .



3.4 Handling Tracing Unit Accessories (Except for NT Model)

3.4.1 Removing and storing the pattern setting unit

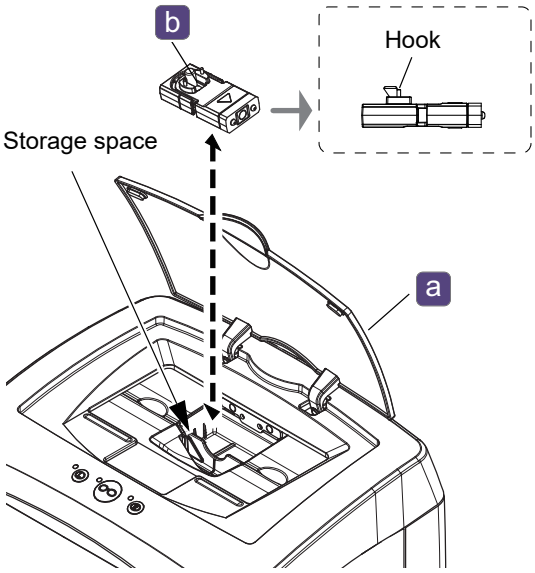
Store the pattern setting unit in the storage space above the upper slider of the tracing unit to avoid loss when not in use.



Pattern setting unit

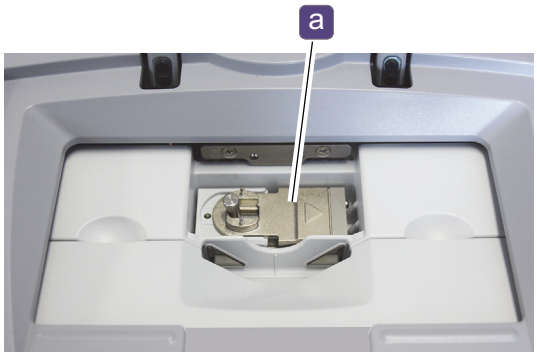
1 Open the tracing unit lid a.

2 With the upper and lower sliders closed, remove the pattern setting unit b.

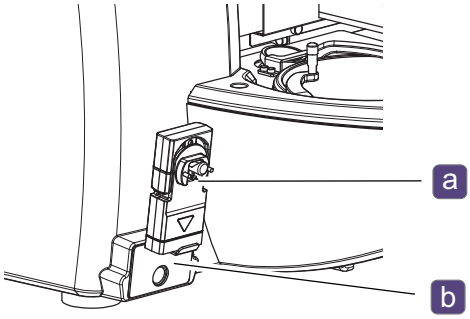


3 As shown to the right, when storing the pattern setting unit a, insert it with its hook towards the upper left as viewed from the front of the instrument.

If the pattern setting unit is stored in the wrong orientation, the upper and lower sliders cannot be opened.



The pattern setting unit a can also be attached to the pattern setting unit stand b when not in use.



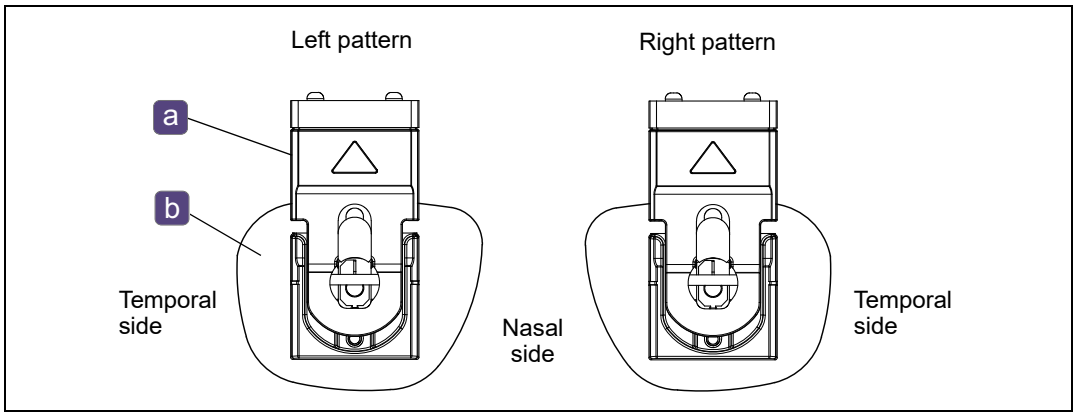
3.4.2 Handling the pattern setting unit

The pattern setting unit can be used in two methods: by attaching a two-point frame pattern and such or a mounted lens used as a demo lens.

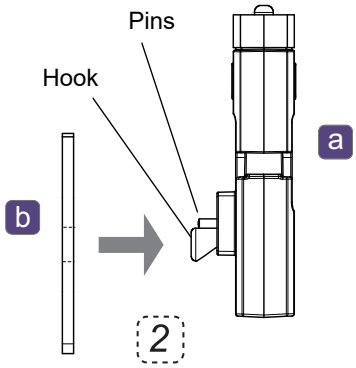
○ Attaching a pattern

1 Confirm the orientation in which the pattern b is attached to the pattern setting unit a.

The pattern is attached in the orientation as shown below.



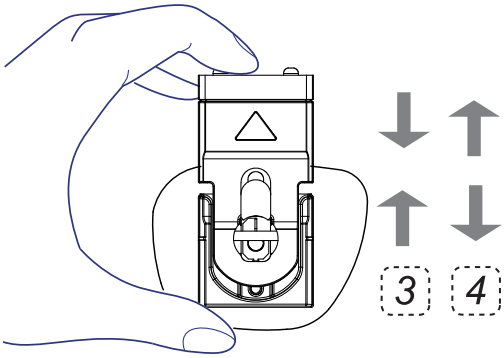
2 Fit the pattern b to the hook of the pattern setting unit a.



3 While pressing both ends of the pattern setting unit, push in the pattern.

Push the pattern until the hook and two pins of the pattern setting unit fit into the holes of the pattern.

4 Release both ends of the pattern setting unit to lock the pattern.



5 Detach the pattern in the reverse order.

○ Attaching a demo lens

1 Block the convex surface of a demo lens with a pliable cup.

1) Mark the approximate center of the demo lens with a lensmeter.

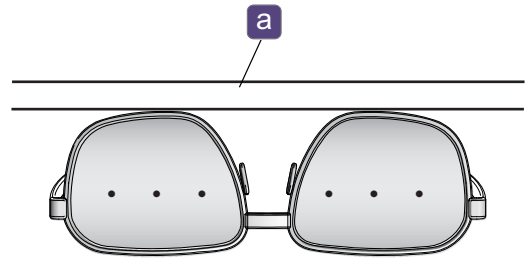
   Make sure that the demo lenses are mounted in the frames and the frames are in contact with the lens table a.

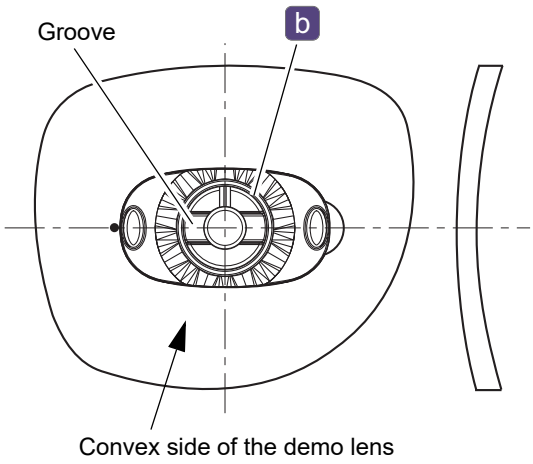
2) Stick a double-coated adhesive pad for the pliable cup on the pliable cup b.

3) Block the convex surface of the demo lens with the pliable cup.

   Block the lens so that the markings on the demo lens are aligned to the groove orientation of the pliable cup.

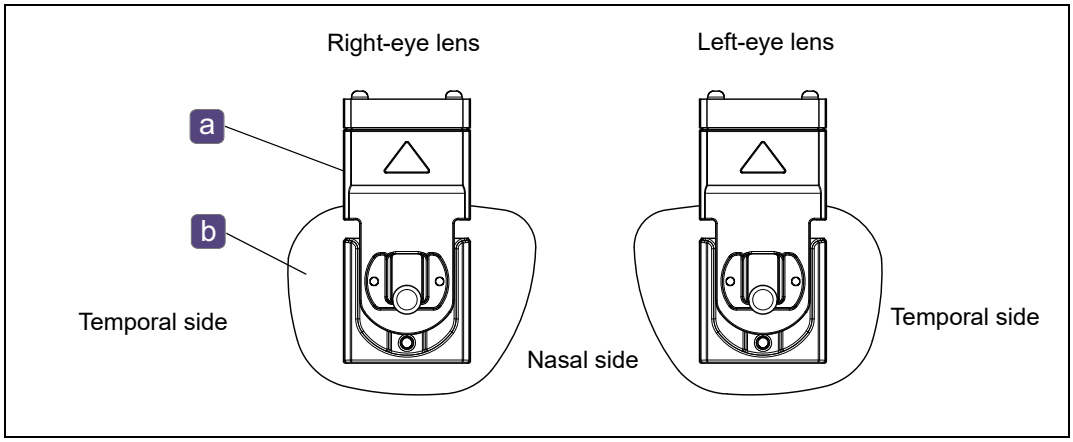
“3.8.5 Blocking demo lenses (using frame change holder)” (page 141)





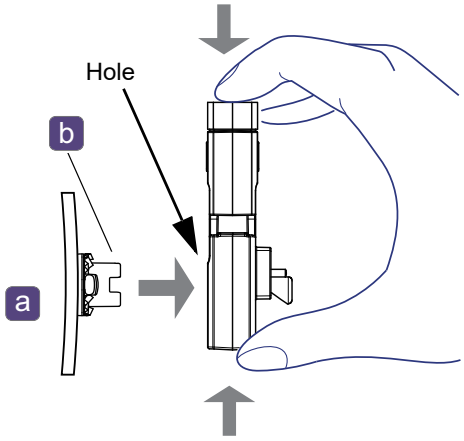
2 Confirm the orientation in which the demo lens b is attached to the pattern setting unit a.

Demo lenses are attached in the orientation as shown below.

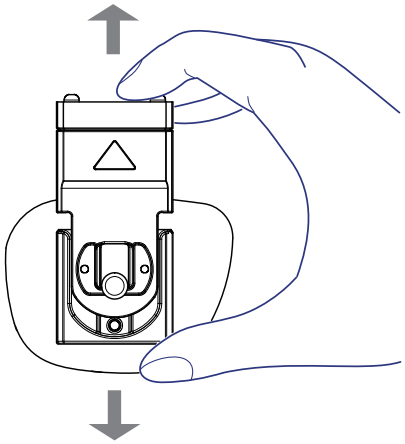


3 Fit the pliable cup b on the demo lens a to the hole of the pattern setting unit.

While pressing both ends of the pattern setting unit, push in the demo lens.



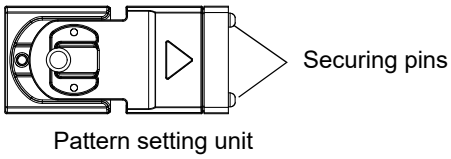
4 Release both ends of the pattern setting unit to lock the demo lens.



5 Detach the demo lens in the reverse order.

3.4.3 Setting the pattern setting unit to the tracing unit

The pattern setting unit is fastened to the pattern setting unit support by magnet.

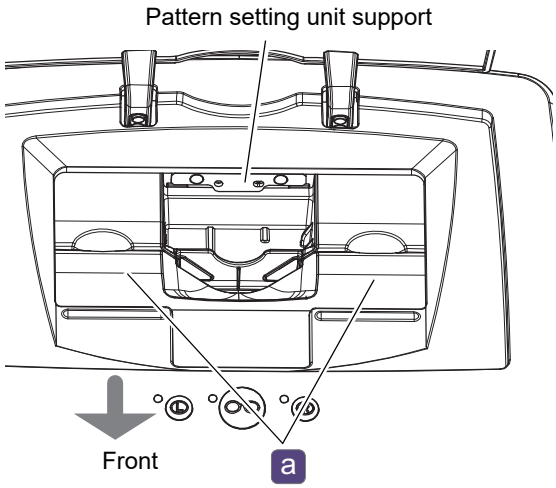


1 Open the tracing unit lid. With the upper and lower sliders closed, remove the pattern setting unit.

"3.4.1 Removing and storing the pattern setting unit" (page 74)

2 Attach a pattern or demo lens to the pattern setting unit.

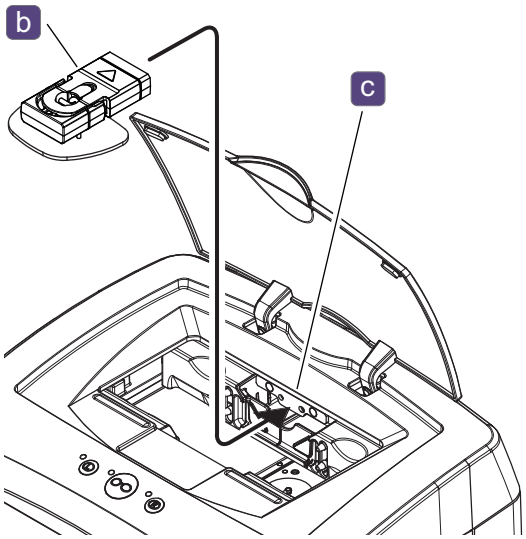
"3.4.2 Handling the pattern setting unit" (page 75)



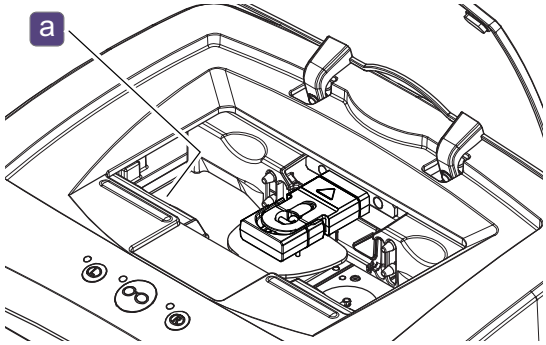
3 Gently move the lower slider a all the way to the front to open the upper and lower sliders.

4 Set the pattern setting unit b to the pattern setting unit support c.

With the pattern or demo lens facing down, fit the securing pins of the pattern setting unit into the holes of the pattern setting unit support. The pattern setting unit is fastened to the pattern setting unit support by magnet.



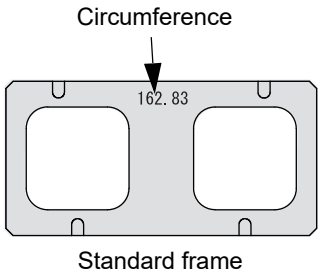
5 To remove the pattern setting unit, gently hold the lower slider a by hand so that it will not close and then take out the unit.



3.4.4 Setting the standard frame

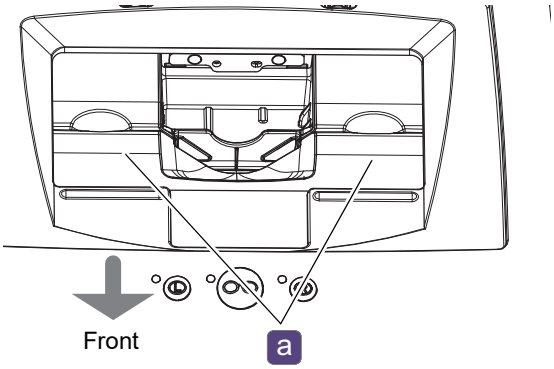
The circumference (162.83) is indicated on the front of the standard frame.

Store the standard frame to avoid loss or damage when not in use.



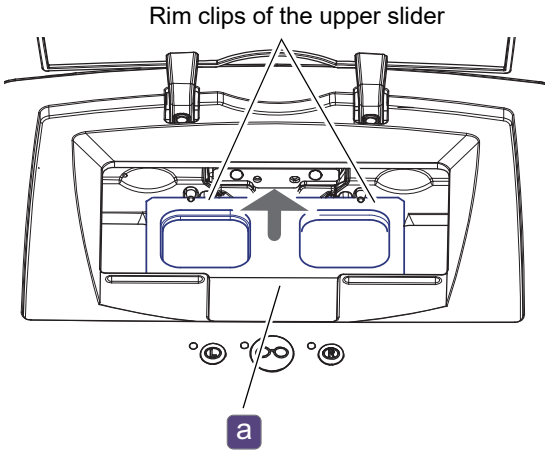
1 Prepare the standard frame.

2 Gently move the lower slider a to the front to open the upper and lower sliders.



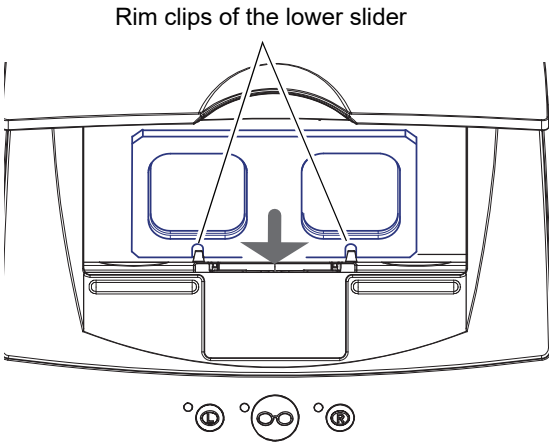
3 Set the standard frame a with the front side facing up.

With the side on which the circumference is indicated facing up, insert the upper grooves of the standard frame between the rim clips of the upper slider.



4 Set the bottom of the standard frame.

Gently open the lower slider and insert the lower grooves of the standard frame between the rim clips of the lower slider.

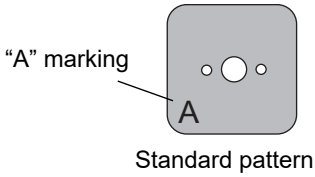


5 To remove the standard frame, gently open the lower slider and then take out the frame.

3.4.5 Handling the standard pattern

An “A” is marked on the front of the standard pattern.

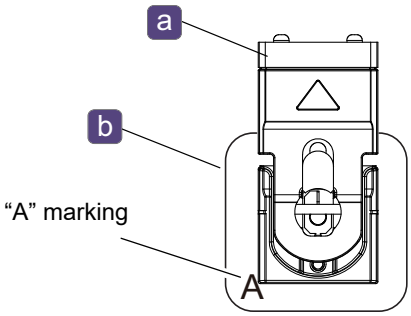
Store the standard pattern to avoid loss or damage when not in use.



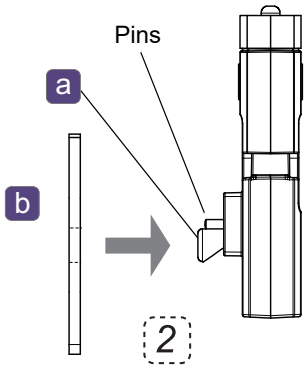
Standard pattern

1 Set the standard pattern b to the pattern setting unit a.

Attach the standard pattern to the pattern setting unit with the side marked with an “A” oriented as shown to the right.



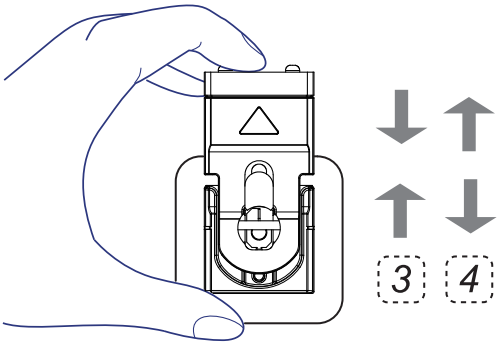
2 Fit the standard pattern to the hook a of the pattern setting unit b.



3 While pressing both ends of the pattern setting unit, push in the standard pattern.

Push the standard pattern until the hook and two pins of the pattern setting unit fit into the holes of the standard pattern.

Confirm that the standard pattern is not set askew.



4 Release both ends of the pattern setting unit to lock the standard pattern.

5 Detach the standard pattern in the reverse order.

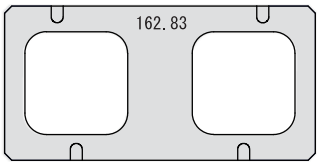
3.4.6 Calibrating the tracing unit

Calibrate the tracing unit using the provided standard frame and standard pattern.

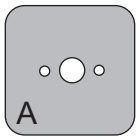
Standard frame: Calibration of frame tracing

Standard pattern: Calibration of pattern tracing

* Perform calibration before using the tracing unit each day to ensure high accuracy.



Standard frame



Standard pattern

○ Calibrating the tracing unit using the standard frame

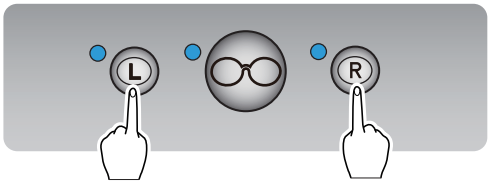
1 Take out the standard frame and standard pattern.

2 Turn on (|) the power switch.

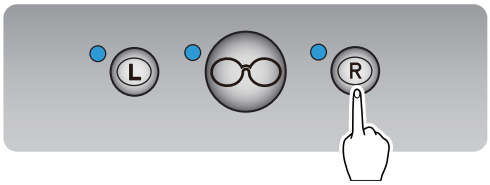
3 After initialization, set the instrument to calibration mode.

1) While pressing Ⓛ, press Ⓡ.

A beep sounds.

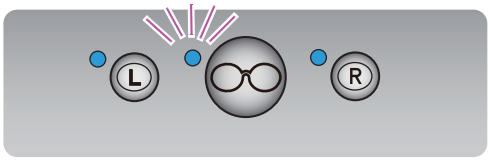


2) Release Ⓛ.



3) Release Ⓡ.

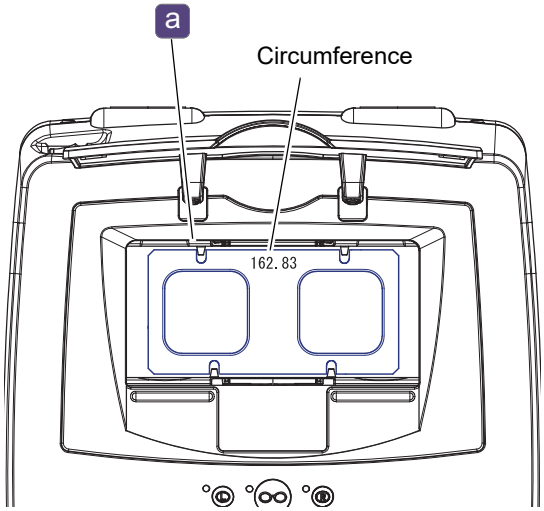
The indicator of ∞ blinks.



4 Set the standard frame a.

With the side on which the circumference is indicated facing up, set the standard frame so that the rim clips are fit into the grooves of the standard frame.

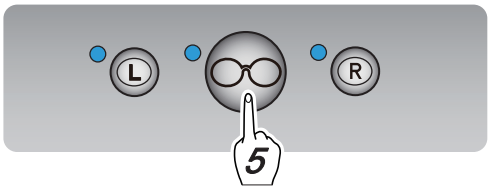
"3.4.4 Setting the standard frame" (page 79)



5 Press .

Automatic calibration (frame) starts. After several tracings, automatic calibration ends.

A beep sounds, the instrument exits from calibration mode, and then the standard frame is released.

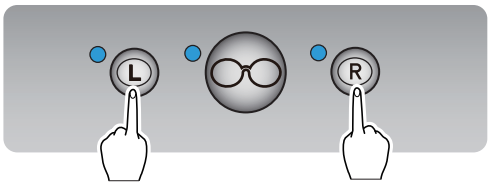


6 Remove the standard frame.

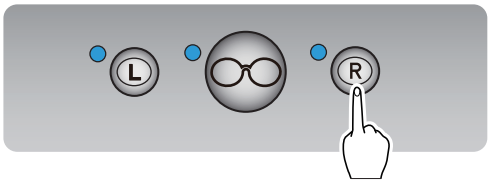
○ Calibrating the tracing unit using the standard pattern

1 Set the instrument to calibration mode again.

1) While pressing Ⓛ, press Ⓡ.
   A beep sounds.

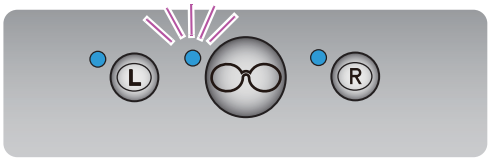


2) Release Ⓛ.



3) Release Ⓡ.

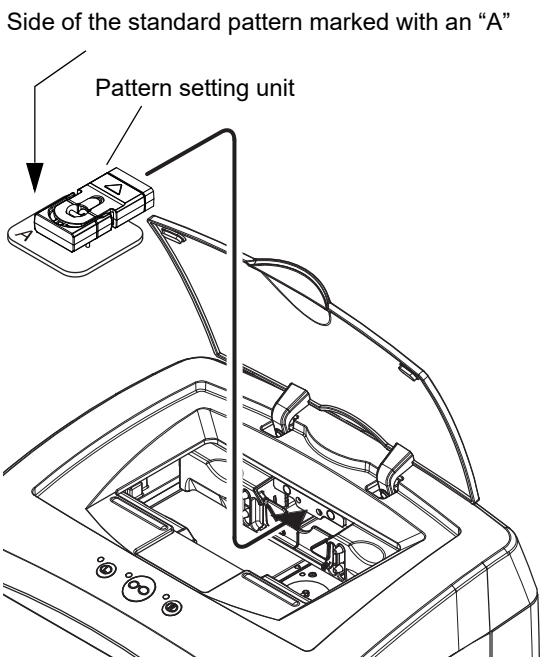
   The indicator of blinks.



2 Set the standard pattern.

Set the standard pattern with the side marked with an “A” facing towards the pattern setting unit.

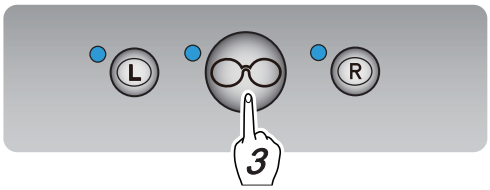
“3.4.2 Handling the pattern setting unit” (page 75), *“3.4.5 Handling the standard pattern” (page 80)*



3 Press .

Automatic calibration (pattern) starts.

When automatic calibration is complete, a beep sounds. The instrument exits from calibration mode and returns to normal mode.



4 Remove the standard pattern to complete the procedure.

Note

- To avoid calibration with frames other than the standard frame or standard pattern, should the circumference exceed the correction value of ±2 mm, an error occurs.

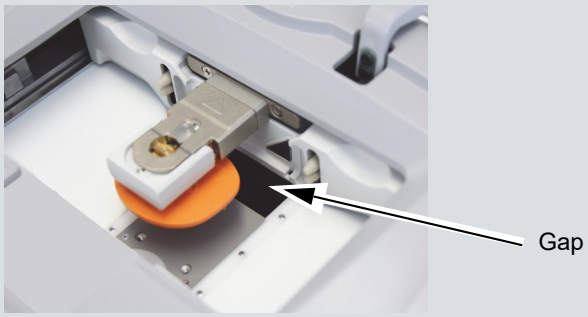
3.5 Tracing (except for NT model)

- Tracing measures the shape [*1] of spectacle frames (hereafter referred to as frames) and 3-D circumference [*2]. In addition, patterns or demo lenses can be measured.
- The following methods of tracing are available. Select the type as necessary or desired.

Frame tracing (both eyes)	Traces both eyes of general frames. *"3.5.1 Frame tracing (both eyes/single eye)" (page 85)*
Frame tracing (single eye)	Traces the left eye or right eye of general frames. *"3.5.1 Frame tracing (both eyes/single eye)" (page 85)*
Semiauto tracing	Used when the stylus does not automatically run in the groove at the time of frame tracing. *"3.5.2 Semiauto tracing (both eyes, single eye)" (page 87)*
Goggle type frame tracing	Used when the stylus comes off the groove of the sharply warped frame during tracing. Hold by hand the frame not being traced. *"3.5.3 Goggle type frame tracing" (page 89)*
Pattern tracing	Traces the patterns of two-point or nylor frames. *"3.5.4 Pattern tracing" (page 91)*
Demo lens tracing	Traces lenses that were mounted in the frames in the same manner as the pattern tracing. Also, this method is used when accurate measurement cannot be performed due to distortion of highly flexible frame rims. *"3.5.5 Demo lens tracing" (page 92)*

⚠ CAUTION

- A gap may open between the stylus unit and the upper slider during tracing. Never insert fingers into the gap because injury may occur. Make sure that no foreign matters fall into the gap because malfunction may result.



*1. Shape refers to the outer shape of spectacle lenses or inner shape of spectacle frame rims.
*2. Length assumed that groove of the frame is stretched straight

3.5.1 Frame tracing (both eyes/single eye)

This is the procedure to trace both eyes or single eye (right eye or left eye) using general frames.

Note

- Highly flexible frames may become distorted resulting in inaccurate measurement. In such a case, trace demo lenses.

  "3.5.5 Demo lens tracing" (page 92)

- If there is a level difference in the inner circumference of frame rims, the tip of the stylus may be caught resulting in frame movement. In such a case, hold the right and left temples by hand so that frames will not move.

○ Both-eye tracing

Frames of both eyes as well as the FPD (Frame Pupillary Distance) are measured.

- Firmly insert the frame between the rim clips of the upper and lower sliders.

  If the frame is not properly inserted between the rim clips and tracing is performed, instrument malfunction may result.

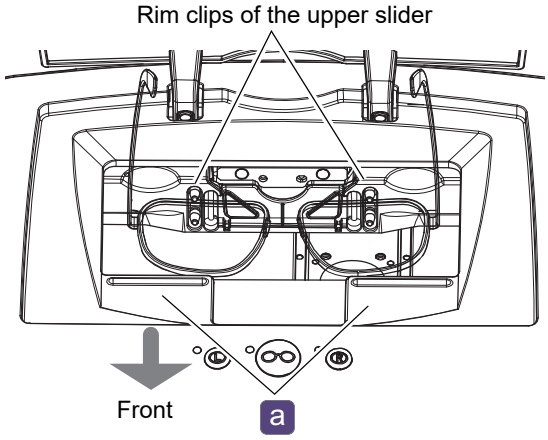
- If frames with a sharply protruding bridge center are traced, the bridge may be damaged and trace results may become inaccurate. In such a case, perform goggle type frame tracing.

  "3.5.3 Goggle type frame tracing" (page 89)

1 Set the top of the frames.

Gently move the lower slider a to the front to open the upper and lower sliders.

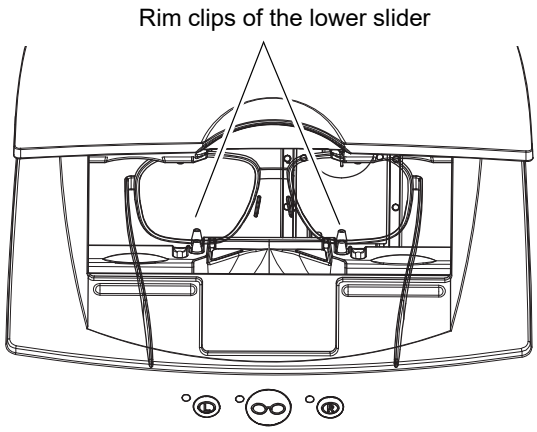
With the frames oriented as shown to the right, insert the top of the frames between the rim clips of the upper slider.



2 Set the bottom of the frames.

Gently open the lower slider and insert the bottom of the frames between the rim clips of the lower slider.

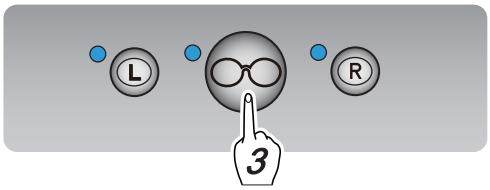
Move the frames left or right to bring them to the approximate center of the upper slider.



3 Press .

Both-eye tracing starts.

When the frames are released, tracing is complete.



4 Gently open the lower slider to remove the frames.

○ Single-eye tracing

Frame shape of the right eye or left eye is measured.

The FPD (Frame Pupillary Distance) cannot be measured during single-eye tracing. Enter the FPD value manually when entering lens layout data.

1 Set frames.

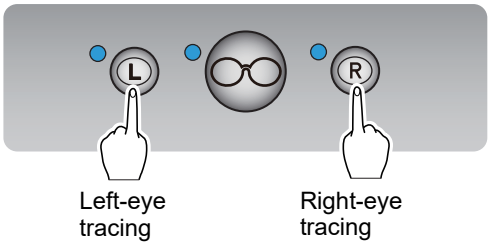
See Steps 1 and 2 of *"O Both-eye tracing" (page 85)*.

2 Press (L) or (R).

- (L): Traces the left-eye frame.
- (R): Traces the right-eye frame.

Tracing starts.

When the frames are released after a short interval, tracing is complete.



3 Gently open the lower slider to remove the frames.

3.5.2 Semiauto tracing (both eyes, single eye)

When the stylus does not automatically run in the frame groove because the groove is not in the middle of the rim, insert the stylus into the groove by hand before tracing the frames.

Trace both eyes, right eye, or left eye of frames.

○ Semiauto tracing (both eyes)

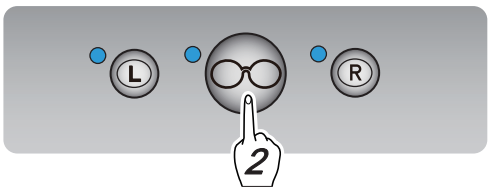
Frames of both eyes as well as the FPD (Frame Pupillary Distance) are measured.

1 Set frames.

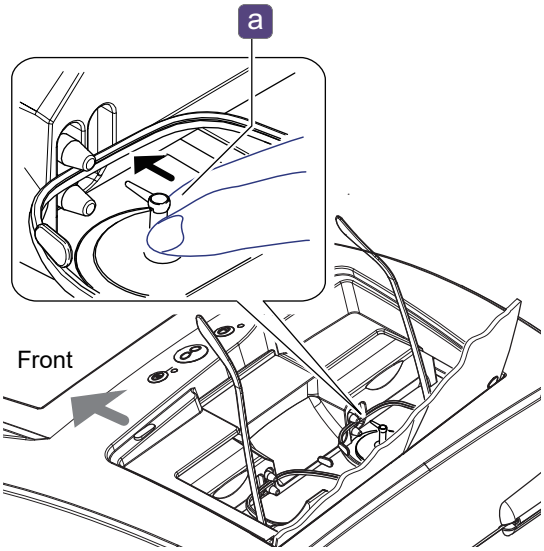
See Steps 1 and 2 of *"O Both-eye tracing" (page 85)*.

2 Press and hold for 3 seconds.

The stylus moves and pauses in the tracing start position.

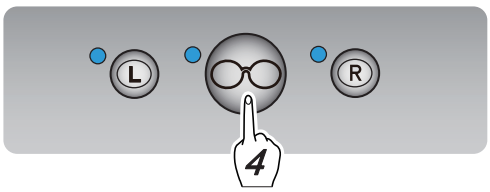


3 Insert the stylus a into the groove of the frame bottom by hand.



4 Press to start tracing.

After tracing one frame, the stylus moves to the other frame and pauses in the tracing start position.



5 Trace the other frame in the same manner as Steps 3 and 4.

When the frames are released after a short interval, tracing is complete.

6 Gently open the lower slider to remove the frames.

○ Semiauto tracing (single eye)

Frame shape of the right eye or left eye is measured.

The FPD (Frame Pupillary Distance) cannot be measured during semiauto tracing (single eye). Enter the FPD value manually when entering lens layout data.

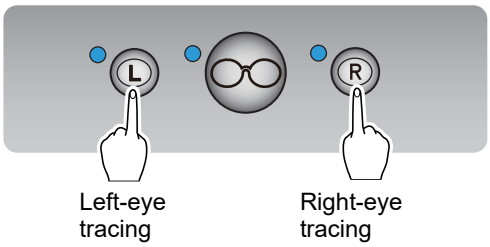
1 Set frames.

See Steps 1 and 2 of *"○ Both-eye tracing" (page 85)*.

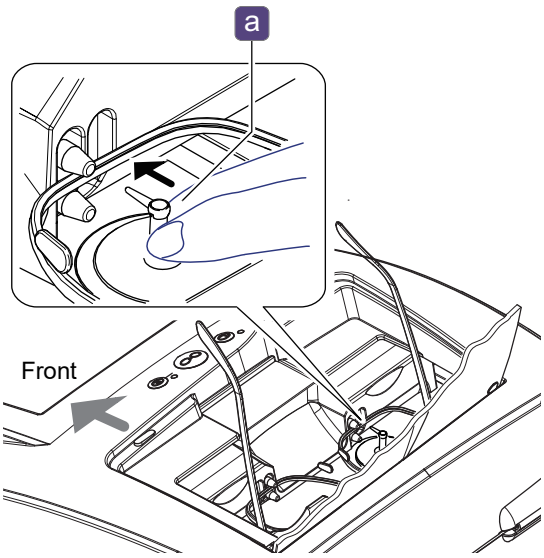
2 Press and hold Ⓛ or Ⓡ for 3 seconds.

- Ⓛ: Traces the left-eye frame.
- Ⓡ: Traces the right-eye frame.

The stylus moves and pauses in the tracing start position.

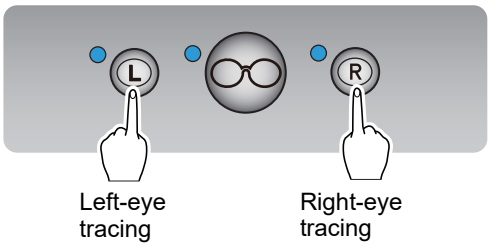


3 Insert the stylus a into the groove of the frame bottom by hand.



4 Press Ⓛ or Ⓡ, the side to be traced, to start tracing.

When the frames are released after a short interval, tracing is complete.



5 Gently open the lower slider to remove the frames.

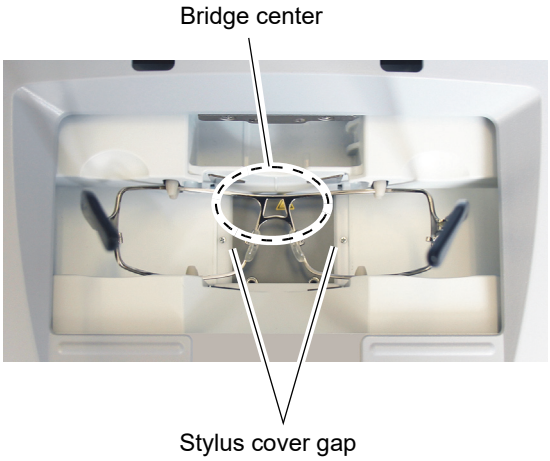
3.5.3 Goggle type frame tracing

When frames are sharply warped, the stylus may come off the groove. In such a case, fasten only the one frame between the rim clips and perform goggle type frame tracing.

The FPD (Frame Pupillary Distance) cannot be measured during goggle type frame tracing. Enter the FPD value manually when entering lens layout data.

When frames with a sharply protruding bridge center are attempted to be set, the bridge may contact the stylus cover gap or such. In such a case, perform goggle type frame tracing.

This tracing is available for both left and right frames. The procedure for tracing the right frame is described here.

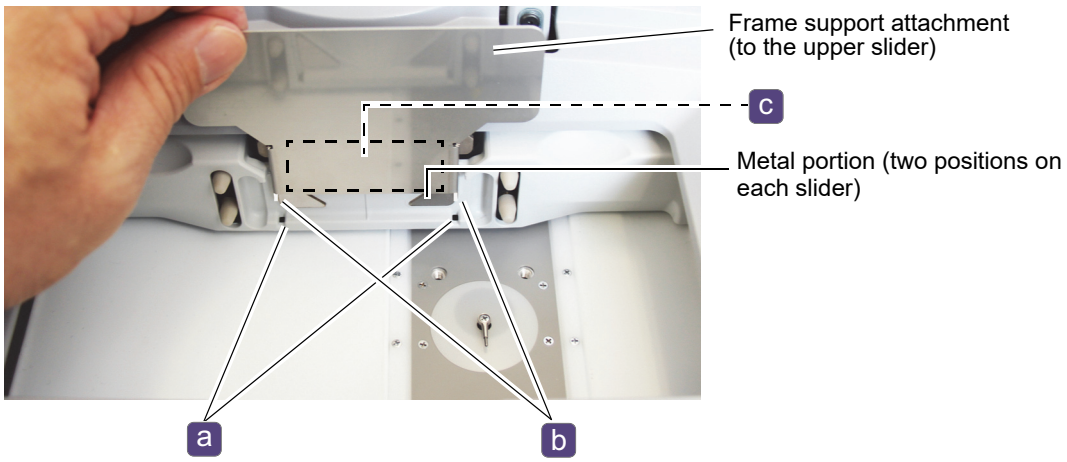


1 Set the frame support attachments.

1) Gently move the lower slider to the front to open the upper and lower sliders.
2) As shown in the picture below, to prevent hand movement, attach the frame support attachment to each of the upper and lower sliders by inserting the tabs b into the tab slots a. Press the magnet c of the attachment against the metal portions of the slider to secure the attachment.

- Confirm that the magnets of the frame support attachments are attached to the metal portions of the upper and lower sliders securely.

  If tracing is performed with the frame support attachments tilted because the magnets are not attached to the metal portions, measurement cannot be performed accurately.



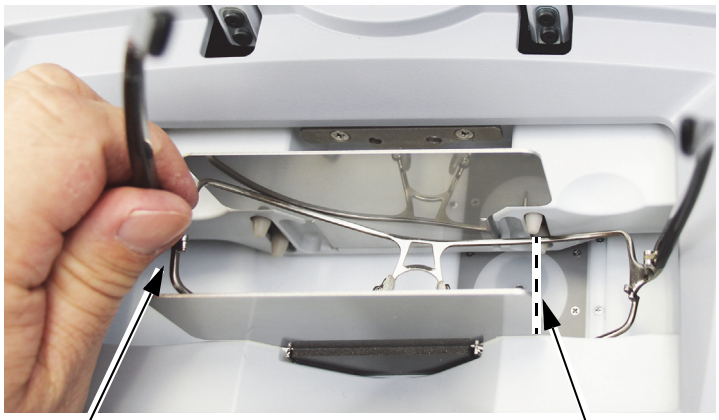
2 Set frames.

As shown in the picture below, do not fasten the left frame between the rim clips but hold the left temple.

Fasten the right frame between the rim clips while keeping the right frame level, and align the middle of the right frame to the dotted line position.

Use the frame support attachments to help the hand hold the frames steady.

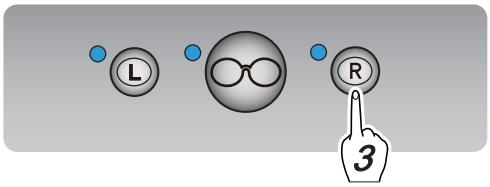
- Firmly insert the frame between the rim clips of the upper and lower sliders.
  If the frame is not properly inserted between the rim clips and tracing is performed, instrument malfunction may result.



[Side not to be traced]
Hold the frame by hand.
Do not fasten the frame between the rim clips.

[Side to be traced]
(1) Fasten the frame between the rim clips.
(2) Make the frame level.
(3) Align the middle of the right frame to the dotted line position.

3 Press Ⓡ, the side to be traced, to start tracing.



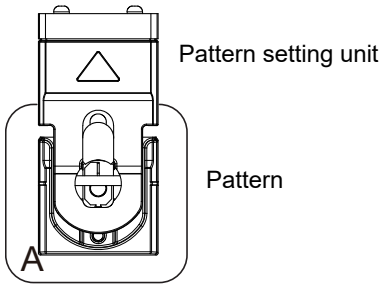
- The rim clips are closed to fasten the right frame. However, do not release the left frame until tracing is complete. If the frames shift, accurate measurement cannot be performed.
  When the frame is released after a short interval, tracing is complete.

4 Gently open the lower slider to remove the frames and two frame support attachments.

3.5.4 Pattern tracing

Pattern shape for two-point frames or such is measured.

The FPD (Frame Pupillary Distance) cannot be measured during pattern tracing. Enter the FPD value manually when entering lens layout data.



1 Set a pattern to the pattern setting unit.

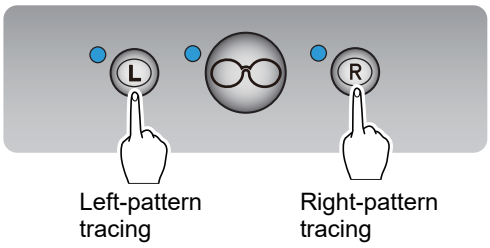
"O Attaching a pattern" (page 75)

2 Set the pattern setting unit.

"3.4.3 Setting the pattern setting unit to the tracing unit" (page 78)

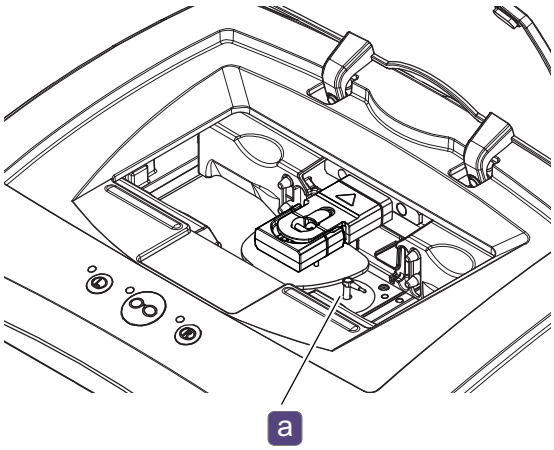
3 Press Ⓛ or Ⓡ to start tracing.

- Ⓛ: Traces the left-eye pattern.
- Ⓡ: Traces the right-eye pattern.



The stylus a moves up and pattern tracing starts.

When pattern tracing is complete, the stylus is automatically stored.



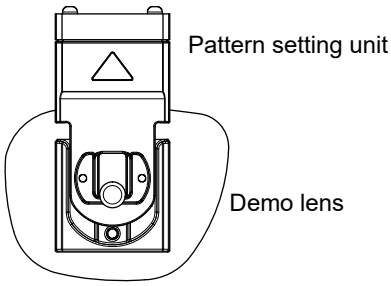
4 After tracing, remove the pattern setting unit.

3.5.5 Demo lens tracing

Lenses that were mounted in frames are traced in the same manner as pattern tracing.

Highly flexible frames may become distorted resulting in inaccurate measurement. In such a case, also perform demo lens tracing.

The FPD (Frame Pupillary Distance) cannot be measured during demo lens tracing. Enter the FPD value manually when entering lens layout data.



1 Attach a demo lens to the pattern setting unit.

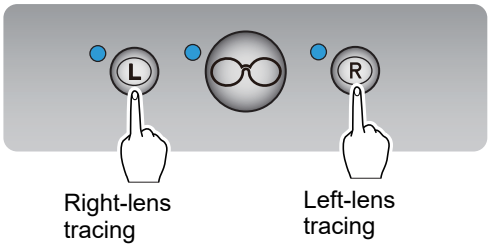
"O Attaching a demo lens" (page 76)

2 Set the pattern setting unit.

"3.4.3 Setting the pattern setting unit to the tracing unit" (page 78)

3 Press Ⓛ or Ⓡ to start tracing.

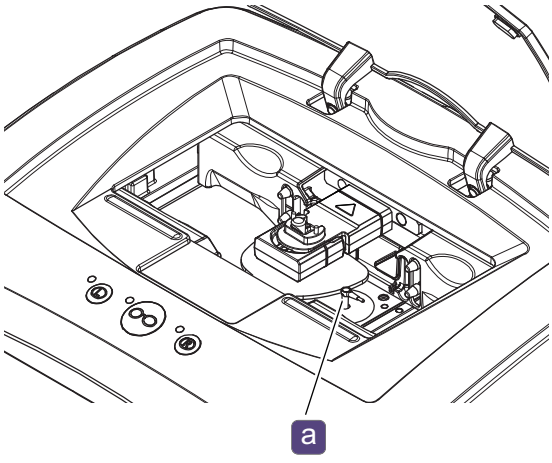
- Ⓛ: Traces the right lens.
- Ⓡ: Traces the left lens.



- Only for demo lens tracing, each tracing button is used for the opposite side lens tracing: Ⓛ is for the right side and Ⓡ is for the left side.

The stylus a moves up and demo lens tracing starts.

When demo lens tracing is complete, the stylus is automatically stored.



4 After demo lens tracing, remove the pattern setting unit.

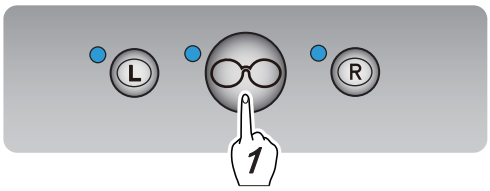
3.5.6 Stopping tracing

Follow the procedure below to stop tracing.

○ Stopping frame tracing

1 Press .

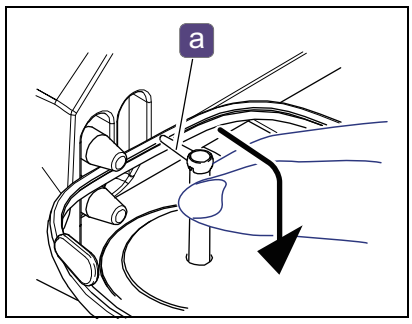
The stylus returns to the origin point and frames are released.



2 Remove the frames.

Note

- If is pressed while frames are being retraced after the stylus came off, two beeps may sound and tracing cancellation may not occur. In such a case, wait a moment and press again.
- If the stylus a is caught in the frames and does not move, turn off the power switch, gently release the stylus, and push it down slowly. Then turn on the power switch again.

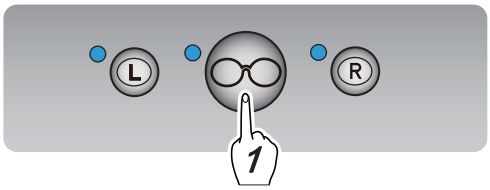


○ Stopping pattern or demo lens tracing

1 Press .

The stylus is stored.

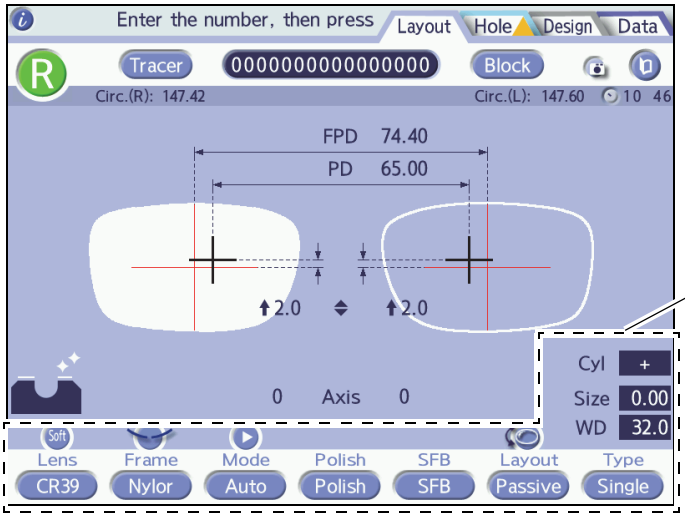
2 Remove the pattern setting unit.



3.6 Entering Processing Conditions

■ Set the processing conditions such as the lens material, frame type, processing mode. polishing, safety beveling, lens type, soft processing mode, and frame information on the Layout screen.

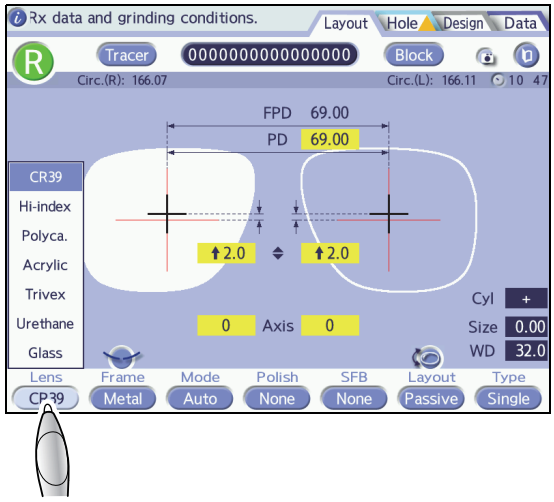
Before setting processing conditions, perform tracing or load the trace data.



○ Lens material

Select the material of a lens to be processed.

Pressing the Lens button displays the pop-up menu. Select the desired lens material.



Lens material
• CR39 (general plastic)
• Hi-index (plastic lens with a refractive index 1.60 or greater)
• Polyca. (polycarbonate)
• Acrylic
• Trivex
• Urethane (polyurethane)
• Glass

- Be sure to select the correct lens material.

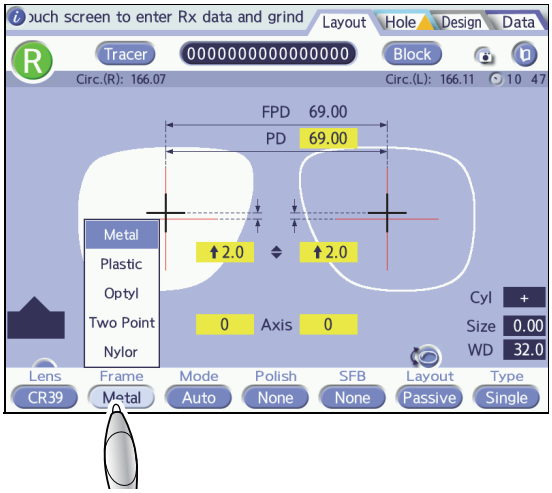
  Otherwise, the lens cannot be processed properly and the lifetime of processing wheels may be reduced substantially.
- When processing a lens material that is susceptible to heat such as Trivex lenses, select “Trivex”.
- Select “Hi-index” when processing plastic lenses which produce burrs or chips easily.

○ Frame type

Select the frame type.

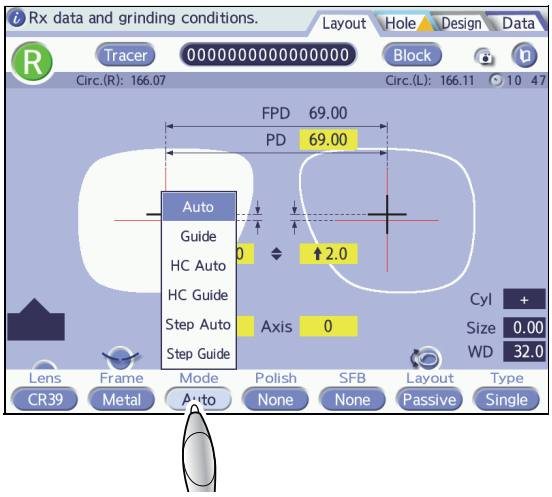
Pressing the Frame button displays the pop-up menu. Select the desired frame type.

Frame type
• Metal
• Plastic (celluloid frame)
• Optyl (epoxy frame)
• Two Point
• Nylor



○ Mode

Pressing the Mode button displays the pop-up menu. Select the desired mode. Depending on the frame type setting, not all modes are displayed in the pop-up menu.



Auto	The bevel/groove position and curve are automatically computer calculated.
Guide	The bevel/groove position and curve are manually entered.
HC Auto	The bevel/groove position and curve are automatically computer calculated for high base curve lenses.
HC Guide	The bevel/groove position and curve are manually entered for high base curve lenses.
Step Auto	The step beveling position and curve are automatically computer calculated.
Step Guide	The step beveling position and curve are manually entered.
Flat	Flat edging. Beveling or grooving is not performed.

● Selecting processing mode

The following processing modes are available according to the combination of the Frame and Mode settings.

Processing mode	Processing	Frame setting	Mode setting
Auto beveling	Beveling	Metal/Plastic/Optyl	Auto
Guide beveling			Guide
High base curve auto beveling			HC Auto
High base curve guide beveling			HC Guide
Step auto beveling			Step Auto
Step guide beveling			Step Guide
Flat	Flat edging	Two Point/Nylor	Flat
Auto grooving	Grooving	Nylor	Auto
Guide grooving			Guide

* Whether the guide screen is displayed depends on the edger.

○ High base curve auto processing, high base curve guide processing

This is the mode for auto beveling or guide beveling high base curve lenses.

It is selectable only for Metal, Plastic, or Optyl frame types.

- Layout mode automatically changes to Passive mode.
- For any Polish/SFB Setting parameter other than SE-1, safety beveling is automatically set to None. In a system in which the ICE-1500 is not the data server, even when the Polish/SFB Setting parameter is set to SE-1, safety beveling cannot be performed.

Note

- According to the edger, HC Auto or HC Guide may not be set.

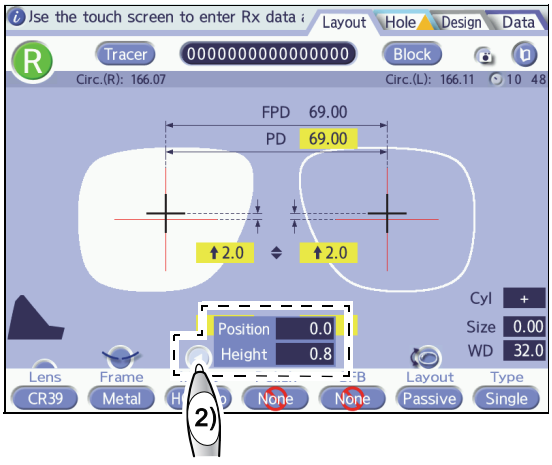
Specify high base curve beveling.

Set Position to 0.0 to 12.7 mm and Height to 0.1 to 5.0 mm.

1) Set Mode to HC Auto or HC Guide.

2) Pressing ▶ displays the pop-up menu for high base curve beveling.

3) Press the Position and Height numeric fields and enter the desired values with the displayed numeric keypad. Press ↵ to confirm the values.



4) Press to close the pop-up menu. HC Auto or HC Guide is selected.

Setting HC Auto applies the high base curve auto beveling automatically during lens processing.

Setting HC Guide applies the high base curve guide beveling automatically during lens processing and prevents processing with auto incorrectly.

○ Polishing

Select polishing mode.

The selectable options depend on the connected lens edger.

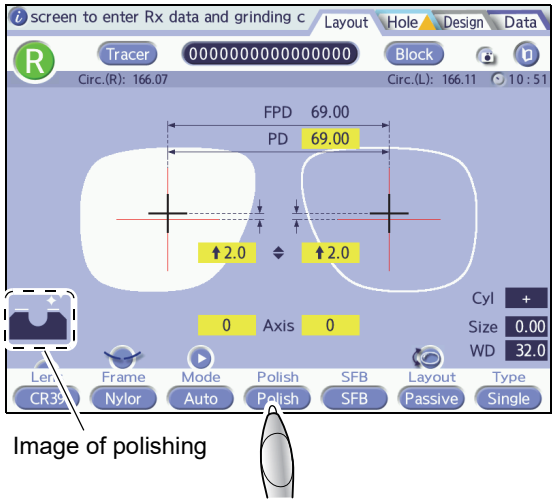
- When the Polish/SFB Setting parameter is set to LE/LEX/LEXCE:

Press the Polish button.

Each press of the Polish button toggles between Polish and None.

Image of polishing

None	
Polish	



- When the Polish/SFB Setting parameter is set to Supra/ME or SE-1:

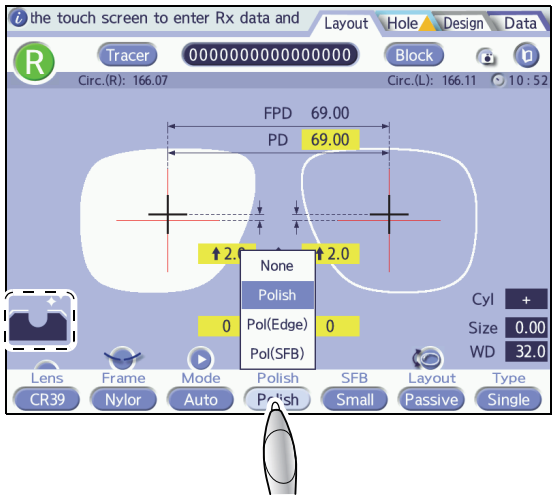
The selectable options depend on the safety beveling setting.

Pressing the Polish button displays the pop-up menu.

Select the desired polishing type.

Image of polishing

None	
Polish	
Pol (Edge)	
Pol (SFB)	



Note

- When Pol (SFB) is selected, if safety beveling is changed to None, the polishing setting automatically changes to None.
- When Pol (Edge) is selected, if safety beveling is changed to None, the polishing setting automatically changes to Polish.
- For glass lenses, polishing is set to None.

○ Safety beveling

Select safety beveling mode.

The selectable options depend on the connected lens edger.

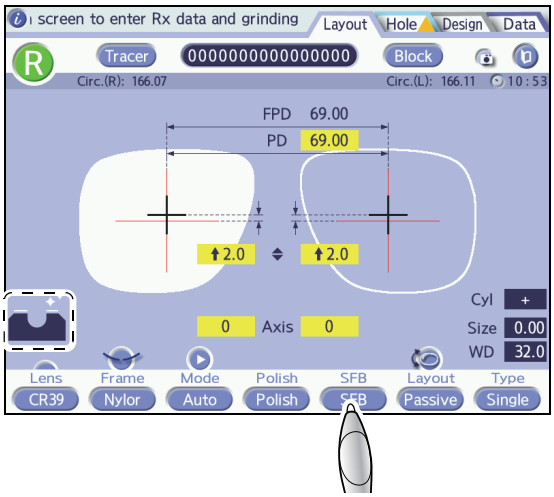
- When the Polish/SFB Setting parameter is set to LE/LEX/LEXCE:

  Press the SFB button.

  Each press of the SFB button toggles between SFB and None.

  Image of safety beveling

None	
SFB	



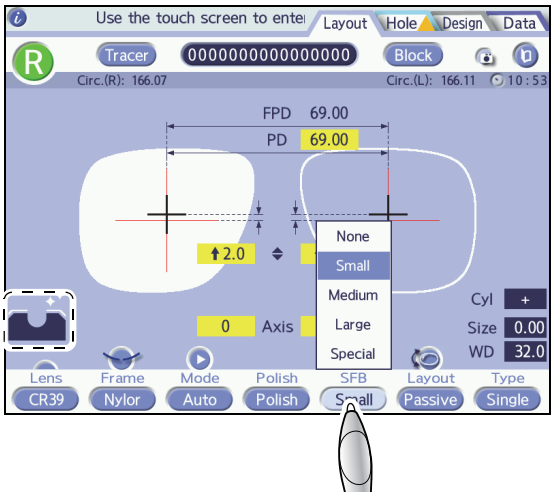
- When the Polish/SFB Setting parameter is set to Supra/ME or SE-1:

  Pressing the SFB button displays the pop-up menu.

  Select the desired safety beveling type.

  Image of safety beveling

None	
Safety beveling (Small) (Medium) (Large) (Special)	



Note

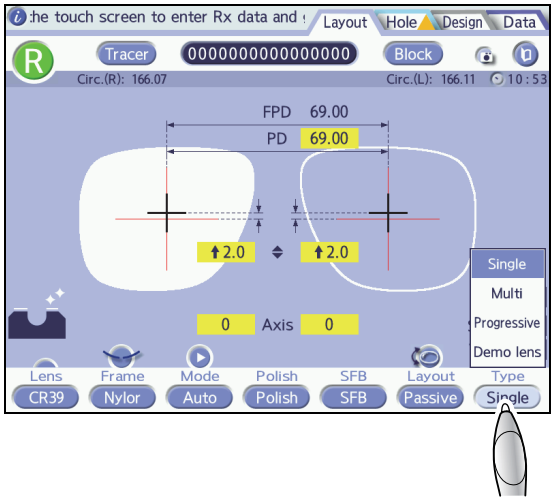
- For the setting method of the Polish/S.B Setting parameter, see *"5.1 Setting Parameters" (page 195)*
- For the settings of polishing and safety beveling when Supra/ME is selected, refer to the operator's manual for the SE-9090 Supra or ME-1500.
- For glass lenses, Special cannot be set.
- In high base curve mode, safety beveling is set to None.

○ Lens type

Select a lens type.

Pressing the Type button displays the pop-up menu. Select the desired lens type.

- Single
- Multi
- Progressive (Progressive power)



Note

- Do not select Demo lens. When Demo lens is selected, the screen switches to the screen for Demo lens blocking.

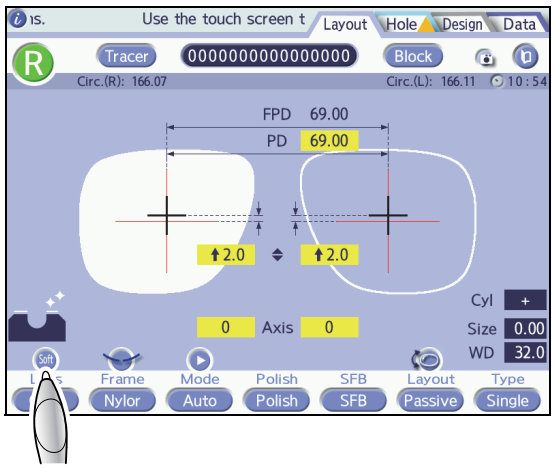
"3.8.5 Blocking demo lenses (using frame change holder)" (page 141)

○ Soft processing mode

Select soft processing mode.

Press the soft processing mode button.

Button shape	Soft processing mode
Soft	On
	Off



Note

- To set soft processing mode in the ICE-1500, the software version of the lens edger must be compatible.
- Setting this mode applies soft processing automatically during lens processing.

○ Changing frame information

After single-eye tracing (including high base curve frame tracing), shape measurement, or pattern (demo lens) tracing, the frame warping angle and frame curve value can be changed.

For both-eye tracing, the frame warping angle and frame curve value measured during tracing are used.

Frame warping angle: The number of degrees the frames warp when viewed from above.

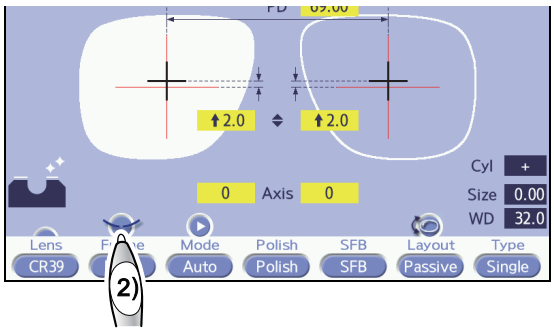
Frame curve: The curve of the frame groove (lens shape) as expressed on a sphere

- Changing the frame warping angle value

1) Load the shape measurement, pattern (demo lens) trace, or single frame trace data to the Layout screen.

2) Press  .

The frame data edit screen is displayed.

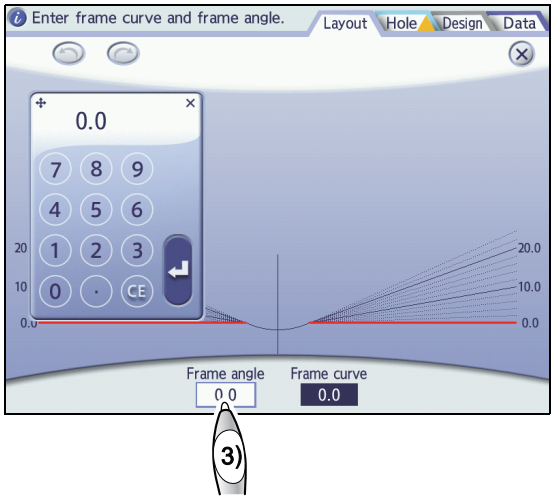


3) Press the Angle numeric field.

The numeric keypad appears.

4) Enter the frame warping angle with the numeric keypad and press  .

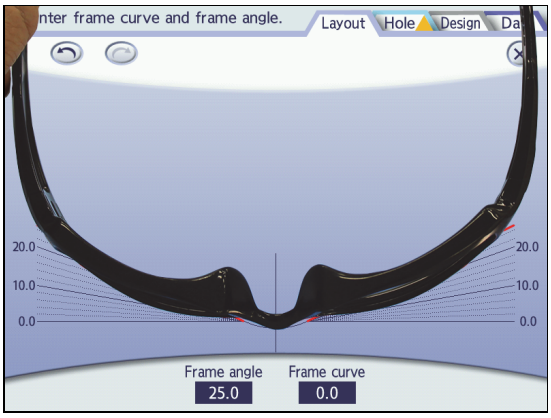
The entered warping angle is displayed in red on the figure.



5) It can be confirmed whether or not the frame warping angle is proper by comparing the frames with the figure on the screen

 Undoes the last change.  Restores the change. These can be performed a maximum of five times.

6) Press to close the frame data edit screen.

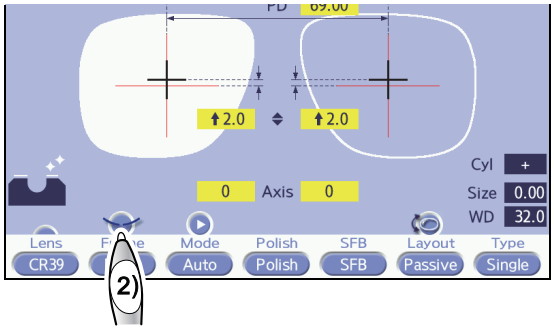


- Changing the frame curve value

1) Load the shape measurement, pattern (demo lens) trace, or single frame trace data to the Layout screen.

2) Press  .

The frame data edit screen is displayed.



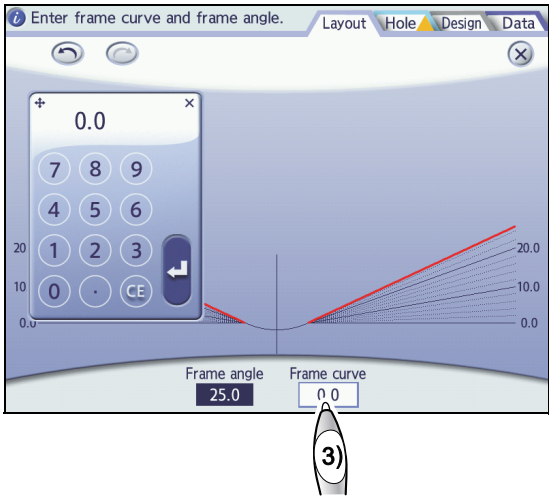
3) Press the Curve numeric field.

The numeric keypad appears.

4) Enter the frame curve with the numeric keypad and press  .

 Undoes the last change.  Restores the change. These can be performed a maximum of five times.

5) Press  to close the frame data edit screen.



Note

- For two-point or nylor frames, the frame warping angle value or frame curve value set by the above function in some software versions may not be reflected in lens processing.

○ Rotating lens shapes

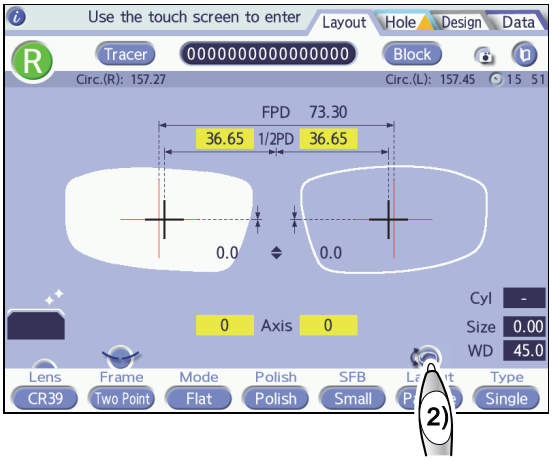
Lens shapes can be rotated.

If the axis of a pliable cup blocked to a demo lens is shifted, it can be corrected by rotating the lens shapes of the trace data.

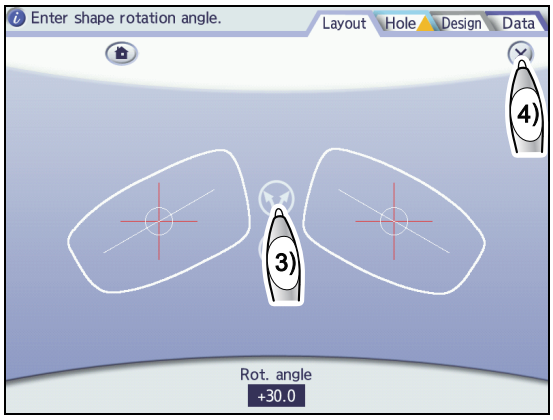
1) Load lens shapes to the Layout screen.

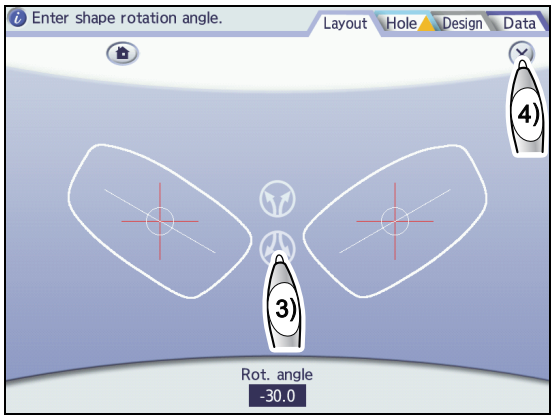
2) Press  .

The shape rotation screen is displayed.



3) Press  or  to rotate the shapes by the desired angle.



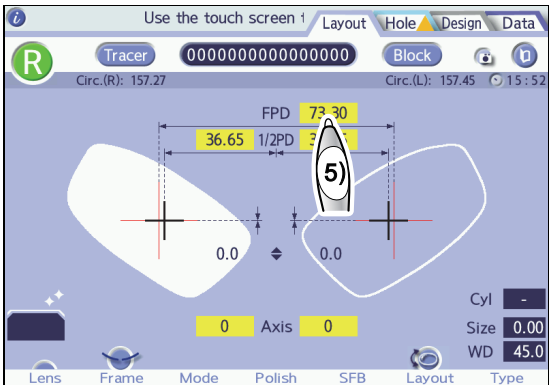


A rotation angle can also be entered with the numeric keypad that is displayed by pressing the Rot. angle field.

The entry range is -30.0° to +30.0°.

4) Press  to return to the Layout screen.

5) Enter FPD (or DBL).



Note

- After shapes are rotated, FPD (or DBL) becomes unconfirmed. Be sure to reenter it.
- Hole position, step processing, design processing, frame warping angle, and such data is not changed accordingly for the shape rotation. Change them as necessary.

3.6.1 Grooving Settings

- The setting is possible only when the ICE-1500 is connected to an edger (LE-1200S/SNT model, ME-1500, LEX-1200/Lex Drill system, SE-9090 Supra, SE-1, or LEXCE) equipped with the grooving function.
- When the Curve setting is other than Auto or when the groove position has been changed, ensure that desired groove specifications are displayed by checking the simulated groove section in the lens edger before processing lenses.

  In the ICE-1500, grooving is set without measuring the lens curve. Therefore, the groove may be off the lens edge depending on the setting.

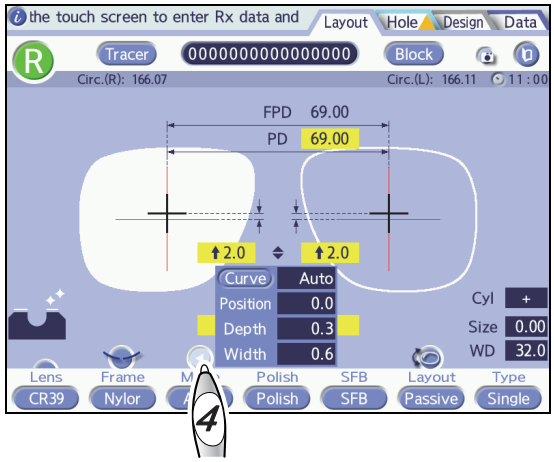
1 Display the original shape data on the Layout screen.

2 Select Nylor for the frame type.

When Glass is selected for the lens material, grooving cannot be selected.

3 Select “Auto” or “Guide” for processing mode.

4 Press ▶ to display the pop-up menu to set grooving details.



5 Enter the curve type, grooving position, grooving depth, and grooving width in the pop-up menu.

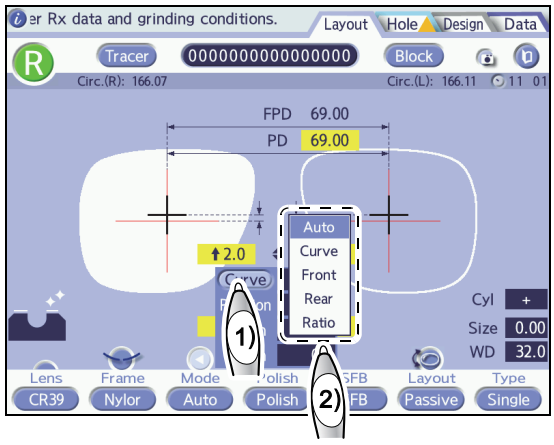
- Curve

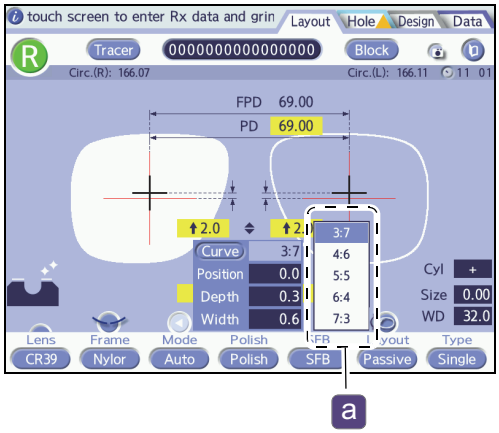
  1) Press Curve.

  The pop-up menu is displayed.

  When processing mode is set to Guide, the pop-up menu is not displayed. Curve is fixed to Auto.

  2) Select the desired curve from the menu.



Auto	Computer-calculated curve
Curve	Manually enter the desired curve. Pressing the numeric field displays the numeric keypad. Enter the desired value.
Front	Front base curve (curve profiling the front surface of a lens)
Rear	Rear base curve (curve profiling the rear surface of a lens)
Ratio	Select the groove position on the edge by the ratio. Pressing the numeric field displays the pop-up submenu a. Select the desired ratio. 

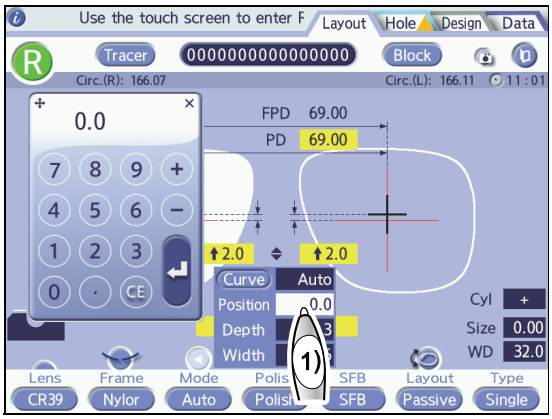
- Position

Change the position of the whole groove forward/ backward.

1) Press the Position numeric field to display the numeric keypad.

2) Enter the amount to move the groove forward or backward with the numeric keypad and press to confirm it. (unit: mm)

The range is -12.8 to 12.7 mm.



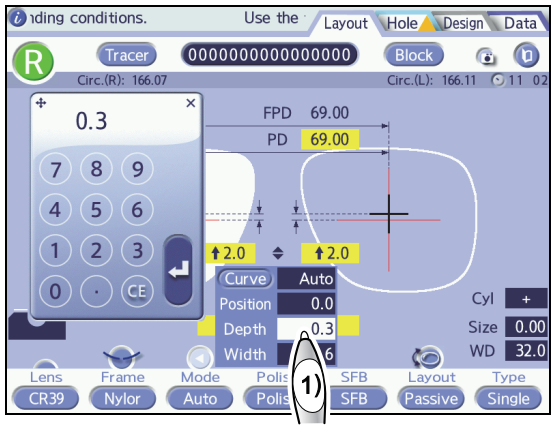
Negative value	The groove moves toward the front surface.
Positive value	The groove moves toward the front surface.

- Depth

1) Press the Depth numeric field to display the numeric keypad.

2) Enter the groove depth with the numeric keypad and press to confirm it (unit: mm).

The range is 0.0 to 0.8 mm.



Note

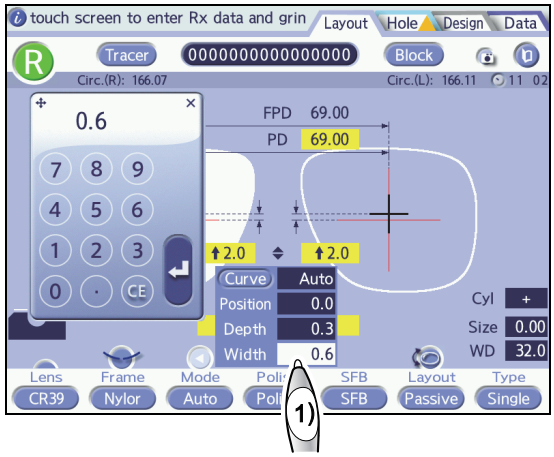
- The default of groove depth can be set by the Groove Depth parameter.

- Width

1) Press the Width numeric field to display the numeric keypad.

2) Enter the groove width with the numeric keypad and press to confirm it (unit: mm).

The range is 0.6 to 1.2 mm.



Note

- The default of groove width can be set by the Groove Width parameter.

6 Press to close the groove details setting menu.

3.7 Entering Layout Data

■ According to prescription, enter lens layout data (FPD, PD, optical center height, and axis).

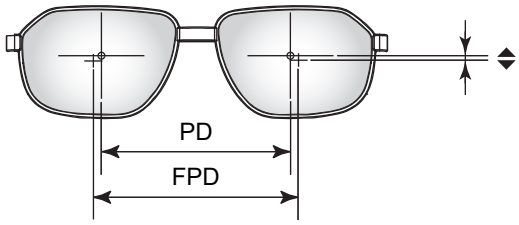
Blocking mode can be selected between Active and Passive (layout mode).

The layout data is displayed in the numeric field next to each item label. Pressing the numeric field displays the numeric keypad.

When the necessary item is not entered, the corresponding numeric field is highlighted in yellow.

3.7.1 Entering layout data for single vision lenses

Enter FPD, PD, optical center height (▲▼), and axis.

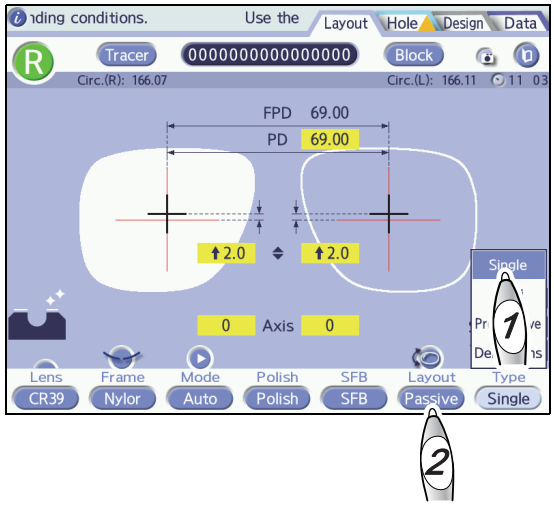


1 Select Single for the lens type on the Layout screen.

2 Select Active or Passive for layout mode.

Select whether to block the lens with a lens cup at the optical center or frame center.

Each press of the Layout button toggles between Active and Passive.



Active	The lens is blocked with the lens cup at the optical center.
Passive	The lens is blocked with the lens cup at the boxing (frame) center.

Note

- When HC Auto, HC Guide, Step Auto, or Step Guide is selected for Mode, the layout automatically enters Passive mode.

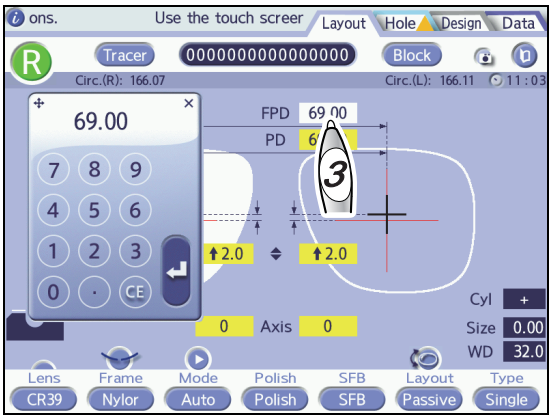
3 Enter FPD.

Press the FPD numeric field to display the numeric keypad. Enter a value and press ↵ to confirm the entry.

When both-eye frames are traced, the measured FPD value is entered.

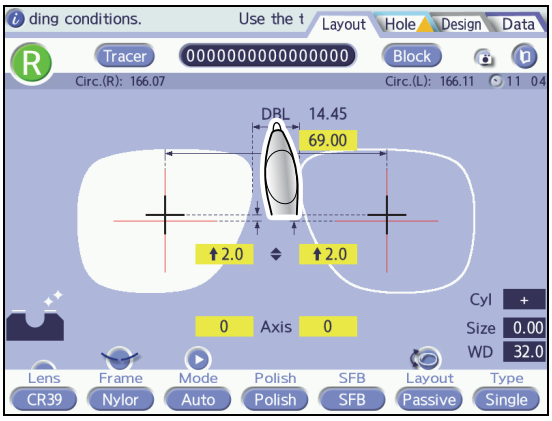
- Range: 30.00 to 99.50 mm
- Increments: 0.01 mm

Pressing CE clears the entered value.



● When entering the DBL value

Pressing the FPD label switches from FPD to DBL (width between the nasal ends of left and right frames).

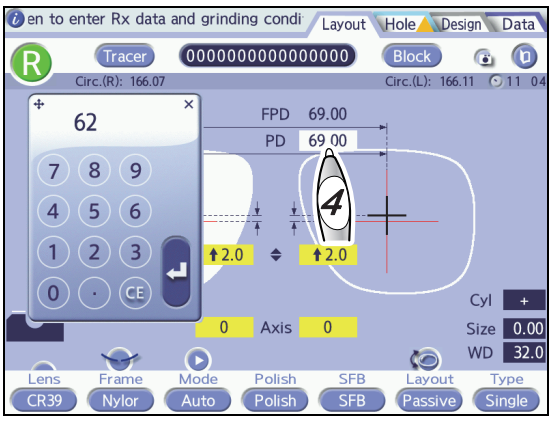


- The DBL value should be regarded as a reference value.

"12 Frame pupillary distance (FPD)" (page 16)

4 Press the PD numeric field to display the numeric keypad. Enter a value and press ↵ to confirm the entry.

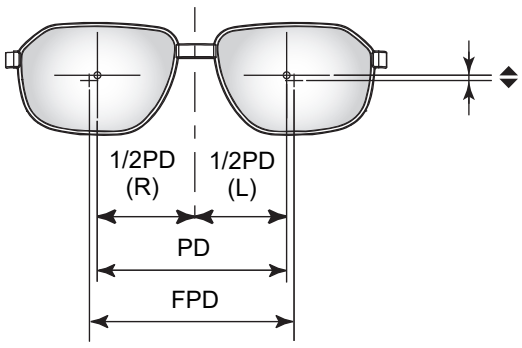
- Range: 30.00 to 99.50 mm
- Increments: 0.01 mm



● When entering monocular PD

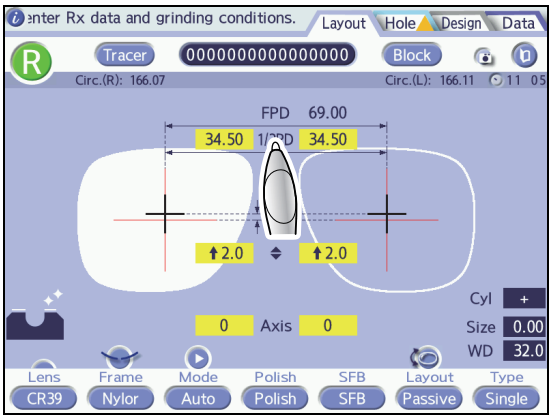
Entering the monocular PD (1/2 PD) is also possible.

This is a method to enter the distance from the bridge center to each pupil center separately.



Pressing the PD label switches from PD to 1/2PD.

- Range: 15.00 to 49.75 mm
- Increments: 0.01 mm

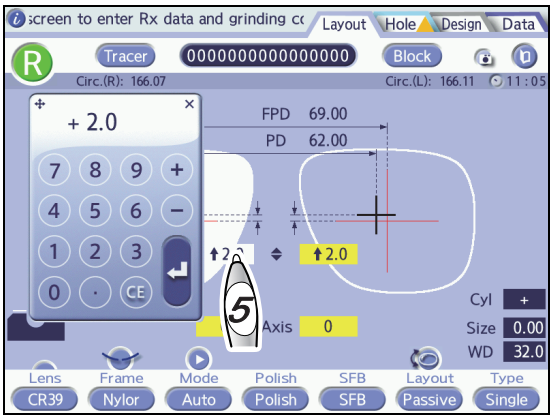


5 Enter the optical center height for the left- and right-eye lenses individually.

Pressing the ⬍ numeric field displays the numeric keypad.

Enter a value and press ↵ to confirm the entry.

- Range of ⬍: -15.0 to +15.0 mm



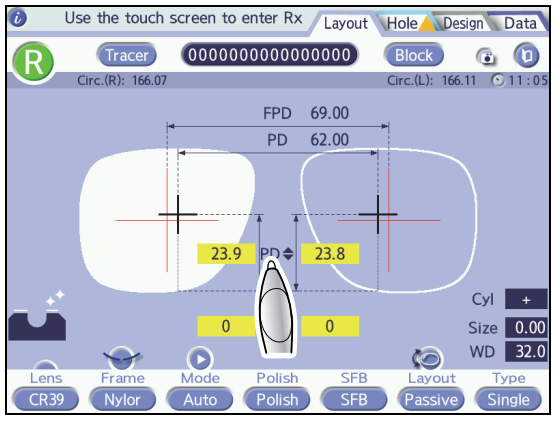
Note

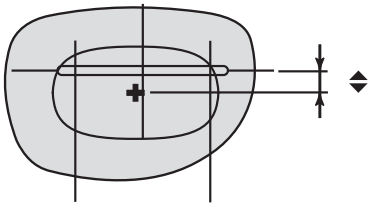
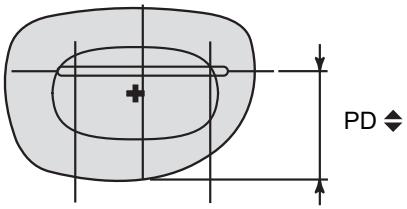
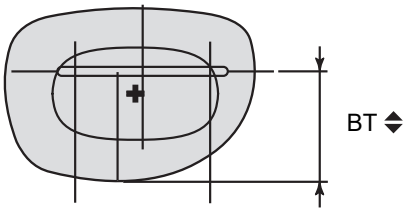
- The default displayed in the optical center height numeric field can be set by the Optical center height parameter.

- Entering the vertical distance from the lowest point on the lens shape.

  In addition to the optical center height ⬍, entering the vertical distance from the lowest point on the lens shape (PD ⬍ or BT ⬍) is also possible.

  - Pressing ⬍ toggles among PD ⬍, BT ⬍, and ⬍.
  - Range of PD ⬍ and BT ⬍: –15.0 to +15.0 mm ⬍.



⬍	Enter the vertical distance from the frame center to the optical center. The minus sign indicates that the optical center is shifted downward. The plus sign indicates that the optical center is shifted upward.	
PD ⬍	Enter the vertical distance from the optical center to the point on the lens shape directly below it.	
BT ⬍	Enter the vertical distance from the optical center to the lowest point on the lens shape.	

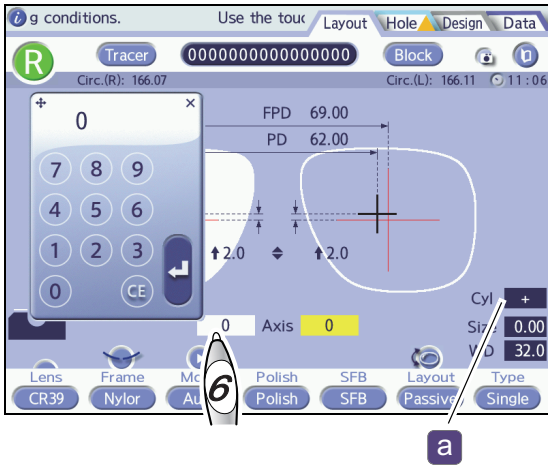
6 When blocking a single vision lens containing cylindrical power, enter the axis for the left- and right-eye lenses individually.

Press the Axis numeric field to display the numeric keypad.

Enter a value and press ↵ to confirm the entry.

- Range: 0 to 180°
- Increments: 1°

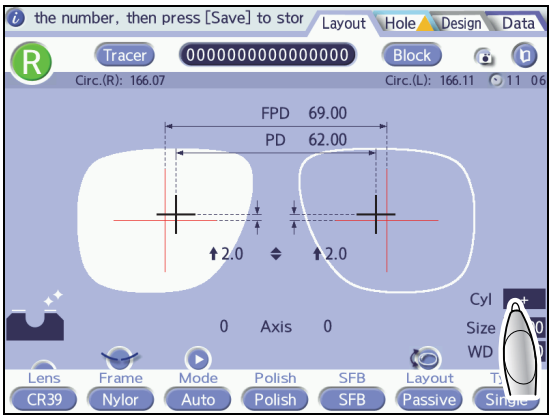
Confirm that the Cyl reading (+/-, +, -) a is set the same as the prescription.



- When changing the Cyl reading

  Pressing the Cyl setting field toggles among +/-, +, and -.

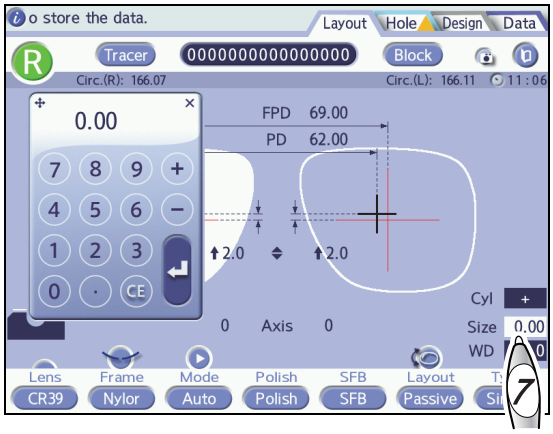
  This change is available only for the currently displayed shape.



Note

- The default displayed in the Cyl setting field can be set by the Initial CYL mode parameter.

7 Enter the size (enlarged or reduced lateral based size of lens shape).



Entering this item is optional.

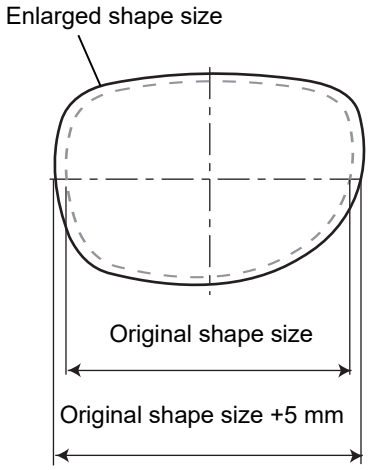
Press the Size numeric field to display the numeric keypad. Enter a value and press ↵ to confirm the entry.

- Range:-9.95 to +9.95 mm
- Increments: 0.01 mm

  The minus sign indicates that the lens shape is reduced and the plus sign indicates that the lens shape is enlarged.

The lens shape is enlarged or reduced laterally while maintaining a similar form. At this time, the optical center is regarded as the reference position.

- Example when Size is set to +5 mm is shown to the right.



Note

- This function allows one pattern to be used for several different-sized patterns.
- Changing the shape to a different form is also possible.

"4.1.1 Shape change function" (page 166)

- When the necessary item is not entered, the corresponding numeric field is highlighted in yellow. In that state, blocking cannot be performed.

  Even when using the default, press the numeric field to display the numeric keypad and press ↵ to confirm the value.

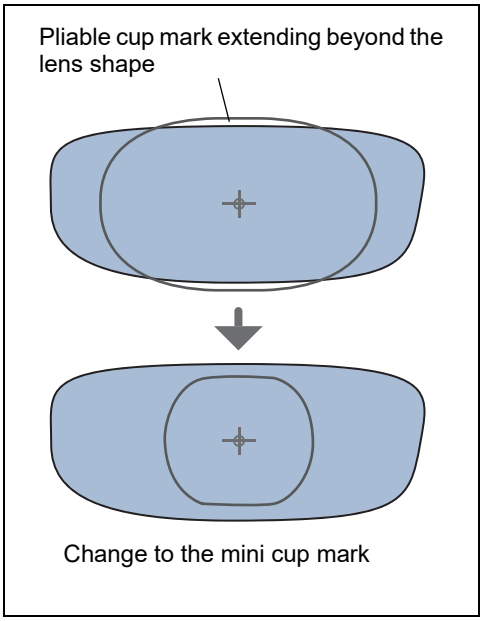
○ Changes in the cup mark shape according to the layout setting

When the Cup Mode parameter is set to Pliable/Mini, or Pliable/Nano, the cup mark changes as follows when the lens shape contacts the pliable cup mark according to the layout setting.

Cup mode setting	Normal lens processing	Small diameter lens processing
Pliable/Mini	Pliable cup	Mini cup
Pliable/Nano	Pliable cup	Nano cup

If the pliable cup is continued to be used, the lens adapter or lens clamp may contact the processing wheel because the distance between the blocking point and lens edge is short.

When the cup mark has changed, block the lens with a lens cup for small diameter lenses.

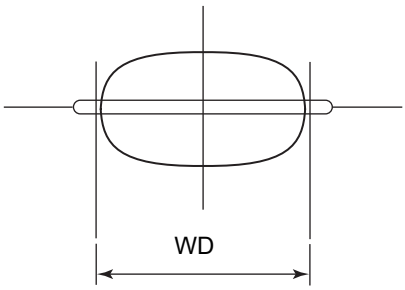


Note

- When the Cup Mode parameter is set to Half eye or Pliable, the displayed cup mark is constant in size. However, when the lens shape contacts the cup mark, the cup mark turns from yellow to red to call the operator's attention.
- When the Cup mode parameter is set to Pliable, Pliable/Mini, or Pliable/Nano, the settings of the Minimum grinding H size and Minimum grinding V size parameters become disabled.
- As the cup mark display is a guide, according to the edger or layout, processing may not be possible with the displayed cup.
- If there is a possibility of contact with the processing wheels even when a lens cup for small diameter lenses is used, the cup mark turns from yellow to red to call the operator's attention.
- When the cup mark has turned red by contacting or intersecting the lens shape, be sure not to block the lens.

○ Setting WD (width of the alignment scale)

The WD represents the distance between the vertical lines on the left and right.

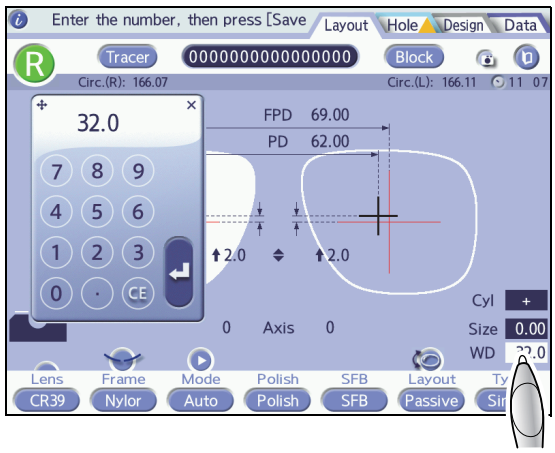


Press the WD numeric field to display the numeric keypad. Enter a value and press ↵ to confirm the entry.

Set the WD value depending on the space between the markings on the lens.

- Range: 15.0 to 45.0 mm
- Increments: 0.1 mm

This setting is possible on the blocking screen as well.



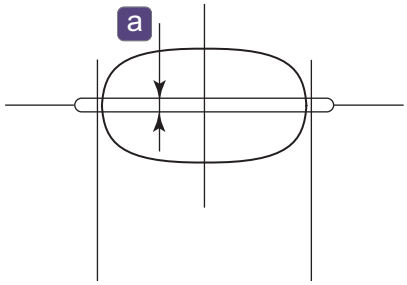
○ Setting the alignment scale

The height of the horizontally-long ellipse of alignment scale can be changed by the corresponding parameter.

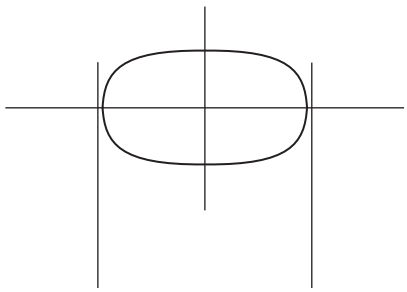
"5.1 Setting Parameters" (page 195)

Alignment scale (height):

Select the alignment scale height a from among 0 mm, 1.0 mm, and 2.0 mm.



When 0 mm is selected, the alignment scale becomes straight line.



3.7.2 Entering layout data for multifocal lenses

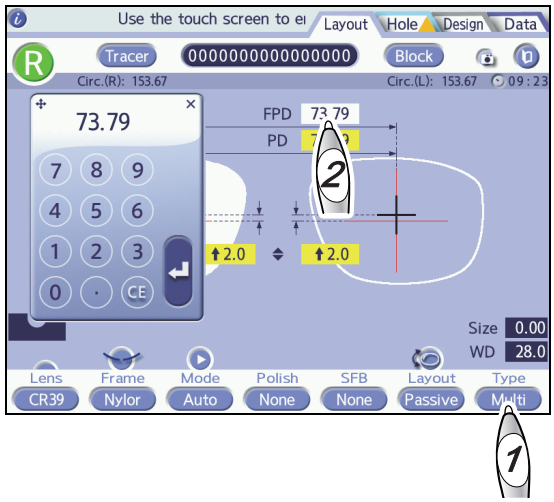
According to prescription, enter lens layout data (FPD, near PD, and optical center height).

Note

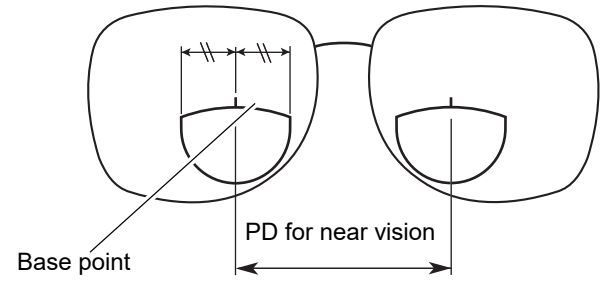
- Changing the lens type to Multi automatically enters Passive mode.
- If the segment shape is not typical (round or such) or the shape shadow is faint, the instrument cannot recognize the segment position and block the lens. In such a case, set block mode to Manual and block the lens.

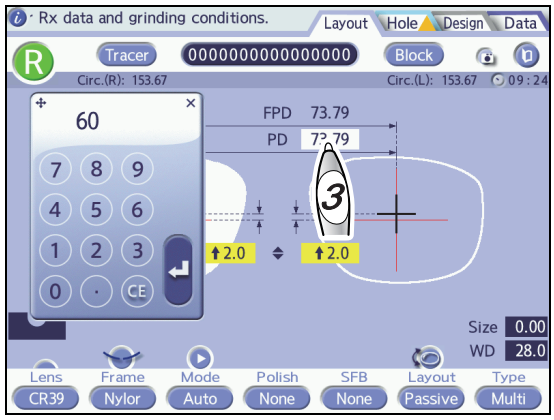
1 Select Multi for the lens type on the Layout screen.

2 Enter FPD.



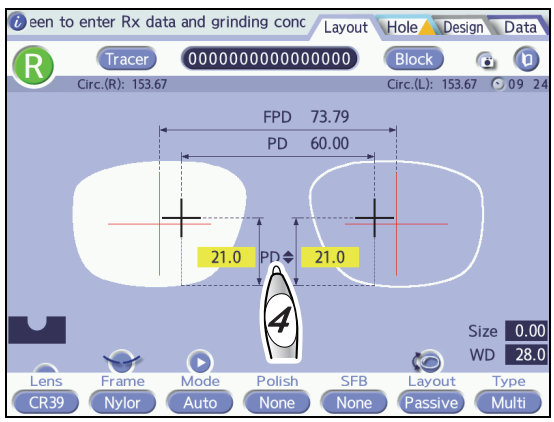
3 Enter the prescribed near PD value (PD for the segment) in the PD (or 1/2PD) numeric field.



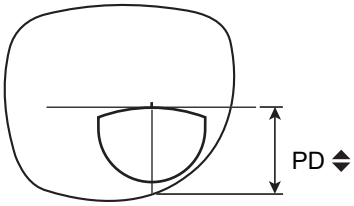
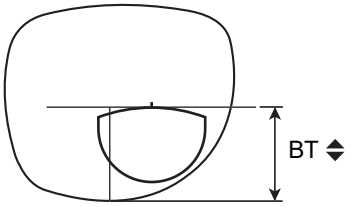


4 Select a method to enter the optical center height.

Press ▲▼ to switch to PD ▲▼ or BT ▲▼.

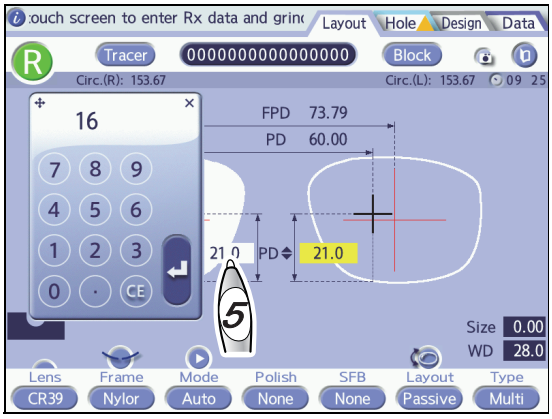


Select either of the following.

PD▲▼	Enter the vertical distance from the top line center of segment to the point on the lens shape directly below it.	
BT ▲▼	Enter the vertical distance from the top line center of segment to the lowest point on the lens shape.	

5 Enter the height of the segment base point (top line center of segment).

Press the PD ▲▼ or BT ▲▼ numeric field to display the numeric keypad. Enter a value and press ↵ to confirm the entry.



6 Enter the size (enlarged or reduced lateral based size of lens shape).

See *"7 Enter the size (enlarged or reduced lateral based size of lens shape)." (page 111)* of *"3.7.1 Entering layout data for single vision lenses" (page 107)*.

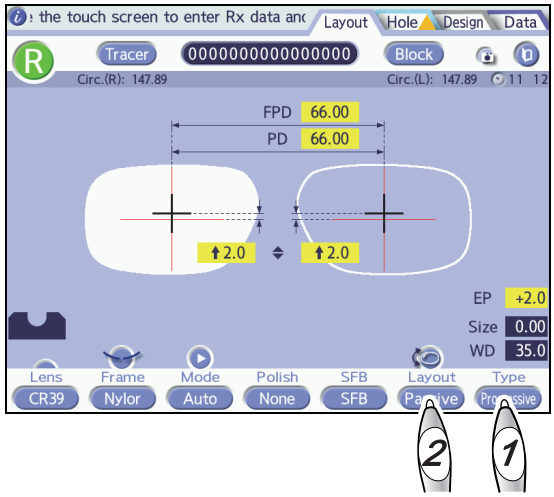
3.7.3 Entering layout data for progressive power lenses

According to prescription, enter lens layout data (FPD, PD, optical center height, and EP).

1 Select Progressive for the lens type on the Layout screen.

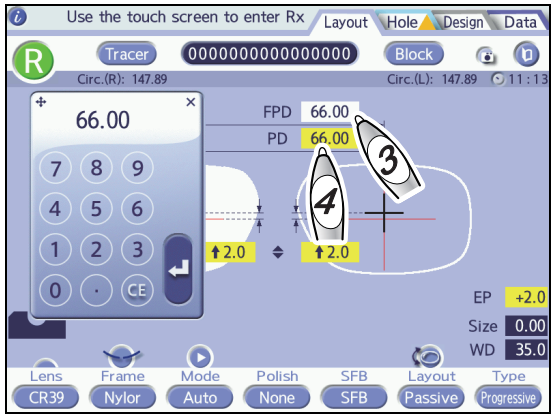
2 Select Active or Passive for layout mode.

See *"2 Select Active or Passive for layout mode." (page 107)* of *"Entering layout data for single vision lenses" (page 107)*.



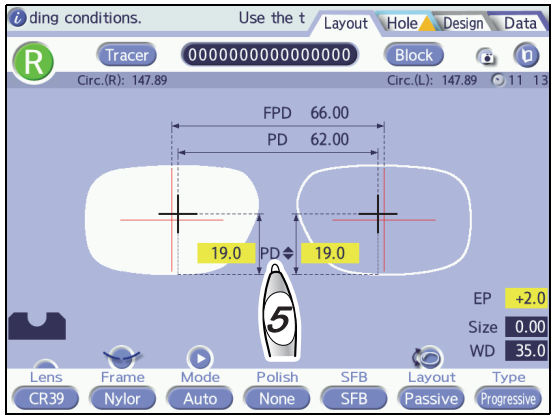
3 Enter FPD.

4 Enter the prescribed PD value in the PD (or 1/2PD) numeric field.

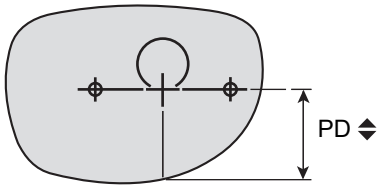
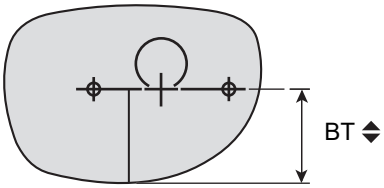


5 Select a method to enter the optical center height.

Press ⬍ to switch to PD ⬍ or BT ⬍.

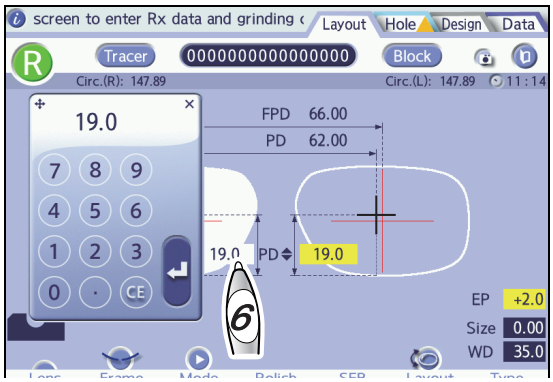


Select either of the following.

PD ⬍	Enter the vertical distance from the distance eyepoint to the point on the lens shape directly below it.	
BT ⬍	Enter the vertical distance from the distance eyepoint to the lowest point on the lens shape.	

6 Enter the height of the eye point.

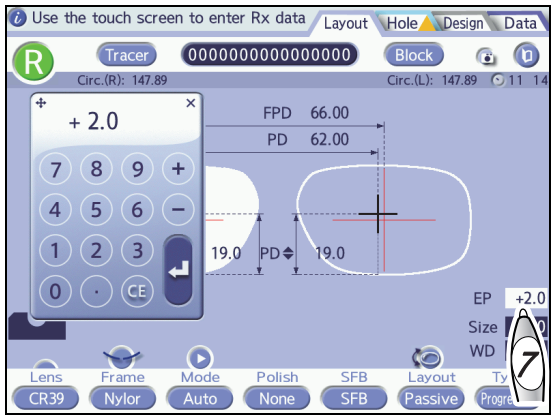
Press the PD ⬍ or BT ⬍ numeric field to display the numeric keypad. Enter a value and press ↵ to confirm the entry.



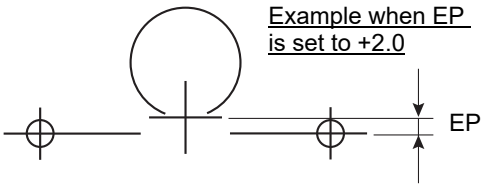
7 Enter the EP value.

Press the EP numeric field to display the numeric keypad. Enter a value and press ↵ to confirm the entry.

- Range: -6.0 to +6.0 mm
- Increments: 0.1 mm



When the EP value is entered, the distance eyepoint mark on the blocking screen changes as shown to the right.



8 Enter the size (enlarged or reduced lateral based size of lens shape).

See *"7 Enter the size (enlarged or reduced lateral based size of lens shape)." (page 111)* of *"3.7.1 Entering layout data for single vision lenses" (page 107)*.

3.7.4 Reading QR code for PD and Axis

Automatic entry of PD and Axis by reading the QR code printed by a Nidek lensmeter/refractor is possible. The optional 2D barcode scanner is required.

1 With the ICE-1500 turned off, connect the cable of the 2D barcode scanner to the BARCODE connector.

2 Turn on power to the ICE-1500.

3 Display the lens shape on the Layout screen and use the 2D barcode scanner to read the QR code printed by a Nidek lensmeter/refractor.

1) Hold the scanner close to the QR code.
2) Press the trigger switch.
   When reading is complete, a beep sounds.

4 The PD and Axis values read from the QR code appear on the Layout screen.

3.8 Blocking

■ This section describes the procedure for blocking lenses with lens cups according to the entered layout data.

Before blocking, perform tracing or load the trace data, then enter processing conditions and layout data.

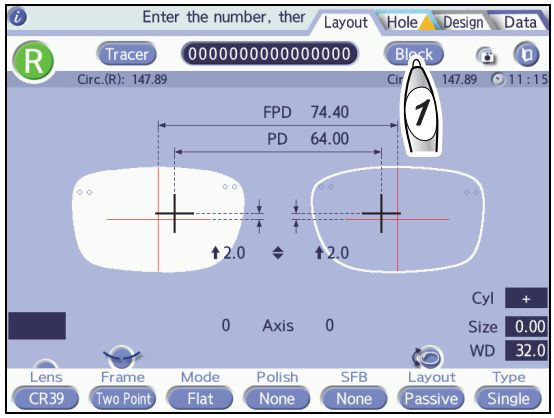
3.8.1 Preparation for blocking

Set a lens cup to the instrument and display the blocking screen.

- The lens cups come in two colors: green and red. Use the green cup for the right-eye lens and the red one for the left-eye lens.

  Using the cup with the same color as that of the Right or Left button helps the operator to distinguish the right and left lenses and process them properly.
- Select a lens whose diameter is sufficient.
- When the necessary item is not entered on the Layout screen, the corresponding numeric field is highlighted in yellow. Enter a value in that field. Otherwise, blocking cannot be performed.

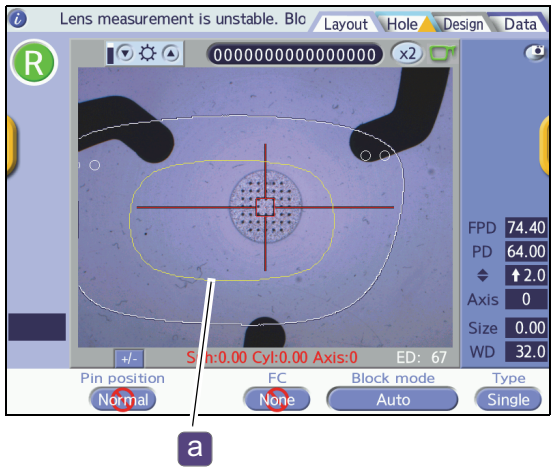
1 Press Block on the Layout screen to display the blocking screen.



2 Check the cup mark shape a.

Use a lens cup suitable for the cup mark shape.

"O When cup mark reduces in size" (page 121)



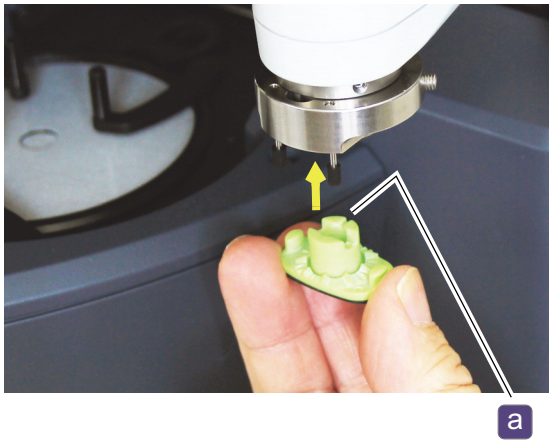
3 Stick the double-coated adhesive pad on the lens cup.

Use the green or red lens cup according to the lens side as indicated below to prevent confusion of the right and left lenses.

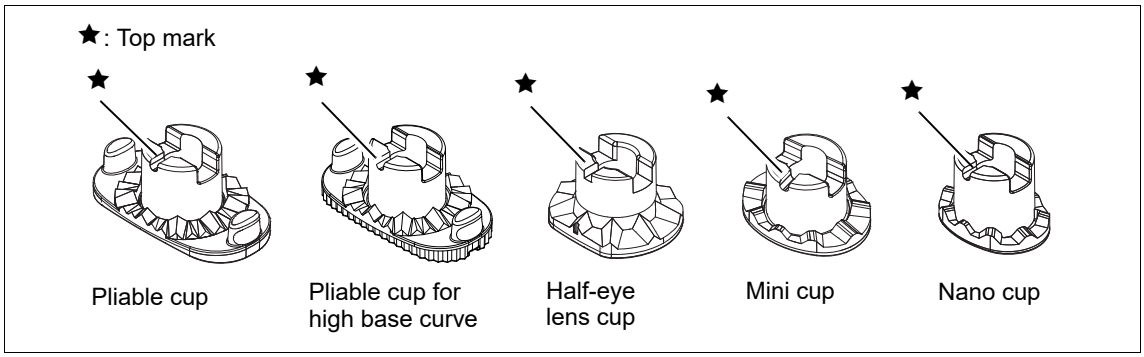
Right (R) lens	Green lens cup
Left (L) lens	Red lens cup

4 Set the lens cup to the cup holder.

Firmly insert the lens cup with the top mark a oriented backward (instrument side).



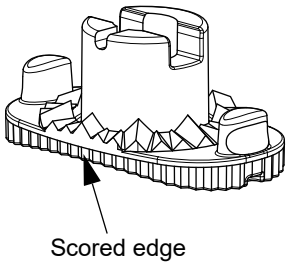
- Available cup types



○ For lenses that have a front surface with a base curve of 6 or greater

Be sure to use a pliable cup for high base curve lenses when processing plus lenses that have a front surface with a base curve of 6 or greater.
Using the standard pliable cup may cause axis shift or coating crack.

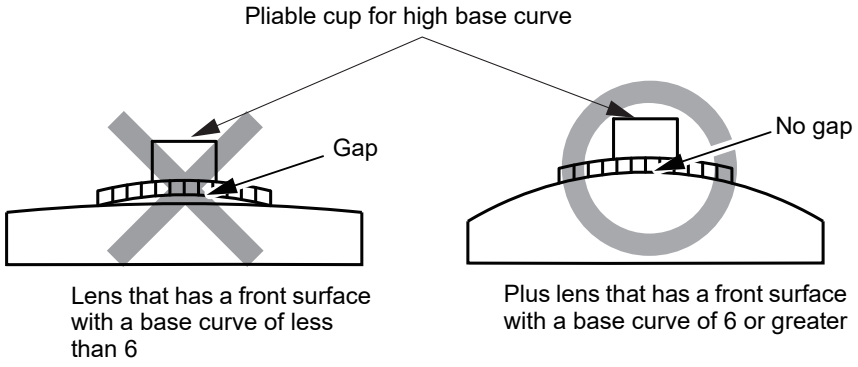
The scored edge of the pliable cup for high base curve lenses allows it to be distinguished from the standard pliable cup.



- Do not use the pliable cup for high base curve lenses when processing lenses have a front surface with a base curve of less than 6.

  Failure to do so may cause a gap between the cup and lens resulting in the following malfunctions:

  - Cup is removed.
  - Axis shift occurs.
  - Roughing cannot be performed properly.
  - Coating is cracked.

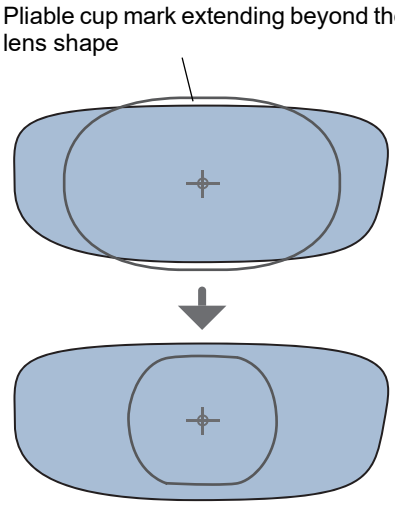


○ When cup mark reduces in size

When the Cup mode parameter is set to Pliable/Mini or Pliable/Nano, the cup mark shape may change from that of pliable cup to that for small diameter lenses. In such a case, block the lens with a lens cup for small diameter lenses.

Setting	Normal lens processing	Small diameter lens processing
Pliable/Mini	Pliable cup	Mini cup
Pliable/Nano	Pliable cup	Nano cup

If the pliable cup is continued to be used, the lens adapter or lens clamp may contact the processing wheel because the distance between the blocking point and lens edge is short.



3.8.2 Blocking single vision lenses

For single vision lens blocking, the following three types of block mode are available.

Block mode	Optical center detection
Auto	Automatic detection
Point mark	Detects according to the markings at the optical center made with a lensmeter.
Manual	No detection

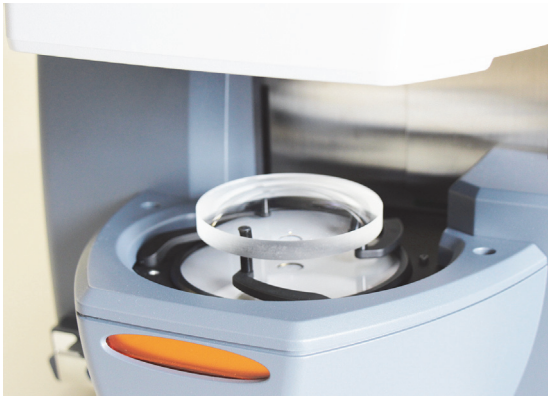
If the optical center is difficult to detect in Auto mode, block a lens in Point mark mode or Manual mode.

In Auto mode, move the lens so that the optical center detected with the instrument aligns to the approximate center on the screen. When blocking is possible, the Blocking button is displayed.

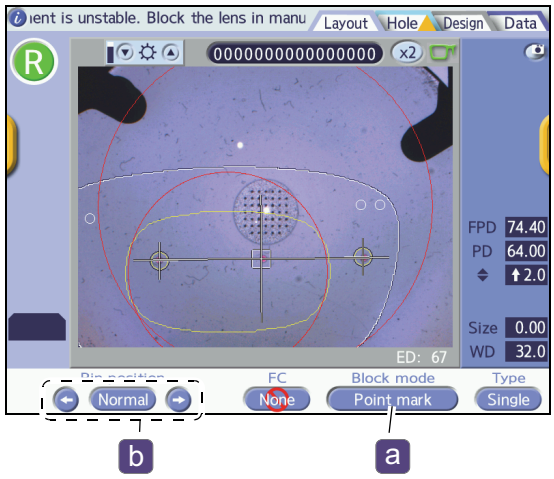
In Manual mode, precisely align the markings on the lens to the alignment scale.

1 Place the lens on the lens table with the convex surface up.

While checking the blocking screen, align the center of the lens to the approximate center of the lens table.



If the lens cannot be placed on the lens table pins, activate Point mark mode or Manual mode with the Block mode button a and adjust the intervals between the pins with the Pin position button b.



Note

- As the lens outline and shape are displayed, whether or not the lens diameter is sufficient for the entered layout conditions can be determined.

  If the shape extends beyond the lens outline, replace the lens with a larger diameter lens.

  When the lens size is insufficient for processing for frame changing (if a part of the lens shape overlaps the lens outline), change the lens layout data so that the shape is moved inside the outline. However, the prescription may become altered.

- Measurement accuracy varies depending on the lens Sph and Cyl values.
  As the color of the optical center mark and lens measurement value indications change from white to yellow to red, measurement accuracy reduces.

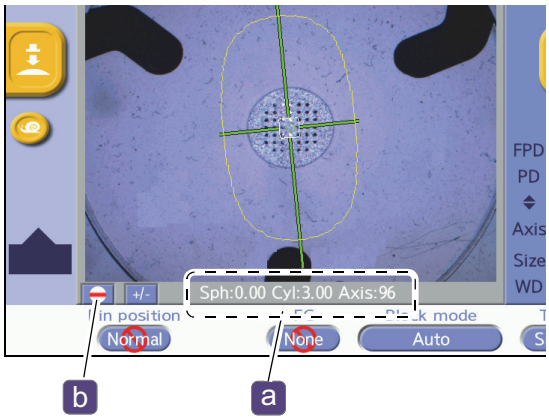
  It is recommended to mark the lens with a lensmeter and block the lens in Manual mode when the indication is other than white. When the indication is red, blocking is not possible.

- Only when the lens optical center is positioned outside the area where blocking is possible, the red cup holder mark appears. In such a case, move the lens so that the cup holder mark disappears.
- Using the optional 2D barcode scanner enables comparison of the data with that read from the QR code printed by a Nidek lensmeter/refractor in order to check whether the blocked lens is proper. For details, contact Nidek or your authorized distributor.

2 Check the lens measurement values a to confirm that the lens is the prescribed one. (Auto mode)

The Sph and Cyl values are reference values.

3 When the Simple astigmatism button b is displayed, confirm that the indication matches the lens described in Step 1. (Auto mode)



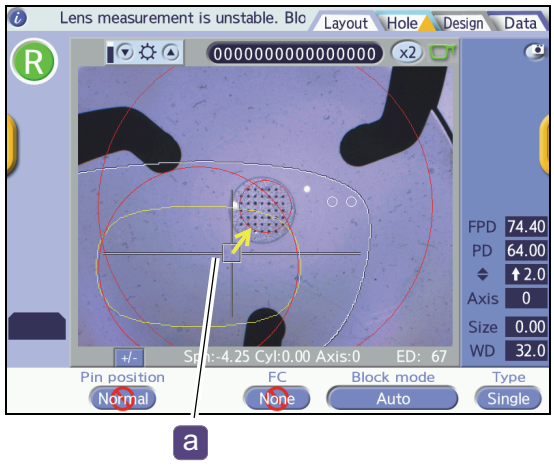
Indication of Simple astigmatism button	Determination with the ICE-1500
	Determined to be a simple astigmatic lens with the instrument.
	Determined to be a non-simple astigmatic lens with the instrument.
No indication	Definitely determined to be a non-simple astigmatic lens with the instrument.

If the indication of the Simple astigmatism button does not match the lens, press the button to change the indication.

4 Align the lens position.

If the optical center is difficult to detect in Auto mode, activate Point mark mode or Manual mode with the Block mode button and block the lens.

- For Auto mode



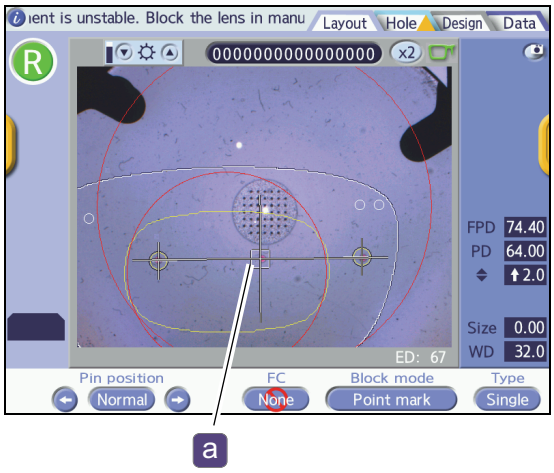
In Auto mode, the detected optical center position is indicated with the optical center mark.

1) Move the lens so that the optical center mark a fits in the red circle in the center. The optical center mark may tilt.

   For a dual-tone colored lens, confirm that the right side is up and rotate the lens to make the dyed line level.

2) When blocking is possible, the center circle and optical center mark turn green and is displayed.

- For Point mark mode



In Point mark mode, the marking position is detected as the optical center.

1) Mark the lens at the optical center with a lensmeter. When the lens contains cylindrical power, mark the cylinder axis according to the prescription value.

2) When the marking is detected, the marking indication a is displayed. Confirm that the marking indication is aligned with the marking on the lens.

3) Move the lens to align the middle marking to the approximate center of the screen. The markings may tilt.

4) When blocking is possible, is displayed.

- For Manual mode

In Manual mode, the optical center or cylinder axis is not detected. Align the markings on the lens to the alignment scale.

1) Mark the lens at the optical center with a lensmeter. When the lens contains cylindrical power, mark the cylinder axis according to the prescription value.

2) Move the lens to align the middle marking to the center of the alignment scale a. Also align the markings on both sides to the alignment mark.

Change the alignment scale size as necessary.

"O Setting WD (width of the alignment scale)" (page 127), *"O Setting the alignment scale" (page 127)*

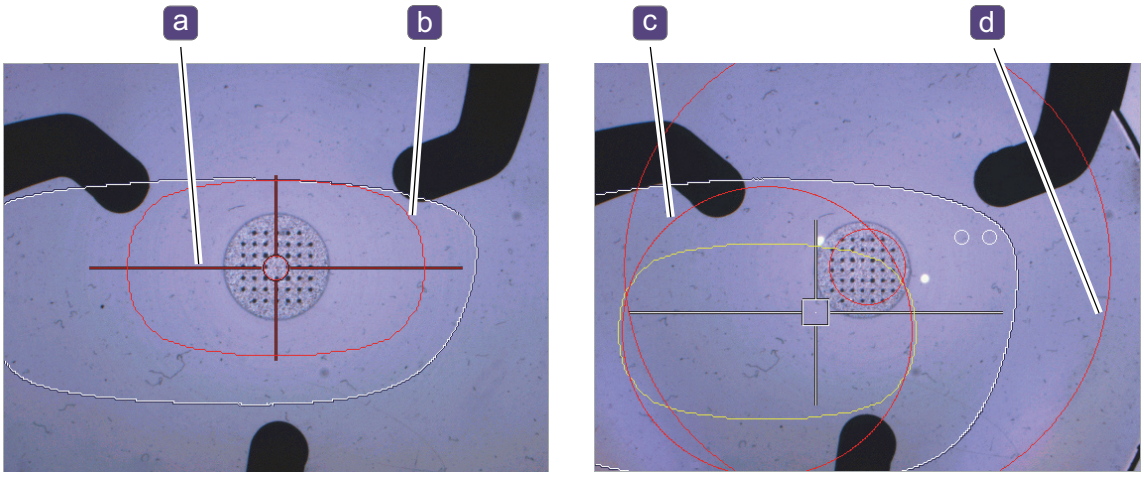
Change the brightness and magnification of the image as necessary.

"O Adjusting the image brightness" (page 128), "O Changing the image display magnification" (page 128)

Note

- For the lenses to which prism is to be added, blocking in Auto mode is not possible. Therefore, mark the lens with a lensmeter and block it in Point mark mode or Manual mode.

If any mark is indicated in red, take a remedy according to the table below.



Red indication	State, remedy
Detection mark a	Each lens is not detected. Move the lens so that it is properly detected.
Cup mark b	The cup mark contacts or extends beyond the lens shape. Switch layout mode to Passive.
Cup holder c, Available blocking area d	The cup holder mark contacts or extends beyond the available blocking area. Perform any of the following: change the intervals between the lens table pins, switch between Active and Passive, or move the lens.

5 Block the lens.

1) Confirm that the pliable cup is set in the cup holder, then press  while holding the lens edges by hand.

   The  buttons are displayed on both sides of the screen. Either may be used.

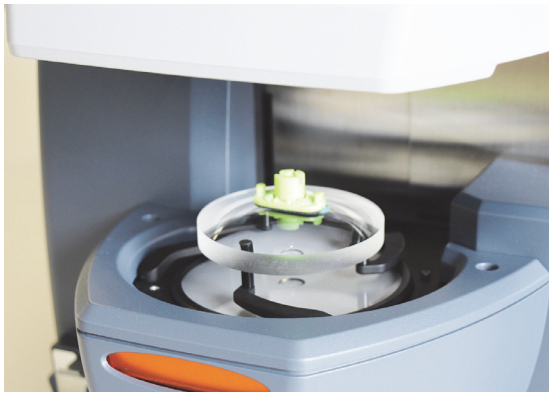
2) The blocking arm moves to the center of the instrument, then descends to block the lens.

   Be careful not to get fingers caught between the lens cup and lens.

3) The blocking arm returns to the original position.

After one lens has been blocked, the lens indication, R or L, automatically switches.

The processing conditions and layout data are saved when the lens is blocked.



Note

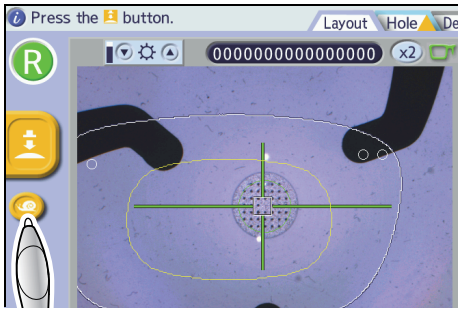
- It is possible to set the time that the blocking arm descends by the Lens Holding Time parameter.

"5.1 Setting Parameters" (page 195)

- Pressing  performs blocking at a slow speed.

The blocking arm remains idle at the lowest position.

Pressing OK in the "Complete blocking." message displayed on the screen returns the blocking arm to the original position.



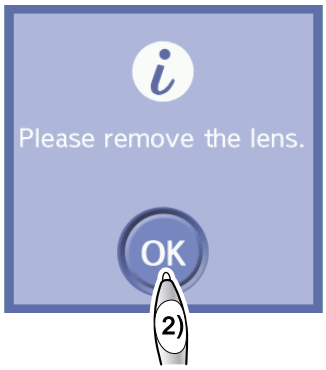
6 Remove the lens from the lens table.

Only in Auto mode, the message "Please remove the lens." is displayed. Remove the lens by the following procedure.

1) Remove the lens.

2) Press OK in the message.

The instruments measures the measurement criteria.



Note

- Measuring the measurement criteria when the message closes affects blocking accuracy. Be sure to remove the lens before pressing OK.

7 Store the blocked lens in a tray or such marked with the JOB code.

Identify the stored lens as right or left.

8 Block the other side lens in the same manner.

When the right and left lenses have been blocked, the screen automatically switches to the Layout screen.

9 When continuing blocking, change the JOB code and start from tracing.

○ Setting WD (width of the alignment scale)

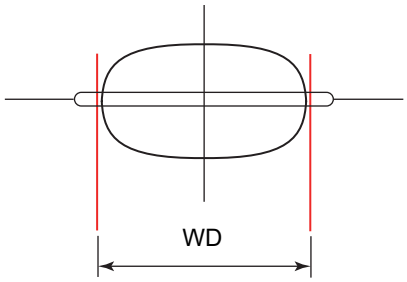
Press the WD numeric field to display the numeric keypad. Enter a value and press ↵ to confirm the entry.

The WD represents the distance between the vertical lines on the left and right.

Set the WD value depending on the space between the markings on the lens.

- Range: 15.0 to 45.0 mm
- Increments: 0.1 mm

Settings can be performed on the Layout screen as well.



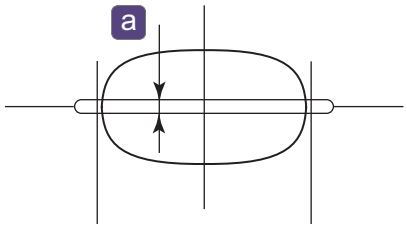
○ Setting the alignment scale

The height of the horizontally-long ellipse of alignment scale can be changed by the corresponding parameter.

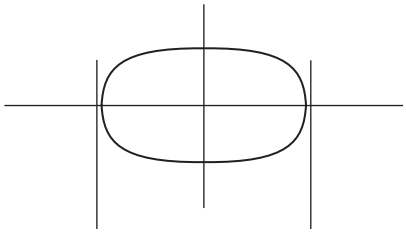
"5.1 Setting Parameters" (page 195)

Alignment scale (height):

Select the alignment scale height a from among 0 mm, 1.0 mm, and 2.0 mm.

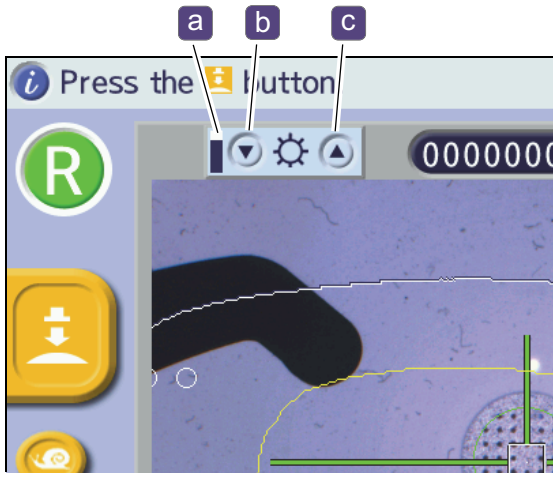


When 0 mm is selected, the alignment scale becomes straight line.



○ Adjusting the image brightness

If the markings are difficult to see because of the dark color lenses or partially shining part, adjust the image brightness with the Screen Brightness button.



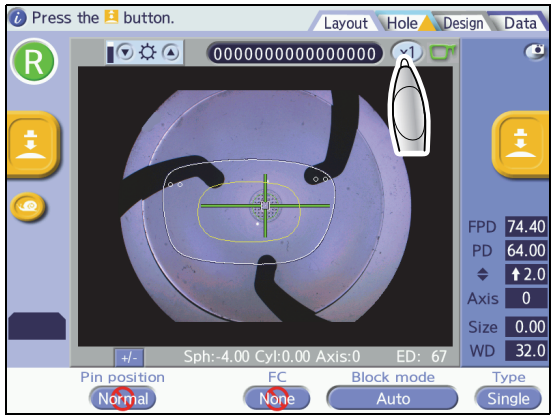
a	Bar graph that indicates the image brightness
b	Reduces the image brightness.
c	Increases the image brightness.

○ Changing the image display magnification

Pressing the magnification button toggles the camera image between x1 and x2.

x1: The image is displayed in actual size.

x2: The image is displayed in double size, which allows accurate lens position alignment.



3.8.3 Blocking multifocal lenses

For multifocal lens blocking, the following two types of block mode are available.

Block mode	Detection
Auto	Automatically detects the segment position and tilt.
Manual	No detection

If the segment is difficult to detect in Auto mode, block a lens in Manual mode.

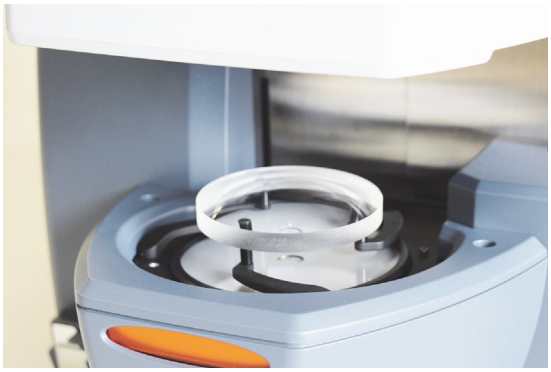
In Auto mode, move the lens so that the segment detected with the instrument aligns to the approximate center of the screen. When blocking is possible,  is displayed.

In Manual mode, precisely align the lens segment to the segment mark.

1 Place the lens on the lens table with the convex surface up.

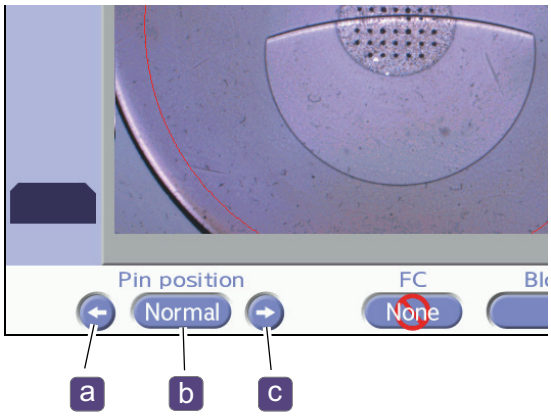
While checking the blocking screen, align the center of the lens to the approximate center of the lens table.

Make sure that the segment is closer to the front.



If the lens cannot be placed on the lens table pins, change the intervals between the pins with the Pin position button.

a	Precisely narrows the intervals.
b	Selects the intervals from among Wide, Normal, and Narrow.
c	Precisely widens the intervals.



Note

- As the lens outline and shape are displayed, whether or not the lens diameter is sufficient for the entered layout conditions can be determined.

  If the shape extends beyond the lens outline, replace the lens with a larger diameter lens.

  When the lens size is insufficient for processing for frame changing (if a part of the lens shape overlaps the lens outline), change the lens layout data so that the shape is moved inside the outline. However, the prescription may become altered.

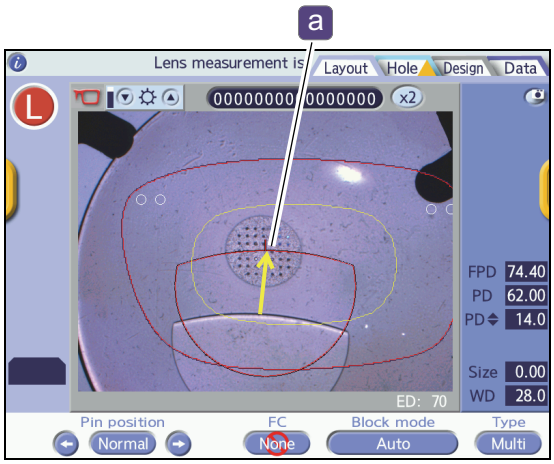
- If the cup holder mark (in red color) appears, move the lens to a position where the cup holder mark disappears.

2 Align the lens position.

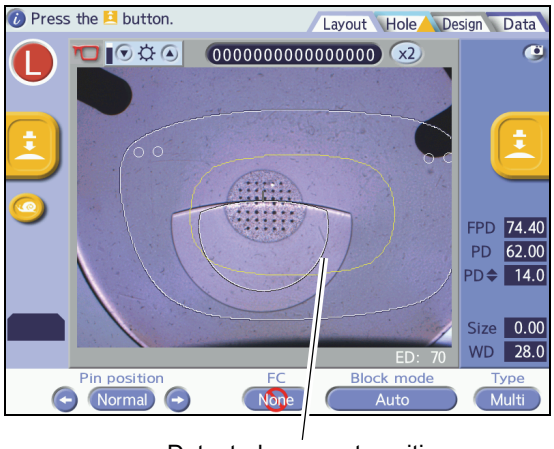
If the segment position is difficult to detect in Auto mode, activate Manual mode with the Block mode button and block the lens.

- For Auto mode

1) Move the lens to align the top line center of segment to the red segment mark a on the screen.



2) When the segment position is detected, the segment mark and lens shape are indicated in white, is displayed, and blocking becomes possible.

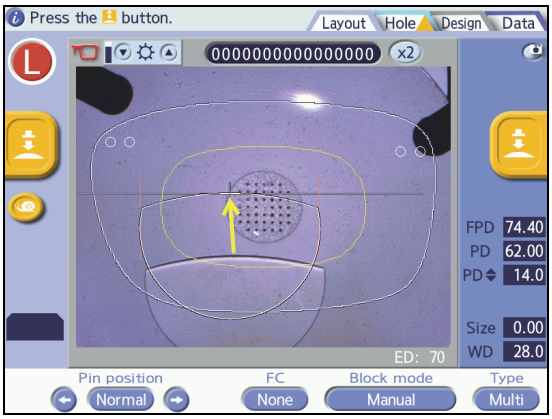


Detected segment position.

- For Manual mode

In Manual mode, the segment is not detected.

Align the top line center of lens segment to the segment mark on the screen.



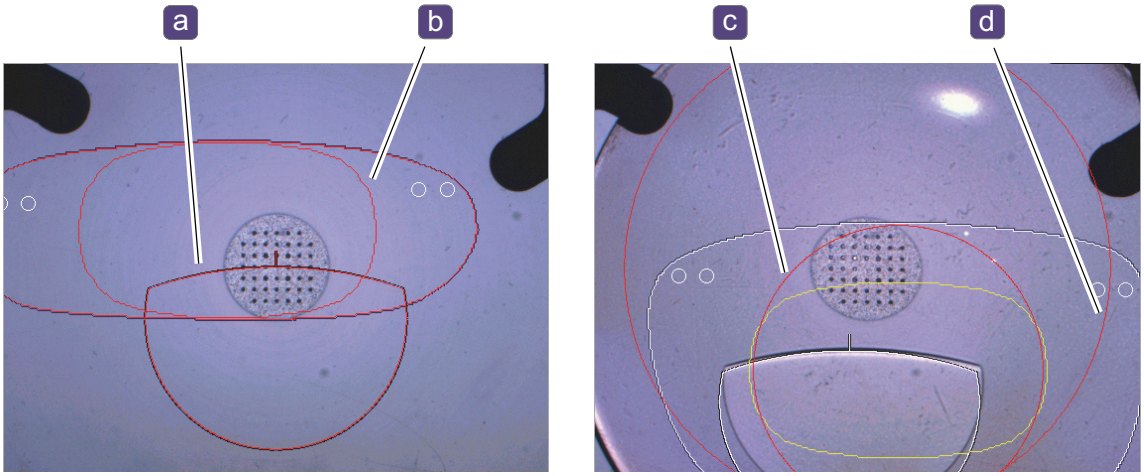
Change the segment size and shape as necessary.

"O Setting WD (width of the segment mark of the multifocal lens)" (page 133), "O Setting the segment mark shape" (page 133)

Change the brightness and magnification of the image as necessary.

"O Adjusting the image brightness" (page 128), "O Changing the image display magnification" (page 128)

If any mark is indicated in red, take a remedy according to the table below.

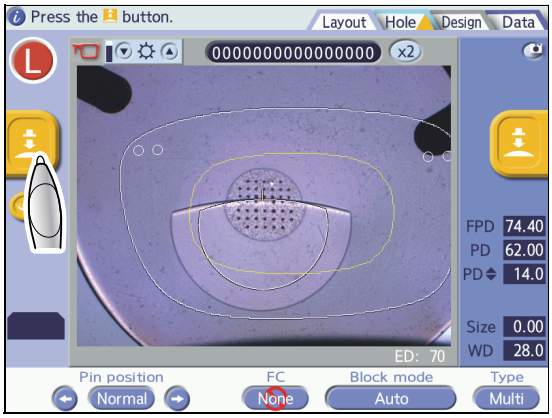


Red indication	State, remedy
Detection mark a	The segment is not detected. Move the lens so that the segment is properly detected.
Cup mark b	The cup mark contacts or extends beyond the lens shape.
Cup holder c, Available blocking area d	The cup holder mark contacts or extends beyond the available blocking area. Perform either of the following: change the intervals between the lens table pins or move the lens.

3 Block the lens.

1) Confirm that the pliable cup is set in the cup holder, then press  while holding the lens edges by hand.

   The  buttons are displayed on both sides of the screen. Either may be used.



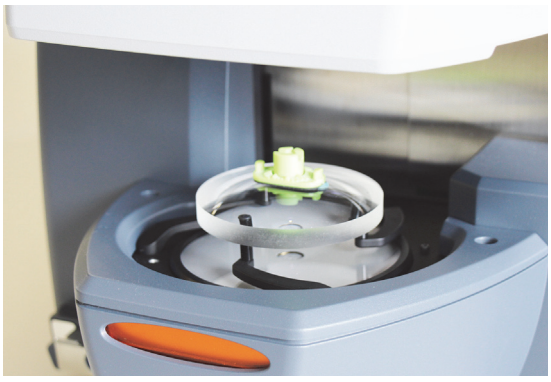
2) The blocking arm moves to the center of the instrument, then descends to block the lens.

   Be careful not to get fingers caught between the lens cup and lens.

3) The blocking arm returns to the original position.

   After one lens has been blocked, the lens indication, R or L, automatically switches.

   The processing conditions and layout data are saved when the lens is blocked.



Note

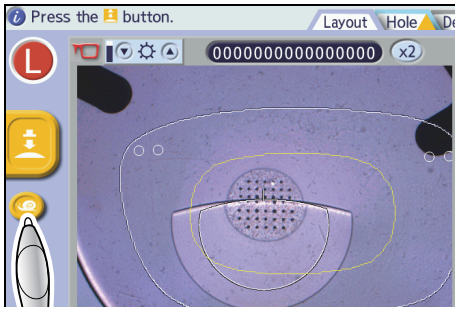
- It is possible to set the time that the blocking arm descends by the Lens Holding Time parameter.

  "5.1 Setting Parameters" (page 195)

- Pressing  performs blocking at a slow speed.

  The blocking arm remains idle at the lowest position.

  Pressing  in the "Complete blocking." message displayed on the screen returns the blocking arm to the original position.



4 Remove the lens from the lens table.

5 Store the blocked lens in a tray or such marked with the JOB code.

Identify the stored lens as right or left.

6 Block the other side lens in the same manner.

When the right and left lenses have been blocked, the screen automatically switches to the Layout screen.

7 When continuing blocking, change the JOB code and start from tracing.

○ Setting WD (width of the segment mark of the multifocal lens)

Press the WD numeric field to display the numeric keypad. Enter a value and press ↵ to confirm the entry.

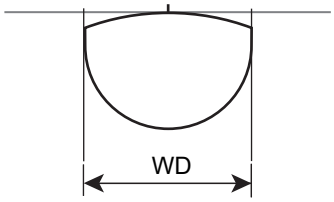
The WD represents the distance between the vertical lines on the left and right.

For easy alignment, set the width according to the segment size.

- Range: 15.0 to 45.0 mm
- Increments: 0.1 mm

Settings can be performed on the Layout screen as well.

Example of segment curve top

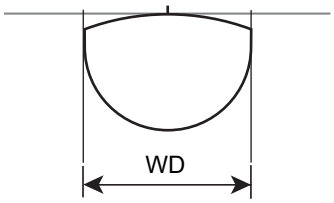


○ Setting the segment mark shape

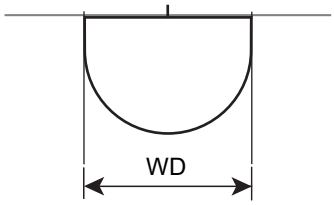
The segment shape can be selected between curve top and flat top by the Segment type parameter.

"5.1 Setting Parameters" (page 195)

Example of segment curve top



Example of segment flat top



3.8.4 Blocking progressive lenses

For progressive lens blocking, the following four types of block mode are available.

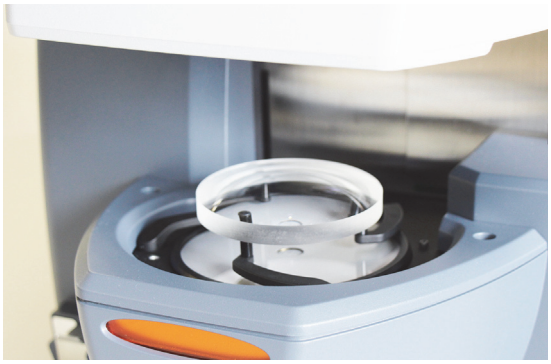
Block mode	Detection
Print mark	Detects the distance eyepoint indication and horizontal reference lines from the print marks on the lens automatically, and blocks the lens according to the distance portion center and tilt. The distance portion center marks that can be automatically detected are limited to "+" and "⊥".
Print mark (angle)	Detects the lens horizontal reference lines to correct the lens tilt. The distance eyepoint is not detected, therefore, manually align the lens position according to the distance eyepoint indication.
Point mark	Detects the hidden markings of the lens and automatically blocks the lens.
Manual	No detection

If the print mark is difficult to detect in Print mark mode, block the lens in Print mark (angle) mode, Point mark mode, or Manual mode.

In Print mark mode, move the lens so that the distance eyepoint detected with the instrument aligns to the approximate center of the screen. When blocking is possible,  is displayed.

In Manual mode, precisely align the markings on the lens to the alignment scale.

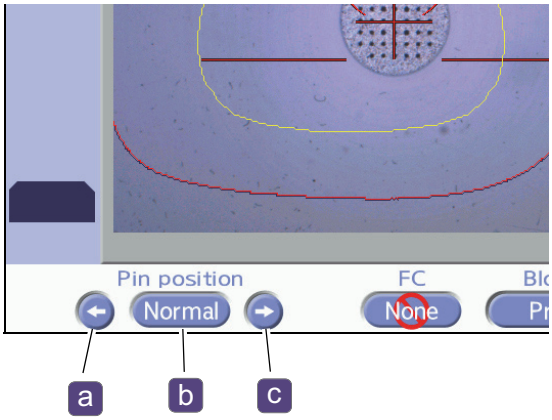
1 Place the lens on the lens table with the convex surface up.



While checking the blocking screen, align the center of the lens to the approximate center of the lens table.

Place the lens so that the horizontal reference lines or hidden markings are almost horizontal.

If the lens cannot be placed on the lens table pins, change the intervals between the pins with the Pin position button.



a	Precisely narrows the intervals.
b	Selects the intervals from among Wide, Normal, and Narrow.
c	Precisely widens the intervals.

Note

- As the lens outline and shape are displayed, whether or not the lens diameter is sufficient for the entered layout conditions can be determined.

  If the shape extends beyond the lens outline, replace the lens with a larger diameter lens.

  When the lens size is insufficient for processing for frame changing (if a part of the lens shape overlaps the lens outline), change the lens layout data so that the shape is moved inside the outline. However, the prescription may become altered.

- Print marks may not be detected depending on the progressive lens.

  In such a case, block the lens in Point mark mode or Manual mode.

- Only when the lens optical center is positioned outside the area where blocking is possible, the red cup holder mark appears. In such a case, move the lens to a position where the cup holder mark disappears.

2 Align the lens position.

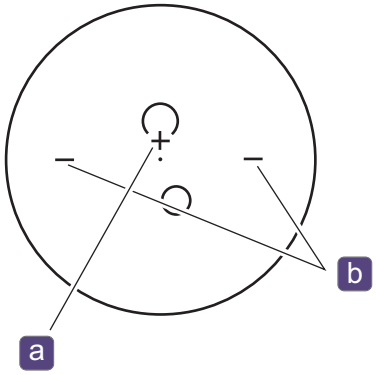
If the optical center is difficult to detect in Print mark mode, activate Print mark (marking) mode, Point mark mode, or Manual mode with the Block mode button and block the lens.

- For Print mark mode

The distance eyepoint a and horizontal reference lines b are detected from the print marks on the lens.

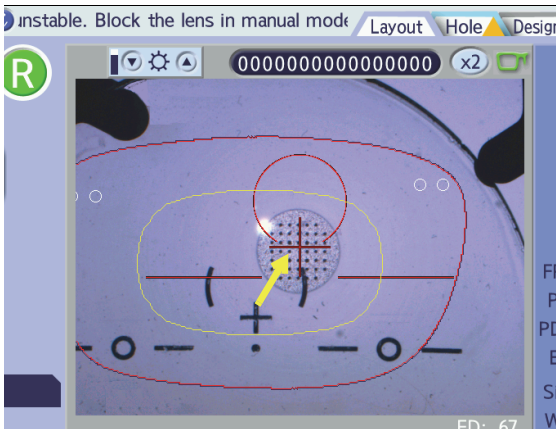
Erase the print marks other than the distance eyepoint indication and horizontal reference lines in advance.

The detected distance eyepoint and horizontal reference lines are indicated in white.



1) Move the lens to align the distance eyepoint to the approximate center of the screen. The print marks may tilt.
2) When the print marks are detected, the distance eyepoint and horizontal reference lines are indicated in white and overlaid on the lens image.

   When the print marks are not detected, these are indicated in red.
3) When blocking is possible,  is displayed.

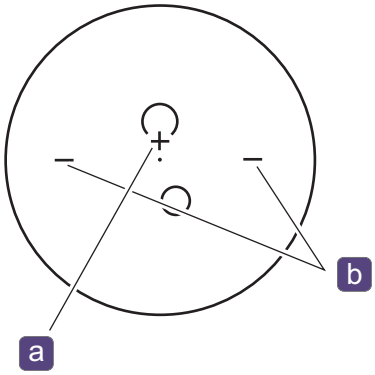


- For Print mark (angle) mode

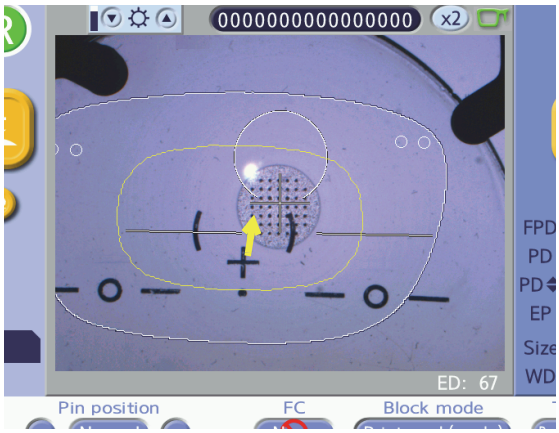
Only the horizontal reference lines are detected from the print marks on the lens.

Erase the print marks other than the distance eyepoint a and horizontal reference lines b in advance.

The detected horizontal reference lines are indicated in white.



1) Move the lens to align the distance eyepoint to the approximate center of the screen.
2) Precisely align the distance eyepoint to the white cross on the screen. The print marks may tilt.
3) When the horizontal reference lines are detected, is displayed.



Note

- In Print mark (angle) mode, is displayed when the horizontal reference lines are detected even if the distance eyepoint position is not aligned. Precisely and manually align the distance eyepoint position.

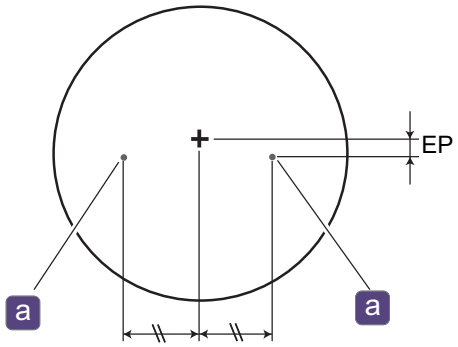
- For Point mark mode

When the print marks cannot be detected, markings are made on the hidden markings, and blocking is performed in Point mark mode.

In Point mark mode, blocking is performed using the line connecting the two markings a as the horizontal reference line and the point separated by the EP value directly above its center to determine the distance eyepoint.

"O Setting the height from horizontal reference line to distance eyepoint" (page 140)

Erase the print marks on the lens in advance.

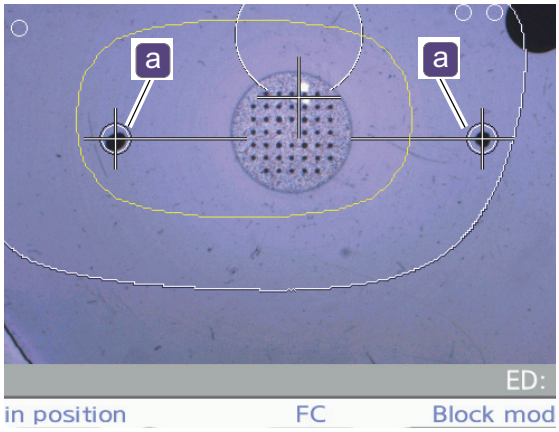


1) Make markings on the hidden markings.

2) Move the lens to align the markings to the approximate center of the screen. The markings may tilt.

3) When the markings are detected, the marking indications a are displayed. Confirm that the marking indications are aligned with the markings on the lens.

   If the marking indication is displayed on any spot that is not a marking, check the lens for any dirt and restart from Step 1).



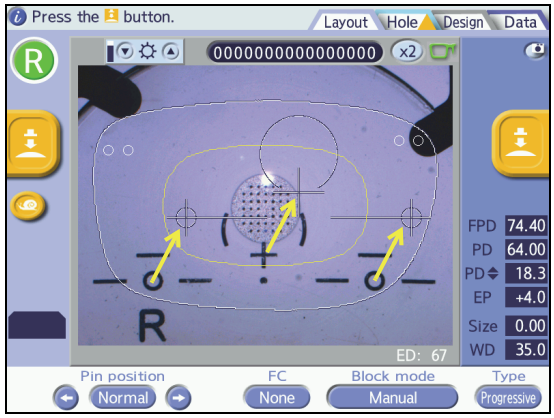
4) When blocking is possible, is displayed.

- For Manual mode

In Manual mode, the distance eyepoint or horizontal reference lines are not detected. Align the distance eyepoint and horizontal reference lines of the lens to the alignment scale on the screen.

1) Align the distance eyepoint of the lens to the center of the alignment scale.

2) Align the horizontal reference lines of the lens to those of the alignment scale.



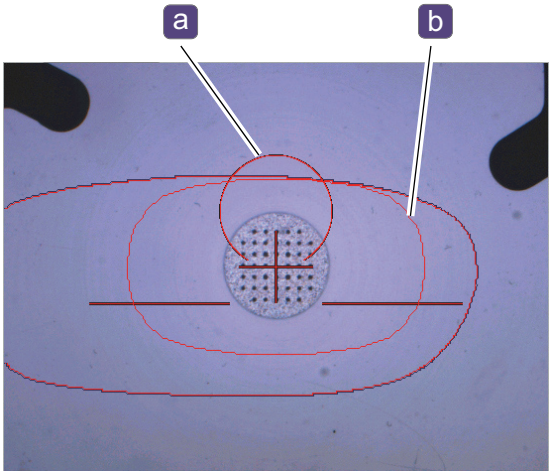
Change the alignment scale size as necessary.

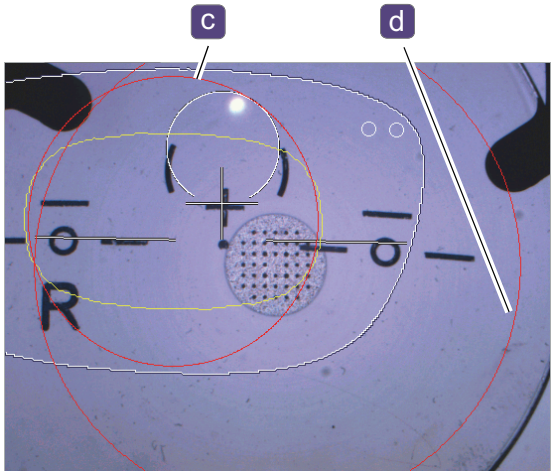
"O Setting WD (width of the alignment scale)" (page 140), *"O Setting the height from horizontal reference line to distance eyepoint" (page 140)*

Change the brightness and magnification of the image as necessary.

"O Adjusting the image brightness" (page 128), *"O Changing the image display magnification" (page 128)*

If any mark is indicated in red, take a remedy according to the table below.



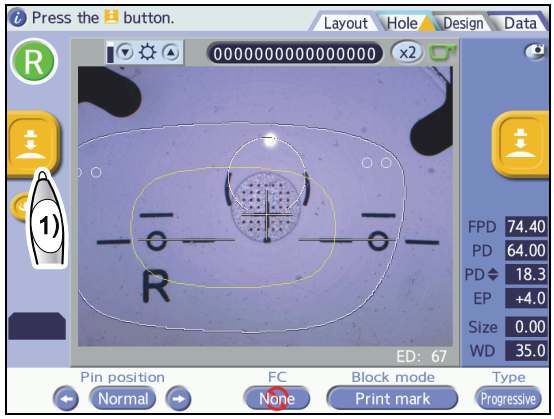


Red indication	State, remedy
Alignment scale a	Print marks or markings are not detected. Move the lens so that they are properly detected.
Cup mark b	The cup mark contacts or extends beyond the lens shape. Switch layout mode to Passive.
Cup holder c, Available blocking area d	The cup holder mark contacts or extends beyond the available blocking area. Perform any of the following: change the intervals between the lens table pins, switch between Active and Passive, or move the lens.

3 Block the lens.

1) Confirm that the pliable cup is set in the cup holder, then press while holding the lens edges by hand.

   The buttons are displayed on both sides of the screen. Either may be used.



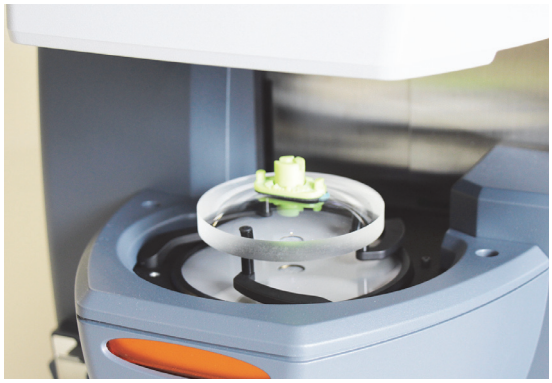
2) The blocking arm moves to the center of the instrument, then descends to block the lens.

   Be careful not to get fingers caught between the lens cup and lens.

3) The blocking arm returns to the original position.

   After one lens has been blocked, the lens indication, R or L, automatically switches.

   The processing conditions and layout data are saved when the lens is blocked.



Note

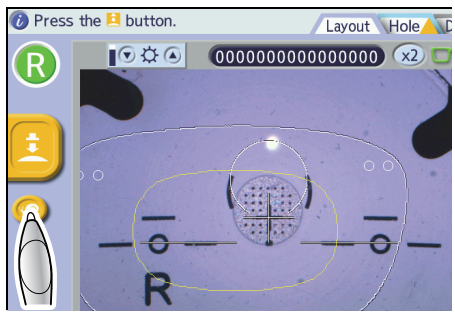
- It is possible to set the time that the blocking arm descends by the Lens Holding Time parameter.

  "5.1 Setting Parameters" (page 195)

- Pressing performs blocking at a slow speed.

  The blocking arm remains idle at the lowest position.

  Pressing OK in the "Complete blocking." message displayed on the screen returns the blocking arm to the original position.



4 Remove the lens from the lens table.

5 Store the blocked lens in a tray or such marked with the JOB code.

Identify the stored lens as right or left.

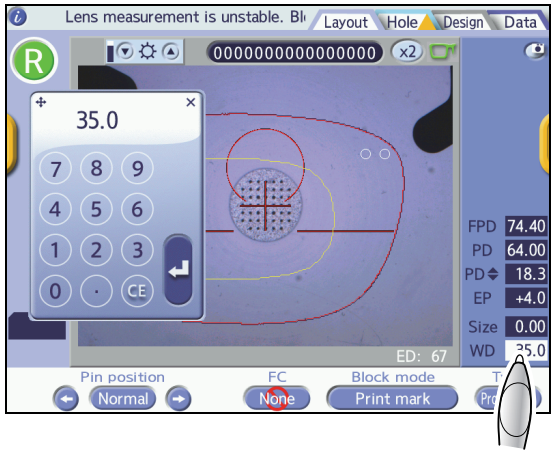
6 Block the other side lens in the same manner.

When the right and left lenses have been blocked, the screen automatically switches to the Layout screen.

7 When continuing blocking, change the JOB code and start from tracing.

○ Setting WD (width of the alignment scale)

Press the WD numeric field to display the numeric keypad. Enter a value and press ↵ to confirm the entry.

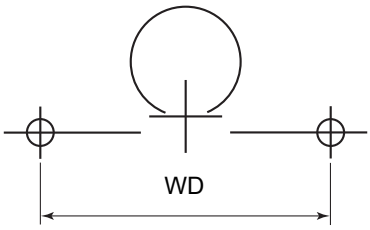


The WD represents the distance between the vertical lines on the left and right.

When there are circles on both the horizontal reference lines printed on the lens, set the WD value depending on the distance between the circles.

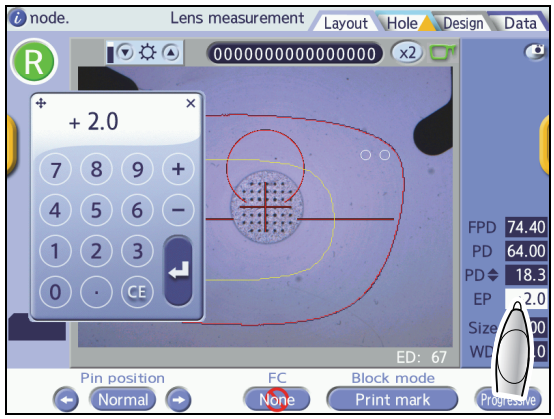
- Range: 15.0 to 45.0 mm
- Increments: 0.1 mm

Settings can be performed on the Layout screen as well.



○ Setting the height from horizontal reference line to distance eyepoint

Press the EP numeric field to display the numeric keypad. Enter a value and press ↵ to confirm the entry.

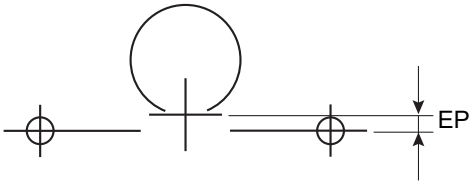


Enter the height from the horizontal reference line to the distance eyepoint (EP).

Set the EP value depending on the height from the horizontal reference line to the distance eyepoint printed on the lens.

- Range: -6.0 to +6.0 mm
- Increments: 0.1 mm

Settings can be performed on the Layout screen as well.



3.8.5 Blocking demo lenses (using frame change holder)

This section describes the procedure for when blocking demo lenses to perform demo lens tracing.

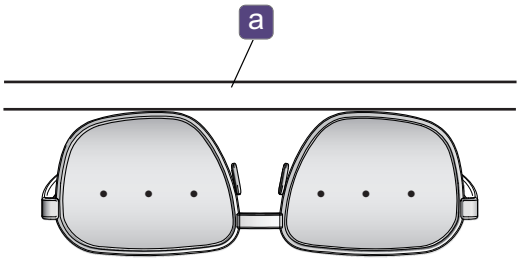
When blocking demo lenses, it is unnecessary to load lens shapes, enter processing conditions and layout data.

Note

- If a demo lens is too small to be held with the three lens clamp pins of the blocking arm, remove the lens clamp from the blocking arm.
- When a demo lens is large enough to be held with the three lens clamp pins of the blocking arm, the lens clamp is not removed. Therefore, it is unnecessary to perform Steps 3 and 4.

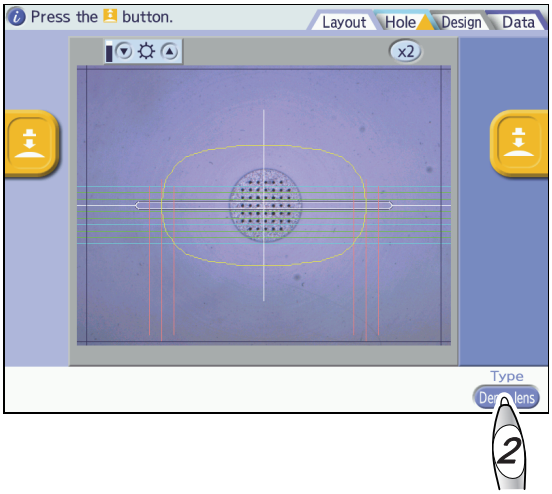
1 Mark the approximate center of the demo lens with a lensmeter.

Make sure that the demo lenses are mounted in the frames and the frames are in contact with the lens table a.

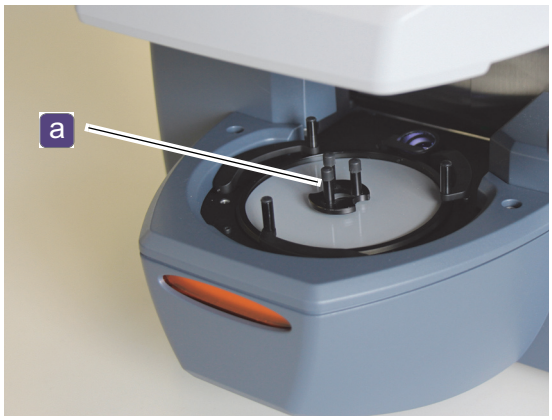


2 Select Demo lens for the lens type on the Layout screen or Blocking screen.

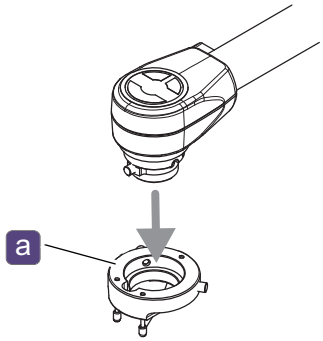
The lens table pins open.



3 Place the frame change holder a on the center of the lens table.

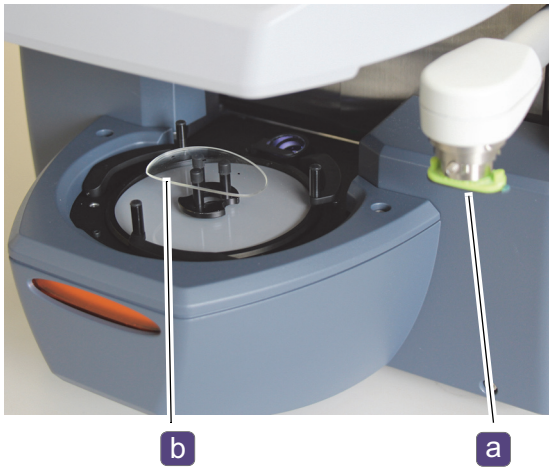


4 Remove the lens clamp a from the blocking arm.



5 Set the lens cup a to the cup holder.

6 Place the demo lens b on the frame change holder with the convex surface up.



7 Align the lens position.

Align the middle marking to the center of the alignment scale.

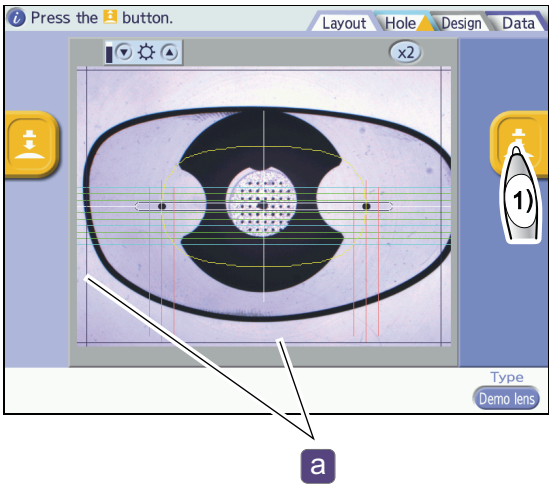
Make sure that the markings are level.

Drag the horizontal or vertical line a with the touch pen to align it to the shape outline of the demo lens.

8 Block the lens.

1) While holding the lens edges by hand, press  to block the lens.

Hold the lens by hand to prevent lens shift during blocking. Use the left hand so as not to come into contact with the blocking arm.



2) The blocking arm moves to the center of the instrument, then descends to block the lens.

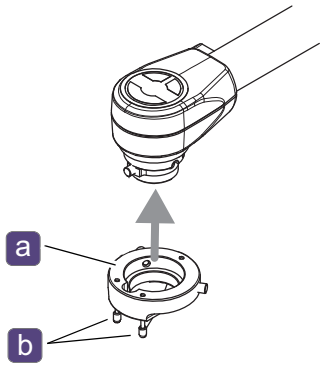
Be careful not to get fingers caught between the lens cup and lens.

3) When the “Complete blocking” message is displayed on the screen, press OK to remove the lens.

9 Remove the frame change holder.

10 Attach the lens clamp a removed in Step 4 to the blocking arm.

With the two-pin side b facing forward, push the lens clamp up until a click sounds.



3.8.6 Blocking lenses using frame change holder

Only the procedure different from when blocking blank lenses is explained.

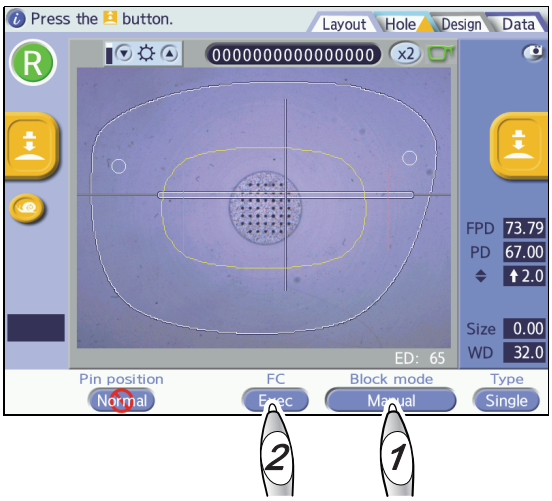
On the Blocking screen, select Manual mode, set FC to Exec, and block the lens using the frame change holder.

1 Set block mode to Manual on the blocking screen.

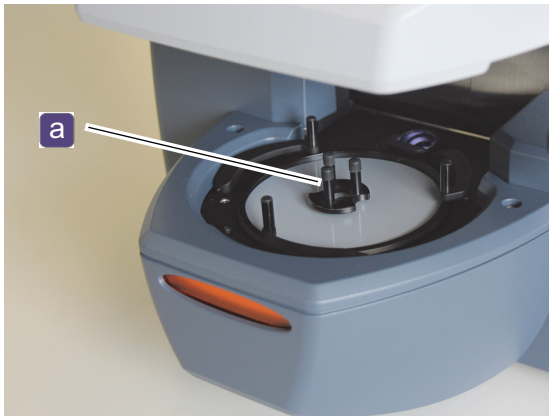
The alignment scale shape differs depending on the lens type. (Single is selected in the figure to the right.)

2 Press the FC button to set it to Exec.

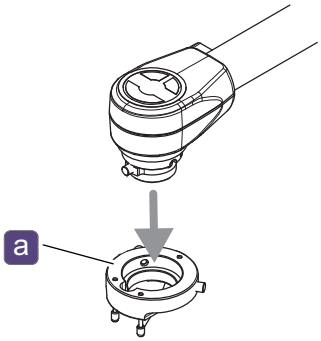
The lens table pins open.



3 Place the frame change holder a on the center of the lens table.



4 Remove the lens clamp a from the blocking arm.



5 Place the lens on the frame change holder with the convex surface up.

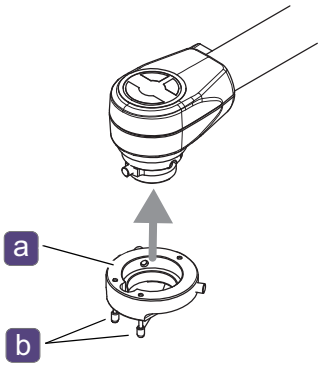
6 Align the lens position and block the lens.

“3.8.2 Blocking single vision lenses” (page 122)
“3.8.3 Blocking multifocal lenses” (page 129)
“3.8.4 Blocking progressive lenses” (page 134)

7 Remove the frame change holder.

8 Attach the lens clamp a removed in Step 4 to the blocking arm.

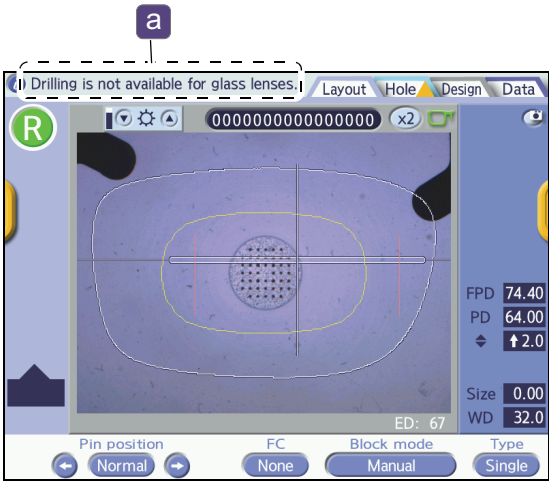
With the two-pin side b facing forward, push the lens clamp up until a click sounds.



3.8.7 Messages displayed during blocking or after blocking

If any error is detected during blocking or when data is saved after blocking, the error message is displayed in the information bar a. (Some messages are displayed in message boxes.)

Take a remedy according to the table below.



- Messages during blocking

Message	Remedy
The cup is out of the frame. Continue?	• When not continuing, press No. Use a small diameter lens cup or toggle between Active and Passive.
Enter Rx data.	• Confirm the unconfirmed layout information (highlighted in yellow).
Lens measurement is unstable. Block the lens in manual mode.	• Accurate measurement is not possible in Auto mode. Use Point mark mode or Manual mode.
Do not include “-” in JOB No.	• The JOB code includes “-”. Change the JOB code.
Load shape data.	• The right and left lenses are already blocked. Load new shape data.
Drilling is not available for glass lenses.	• Change the lens material or delete the drilling data.

- Messages after blocking

Message	Remedy
Insert USB flash drive.	• The USB flash drive is not inserted. Turn off power, insert the USB flash drive, and block the lens again.
USB flash drive is full.	• The free space on the USB flash drive is insufficient. Free up space by deleting unnecessary data or backing up data, then block the lens again.
The number of data is full (1000).	• The number of data items in the folder reaches the limit (1000). Reduce the number of data items by deleting unnecessary data or backing up data, then block the lens again.
The number of brands is full (500).	• The number of brand folders reaches the limit (500). Reduce the number of folders by deleting or backing up data, then block the lens again.

3.9 Drilling Settings

■ This section describes the procedure for drilling settings in the ICE-1500.

Lens outline and hole position can be loaded using a demo lens.

Note

- The setting is possible only when the ICE-1500 is connected to an edger (ME-1500, LEX-1200/Lex Drill system, SE-9090 Supra/AHM-1000 system, SE-1) equipped with the drilling function.
- The drilling process can be set in all frame types (Metal, Plastic, Optyl, Two Point, and Nylor).
- When Glass is selected for the lens material, the drilling process cannot be set.
- When layout mode is set to Active, blocking cannot be performed if drilling data exists. Switch to Passive or delete the drilling data.

3.9.1 Setting entry on Hole Editor screen

For added holes, various settings other than position can be added.

On the Hole Editor screen, holes can be added to or deleted from the displayed lens shape.

Note

- When in Edit mode (magnified by 1.5 times), the captured lens hole and drawn hole may be slightly misaligned depending on the hole position.

  Confirm the correct hole position by switching to Adjust mode (magnified display).

- After adding one or more holes, be careful not to move the lens except for just after loading and confirming the shape on the Shape Imager screen.

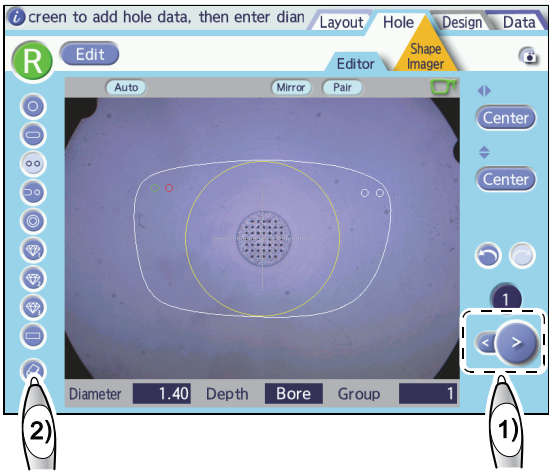
○ Hole addition

1) Select the hole type with the hole add button.
2) Specify the hole position with the touch pen.

   Holes can be specified to a combined maximum of 64 positions for the left and right lenses.

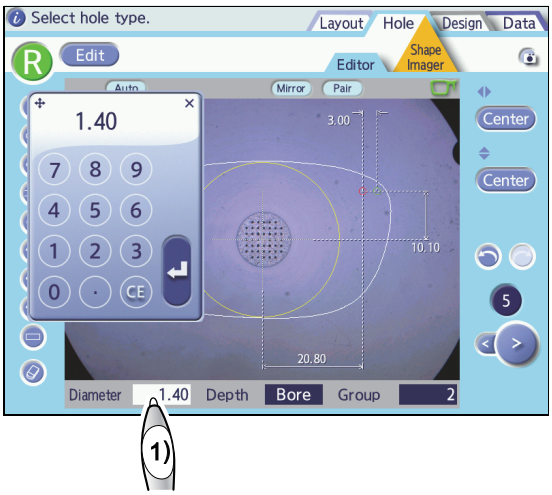
O Hole deletion

1) Press the hole No. display button to select the hole to be deleted.
   The currently selected hole is displayed in red.
2) Press  .



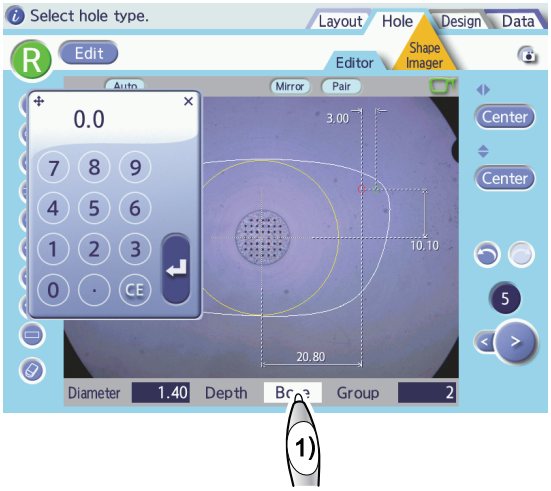
O Hole diameter change

1) Press the hole diameter numeric field.
2) Enter a value with the displayed numeric keypad and press  to confirm it.



O Hole depth change

1) Press the hole depth numeric field.
2) Enter a value with the displayed numeric keypad and press  to confirm it.
   For a through hole, enter 0.0.



○ Hole position coordinate display

Press the Hole position coordinate button on the Hole Editor screen.

There are six types of coordinate display methods according to the selection of the horizontal and vertical reference positions. The method can be selected for each hole.

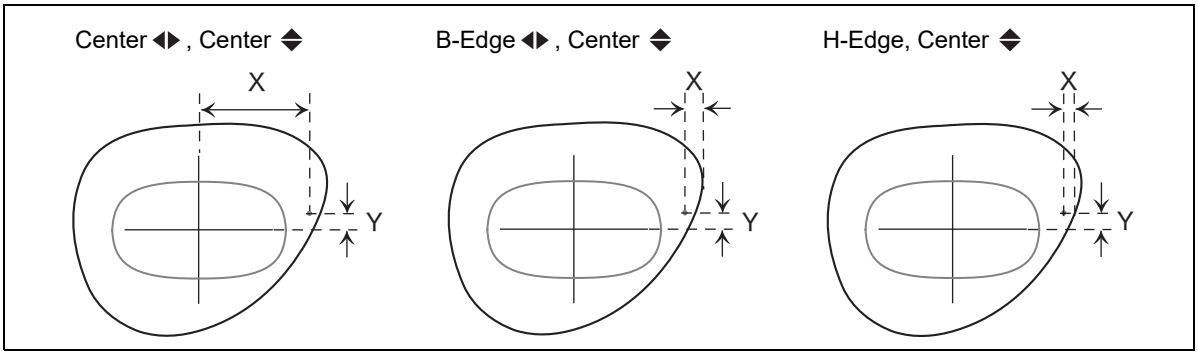
Horizontal reference position

Center ◆▶	The frame center is regarded as the reference position.
B-Edge ◆▶	The temporal end or nasal end of the lens shape is regarded as the reference position.
H-Edge	The temporal edge or nasal edge that is right beside the hole is regarded as the reference position.

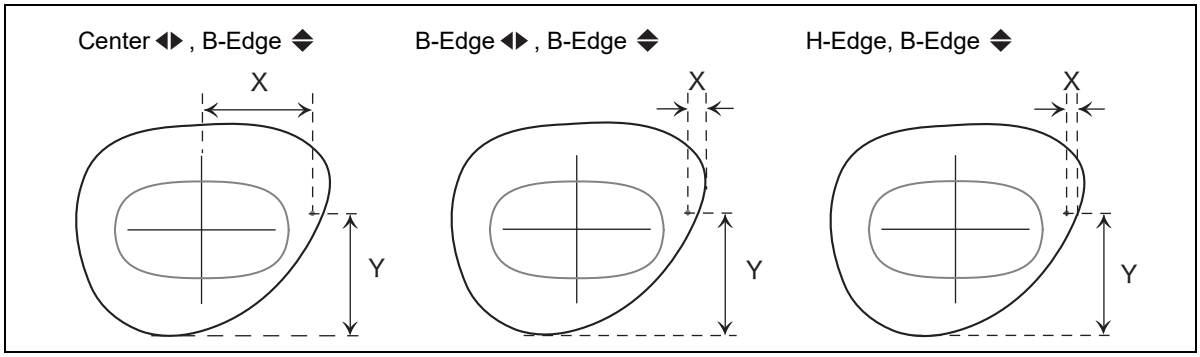
Vertical reference position

Center ▲▼	The frame center is regarded as the reference position.
B-Edge ▲▼	The lowest point on the lens shape is regarded as the reference position.

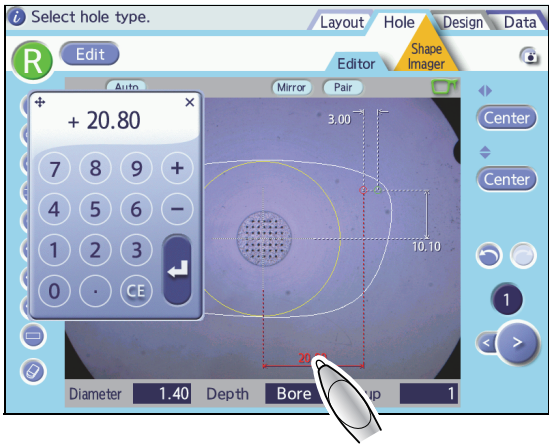
When the vertical reference position is set to Center ▲▼



When the vertical reference position is set to B-Edge ▲▼



○ Hole position change



There are two methods to change a hole position as follows:

a. Enter hole position coordinates.
b. Specify the hole position with the touch pen.

- When entering hole position coordinates

1) Press the hole position coordinate value to be changed.

2) Enter a value with the displayed numeric key-pad and press ↵ to confirm it.

- When specifying the hole position with the touch pen.

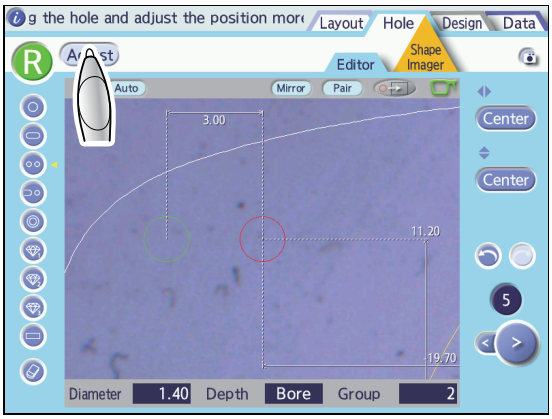
1) Make sure that any hole add button is not pressed.

2) Pressing the desired position on the lens shape move the selected hole there.

Note

• Hole positions cannot be specified inside the yellow circle (hole setting invalid range).

When Edit is pressed to enter Adjust mode, the selected hole area is enlarged. Place a demo lens on the lens shape display and align the hole position with the display enlarged.



○ Hole angle

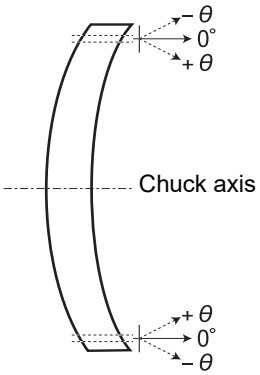
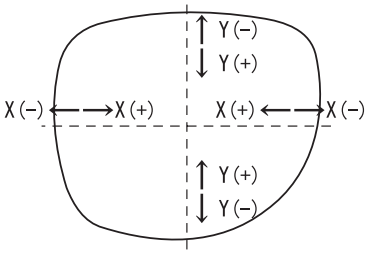
1) Set the angle with the hole angle button.

Each press of the button toggles the settings.

- Auto
- Angle
- X-Y
- X Auto
- Curve

For paired, notched, or counterbored holes, only Auto, Angle, or Curve is selectable.

2) For the settings other than Auto, a numeric field is displayed to the right of the hole angle button. Specify the angle with the numeric keypad displayed by pressing the numeric field.

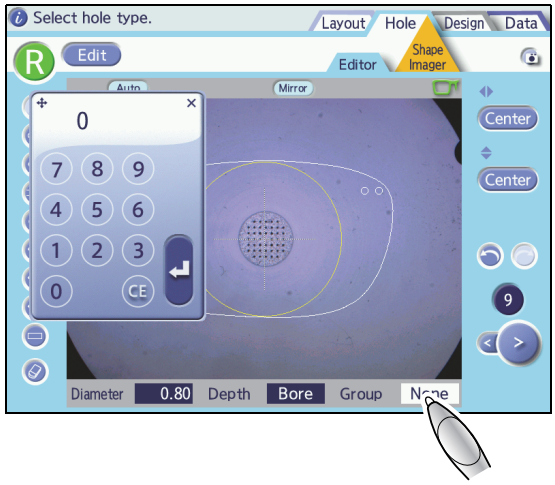
Auto	Make a hole vertically against the lens front side of the hole position.
Angle 0.0	Specify the tilt of the axis direction. With 0°, it becomes parallel to the chuck axis. Entering a positive value tilts in the direction of the chuck axis. 
X-Y X:0.0 Y:0.0	Specify the X axis (horizontal) direction and Y axis (vertical) direction tilt. In the Y axis (vertical) direction, with 0°, it becomes parallel to the chuck shaft. Entering a positive value tilts the hole upward and downward in the direction of the chuck axis. In the X axis (vertical) direction, with 0°, it becomes parallel to the chuck shaft. Entering a positive value tilts the hole right and left in the direction of the chuck axis. 
X Auto Auto Y:0.0	Specify the tilt of the Y axis (vertical) direction. In the X axis (horizontal) direction, the hole is vertical against the lens front. In the Y axis (vertical) direction, with 0°, it becomes parallel to the chuck axis. Entering a positive value tilts the hole upward and downward in the direction of the chuck axis.
Curve 0.0	Make a hole vertically according to the entered curve value.

○ Group

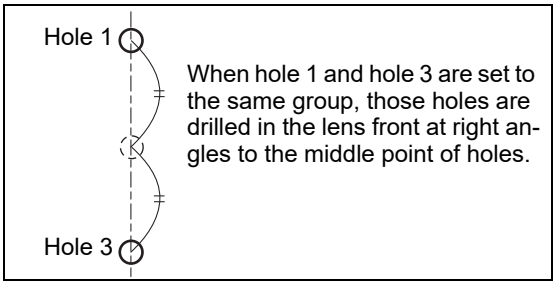
Specify the group number to drill multiple parallel holes.

1) Press the Group numeric field.
2) Enter a value with the displayed numeric keypad and press ↵ to confirm it.

The holes with the same group number are drilled parallel.



With the hole angle button set to Auto, those holes are drilled in the lens front at right angles to the middle point of the same group of holes.



Note

- None in the Group numeric field indicates that the hole is not set by group.
- Up to two holes can be specified in the same group number.
  The paired, notched, and counterbored holes are automatically set as a group.

○ Mirror function

When drilling symmetric positions in the right and left lenses, enable the mirror function.

Pressing Mirror turns on or off the mirror function for each hole.

When the function is enabled (the button is light blue), holes are automatically specified in mirrored positions on the other shape.

Note

- If the holes entered with the mirror function enabled are deleted or moved, it is applied to the other shape.

O Hole specification

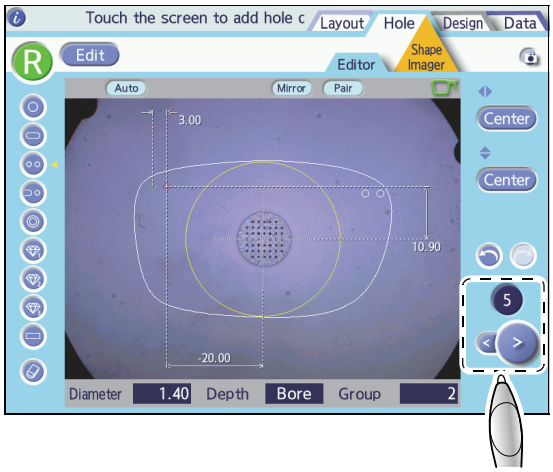
Specify the hole to be edited with the hole No. display button.

Press the hole No. display button to select the desired hole.

The selected hole turns red, hole coordinates are displayed, and the hole becomes editable. The hole No. is displayed above the button.

: Previous hole No.

: Next hole No.



Note

- Pressing the hole center with the touch pen with no hole add button pressed can also specify the hole.

  If any position other than the hole center is pressed, the currently selected hole moves there. Pay attention.

O Hole type change

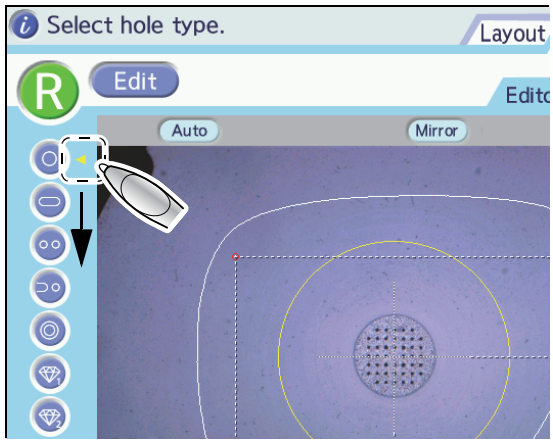
Dragging the hole type indication ◀ allows the hole type to be changed from among Simple hole, Slotted hole, Jewel hole 1, Jewel hole 2, Jewel hole 3, and Rectangular hole.

1) Select the hole for which the hole type is to be changed.

   "O Hole specification" (page 152)

2) Drag the hole type indication ◀ to the right of the desired hole type button.

   The type of the selected hole is changed.



Note

- Not all hole types can be changed into other hole types. The changeable hole types are Simple hole, Slotted hole, Jewel hole 1, Jewel hole 2, Jewel hole 3, and Rectangular hole. Hole types other than these cannot be changed at all.

- Hole type and available settings of position and size

Hole add buttons	Setting and positioning of hole	Setting of hole size	
 Simple hole	Standard circular hole. Specify the hole center position.	Diameter	Hole diameter
		Depth	Hole depth
 Slotted hole	Rounded slotted hole. Specify the start and end points of the hole.	Diameter	Slotted hole width
		Depth	Slotted hole depth
 Paired hole	Combination of two horizontal simple holes. Specify the center of the inside hole (nearer to the frame center) and the distance between the paired holes.	Diameter	Hole diameter
		Depth	Hole depth
 Notched hole	Combination of a simple hole and notch. Specify the vertical position of the simple hole and the distance between the hole and notch.	Diameter	Hole diameter, notch width
		Depth	Depth of the hole and notch
 Counter-bored hole	Counterbored hole. Specify the diameter and depth separately for the hole and counterbore. Specify the hole center position.	Diameter	Diameter of the hole and counterbore
		Depth	Depth of the hole and counterbore
 Jewel hole 1	Hole 1 for embedding a jewel. Specify the hole center position.	Diameter	-
		Depth	-
 Jewel hole 2	Hole 2 for embedding a jewel. Specify the hole center position.	Diameter	-
		Depth	-
 Jewel hole 3	Hole 3 for embedding a jewel. Specify the hole center position.	Diameter	-
		Depth	-
 Rectangular hole	Square-cornered slotted hole. Specify the start and end points of the hole.	Diameter	Rectangular hole width
		Depth	Rectangular hole depth

Note

- Each hole shape of Jewel hole 1 to Jewel hole 3 depends on the connected lens edger settings.
- Paired, notched, and counterbored holes are in pairs. Select each hole with the hole No. display button to specify the hole position and size.

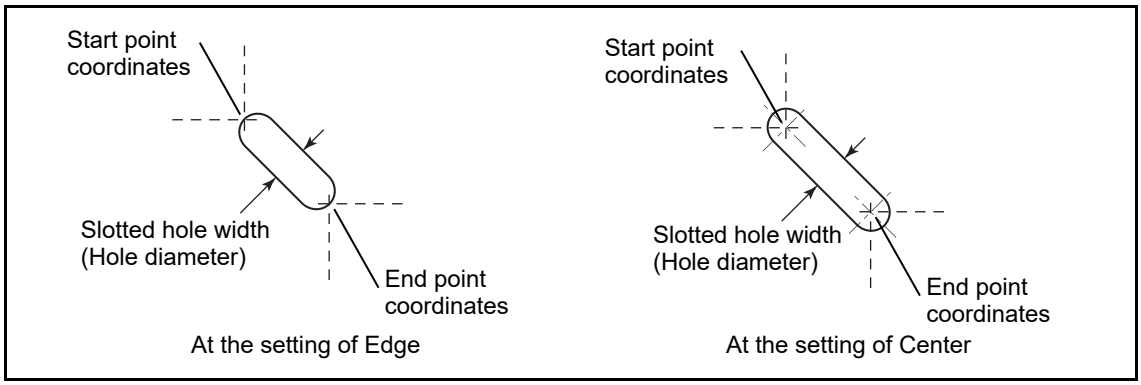
- Hole type selection and hole position specification

Which point of the hole is indicated with each hole position coordinates is explained below.

- Simple hole, Counterbored hole, Jewel hole 1 to Jewel hole 3

  Specify the hole center position.

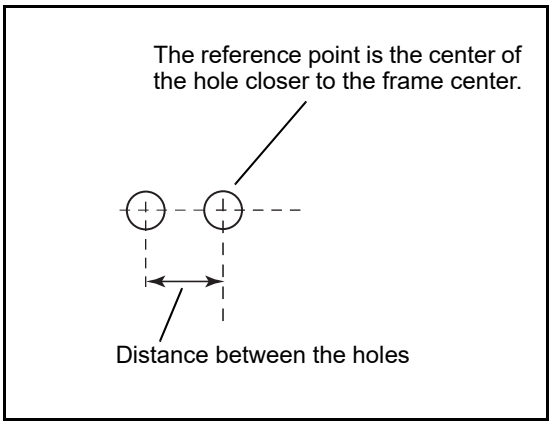
- Slotted hole



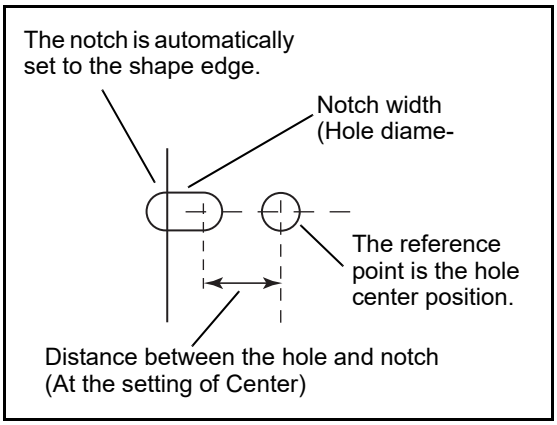
The coordinate specification method of the start and end points is selectable between Center and Edge by the Slot coordinate mode parameter.

- Paired hole, Notched hole

Paired hole



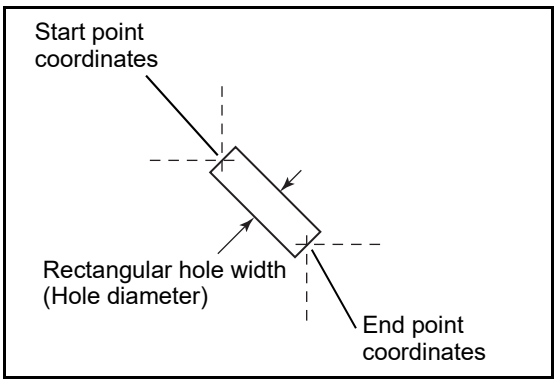
Notched hole



For paired or notched holes, setting the hole diameter and depth when the reference hole is selected (displayed in red) applies the settings to the paired hole (or notch). Change the paired hole (or notch) settings by selecting it (displayed in red) with the hole number.

The coordinate specification method of notched holes is selectable between Center and Edge by the Slot coordinate mode parameter.

- Rectangular hole



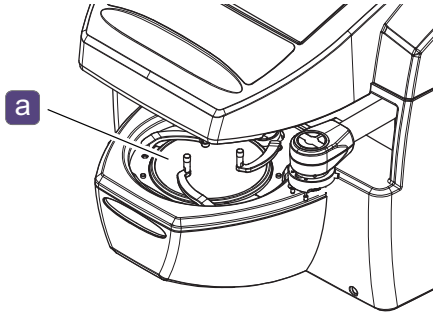
3.10 Loading Hole Position using Demo Lens

■ This section describes the procedure to load lens shapes or hole positions using a demo lens or pattern.

3.10.1 Preparing the demo lens

Mark a demo lens with a lensmeter to indicate its horizontal reference line.

1 Clean the surface and edge of the demo lens, shape measurement table, and reflection protective plate a with a dry soft cloth.



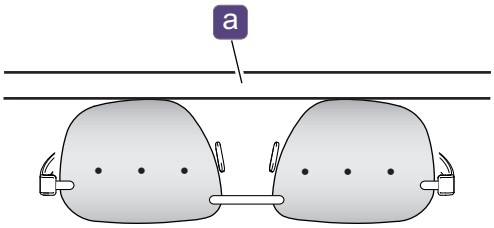
Note

- If there is any dust on the demo lens, shape measurement table, or surface and edge of reflection protective plate, the lens shape may not be detected correctly.

2 Mark the demo lens horizontally.

At this time, the frame must be in contact with the lens table a of the lensmeter while the demo lens is mounted in the frame.

Mark the lens so that the middle point is at the center of the demo lens.



3 Remove the bridge and temples.

4 For a demo lens without flare in edge, it is recommended to perform safety beveling of about 0.5 mm width to the front side.

If safety beveling is not performed, the edge may not be reflected clearly and the shape may not be detected correctly. It may result in unevenness on the processed lens edge.

If polish beveling is performed, the shape may not be detected correctly. In this case, perform safety beveling without polishing again.

Note

- A hole that is detectable on the Shape Imager screen needs to meet the following conditions: The hole shadow is clearly visible. The lens outline shadow and other hole shadows are separated. If they are not met, the hole may not be detected.
- Holes or markings on a tint lens, dual-tone colored lens, or polarizing lens may not be detected.

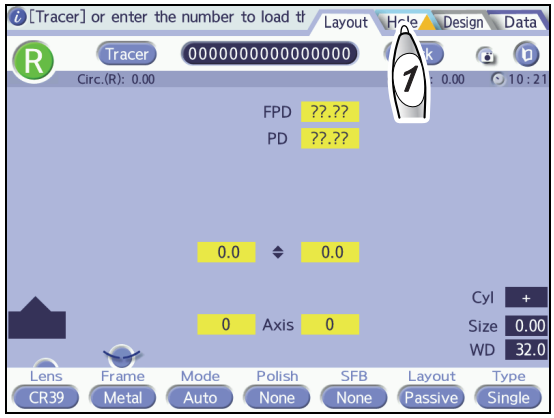
3.10.2 Measuring demo lenses (with marking)

This section describes the procedure to load lens shapes or hole positions by measuring demo lenses.

Note

- When measuring the high base curve demo lens shape, the shape and hole may not be measured properly.

1 Press the Hole tab to display the Hole Editor screen.



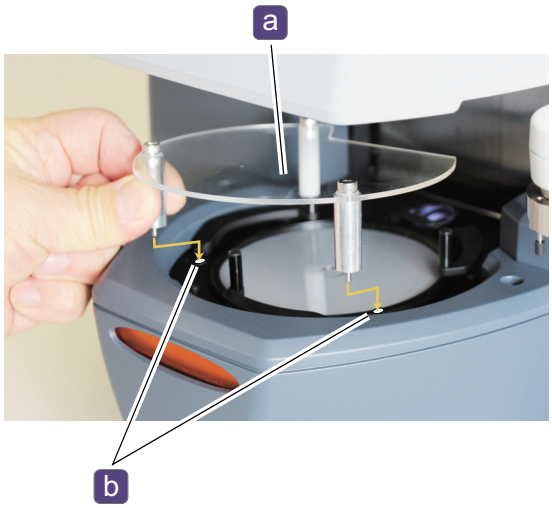
2 Press the Shape Imager tab to display the Shape Imager screen.

3 Set the shape measurement table a to the lens table.

Insert the tips of the front pins (two units) of the shape measurement table into the holes b of the lens table.

Press down the shape measurement table to be set securely. If the shape measurement table comes into contact with the lens table pins or such and is held up, the lens shape cannot be detected correctly.

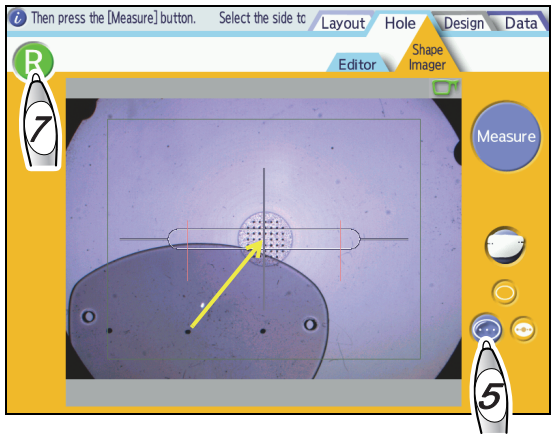
4 Set a demo lens with the front surface up to the shape measurement table.



5 Press .

6 Align the markings on the demo lens to the center and horizontal position of the alignment scale.

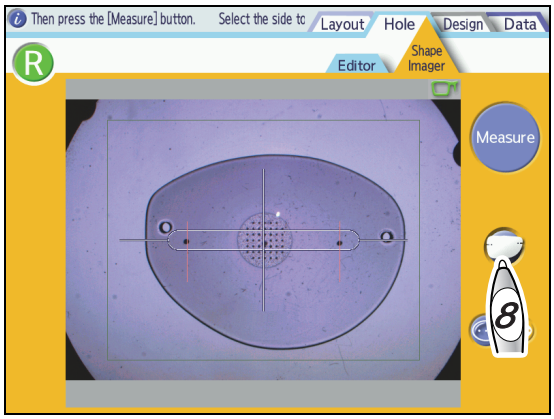
As the right and left markings are detected and the tilt is automatically corrected, the markings are not necessary to be exactly horizontal.



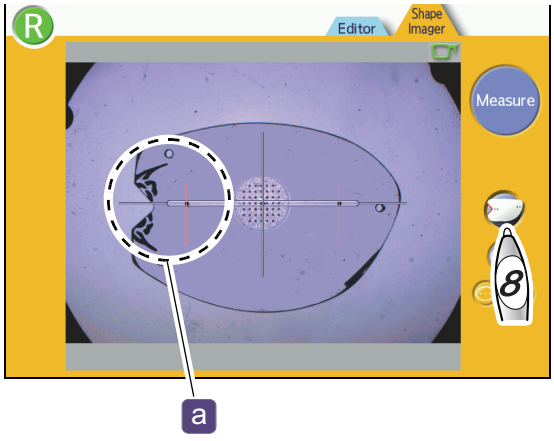
7 Press the Right or Left button to select the right eye or left eye lens.

8 Select two point measurement mode, design cut measurement mode, or partial step measurement mode according to the shape of the demo lens.

For demo lenses with simple holes, notched holes, or both as shown to the right, press the measurement mode button to activate two point measurement mode .

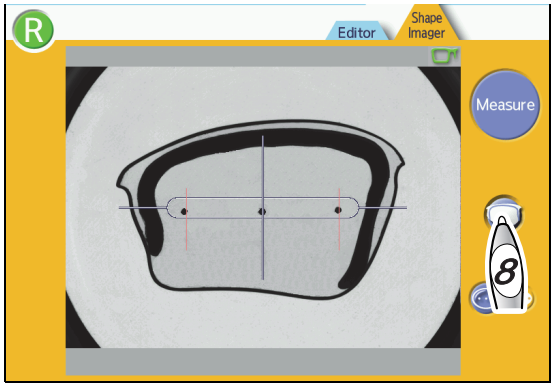


For demo lenses with edge design cuts a as shown to the right, press the measurement mode button to activate design cut measurement mode .



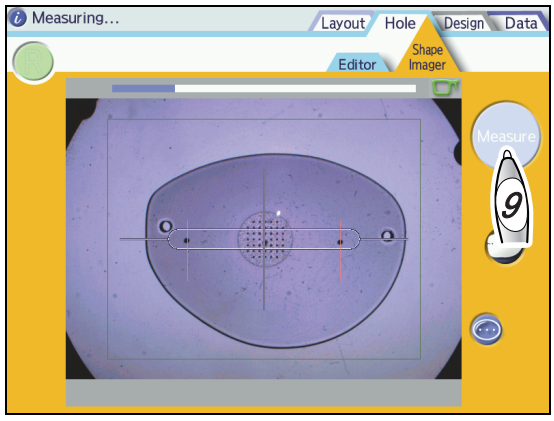
To perform step beveling, press the measurement mode button to activate partial measurement mode .

"4.2 Creating Partial Step Data" (page 184)



9 Press Measure.

"Measuring..." is displayed in the information bar during measurement. Wait for some time without touching the instrument.



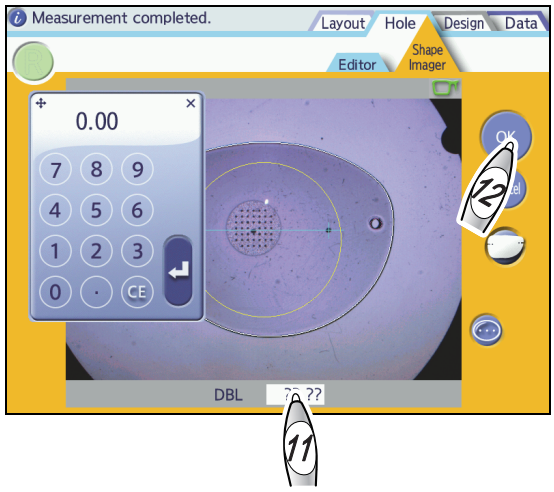
⚠ CAUTION

- When measuring the high base curve demo lens shape, the shape and hole may not be measured properly.

10 When the measurement is complete, the detected outline is displayed in white solid line and hole is displayed in pink dashed line on the screen.

If the outline or marking cannot be detected, press Cancel Clean the shape measurement table or such, then restart the operation from Step 8.

11 Press the DBL field and enter the DBL value with the displayed numeric keypad.



Note

- If "Measurement completed. (Failed to adjust the angle of a demo lens or pattern.)" is displayed in the information bar, angle correction is failed. Confirm that the WD setting of the single vision lens conforms to the distance between the right and left markings on the Layout screen, then perform measurement again. If the same error occurs even after WD is correctly set, manually align the angle properly in manual alignment mode.

  "3.10.4 Measuring demo lenses (manual alignment mode)" (page 163)

- After the measurement is complete, the screen cannot be switched to any screen other than the Hole Editor screen. After pressing Cancel to cancel the measurement result, switching to other screens becomes possible.

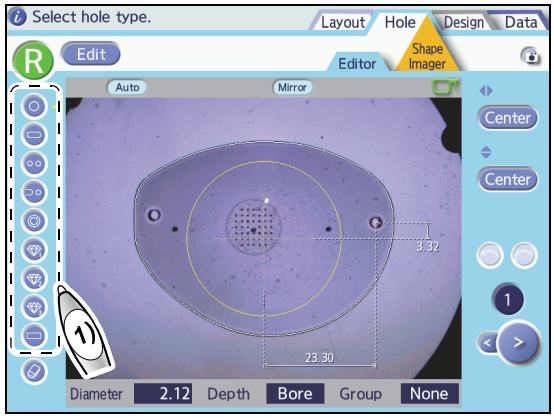
12 Press OK to return to the Hole Editor screen.

Pressing OK confirms the loaded shape result.

Note

- Just after data is loaded using the Shape Imager function, a still image of shape measurement is displayed until any of the following operations is performed.
  - Trace data is received from a tracer.
  - Job or pattern data saved in the ICE-1500 is loaded.
  - Job or pattern data is received from the server.
  - The Shape Imager screen is displayed again.
- The detected demo lens is displayed with its center located in the center of the screen and the markings horizontally aligned. (The center of the markings is not necessarily aligned in the center of the screen.)

13 Add the hole that cannot be measured. Or delete the hole measured by mistake.



- Hole addition

  1) Select the hole type with the hole add button.

  2) Specify the hole position with the touch pen.

     The hole is displayed in red in the specified position.

     Rough positioning is acceptable because it will be precisely aligned later.

- Hole deletion

  1) Select the hole to be deleted.

     The selected hole is displayed in red.

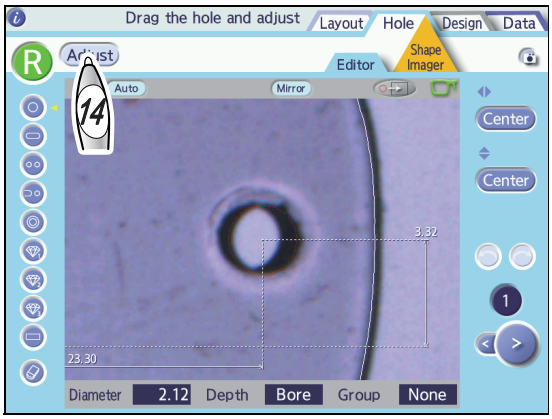
  2) Press  .

     The hole displayed in red is deleted.

14 After specifying all hole positions, press Edit.

The display for hole position addition switches to that for hole position precise alignment.

The selected (red) hole area when Edit is pressed is enlarged.



Note

- The hole position detected with the Shape Imager function is a guide. Be sure to precisely specify the hole position. For the hole that is not detected, enter it with the touch pen.
- When  is pressed, the position of currently selected hole (red circle) is moved and displayed in the center of the screen. When the slotted hole is selected, the base point hole is moved and displayed in the center of the screen.

15 Change the hole type as necessary.

1) Specify the hole for which the hole type is to be changed.

"O Hole specification" (page 152)

2) Drag the hole type indication ◀ to the right of the desired hole type button.
The hole type is changed as specified.

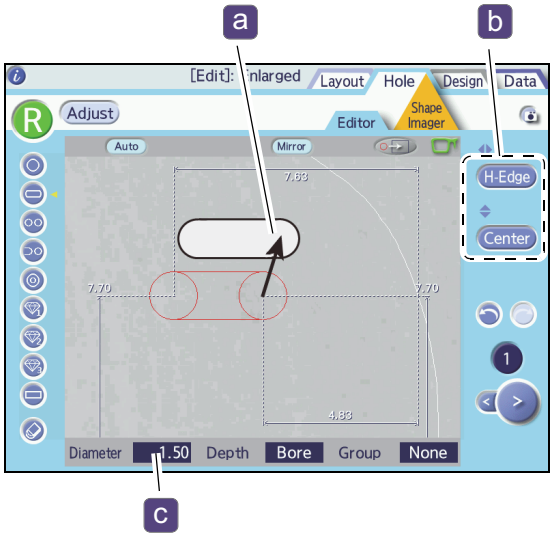
Note

- Not all hole types can be changed into other hole types. The changeable hole types are Simple hole, Slotted hole, Jewel hole 1, Jewel hole 2, Jewel hole 3, and Rectangular hole. Hole types other than these cannot be changed at all.

16 Specify the precise hole position and hole diameter.

Drag the hole indication to the hole on the demo lens image. For paired or notched holes, align also the distance between the holes by dragging. Match the hole position and diameter displayed in red to those of the image.

1) Drag the red circle with the touch pen to align it to the hole position a of the demo lens.



Note

- The hole (dashed line) that is detected with the Shape Imager function can be confirmed (solid line) by changing the hole position and hole diameter. (Red color when selected, blue color when not selected)

2) As necessary, press the hole position coordinate buttons b to set the horizontal and vertical reference positions.

3) Adjust the hole diameter.

Press the Diameter field c to display the numeric keypad. Enter a value and press ↵.

"3.9.1 Setting entry on Hole Editor screen" (page 146)

A value smaller than that set by the Drill bit diameter parameter cannot be set.

4) For paired or notched holes, adjust the distance between the holes.

Drag the paired (or notched) holes displayed in green to align them.

The value in the Diameter field is applied to the diameter of paired hole or the width of notched hole.

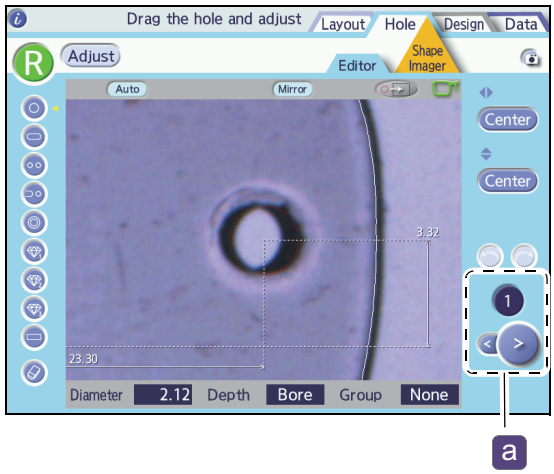
5) Specify the hole depth as necessary.

6) Specify the group as necessary.

Store the holes to be drilled parallel to each other in the same group number.

"O Group" (page 151)

17 In the same manner, set the position and diameter for all holes, and change the hole type.



Select the hole as follows:

- When selecting the hole with the hole No. display button

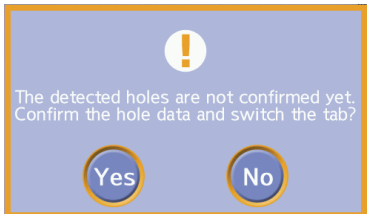
  Press the hole No. display button a to select the desired hole. The selected hole turns red, the hole No. and coordinates are displayed, and the hole becomes editable.

  <: Previous hole No.

  >: Next hole No.

18 After specifications for all holes are complete, press the Layout tab to return to the Layout screen.

If there are any unconfirmed holes, a message asking whether to confirm the hole and switch the tab is displayed.

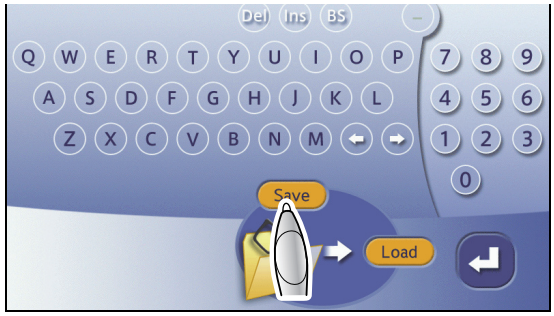


No: The screen does not switch to the Layout screen. Check each unconfirmed hole (dashed line) to confirm it.

Yes: The holes are confirmed and the screen switches to the Layout screen.

19 To save the shape data, press the JOB/PTN code field.

After entering the JOB code or PTN code with the displayed keyboard, press Save to save the data.



3.10.3 Measuring patterns

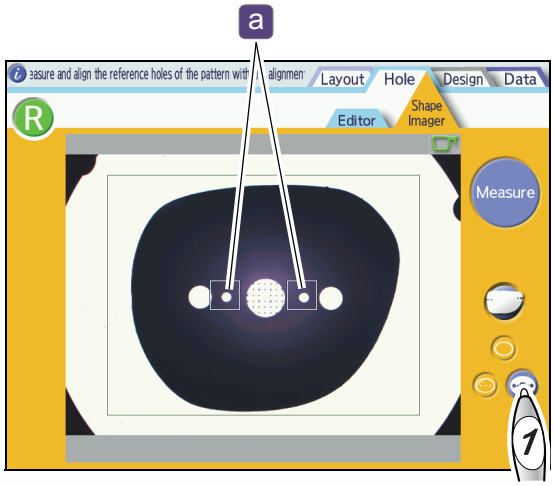
The procedure is the same as *"3.10.2 Measuring demo lenses (with marking)" (page 156)* except for Steps 5 and 6. Perform the following steps instead.

1 Press .

2 Align the pattern holes while each is centered in its corresponding square scale for pattern a and they are horizontal.

As the right and left holes of the pattern are detected and the tilt is automatically corrected, the holes are not necessary to be exactly horizontal.

Completely remove any burrs that occur in the pattern reference hole as the angle correction may not be performed.



Note

- Only the pattern for two-point and nylor frames is supported.
- As for patterns for Metal, Plastic, or Optyl frames, the size may not fit, so use a tracer.
- If "Measurement completed. (Failed to adjust the angle of a demo lens or pattern.)" is displayed in the information bar, angle correction is failed. If the same error occurs even after the same procedure is performed, manually align the angle properly in manual alignment mode.

"3.10.4 Measuring demo lenses (manual alignment mode)" (page 163)

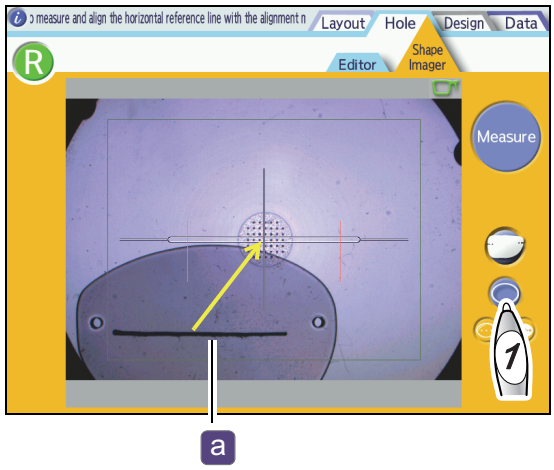
3.10.4 Measuring demo lenses (manual alignment mode)

Manually align the marking on the demo lens, horizontal reference line, or pattern hole to the scale for measurement. Also, if the angle correction error occurs for a demo lens (with marking) or pattern, use this mode.

The procedure is the same as *"3.10.2 Measuring demo lenses (with marking)" (page 156)* except for Steps 5 and 6. Perform the following steps instead.

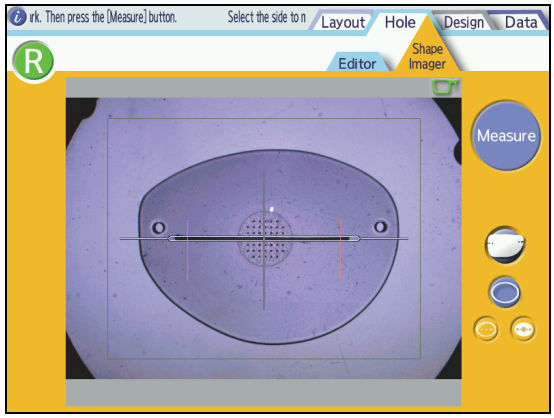
1 Press .

2 Align the marking on the demo lens, horizontal reference line a, or pattern hole to the alignment scale on the Shape Imager screen.



3 Align the marking on the demo lens, horizontal reference line, or pattern hole to the center and horizontal position of the alignment scale on the Shape Imager screen.

In manual alignment mode, angle correction is not performed, so manually align the angle properly.



4 DESIGN EDITING

4.1 Design Processing

■ This section describes the procedures to enter and edit shape change, partial grooving and beveling, design cut, facet, and partial step.

Blocking may not be possible depending on the lens material of frame type.

● Design processing functions and available lens materials

Design processing function	Lens material						
	CR39	Hi-index	Polyca.	Acrylic	Trivex	Urethane	Glass
Shape change	○	○	○	○	○	○	○
Partial grooving	○	○	○	○	○	○	×
Partial beveling	○	○	○	○	○	○	×
Design cut	○	○	○	○	○	○	×
Facet	○	○	×	×	×	×	×
Partial step	○	○	○	○	○	○	×

○: Possible

×: Blocking is not possible.

● Design processing functions and available frame types

Design processing function	Frame type		
	Metal/Plastic/Optyl	Two point	Nylor
Shape change	○	○	○
Partial grooving	×	○	○
Partial beveling	×	○	○
Design cut	○	○	○
Facet	×	○	×
Partial step	○	×	×

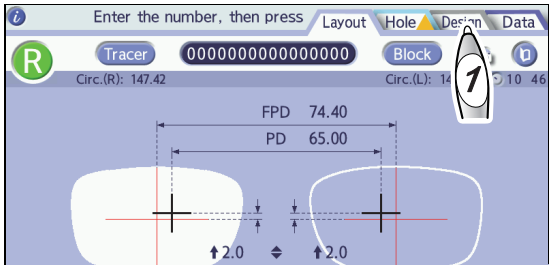
○: Possible

×: Blocking is not possible.

4.1.1 Shape change function

The shape change function changes sections of lens shapes based on existing lens data.

1 Press the Design tab.



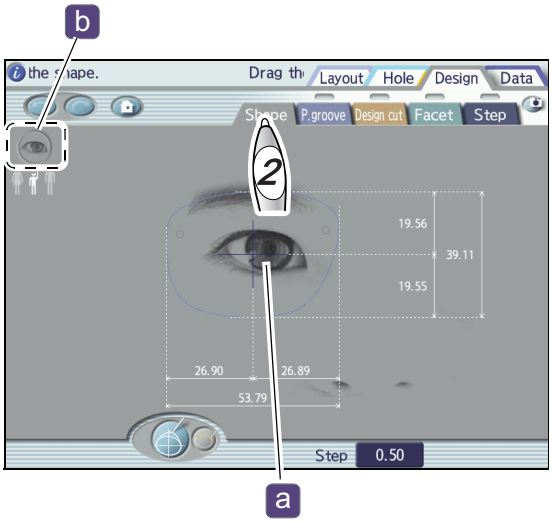
2 Press the Shape tab.

The Shape Editor screen is displayed.

Set eye image a as necessary.

Pressing the eye image button b switches the eye image between display and hide.

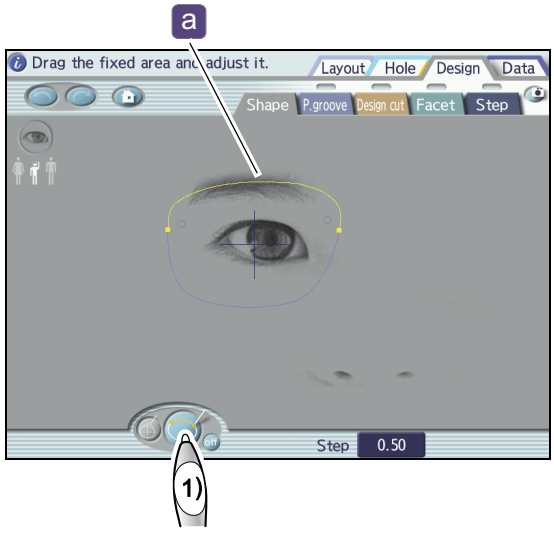
There are three types of eye image: woman, child, and man, which can be selected with the human-form icon ( ).



3 As necessary, specify areas that are not to be changed in shape (fixed areas).

1) Activate fix area mode ( ) with the outline change / fix area button

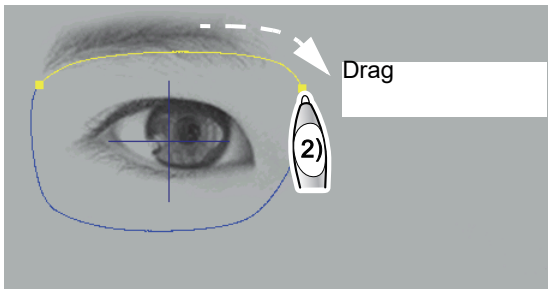
A section of the shape is fixed (locked) a and displayed in yellow.



2) Drag the handles at the ends of the yellow line (yellow squares) to change the fixed area.

: Cancels the fixed area.

When the fixed area is not displayed, the fixed area may be specified by dragging the shape outline.



Note

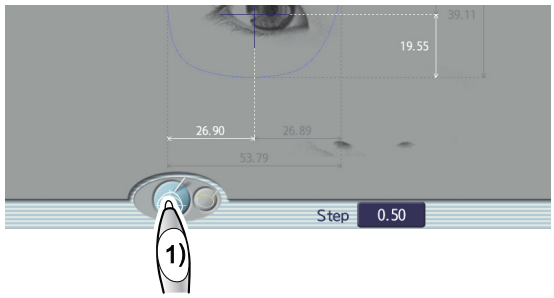
- When the fixed area is set, the shape can be changed only once. Attempting to change the shape again automatically resets it to the initial form from which changes can then be made.
- When the fixed area is set, the shape can be changed in the limited area. The changeable dimensions are displayed in white and unchangeable ones are in gray. Even for the dimensions displayed in white, the shape may not be changed if the changeable area is too small.
- The shape change calculation method differs depending on whether a fixed area is specified or not. Therefore, similar changes to the same shape may have different results.

4 Change the lens shape.

The shape can be changed using the touch pen, numeric keypad, or ⊕⊖ buttons.

- When using the touch pen

1) Press the outline change / fix area button to activate outline change mode ( ).

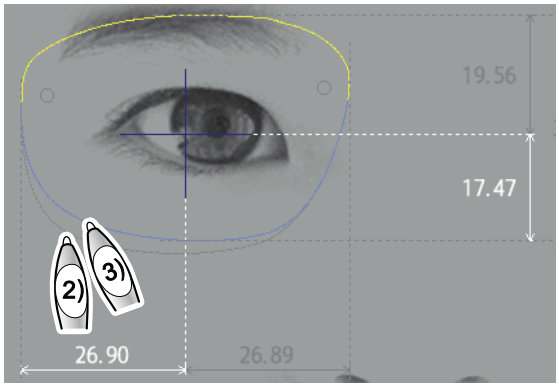


2) Touch the lens shape outline (blue line) to be changed with the touch pen.

3) Drag the blue line to form the desired shape.

The line turns from blue to red.

4) Lifting the touch pen from the screen confirms the shape change and the red line turns blue.

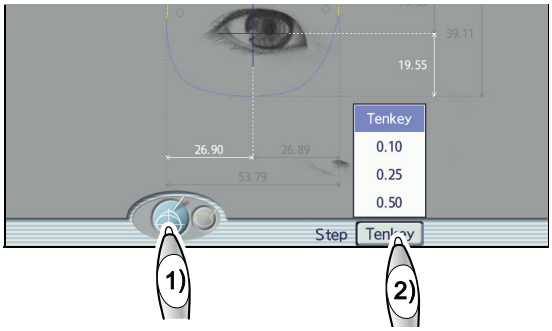


Gray line	Lens shape before change
Red line	Shape being dragged
Yellow line	Fixed area specified in fix area mode
Blue line	Lens shape after change

- When using the numeric keypad

1) Press the outline change / fix area button to activate outline change mode ( ).

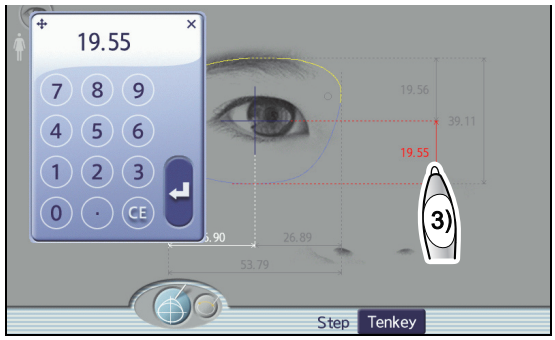
2) Press the Step field and select Tenkey from the pop-up menu.



3) Select the dimension to be changed with the touch pen. The selected dimension and dimension line turn red.

The numeric keypad appears.

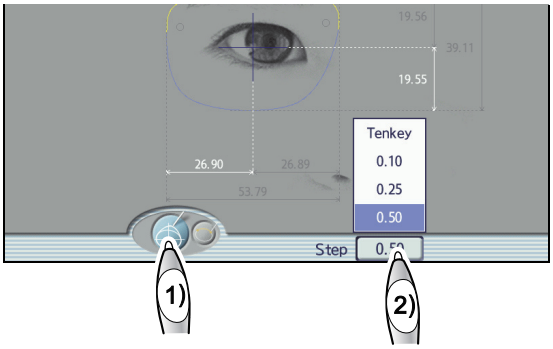
4) Use the numeric keypad to enter the desired value for the dimension selected in Step 3).



- When using the ⊕⊖ buttons

1) Press the outline change / fix area button to activate outline change mode ( ).

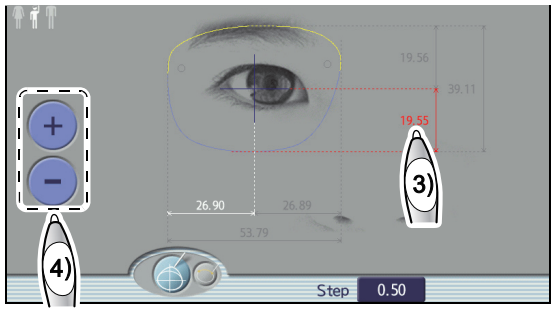
2) As necessary, press the Step field and select the increments for every single click from 0.10, 0.25, and 0.50 on the pop-up menu.



3) Select the dimension to be changed with the touch pen. The selected dimension and dimension line turn red.

The ⊕⊖ buttons are displayed.

4) Press the ⊕⊖ buttons to set the desired value.



	Undoes the last change (up to five times).
	Redoes the change.
	Cancels all the changes.

5 After the shape is changed, press the Layout tab to return to the Layout screen.

Pressing a tab for another screen confirms the shape change and it cannot be canceled. To restore the data, load the data again.

4.1.2 Partial grooving and partial beveling functions

The partial grooving function is for adding partial grooving to flat edging.

Multiple partial grooving data with different groove depths and widths can be specified. However, all groove positions and curves are for auto grooving or guide grooving.

The partial beveling function is for adding partial beveling to flat edging.

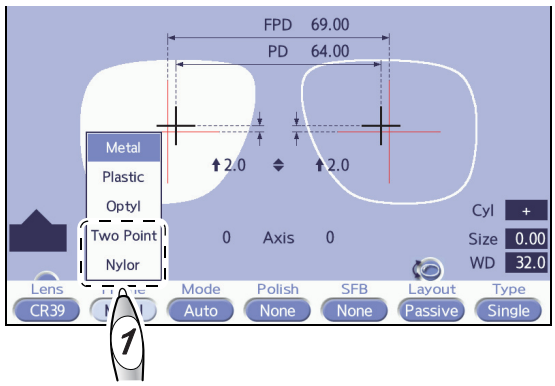
Note

- When partial grooving or beveling data is entered, only the specified area is processed.

  To groove the entire circumference, it is necessary to delete all partial grooving data.
- For partial grooving or beveling, enter the area to be partially grooved or beveled on the right lens shape.

  Data used for partial grooving or beveling is mirrored on the left lens shape. Different partial grooving or beveling between the right and left cannot be performed.
- Safety beveling and polishing are unavailable for the partial beveling area.
- When partial beveling is specified, special safety beveling and facet cannot be selected.
- For glass lenses, partial beveling and partial grooving are unavailable.

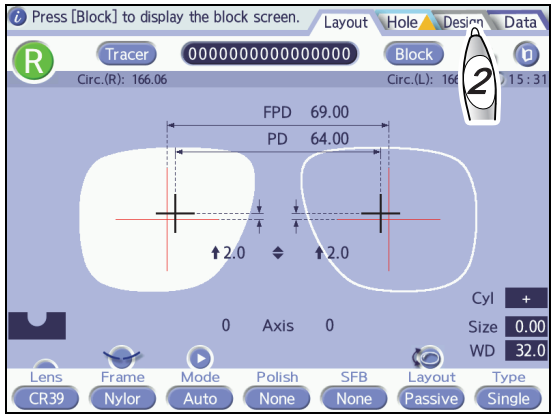
1 Select Two Point or Nylor for the frame type setting.



Note

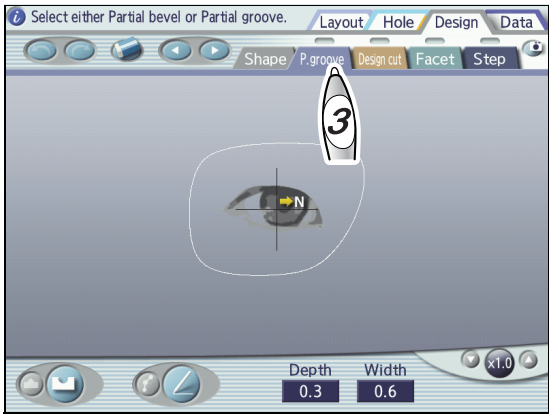
- When Two Point is selected, the FPD is corrected by entering the size. When [Nylor] is selected, the FPD is not corrected.

2 Press the Design tab.



3 Press the P.groove tab.

The Partial grooving screen is displayed.



- Changing display magnification

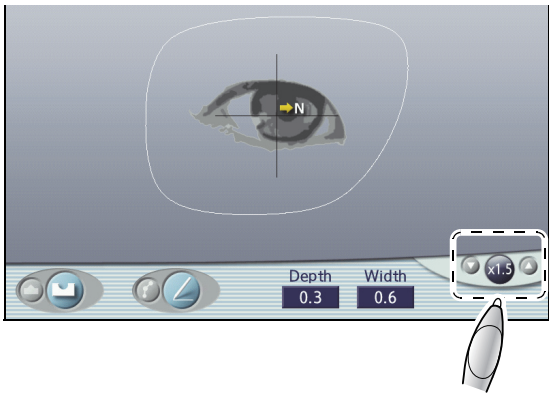
  Change the shape display magnification as necessary.

  Each press of ▽ or △ to the left or right of the value switches the magnification.

  △ : [×1.0] → [×1.5] → [×2.0] → [×4.0]

  ▽ : [×4.0] → [×2.0] → [×1.5] → [×1.0]

  When a magnification other than [×1.0] is selected, the lens shape can be moved by dragging. (Touching the screen displays the cursor, which changes to when dragged.)



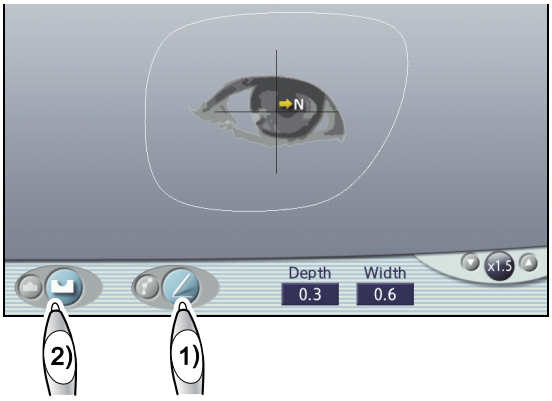
4 Enter partial grooving or beveling data in add mode.

1) Activate add mode ( ) with the Add/edit button.

2) Select partial grooving or partial beveling with the partial groove/bevel button.

   : Partial grooving becomes enabled.

   : Partial beveling becomes enabled.

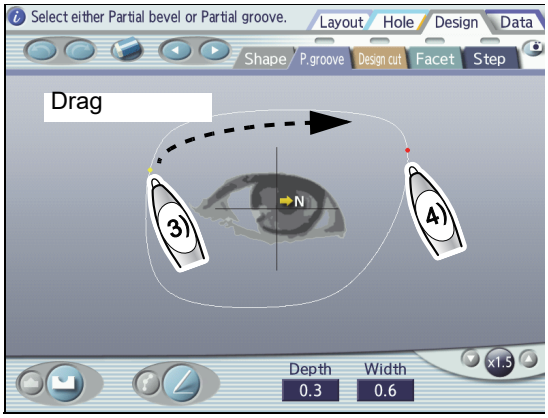


3) Press the end of the area to be partially grooved or beveled with the touch pen.

The handle (yellow point) is displayed in the drag start position.

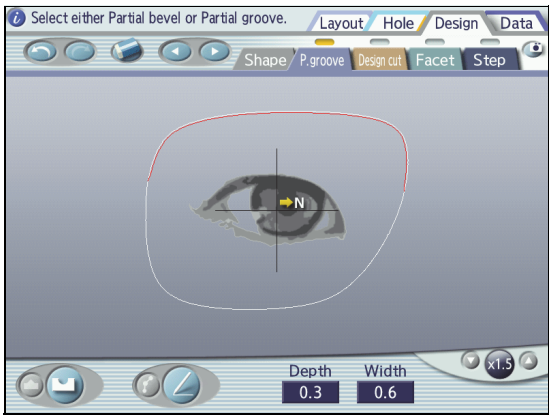
4) Drag the pen to another end of the area to be partially grooved or beveled.

The handle (red point) is displayed in the drag end position.

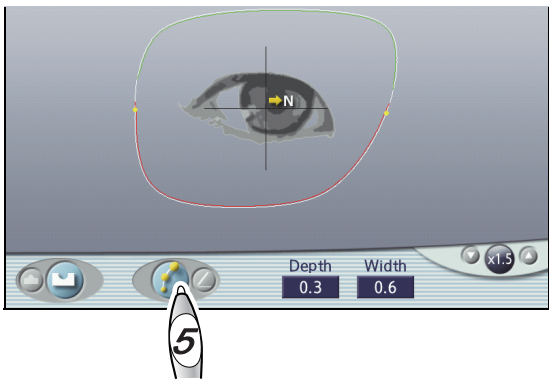


5) When the touch pen is lifted, the yellow and red points disappear and the specified partial grooving or beveling area is displayed as a red line.

6) Repeat Steps 2) to 5) to add all partial grooving or beveling data.



5 Activate edit mode ( ) with the Add/edit button.

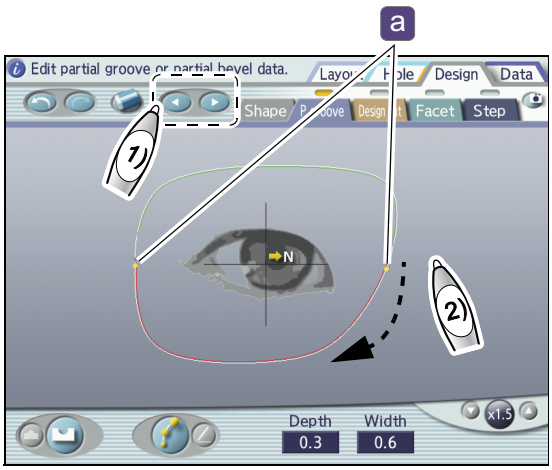


6 Edit the data entered in Step 4 into the desired partial grooving or beveling.

1) Select the data to be edited with the or button.

The selected data is displayed as a red line and the other data is displayed as a green line. The handles (yellow points) a are displayed at both ends of the red line in edit mode.

2) Drag the handles (yellow points) at both ends to move the start or end point of the data as necessary.

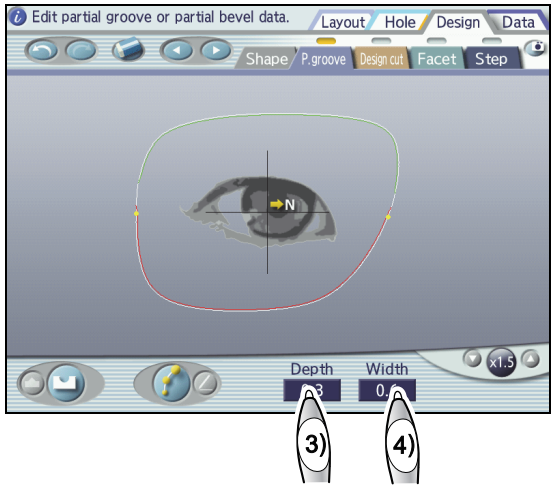


The handle turns red while being dragged. Lifting the touch pen at an appropriate position edits the red line, and the handle turns yellow.

Note

- Two sets of adjacent data can be connected by dragging the handles. However, three or more sets of data cannot be connected. Only the same type of data can be connected (groove and groove or bevel and bevel). Groove data and bevel data cannot be connected.

3) To change the groove depth, press the Depth field to display the numeric keypad and enter the desired value. (partial grooving only)
   - Range: 0.0 to 0.8 mm
4) To change the groove width, press the Width field to display the numeric keypad and enter the desired value. (partial grooving only)
   - Range: 0.6 to 1.2 mm
5) Repeat Steps 1) to 4) to edit all data.



	Undoes the last change (up to five times).
	Redoes the change.
	Used to erase the selected data.
	Selects the previous number of data (entered order in add mode).
	Selects the next number of data (entered order in add mode)
	Changes the selected partial beveling data to partial grooving data.
	Changes the selected partial grooving data to partial beveling data.

7 After editing is complete, press the Layout tab to return to the Layout screen.

Note

- The set partial grooving and beveling data is sent to a lens edger with the following settings: Curve: Auto, Position: 0. To change the Curve or Position setting, set the lens edger to guide processing mode.

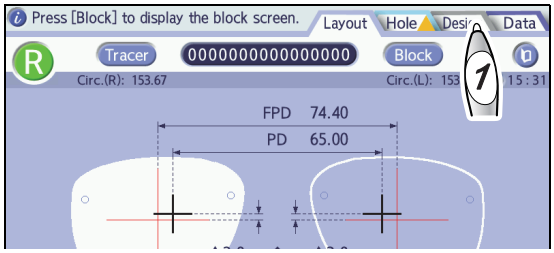
4.1.3 Design cut function

The design cut function is for processing a section of the lens into the desired shape with a drill bit.

Note

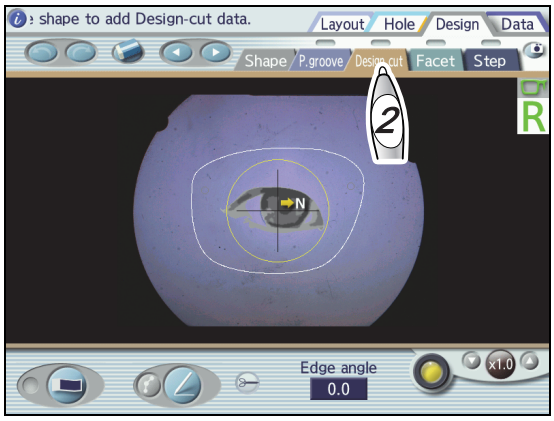
- On the design cut screen, enter a line to be cut on the right lens shape. Data used for design cut is mirrored on the left lens shape. Different design cuts on the right and left lenses cannot be performed.
- Design cut is unavailable for glass lenses.
- Design cut cannot be performed within the area circled in yellow.
- Extremely small design cut may not be performed as entered due to drill diameter limitations.

1 Press the Design tab.



2 Press the Design cut tab.

The Design cut screen is displayed.

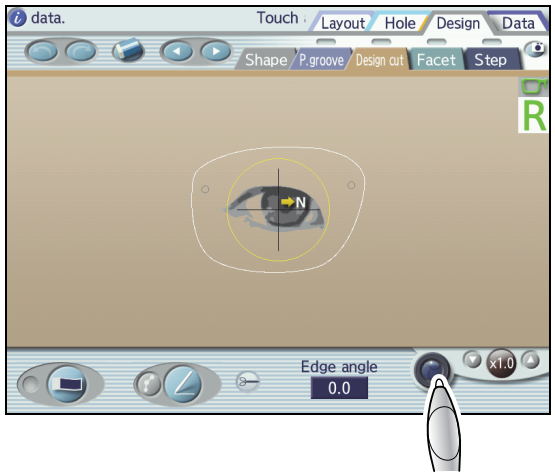


- Switching the background

The background can be selected between the camera image and plain on the Design cut screen.

After shape measurement, a still image of the shape measurement is overlaid. In other situations, a live camera image (video image) is displayed.

Pressing  switches the background between the camera image and plain.



- Changing display magnification

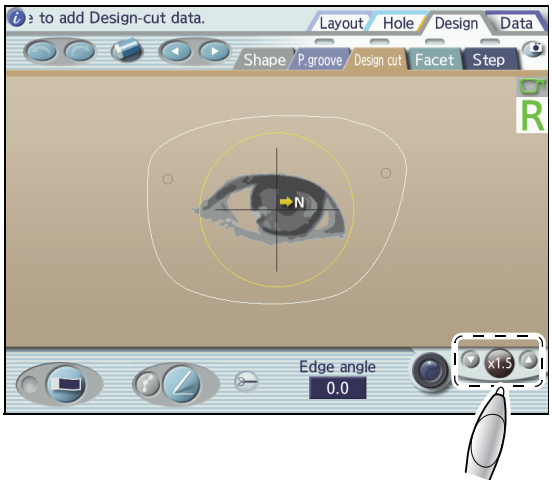
  Change the shape display magnification as necessary.

  Each press of ▼ or ▲ to the left or right of the value switches the magnification.

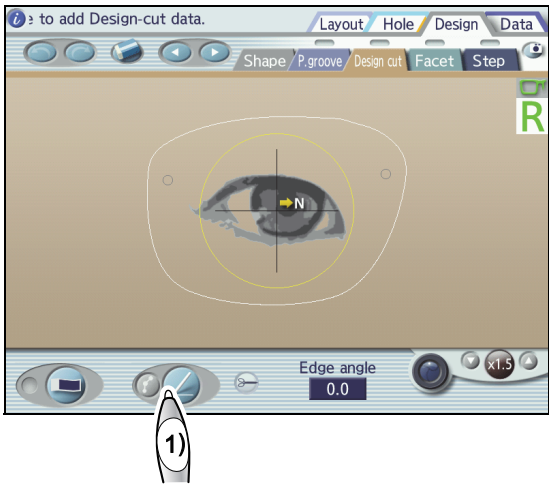
  ▲ : [×1.0] → [×1.5] → [×2.0] → [×4.0]→ [×8.0]

  ▼ : [×8.0] → [×4.0] → [×2.0] → [×1.5]→ [×1.0]

  When a magnification other than [×1.0] is selected, the lens shape can be moved by dragging. (Touching the screen displays the cursor ✋, which changes to ✊ when dragged.)



3 Activate add mode and enter the design cut data.



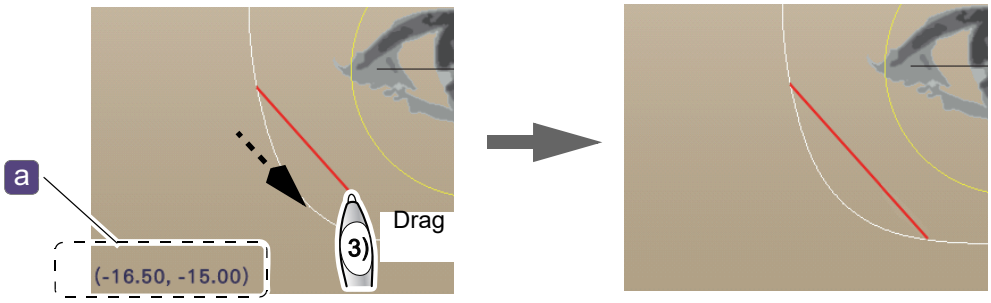
1) Activate add mode ( ) with the Add/edit button.

2) Press the shape on the screen with the touch pen.

3) Drag the pen.

   While dragging, a red line connecting the dragging start and end points is displayed, and the X-Y coordinates a of the dragging end point are indicated to the lower left of the screen.

   When the touch pen is lifted from the screen, a straight line connecting the dragging start and end points is added and the X-Y coordinate indication disappears.



4) Repeat Steps 2) and 3) to add necessary data.

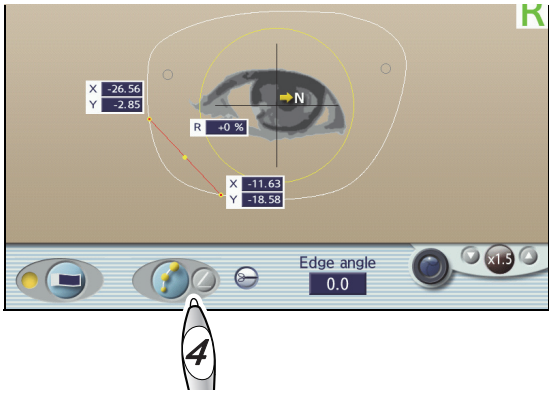
Note

- Both the start and end points in design cut data must be connected with the edge or other data. All the edge angles become the same in the connected design data.

4 Activate edit mode ( ) with the Add/edit button.

In edit mode, three handles (yellow circles) are displayed for each data. The color of the handles at both ends indicates the connection conditions:

Red	Connected to the edge of the shape.
Green	Connected to other data.



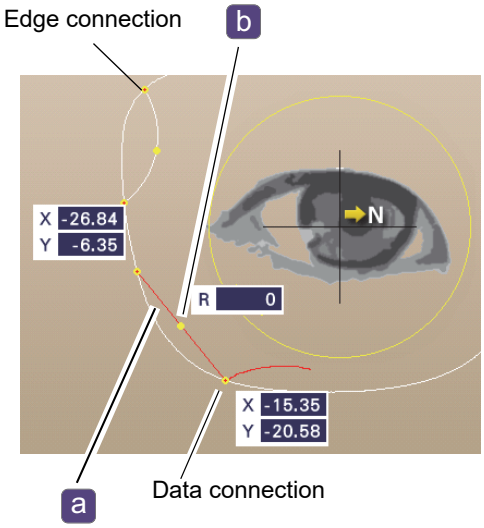
Note

- Pressing to the lower left displays or hides the start and end point coordinates and curve value.

5 Edit the data entered in Step 3 into the desired design cut.

The design cut data can be edited using the touch pen or numeric keypad.

- When using the touch pen



1) Press data to be edited with the touch pen.

   The selected data a is displayed as a red line.

2) Drag either of the handles at the ends to move the start or end point.

   When the handle at the end is moved close to the edge or the start or end point of other data, they are connected automatically.

   Connection to other data takes priority over edge connection.

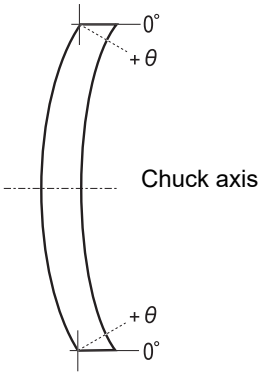
   Moving data connected to other data moves the connected other data as well.

3) Drag the middle handle b to achieve the desired curve.

4) Pressing the Edge angle field displays the numeric keypad to enter the edge angle.

   - Range: 0 to 30°

   With 0º, the edge becomes parallel to the chuck axis. Entering a positive value tilts the axis in the direction of the chuck axis.

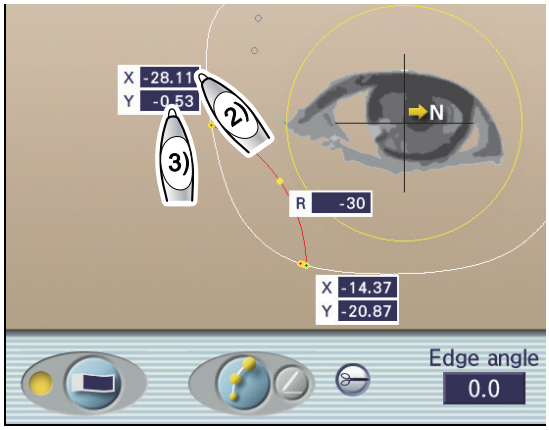


5) Repeat Steps 1) to 4) to edit all data.

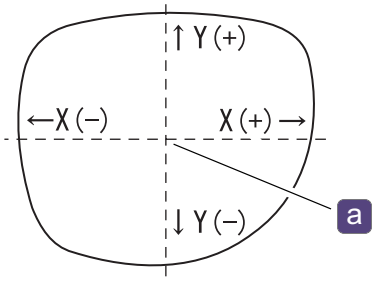
Note

- Be sure to connect the ends of data to other data or the shape edge.
  Edit mode cannot be exited while the end of any data is not connected.
- Connections among data cannot be cut.
  When data is mistakenly connected, press  to return to the previous state or delete either data.

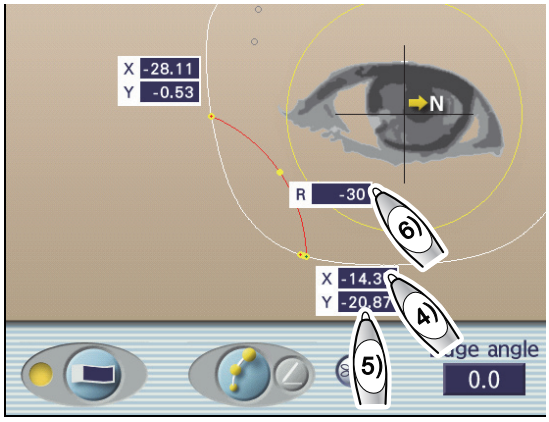
- When using the numeric keypad



1) Press data to be edited with the touch pen.
   The selected data is displayed as a red line.
   The start and end point coordinates and curve value of the selected data are displayed in the start point, end point, and curve fields.
2) Pressing the X coordinate field of the start point displays the numeric keypad. Enter the X coordinate of the start point.

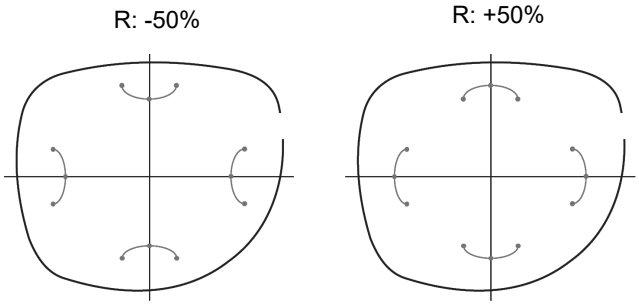


   Coordinates are displayed relative to the boxing center a. The right and upper are positive values and the unit is mm.
3) Pressing the Y coordinate field of the start point displays the numeric keypad. Enter the Y coordinate of the start point.



4) Pressing the X coordinate field of the end point displays the numeric keypad. Enter the X coordinate of the end point.
5) Pressing the Y coordinate field of the end point displays the numeric keypad. Enter the Y coordinate of the end point.
6) Pressing the curve (R) field displays the numeric keypad. Enter the curve value.
   - Range: -99 to +99%
     The curve value of 0% indicates a straight line. As the numeric value increases, the line

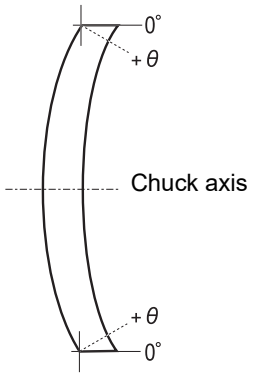
becomes more curved. When +99% or -99% is entered, it becomes a semi-circle. The direction of the curve depends on the sign.



7) Pressing the Edge angle field displays the numeric keypad to enter the edge angle.

- Range: 0 to 30°

  With 0º, the edge becomes parallel to the chuck axis. Entering a positive value tilts the axis in the direction of the chuck axis.

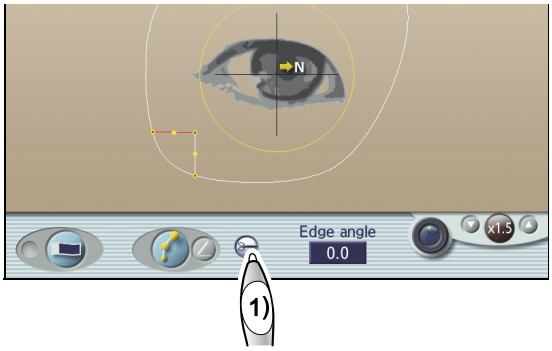


8) Repeat Steps 1) to 7) to edit all data.

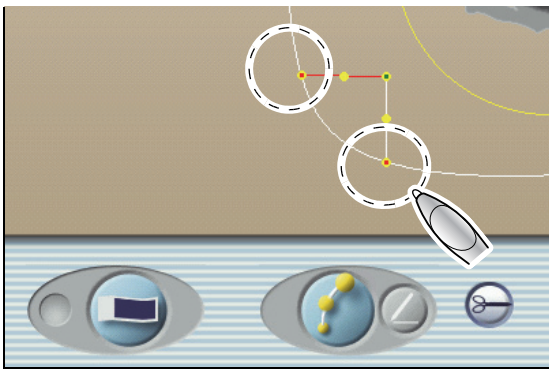
6 If necessary, split the design cut data entered in Step 5 for fine adjustment.

For fine adjustment of design cut data, data can be split in two data sets.

1) With design cut data entered, press  .



2) Select a design cut data point to be split.

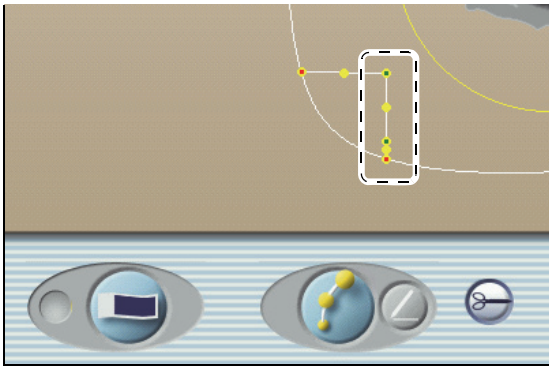


- When selecting the start point or end point

  Select the start point or end point in the area surrounded by dashed line as shown to the right.

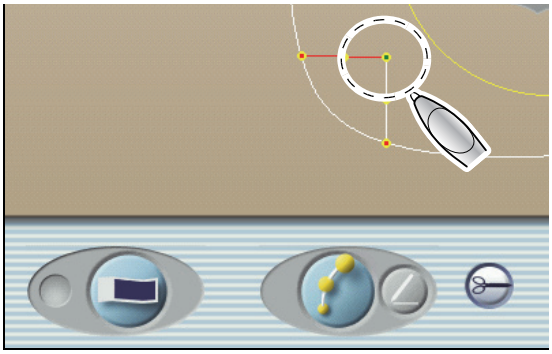
  As shown to the right, design cut data is split in two data sets at the selected point.

  Select the split data sets for fine adjustment. (For editing, see Step 5.)



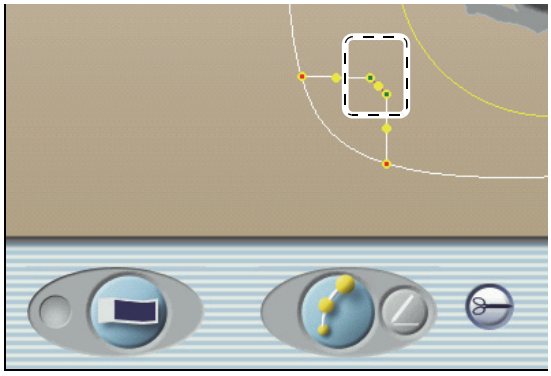
- When selecting the intermediary point

  Select the intermediary point circled by dashed line as shown to the right.



  As shown to the right, design cut data is split in two data sets at the selected intermediary point.

  Select the split data sets for fine adjustment. (For editing, see Step 5.)



	Undoes the last change (up to five times).
	Redoes the change.
	Used to erase the selected data.
	Selects the previous number of data (entered order in add mode).
	Selects the next number of data (entered order in add mode)

7 After editing the design cut data is complete, press the Layout tab to return to the Layout screen.

If the start or end point of data is not connected, an error message is displayed. Data with problem is selected. Check the message and edit the data properly.

4.1.4 Facet function

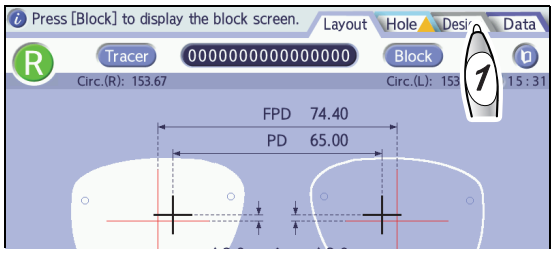
The facet function allows the front and rear lens edges to be freely faceted in a width, range and position.

Note

- The facet function is available for plastic and high index plastic lenses only.
- The facet function is available for two-point frames only.
- On the Facet screen, enter a line to be faceted on the right lens shape.

  Data used for facet is mirrored on the left lens shape. Facet different between the right and left lenses cannot be performed.

1 Press the Design tab.



2 Press the Facet tab.

The Facet screen is displayed.

- Changing display magnification

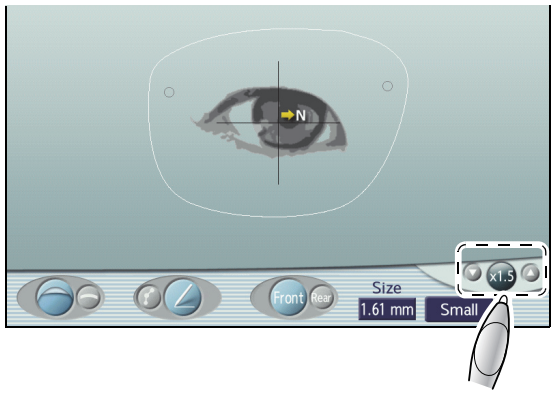
  Change the shape display magnification as necessary.

  Each press of ▼ or ▲ to the left or right of the value switches the magnification.

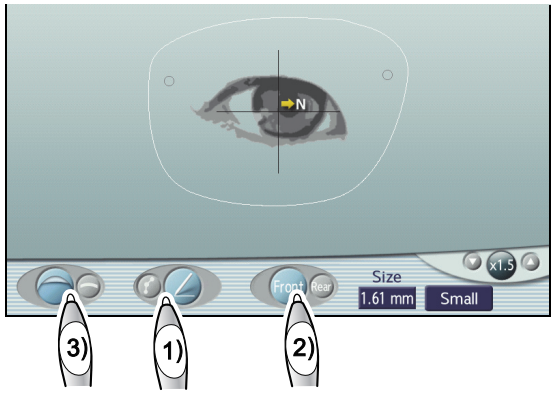
  ▲ : [×1.0] → [×1.5] → [×2.0] → [×4.0]

  ▼ : [×4.0] → [×2.0] → [×1.5] → [×1.0]

  When a magnification other than [×1.0] is selected, the lens shape can be moved by dragging. (Touching the screen displays the cursor, which changes to when dragged.)



3 Enter facet data in add mode.



1) Activate add mode ( ) with the Add/edit button.

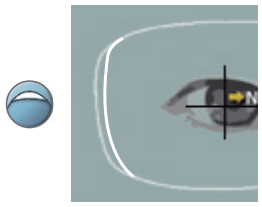
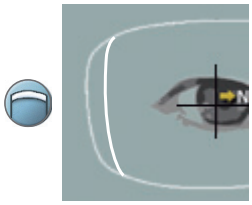
2) Press the Front/Rear button to select the front or rear side in which the facet data is entered.

   Switching between Front and Rear flips the lens shape to be viewed from the selected side.

   Front : Front data, Rear : Rear data

3) Select the facet shape.

   Use the facet shape buttons (,).

	The faceting is deeper around the center of the selected area.
	The faceting width is nearly the same throughout the selected area.

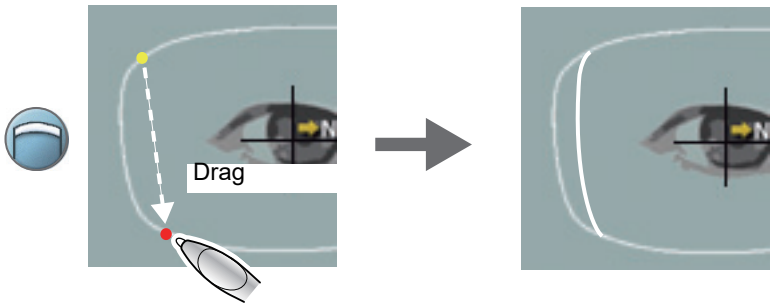
4) Press the end of the area to be faceted on the shape outline with the touch pen.

   The yellow handle is displayed.

5) Drag the pen to another end of the area to be faceted.

   The red handle is displayed in the drag end position.

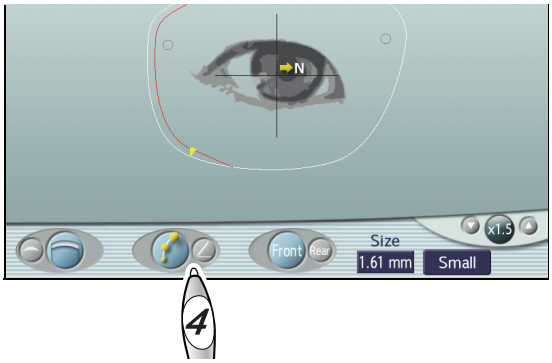
   When the touch pen is lifted, the handles (yellow and red points) disappear and the selected facet area is displayed as a line on the screen. The data is displayed as a light blue line for the front edge and as a violet line for the rear edge.



6) Repeat Steps 2) to 5) to add necessary data.

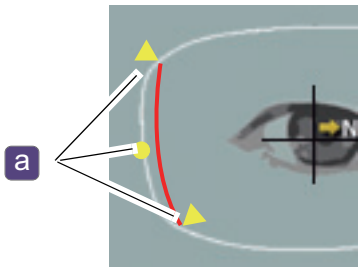
   Up to 10 data sets can be added for the front and rear each.

4 Activate edit mode ( ) with the Add/edit button.



In edit mode, the selected line is displayed in red. Handles a for editing are displayed at both ends of the line.

For the data whose facet shape is , the handle is also displayed in the center.



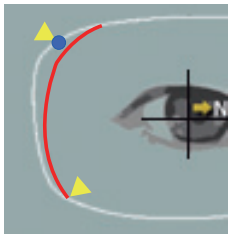
5 Edit the data entered in Step 3 to the desired facet setting.

Use the touch pen to edit the facet data.

1) Select the data to be edited with the or button.
   The handles are displayed on the selected data.
2) Change the facet shape with the facet shape buttons (,) as necessary.
3) Drag either of the triangle handles at both ends to move the start or end point of the data.
   When the center handle is yellow, its position changes corresponding to the movement of the triangle handle.
4) Drag the circle handle if necessary.
   Dragging and lifting the touch pen at an appropriate position moves the handle there, and it turns blue. This is the position where the faceted width of the selected data is maximum.
   The blue circle handle does not move corresponding to the movement of the triangle handles.

Note

- For the data whose facet shape is , dragging the circle handle to either of the triangle handles sets the maximum faceted width in this position.

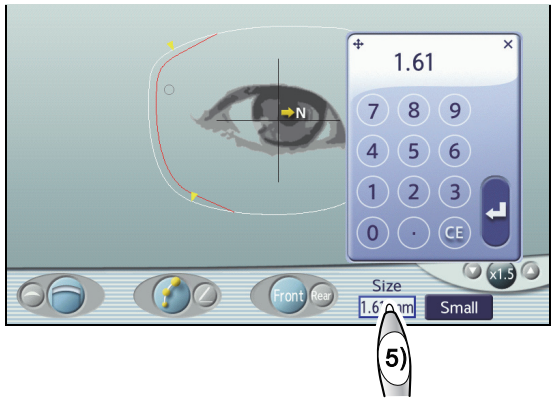


5) To change the facet amount, press the Size field to display the numeric keypad and enter the desired value.

The set value is the maximum facet amount of the selected data.

The actual maximum facet amount may be less than the entered value after lens shape measurement due to the influence of the lens edge thickness or curve.

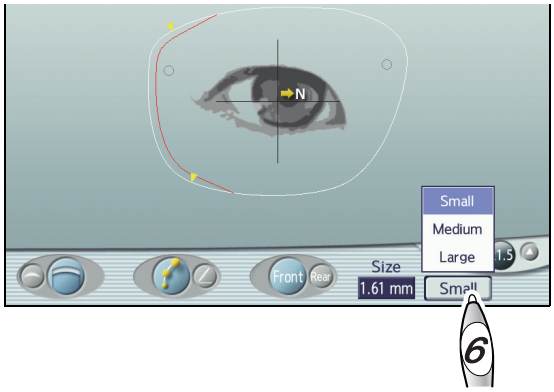
6) Repeat Steps 1) to 5) to edit all data.



6 Select the safety bevel amount for the area not to be faceted as necessary.

1) Press the SFB button.

2) Select the safety bevel amount from Small, Medium, and Large.



Note

- Be sure to check the facet conditions on the facet guide screen when processing lenses with an edger.

  As the lens shape has not been measured in the ICE-1500, the displayed data such as facet width is not calculated correctly.

	Undoes the last change (up to five times).
	Redoes the change.
	Used to erase the selected data.
	Selects the previous number of data (entered order in add mode).
	Selects the next number of data (entered order in add mode)

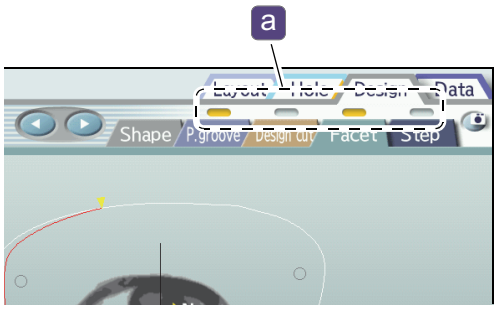
7 After editing the design cut data is complete, press the Layout tab to return to the Layout screen.

Note

- Design data indicators

Indicators a showing existence of design data (yellow indicates the presence of design data while gray indicates the absence) are displayed above the Design screen change tabs on the Partial grooving and partial beveling screen, Design cut screen, Facet screen, and Step Editor screen.

The screen to the right is an example of the facet screen.



- When design data exists, indicators b are also displayed to the left of the Layout screen and Blocking screen.

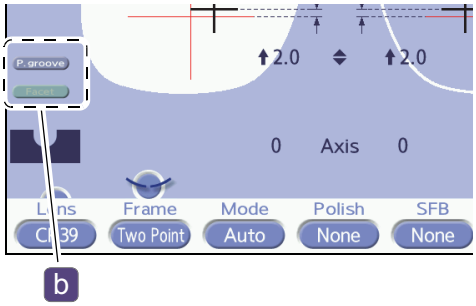
When letters are displayed in white

Design data exists and processing is performed.

When letters are displayed in gray

Design data exists, however, processing is not performed.

Check the processing conditions.



4

4.2 Creating Partial Step Data

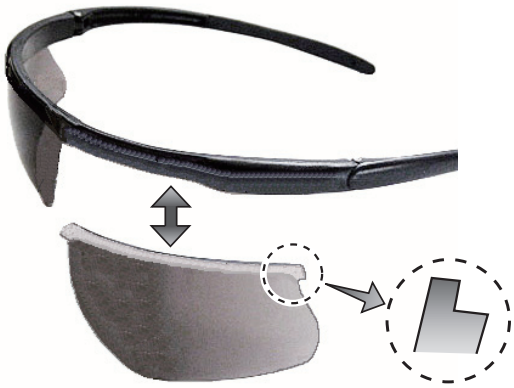
■ This section describes the procedure to create processing data for frames that require partial step processing.

4.2.1 Partial step processing

Partial step processing cuts a select area of the lens edge into a step.

This function is used when a prescription lens with a thick edge is partially fit in the frame groove, and a hook-shaped protrusion on the lens edge is hooked in the notch of the frame groove.

This processing is mainly used for sport sunglasses, in which partially stepped prescription lenses can be mounted when desired.



Side view of step processing

- Block a lens with the front surface curve nearly the same as that of a demo lens. A lens with a different front curve cannot be mounted in a frame, even if it is blocked and processed.

4.2.2 Preparing the demo lens

Partial step data is created by measuring a demo lens.

Use the following optional items.

Part name	Part number
Spatula	44630-M111
Special clay	44630-M113

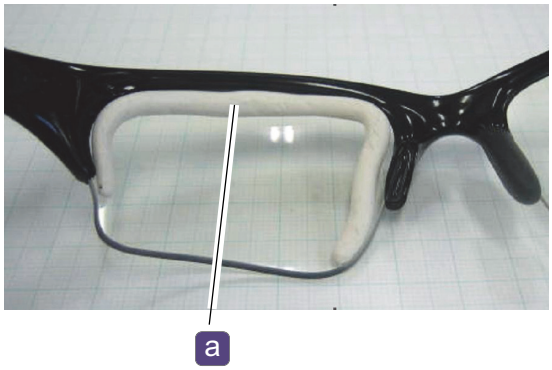
1 Remove the lens from the frame and clean it.

If the demo lens edge is not clean, accurate measurement may not be performed.

2 Mount the demo lens in the frame and mark it with a lensmeter.

See *(Step 2)* of *"3.10.1 Preparing the demo lens" (page 155)*.

3 Roll out the optional special clay into a stick shape and attach it to the rear surface of the demo lens a along the frame shape.



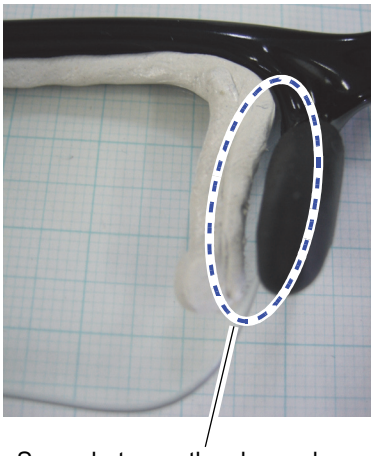
Step processing is only performed along the area between the special clay-attached location and edge.

- If the clay adheres to the nose pad, it may not come off. To prevent such a case, remove the nose pad.
- Do not press the clay strongly against the frame. Leave a slight space between the frame and clay. If any part of the clay contacts the frame, push the clay away using the optional spatula.
- Make the space between the frame and clay as small as possible so that it does not affect the DBL accuracy.
- Make sure that the clay does not ride up on the frame or enter the gap between the demo lens and the frame. If either happens, the clay adhering to the frame may be stretched when the demo lens is removed from the frame resulting in the step shape differing from the desired one.
- Instead of the special clay, a line may be drawn on the demo lens with a pen for tracing to read. However, detection sensitivity is lowered.

4 Leave a space between the lens edge and the special clay for step processing.

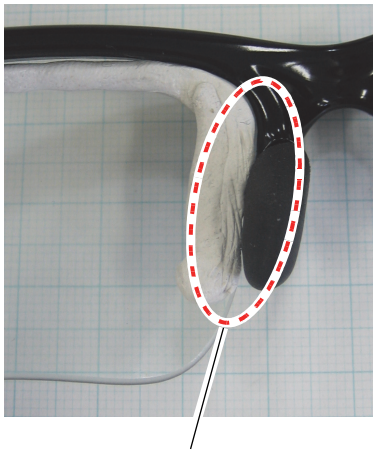
- Make sure that neither end of the clay extends beyond the demo lens. The extension is mistakenly detected as part of the lens shape.
- Attach the clay away from the nose pad so that the nose pad and step processed lens do not interfere with each other.

○



Space between the clay and nose pad is even.

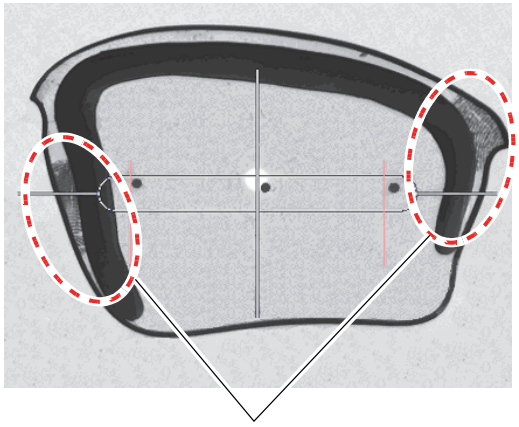
×



There is no space between the clay and nose pad.

5 Remove the demo lens from the frame.

- Stains such as fingerprints affect the detection, therefore wipe any off.
- If the clay shape has changed when the demo lens is removed from the frame due to it adhering to the frame, correct the clay shape with the spatula.



Stains such as fingerprints

4.2.3 Measuring the demo lens

1 Display the Shape Imager screen and set the shape measurement table.

See *(Step 1)* to *(Step 3)* of *"3.10.2 Measuring demo lenses (with marking)" (page 156)*.

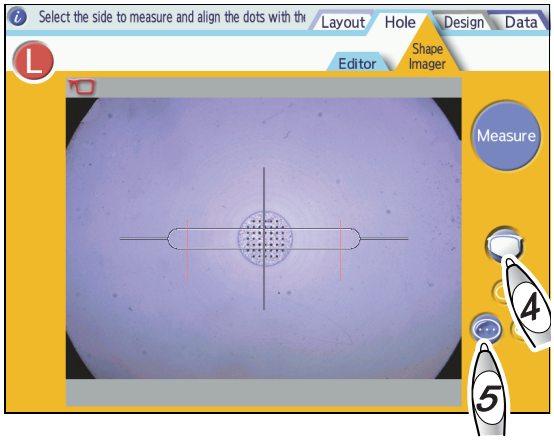
2 Place the dust cover a over the ICE-1500.

When measuring sunglass lenses, cover the ICE-1500 to block exterior and interior light.

3 Open the lid b of the dust cover to access the LCD touch screen.

4 Press the measurement mode button to activate partial measurement mode .

5 Press .



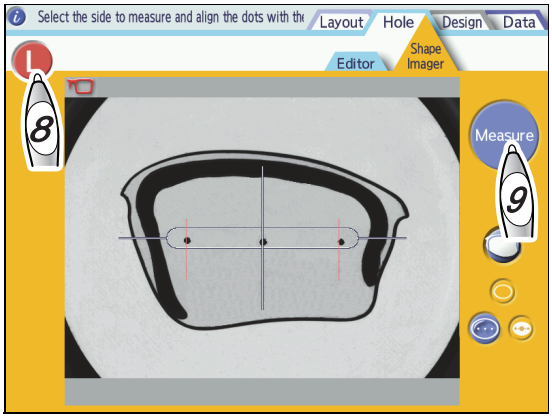
6 Place the demo lens on the shape measurement table with the front surface facing up.

Open the front of the dust cover to place the demo lens.

7 Align the markings on the demo lens to the center and horizontal position of the alignment scale.

As the right and left markings are detected and the tilt is automatically corrected, the markings are not necessary to be exactly horizontal.

8 Press the Right or Left button to select the right eye or left eye lens.



9 Press Measure.

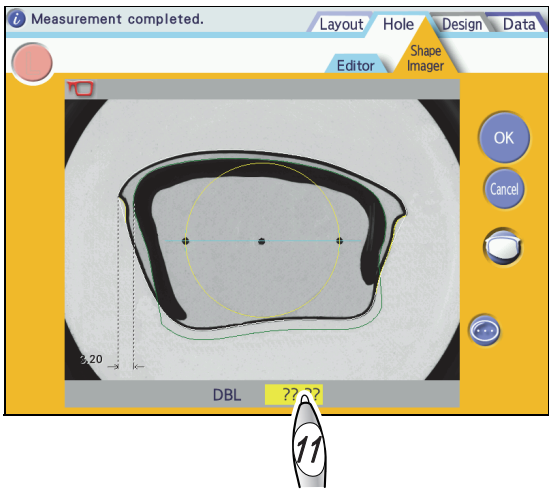
"Measuring..." is displayed in the information bar during measurement. Wait for some time without touching the instrument.

10 When the measurement is complete, the detected outline is displayed in white and the clay outline is displayed in green.

If "Measurement completed. Failed to detect the step data." is displayed, press Cancel. Clean the shape measurement table and demo lens, then restart the operation from Step 6.

11 Press the DBL field and enter the DBL value with the displayed numeric keypad.

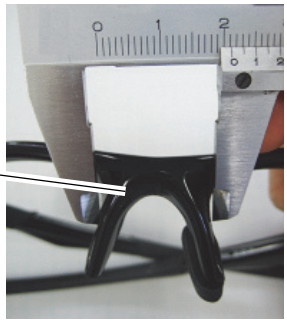
"● *Measuring DBL with a vernier caliper*" *(page 188)*



4

- Measuring DBL with a vernier caliper

1) Measure the distance between the inner points on the right and left frames with a vernier caliper.



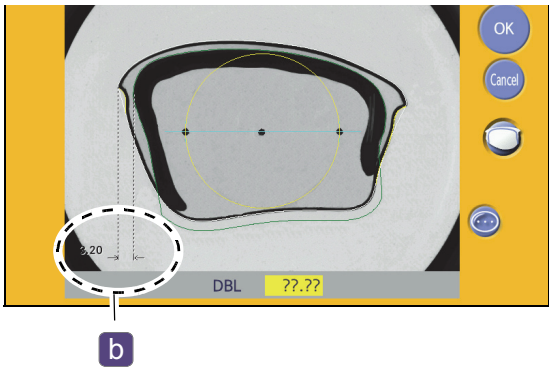
2) Calculate the DBL value by the following formula.

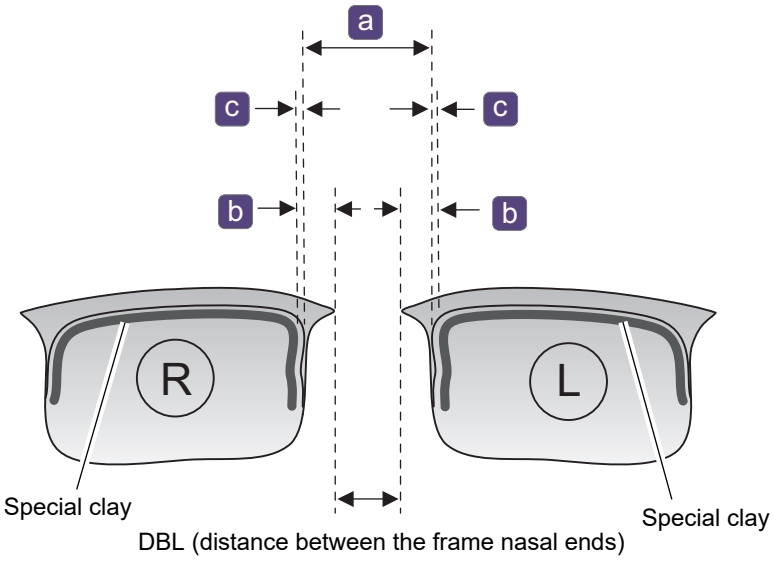
DBL = a - 2 × (b - c)

a : Dimension measured in Step 1)

b : Dimension indicated on the screen

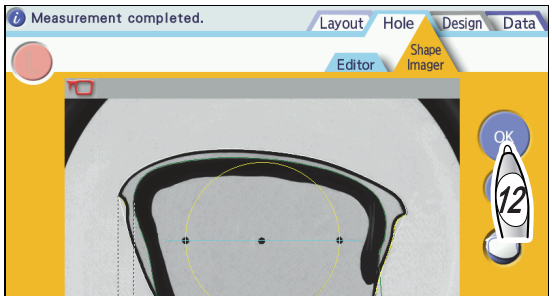
c : Space between the frame and clay





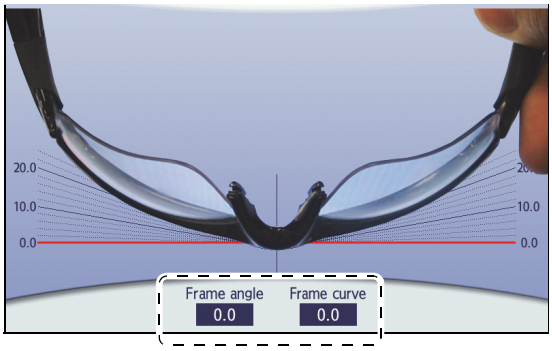
12 Press OK to return to the Hole Editor screen.

Pressing OK confirms the loaded shape result.



13 Enter the frame warping angle and curve.

“O Changing frame information” (page 100)



14 Remove the dust cover from the ICE-1500 to complete measurement.

4.2.4 Checking and editing partial step data

Display the Step Editor screen to check the step data. Edit the step data should any discrepancy occur between the step data detected during shape measurement and the border of the special clay or when step width or angle needs to be changed.

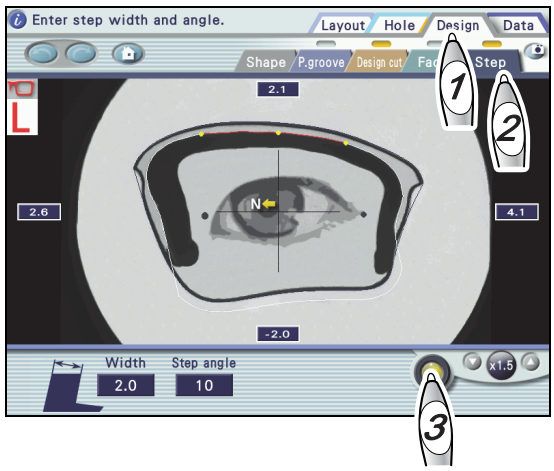
1 Press the Design tab.

2 Press the Step tab.

The Step Editor screen is displayed.

3 As necessary, press  to display the camera image for the background as shown to the right.

After shape measurement, a still image of the shape measurement is overlaid.

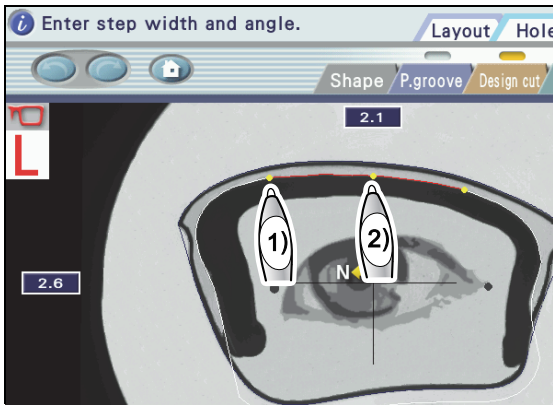


4 As necessary, edit the step data.

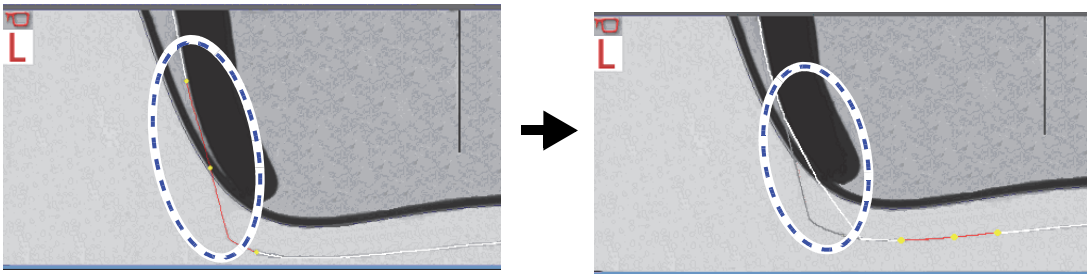
- When editing the step height

Specify the lens edge height for the area where step processing is performed.

1) Drag the handles (yellow points) at both ends to specify the step change area.
2) Drag the middle handle to specify the step height.

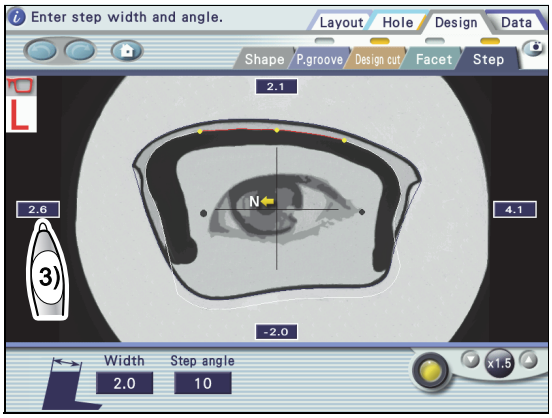


Step data can be corrected more precisely by breaking the correction into a number of smaller steps.



3) The step height can be changed with the numeric keypad displayed when any of the height fields (four positions) is pressed.
   - Range: -2.0 to +5.5 mm

   These fields are displayed only when the magnification is set to ×1 or ×1.5.

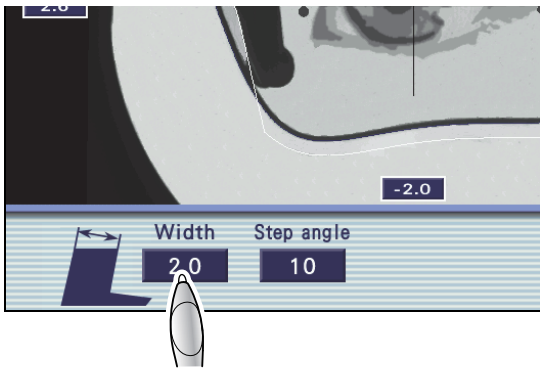


- When editing the step width

  Specify the lens edge width for the area where step processing is performed.

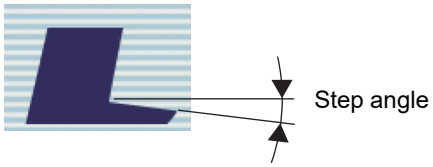
  Press the Width field to display the numeric keypad and enter a value.
  - Range: 0.5 to 5.0 mm

  Measure the thickness of the demo lens edge and enter that or a smaller value.

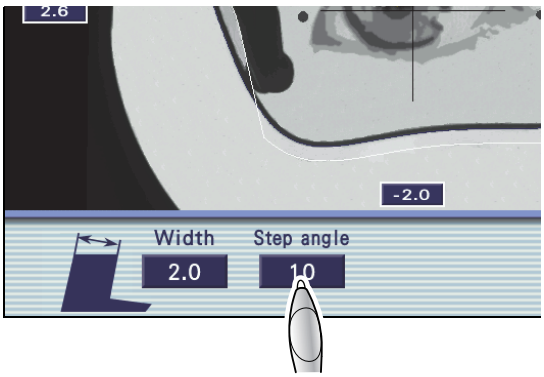


- When editing the step angle

  Specify the lens edge angle for the area where step processing is performed.



  Press the Step angle field to display the numeric keypad and enter a value.
  - Range: 5 to 15°



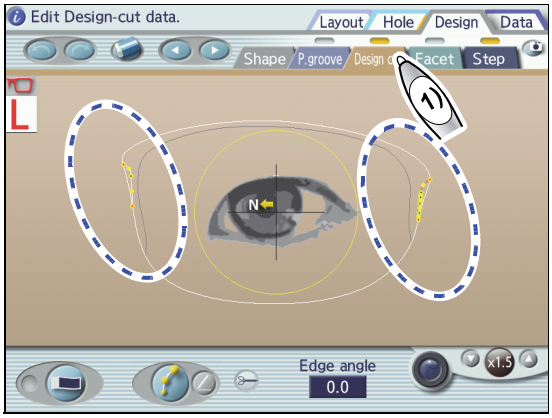
5 As necessary, correct the design cut data.

1) Press the Design cut tab.

   The Design cut screen is displayed.

2) Correct the data should any discrepancy occur between the design cut data detected during shape measurement and the border of the demo lens.

"4.1.3 Design cut function" (page 173)



4.3 Initial Screen Save Function

■ This function sets the items displayed on the Layout screen, Blocking screen, Hole Editor screen, Partial grooving and partial beveling screen, Design cut screen, Facet screen, and Step Editor screen when power is turned on.

When the factory settings for the screens from those for normal use, it is possible to change and save the items to be displayed on the initial layout screen.

○ Items to be saved

Layout screen

All items except for numerics displayed on the screen are saved.

- Right, Left
- FPD, DBL
- PD, 1/2PD
- Optical center height (⬍ /BT ⬍ /PD ⬍)
- Layout mode (Active/Passive)
- Lens material (CR39/Hi-Index/Polyca/Acrylic/Urethane/Trivex/Glass)
- Processing mode (Auto/Guide/HC Auto/HC Guide)
- Lens type (Single/Multi/Progressive)
- Frame type (Metal/Plastic/Optyl/Two Point/Nylor)
- Polishing mode
- Safety beveling mode
- WD (Single, Multi, Progressive)
- Soft processing mode button

Note

- The setting between Right and Left selects the lens eye side that is initially displayed when traced data for both-eye lenses is imported.
- The Optical center height parameter allows the default of the optical center height to be set.

"5.1 Setting Parameters" (page 195)

- The initial setting for Nylor processing mode (Flat / Grooving processing) can be set by the Default groove setting parameter. When the Default groove setting parameter is set to Off, flat edging is initially set for Nylor regardless of the initial screen save setting of processing mode.

"5.1 Setting Parameters" (page 195)

- Step Auto and Step Guide processing modes cannot be saved. When Step Auto is selected, processing mode is saved as HC Auto. When Step Guide is selected, processing mode is saved as HC Guide. When Step Guide is selected, processing mode is saved as HC Guide.

Blocking screen

- Block mode (independently for Single, Multi, and Progressive)

Hole Editor screen

- Horizontal reference position
- Vertical reference position

Shape Editor screen

- Step (0.01 / 0.25 / 0.50 / Tenkey)
- Eye image display (woman, child, and man), hide

Partial grooving and partial beveling screen

- Partial groove/bevel button

Design cut screen

- Camera image on/off
- Edge angle

Facet screen

- Facet shape
- Base facet

Step Editor screen

- Step angle
- Camera image on/off

○ Procedure

1 Display the screen for which the initial settings are to be saved.

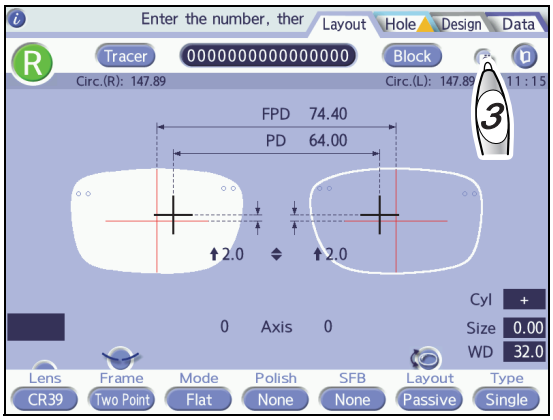
2 Set each item as desired.

3 Press  to save the screen settings.

This is the example of operation procedure on the Layout screen.

The procedure is the same for the Hole Editor screen, Shape Editor screen, Partial grooving and partial beveling screen, Design cut screen, Facet screen, and Step Editor screen.

Example of Layout screen



4.4 Daily Checks

■ This section describes the checks before and after use.

Be sure to check the following before use. Be sure to check the following after use.

It is recommended that a checklist is prepared and the check results are recorded.

○ Check before use

1 Are there any apparent deformations or dirt which might interfere with proper operation? Especially confirm that there are no foreign substances and dirt on the lens table.

2 Is the Layout screen displayed when the ICE-1500 is started?

3 After loading the lens shape and setting the lens, does the blocking arm move properly by pressing  ?

4 Confirm that the stylus has no dirt or deformation. (except for NT model)

5 Calibrates the tracing unit. (except for NT model)

"3.4.6 Calibrating the tracing unit" (page 81)

○ Check after use

1 Is power turned off?

2 Is the ICE-1500 dirty or damaged?

3 Is the tracing unit lid closed?

4 Are all the accessories accounted for and free from damage?

Accessories (ICE-1500): pattern setting unit, standard frame, standard pattern, frame change holder, frame support attachment, shape measurement table, touch pen, dust cover

Accessories (ICE-1500NT): frame change holder, shape measurement table, touch pen, dust cover

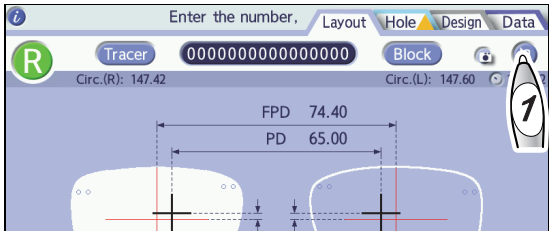
5 CONNECTION AND SETTINGS

5.1 Setting Parameters

5.1.1 Setting procedure

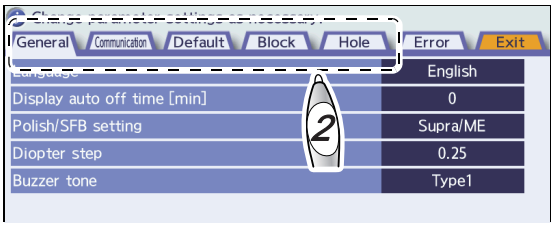
Conduct the various settings of the instrument on the Parameter screen.

1 Press on the Layout screen to display the Parameter screen.



2 Select the screen with the parameter items to be changed using the tabs on the top of the screen.

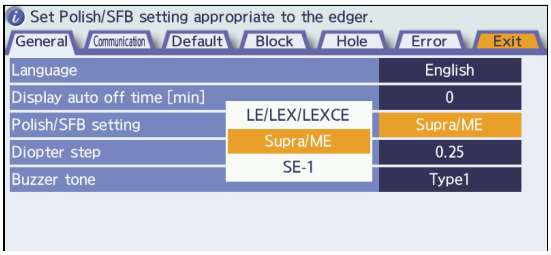
For parameter items and setting contents, see *"5.1.2 Parameter setting list" (page 196)*.



3 Press the setting field to the right of a parameter item to be changed.

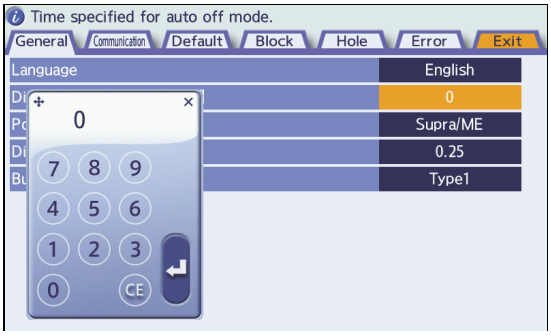
4 Change the setting contents with the displayed pop-up menu or numeric keypad.

- For the parameters whose settings must be selected from the provided options, the pop-up menu appears.



  1) Press the desired setting to select.
  2) The setting is confirmed and the pop-up menu closes.

- For the parameters whose settings must be specified by values, the numeric keypad is displayed.



  1) Enter a value with the numeric keypad.
  2) Press to confirm the entry.

     The numeric keypad closes.

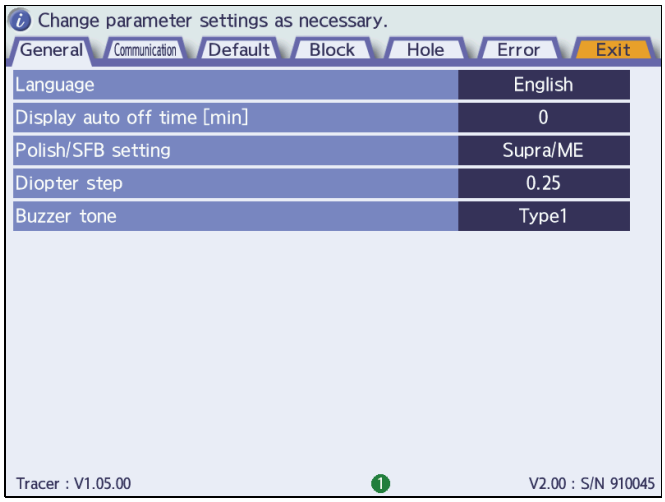
     To cancel the entry, press .

5 Press the Exit tab to return to the Layout screen.

5.1.2 Parameter setting list

- The underlined setting is the factory setting.

Parameter screen (General settings)

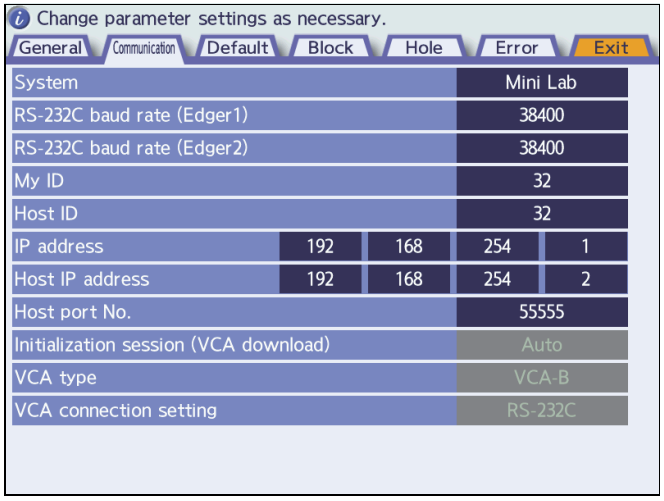


Parameter items	Setting contents
Language	**Other / <u>English</u>**
	Sets the language displayed.
Display auto off time [min]	**<u>0 (min)</u>** Setting range: 0 to 60
	Sets the time to go into standby mode when the instrument is idle. When set to 0, the instrument does not go into standby mode. In standby mode, the display turns off, the lens table lamp blinks, and rotation of the lens table reflector stops. To restore from standby mode, press the LCD touch screen.
Polish/SFB setting	**LE/LEX/LEXCE / <u>Supra/ME</u> / SE-1**
	Sets the lens edger to perform polishing and safety beveling. Select among LE/LEX/LEXCE, Supra/ME, and SE-1 according to the lens edger to be used.
Diopter step	**0.12 / <u>0.25</u>**
	Selects the diopter display of SPH and CYL between the 0.12 D and 0.25 D increments.
Buzzer tone	**Mute / <u>Type1</u> / Type2 / Type3**
	Changes the buzzer tone. When set to Mute, the buzzer does not sound.

Note

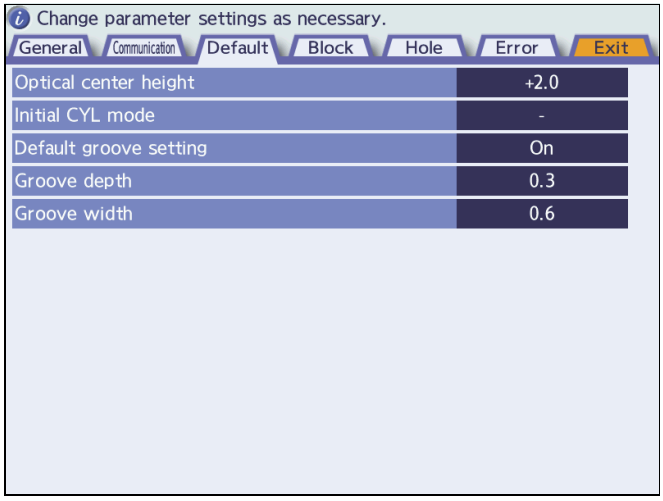
- The lens processing image on the Layout screen reflects the Polish/SFB setting. In a system in which SE-1 and Me, or, Me and LE are combined to form a system that is not specified by the Polish/SFB Setting parameter, actual processing may differ from the processing image on the Layout screen.

Parameter screen (Communication settings)



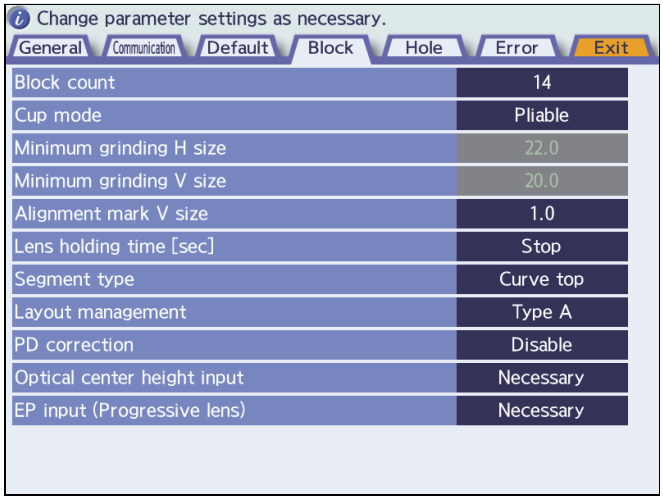
Parameter items	Setting contents
System	**Blocker Lex / <u>Mini Lab</u> / Extended Lab / Blocker VCA**
	Sets the system configuration where the ICE-1500 is connected.
RS-232C baud rate (Edger1)	**<u>38400</u> / 9600**
	Sets the communication speed (Baud rate) using the Edger1 port.
RS-232C baud rate (Edger2)	**<u>38400</u> / 9600**
	Sets the communication speed (Baud rate) using the Edger2 port.
My ID	**<u>32</u>** Setting range: 1 to 65535
	This parameter sets the ID No. for the ICE-1500. When multiple ICE-1500 units are connected in a network, each unit is given a number for identification.
Host ID	**<u>32</u>** Setting range: 1 to 65535
	Sets the ID No. for the host device that is the server in a network.
IP address	**<u>192.168.254.1</u>** Setting range: 0.0.0.0 to 255.255.255.255
	Sets the IP address of the ICE-1500.
Host IP address	**<u>192.168.254.2</u>** Setting range: 0.0.0.0 to 255.255.255.255
	Sets the Host IP address.
Host port No.	**<u>55555</u>** Setting range: 0 to 65535
	Sets the Host port No.
Initialization session (VCA download)	**Preset / <u>Auto</u>**
	This parameter is available only when the system setting is Blocker VCA.
VCA type	**<u>VCA-B</u> / VCA-C**
	This parameter is available only when the system setting is Blocker VCA.
VCA connection setting	**<u>RS-232C</u> / Ethernet**
	Select the method to connect the VCA server. This parameter is available only when the system setting is Blocker VCA.

Parameter screen (Default)

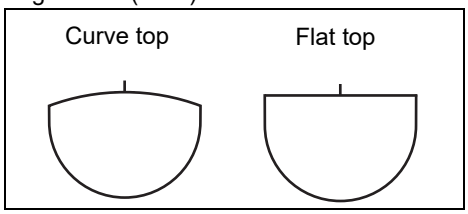


Parameter items	Setting contents
Optical center height	**+2.0 (mm)** Setting range: -5.0 to +5.0
	The default value of optical center height.
Initial CYL mode	**- / + / +/-**
	Default setting of Cyl reading mode.
Default groove setting	**On/Off**
	This parameter sets whether or not to perform grooving after turning on, loading the traced data, measuring the demo lens shape, and selecting the nylor frame.
Groove depth	**0.3 (mm)** Setting range: 0 to 0.8
	Sets the default groove depth.
Groove width	**0.6 (mm)** Setting range: 0.6 to 1.2
	Sets the default groove width.

Parameter screen (Block)

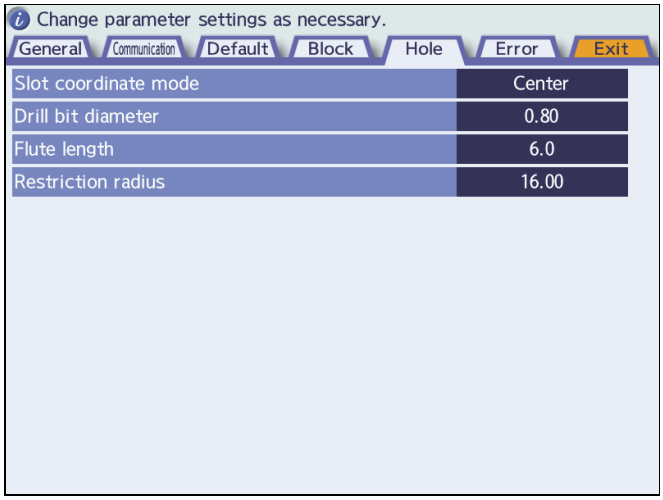


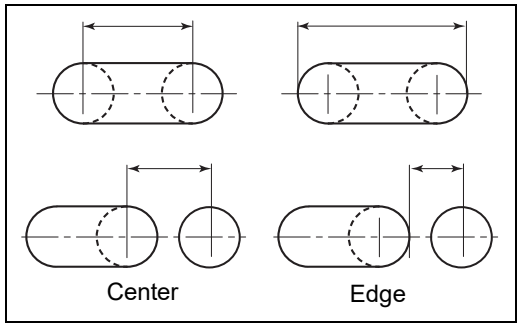
Parameter items	Setting contents
Block count	**0** Setting range: 0 to 999999999
	Shows the numbers of blocked lenses. To clear the number of blocked lenses, press and hold the Block count field and select Yes when the “Clear the block counter. OK?” message is displayed. If the number of blocked lenses exceeds 999999999, the number is automatically cleared to 0.
Cup mode	**Half eye, Pliable, Pliable/Mini, Pliable/Nano**
	Selects a lens cup to be used. • Half eye: The cup mark size can be changed with the Minimum grinding H size and Minimum grinding V size parameters. • Pliable: The shape of Pliable cup is displayed at a fixed size. • Pliable/Mini: The cup mark changes automatically between Pliable cup and Mini cup according to the lens layout setting. • Pliable/Nano: The cup mark changes automatically between Pliable cup and Nano cup according to the lens layout setting.
Minimum grinding H size	**22.0 (mm)** Setting range: 15.0 to 30.0
	Sets the minimum horizontal length of half-eye lenses that can be processed by a lens edger. This parameter is available only when Cup mode is set to Half eye.
Minimum grinding V size	**20.0 (mm)** Setting range: 15.0 to 24.0
	Sets the minimum vertical length of half-eye lenses that can be processed by a lens edger. This parameter is available only when Cup mode is set to Half eye.
Alignment mark V size	**0.0 / 1.0 / 2.0 (mm)**
	Select the alignment scale height (horizontally long ellipse) from 0.0 mm, 1.0 mm, and 2.0 mm. When 0.0 mm is selected, the horizontally long ellipse becomes a straight line.

Lens holding time [sec]	**0.0 (s)** Setting range: 0.0 to 3.0
	Sets the time period for the blocking arm to remain at rest at the lowest position. By setting the proper holding time, the lens cup attached condition can be checked when blocking the super water repellent lens. • In the case of the setting of 0.0 to 3.0 seconds The blocking arm returns to the original position after it has stopped for the set period of time. • In the case of the setting of 3.1 seconds The parameter is set to “STOP”. After blocking, the blocking arm remains at the lowest position. Pressing OK in the “Complete blocking.” message displayed on the screen returns the blocking arm to the original position.
Segment type	**Curve top / Flat top / Received (VCA)**
	Selects the segment display types between Curve top and Flat top on the Blocking screen (Multi).  When this parameter is set to “Received (VCA)”, the segment type switches between Curve top and Flat top according to direction from the server in the Blocker VCA system.
Layout management	**Type A / Type B**
	When this parameter is set to Type B, the parameters of all the connected instruments must be set to Type B. However, this parameter may not be selectable depending on the software version of the connected instrument. In such a case, select Type A. If the settings are incorrect, the PD when the lenses are set in frames may not satisfy the specifications.
PD correction	**Disable / Enable**
	When this parameter is set to Enable for the ICE-1500, PD correction is performed during blocking. Therefore, the PD correction parameter in the connected edger must be set to Disable. If the settings are incorrect, the PD when the lenses are set in frames may not satisfy the specifications. This parameter is enabled only when the Layout management parameter is set to Type A. When the System parameter is set to Blocker VCA and the VCA type parameter is set to VCA-B, the Enable setting becomes ineffective and PD correction is not performed.

Optical center height input	**Necessary** / **Unnecessary** Sets whether or not to confirm the optical center height when the data is loaded from the tracing unit. When the parameter is set to Necessary, the optical center height is not confirmed (numeric field turns yellow) when the data is entered from the tracing unit. When the parameter is set to Unnecessary, the optical center height is confirmed (numeric field turns white).
EP input (Progressive lens)	**Necessary** / **Unnecessary** Sets whether or not to check the EP value entry on the layout of the progressive lens in Point mark mode. When the parameter is set to Necessary, the EP numeric field is displayed in yellow except for when the job data is loaded from the memory, and blocking or saving is not possible. When changing the EP value for each job, setting to Necessary prevents improper blocking due to failure to change the EP value.

Parameter screen (Hole)



Parameter items	Setting contents
Slot coordinate mode	**Center** / **Edge** Selects the reference points either from center or edge when entering the coordinates of slotted holes or the distance between the hole and notch. 

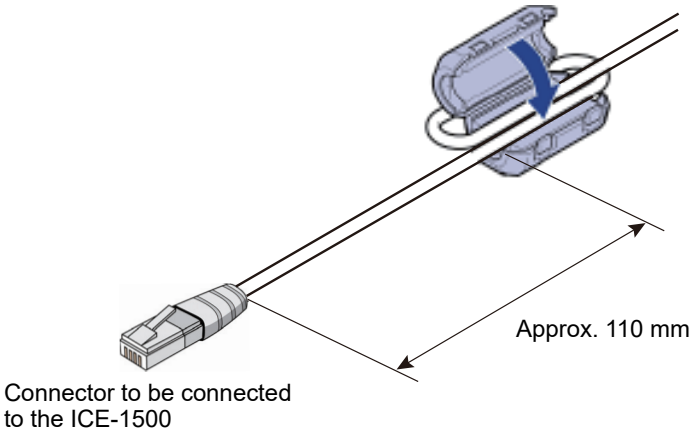
Drill bit diameter	**0.80 (mm)** Setting range: 0.50 to 5.00
	Set the parameter according to the diameter of the drill of the lens edger.
Flute length	**6.0 (mm)** Setting range: 1.0 to 10.0
	Set the parameter according to the diameter of the flute length of the lens edger.
Restriction radius	**16.00 (mm)** Setting range: 10.00 to 20.00
	Sets the hole setting invalid range by the radius from the frame center.

5.2 Connection

■ This section describes the samples when the ICE-1500 is connected to the systems and the communication parameter settings.

5.2.1 Attaching the ferrite core

When connecting the LAN cable to the ICE-1500, attach the provided ferrite core to the LAN cable as shown below.



5.2.2 Connection samples

Connect lens edgers and LAN cables.

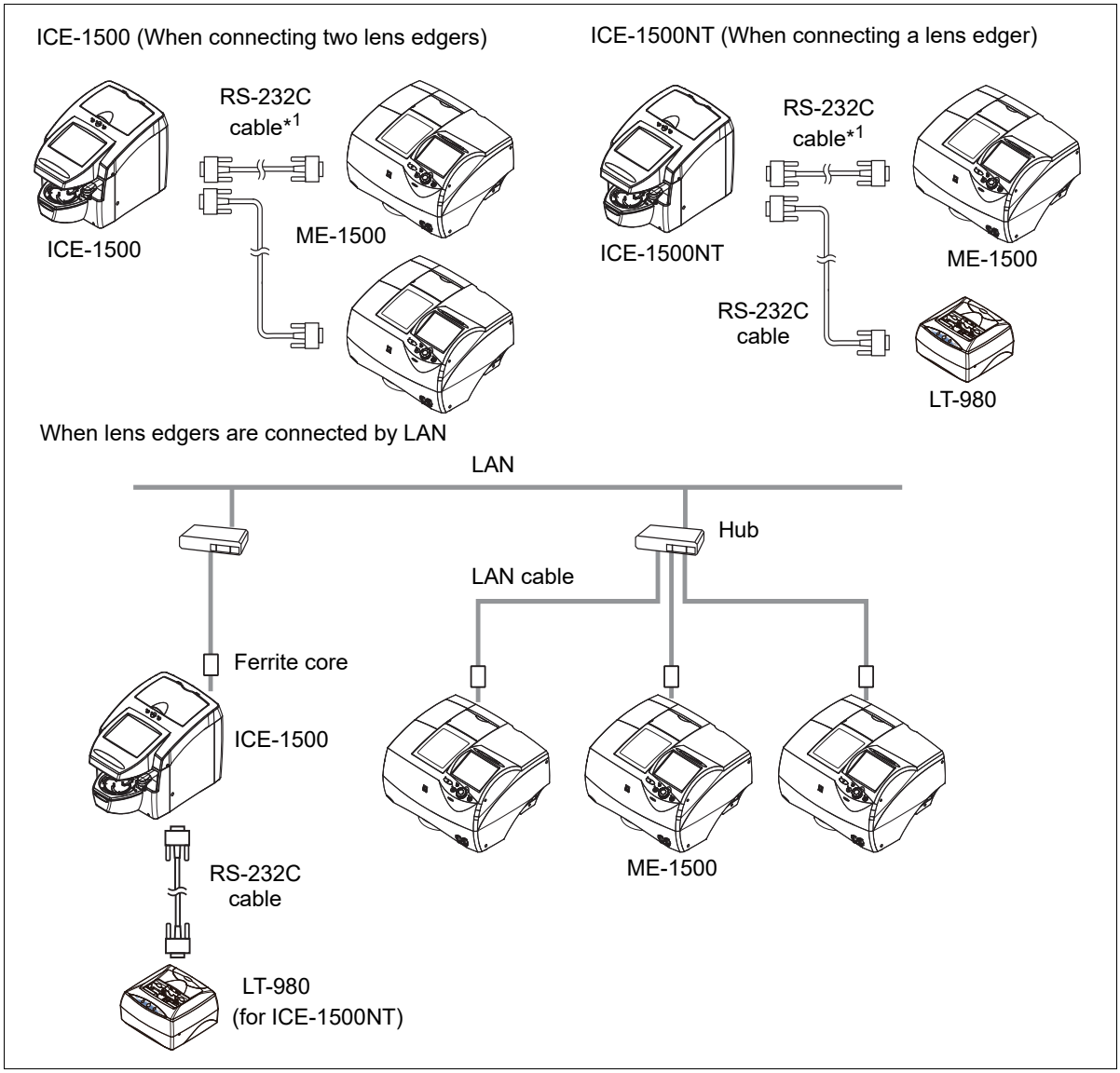
⚠ CAUTION

- Before connecting instruments, confirm that all instruments are turned off.
- When connecting the LAN cable to the ICE-1500, attach the provided ferrite core to the LAN cable.

"5.2.1 Attaching the ferrite core" (page 203)

○ Mini Lab system

In a small- or medium-scale system, the ICE-1500 serves as a data server.



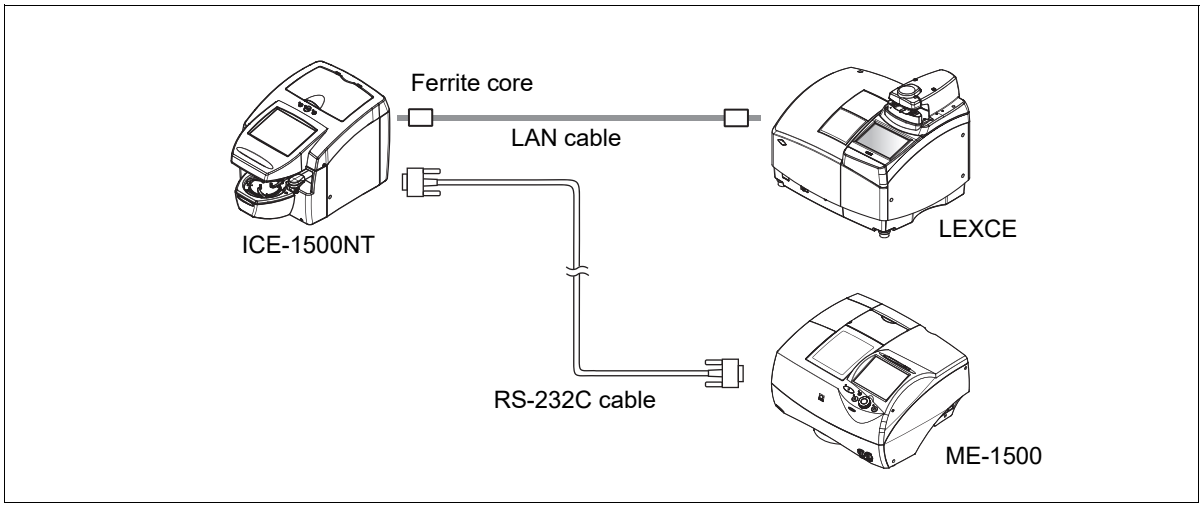
*1: Use LAN cables when connecting to the LEXCE.

Note

- In the Mini LAB system, the ICE-1500 can set the grooving specifications when the LE-1200 S/SNT model, ME-1500, LEX-1200/Lex Drill system, SE-9090 Supra, SE-1, or LEXCE is connected as a lens edger.

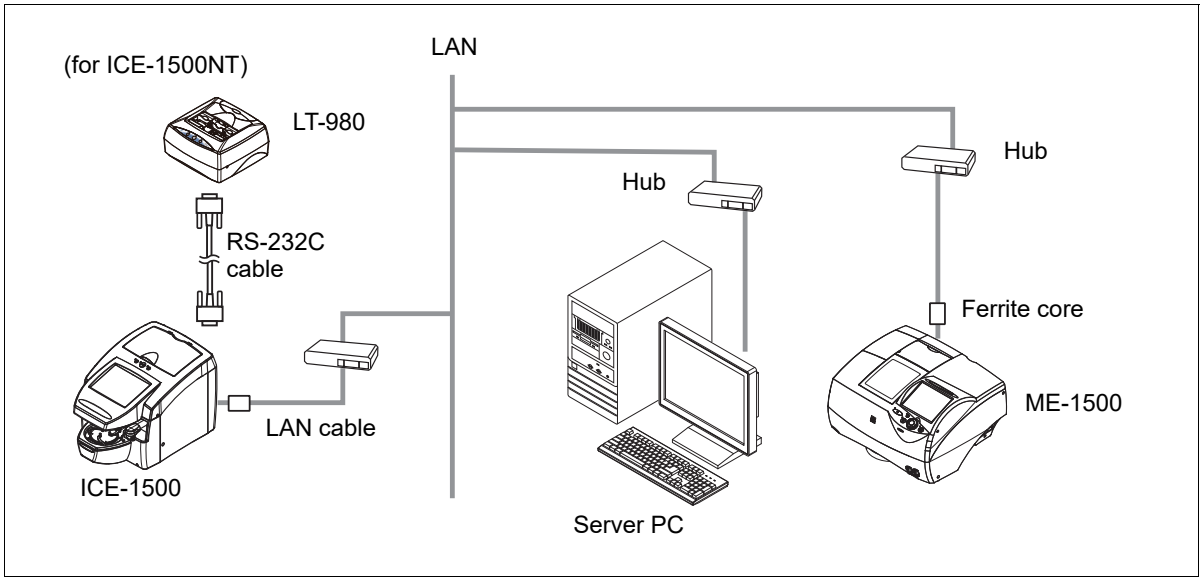
○ Blocker Lex system (NT model)

The smallest system connects the ICE-1500NT and lens edger on a one-to-one or a one-to-two basis.



○ Other systems

In this large-scale system, an external computer serves as a data server.



The server computer and lens edgers are connected by LAN.

○ Connection ports on the ICE-1500

Connect equipment to the EDGER 1 connector, EDGER 2 connector, or LAN port.

System	ICE-1500 port	Connection details
Mini LAB (ICE-1500)	EDGER 1	First edger: RS-232C cable
	EDGER 2	Second edger: RS-232C cable
	LAN	Three or more edgers: LAN cable Connect them to the LAN through a hub.
Mini LAB (ICE-1500NT)	EDGER 1	First edger: RS-232C cable
	EDGER 2	Tracer: RS-232C cable
	LAN	Two or more edgers: LAN cable Connect them to the LAN through a hub.
Extended LAB	EDGER 1	Not used
	EDGER 2	Tracer: RS-232C cable (ICE-1500NT)
	LAN	Server computer and edgers: LAN cable Connect them to the LAN through a hub.
Blocker Lex (ICE-1500NT)	EDGER 1	First edger: RS-232C cable
	EDGER 2	Second edger: RS-232C cable
	LAN	LEXCE: LAN cable

When connecting the external barcode scanner (optional), use the BARCODE connector.

5.2.3 Setting the ICE-1500

Set the ICE-1500 according to the system configuration where the ICE-1500 is connected.

Parameter	Mini Lab / Blocker Lex		Extended Lab
	Edger connector	LAN port	
My ID	ID No. of the ICE-1500: 32		ID No. of the ICE-1500 (Any number except for the server No.)
Host ID No.	ID No. of the ICE-1500: 32		ID No. of the server PC
RS-232C baud rate	38400	–	–
Mac Address	–	Never change the factory setting.*2	Never change the factory setting.*2
IP address	–	Set the parameter differently for each ICE-1500. *3	Set the parameter differently for each ICE-1500. *3
Host IP address	–	–	Set the parameter differently for each ICE-1500. *3 (IP address of the server computer)
Subnet mask *1	–	Set the parameter differently for each ICE-1500. *3	Set the parameter differently for each ICE-1500. *3
Gateway *1	–	–	Set the parameter differently for each ICE-1500. *3
Host port No.	–	–	55555 *4

Parameter	Blocker VCA	
	Edger connector	LAN port
My ID	–	–
Host ID No.	–	–
RS-232C baud rate	38400	–
Mac Address	–	Never change the factory setting.*2
IP address	–	Set the parameter differently for each ICE-1500. *3
Host IP address	–	Set the parameter differently for each ICE-1500. *3 (IP address of the server computer)
Subnet mask *1	–	Set the parameter differently for each ICE-1500. *3
Gateway *1	–	Set the parameter differently for each ICE-1500. *3
Host port No.	–	Set the parameter differently for each ICE-1500. *3 (Port No. of the server software)

*1: Set the parameters on the screen for servicing. When it is necessary to change the settings, consult Nidek or your authorized distributor.

*2: Mac Address is set differently for each ICE-1500. It cannot be changed.

*3: Set these parameters according to the network to which the ICE-1500 is connected.

*4: When the Nidek-produced computer software is used, set the host port No. to 55555. When the other server software is used, set the host port No. of the used software.

- The settings for the devices connected to the ICE-1500 are described in the installation manual. Consult Nidek or your authorized distributor.

6 MAINTENANCE

6.1 Troubleshooting

In the event that the instrument does not work properly, attempt to correct the problem according to the following table before contacting Nidek or your authorized distributor.

Symptom	Remedy
The screen is not displayed even though the power switch is turned on (|).	• Confirm that the power plug is connected to a power outlet. • Confirm that voltage applied to the power outlet is within the range specified. • Check the fuses. If the fuses are blown, replace them with new ones. *"6.3 Fuse Replacement" (page 212)*
The indication of the lens diopter is unstable.	• Clean the lens table. • If the instrument is installed near light equipment, move the instrument.
The following message has appeared at instrument start-up. • 0D initialization error • Adjustment light error • There is a lens on the table. • Dust is on the grid.	• Remove the lens or shape measurement table to clean the lens table. Then restart the instrument. • If strong interference light comes in, block it.
The following message has appeared at instrument start-up. • Camera A error • Camera B error	• The camera has a failure. After checking the error message, turn off power and contact Nidek or your authorized distributor.
Any of the following message has appeared on the screen. • X axis motor error • Y axis motor error • Theta motor error • Block motor error • Bottom pin motor error	• Blocking mechanism has failure. After checking the error message, turn off power and contact Nidek or your authorized distributor.
While the Blocking screen, Hole Editor screen, or Shape Imager screen is displayed, is displayed, the reflector (plate under the lens table glass) does not rotate (except for Display auto off mode).	• Turn off power. In 10 seconds or more, turn it on again.

Symptom	Remedy
The stylus cannot be set in the groove of frames.	• Perform semiauto tracing.
The stylus comes off the groove during tracing and tracing stops. The LED of  blinks.	• Press  to return the stylus to its origin point and trace the frames again. • When the stylus comes off because the frames are sharply warped, perform goggle type frame tracing.

* If the symptom cannot be corrected by the above remedies, contact Nidek or your authorized distributor.

6.2 Periodical Inspection

■ To maintain the instrument properly, it is necessary to regularly check the instrument and replace consumables. The instrument requires the following checks.

For more details of inspection, contact Nidek or your authorized distributor.

⚠ CAUTION

- The periodical inspection is conducted by authorized service personnel only.
  As malfunction or injury may occur, do not replace any parts other than fuses. Do not attempt to repair or disassemble the instrument.

Check area	Cycle	Check or maintenance item
Lens table pin	2 years	Check whether the rubber part has any crack or break. If it does, replace it.
Lens clamp		Check whether the rubber part has any crack or break. If it does, replace it.
Stylus *1	Every 2 years or after 10,000 lenses are traced	Check whether the tip of the stylus is worn out and affects the measurement accuracy. If it does, replace it.
Clamp holder *1	2 years	Check for any break or loss. If it has a problem, replace it.
X axis- and Y axis- constant force springs *1	After 300,000 lenses are traced	Check for any kink or crack. If it has a problem, replace it.

*1: Except for NT model

6.3 Fuse Replacement

If the ICE-1500 is not started even though the power switch is turned on, the fuses may be blown. Replace the fuses with spare ones.

⚠ CAUTION

- Before replacing fuses, be sure to turn off the power switch and disconnect the power cord from the power outlet.

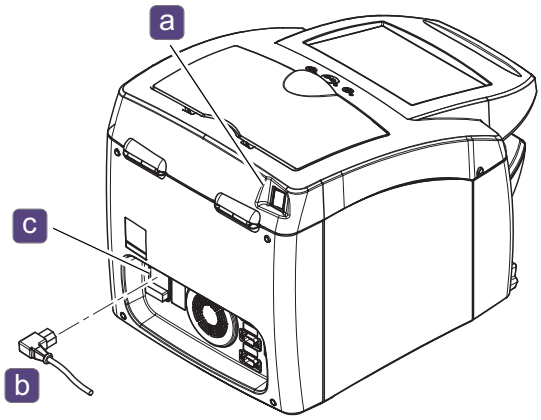
  Electric shock may occur.
- Use the specified fuses only.

  Use of any fuses other than those specified may result in fire.

1 Turn off (○) the power switch a.

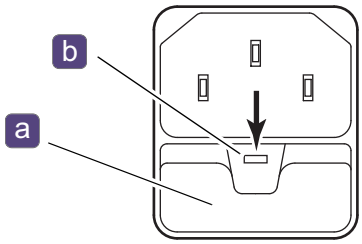
2 Disconnect the power cord from the power outlet.

3 Disconnect the power cord b from the power inlet c.



4 Remove the fuse holder a under the power inlet.

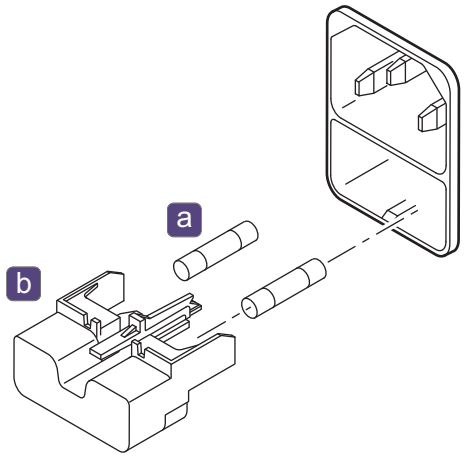
Pull out the fuse holder while holding the lever b in the direction of the arrow.



5 Remove the fuses a to replace them with new ones.

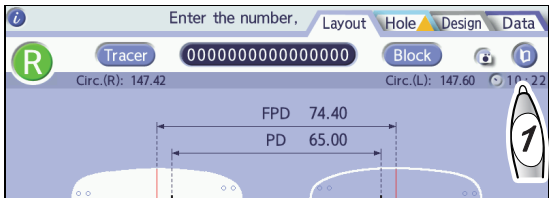
Fuse rating: T 1.6AL 250 V

6 Reattach the fuse holder b.



6.4 Date and Time Setting

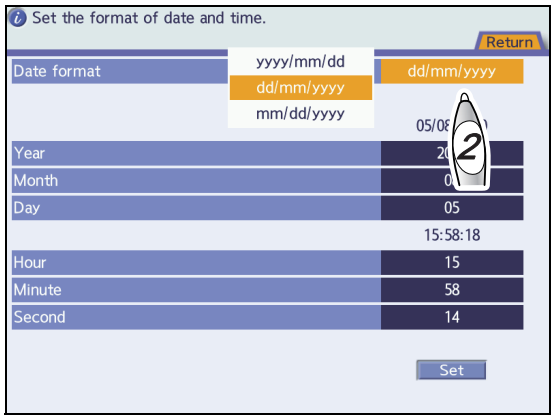
1 Press the time indication on the Layout screen to display the Clock screen.



2 As necessary, select the display format by pressing the Date format field.

Date display format

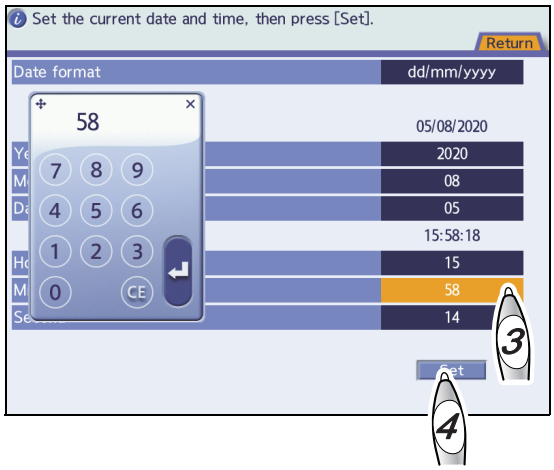
yyyy/mm/dd: Year/Month/Day
dd/mm/yyyy: Day/Month/Year
mm/dd/yyyy: Month/Day/Year



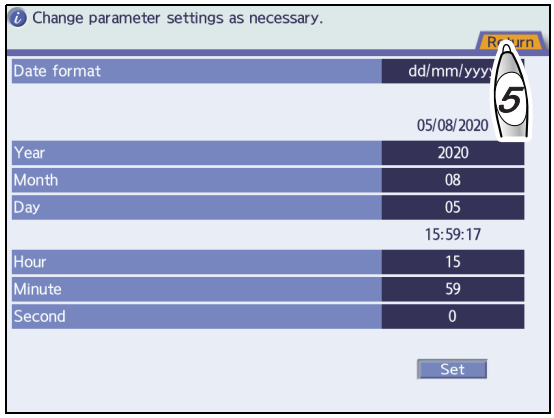
3 Press each numeric field for date and time setting to display the numeric keypad and enter the desired value.

4 After entering all values, press Set to confirm them.

Pressing Set updates to the set time.



5 Press the Return tab to return to the Layout screen.



6.5 Touch Screen Calibration

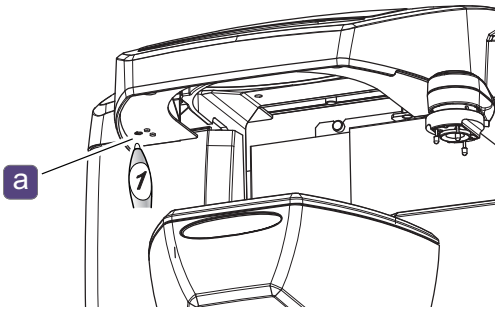
■ This section describes the procedure to calibrate the detection position on the touch screen.

If the pressed button does not respond properly or any button other than the pressed one responds, the detection position may be shifted.

Perform calibration by the following procedure.

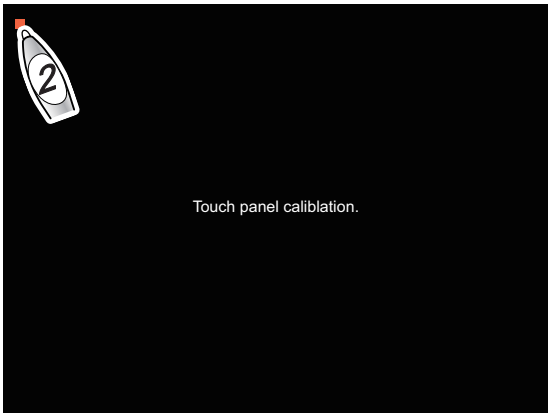
- Be sure to press the red square with the touch pen tip.
  Do not use a finger because the detection position cannot be precisely adjusted.

1 Turn on the power switch while pressing the touch screen calibration switch a.



2 When the Touch panel calibration screen is displayed, press the red square in the top left corner.

A beep sounds and the square turns blue.

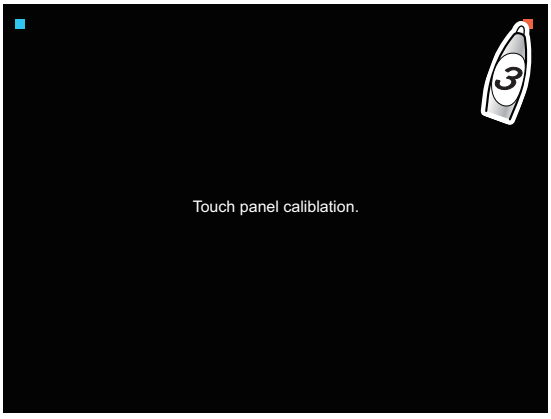


3 Press the red square in the top right corner with the touch pen.

4 Press the red square in the bottom left corner with the touch pen.

5 Press the red square in the bottom right corner with the touch pen.

When the red square is pressed in all four corners, touch screen calibration is performed and the ICE-1500 is activated.



6.6 Cup Holder Adjustment

■ If the plunger inside the cup holder becomes loose or worn out, the cup holder may not hold the pliable cup securely. In such a case, turn the plunger with a hexagonal wrench for adjustment.

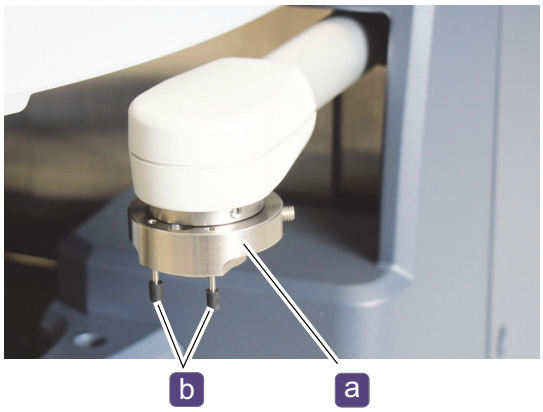
1 Pull down to remove the lens clamp a from the blocking arm.

2 Perform adjustment so that the pliable cup can be held securely and attached or detached smoothly.

Turning the plunger a clockwise holds the pliable cup securely.

3 Reattach the lens clamp a to the blocking arm.

With the two-pin side b facing forward, push the lens clamp up until a click sounds.



6.7 Cleaning

When the cover or screen of the instrument becomes dirty, clean it with a soft cloth. For severe stains, soak the cloth in a neutral detergent diluted with water, wring well, and then wipe. Finally dry with a soft, dry cloth.

⚠ CAUTION

- Never use an organic solvent such as paint thinner.
  That could damage the surface.
- Lightly wipe the exterior of the LCD touch screen with a soft cloth. Do not press the LCD touch screen using an object with a hard tip. In addition, keep magnetic objects away from the LCD touch screen.
  Scratches or failure of the LCD touch screen may result.
- Never use a sponge or cloth soaked in water.
  Water may leak into the interior of the instrument resulting in malfunction.

6.8 List of Consumables

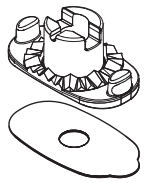
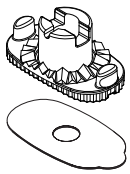
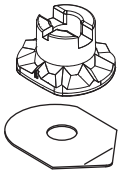
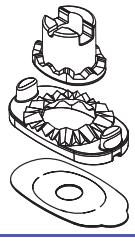
Part name	Part number	Remarks
Fuse	8040202040	T 1.6 AL 250 V 5 × 20 mm
Slide cover (except for the NT model)	40601-M158	Contact Nidek or your authorized distributor if any damage or deterioration is found.

* After replacing the fuses, restock them.

○ Lens cup

The following lens cup can be used for the ICE-1500.

Suction cup cannot be used.

Part name		Part number	Remarks
	Pliable cup (White)	40370-M085	For general lenses
	Pliable cup (Red)	40370-M094	For left lenses
	Pliable cup (Green)	40370-M095	For right lenses
	Double-coated adhesive pad	40370-M087	For pliable cup, 100 units per pack
	Pliable cup (Green) for high base curve processing	44031-M086	For right lenses
	Pliable cup (Red) for high base curve processing	44031-M087	For left lenses
	Double-coated adhesive pad	40370-M087	For pliable cup, 100 units per pack
	Lens cup for half-eye lens (White)	40370-M061	For general lenses
	Lens cup for half-eye lens (Blue)	40370-M066	For flat lenses
	Lens cup for half-eye lens (Pink)	40370-M068	For plus lenses
	Double-coated adhesive pad	40370-M071	For half-eye lens cup
	Mini cup (Red)	40370-M077	For left lenses
	Mini cup (Green)	40370-M078	For right lenses
	Mini cup (White)	40370-M098	For general lenses
	Double-coated adhesive pad	–	Use by trimming the double-coated adhesive pad for half-eye lens cup.
	Nano cup (Red)	44031-M094	For left lenses
	Nano cup (Green)	44031-M095	For right lenses
	Attachment	44031-M095	For Nano cup
	Double-coated adhesive pad	44031-M093	For Nano cup

7 SPECIFICATIONS AND TECHNICAL INFORMATION

7.1 Safety Features and Error Code Table

■ For safe use, the instrument is provided with the following features.

- Blocking pressure detection function

  Even should a finger be caught during blocking, the blocking pressure will not exceed the set value in order to prevent injury.

- Blocking stop function

  Even when  is pressed with no lens on the lens table, the blocking arm stops at the fixed position with the sensor to prevent malfunction.

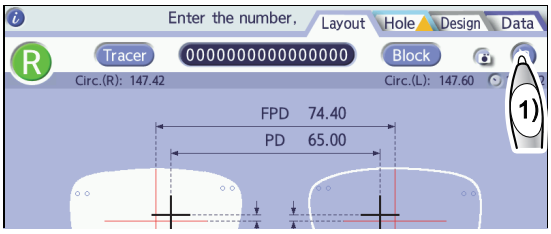
- Self-diagnostic function

  This function always checks the instrument state in operation. If any abnormality is detected, operation is immediately stopped and the error code is displayed on the display.
  Please report the error code as well as the symptoms when contacting Nidek or your authorized distributor due to malfunction.
  For the contents of the error codes, see *"● Error code table" (page 220)*. Attempt correcting the problem according to the table before reporting the malfunction.

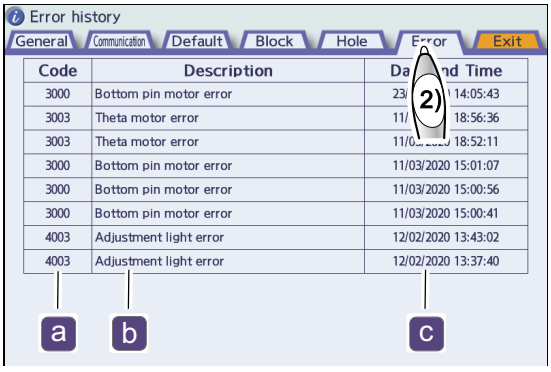
- Error history display

  The error history can be checked.

1) Press  on the Layout screen to display the Parameter screen.



2) Press the Error tab.
   The error history is displayed.
   a: Error code
   b: Error message
   c: Error occurrence date and time



3) To return to the layout screen, press the Exit tab.

- Error code table

Code	Error message	Contents of the error	Remedy
10**	[VCA] Error status	Error status has been received via VCA communication.	Check the communication setting between the ICE-1500 and VCA host.
1999	[VCA] Format error	Unprocessed trace format or Z format has been received via VCA communication.	
2002	[External Memory] No memory media inserted.	Status of no memory media has been received from the host via Nidek-LAN communication.	Check whether the host memory media exists.
2003	[External Memory] Lack of free space in the external memory.	Status of insufficient free space in memory media has been received from the host via Nidek-LAN communication.	Check the free space in the host memory media.
2004	[External Memory] Data volume upper limit	Status of data volume upper limit has been received from the host via Nidek-LAN communication.	Delete data in the host or change the job number.
2005	[External Memory] The number of brands has reached the limitation.	Status of brand number upper limit has been received from the host via Nidek-LAN communication.	Delete brand data in the host or change the brand name.
2006	[External Memory] Include any alphabet in the brand name.	Status of incorrect brand name has been received from the host via Nidek-LAN communication.	Change the brand name.
2007	[External Memory] Shorten the brand name.		
3000	Bottom pin motor error	Bottom pin motor error has been detected.	For details, contact Nidek or your authorized distributor.
3001	X axis motor error	X axis motor error has been detected.	
3002	Y axis motor error	Y axis motor error has been detected.	
3003	Theta motor error	Theta motor error has been detected.	
3004	Block motor error	Block motor error has been detected.	
4000	Camera A error	Camera A error has been detected.	
4001	Camera B error	Camera B error has been detected.	
4002	0D Initialization error	0D Initialization has failed at instrument start-up.	Remove the lens or dust from the lens table.
4003	Adjustment light error	Adjustment light error has been detected.	
4004	There is a lens on the table.	The lens on the lens table has been detected at instrument start-up.	Remove the lens from the lens table.
4010	Dust is on the grid.	Dust on the grid has been detected.	Remove the dust from the lens table.
4011	Measurement error	Lens measurement has failed (Single, Auto).	
4012	Measurement time-out	Lens measurement has not finished within the set time (Single, Auto).	

7.2 Specifications

Blocking unit		
• Method	Lens outline imaging	Imaging of reflected image
	ALM function	Imaging of projected image
• Maximum lens diameter	85 mm in diameter	
• Camera	Lens outline imaging	CMOS color camera
	ALM function	CMOS black and white camera
• Display	8.4-inch Color Liquid Crystal Display, 800 × 600 pixels	
• Layout mode	Single, Multi, Progressive, Demo lens	
• Entry items	FPD (DBL is selectable) PD (1/2PD is selectable) Optical center height (frame center / optical center height, BT height, and PD height) Cylinder axis EP (Height of distance eyepoint of progressive power lens) Size Lens material (CR39, Hi-Index, Polyca, Acrylic, Trivex, Urethane, Glass) Frame type (Metal, Plastic, Optyl, Nylor, Two Point) Processing specification (polishing, safety bevelling) CYL mode (+/- switching) Job code	
• Layout range	FPD	30.00 to 99.50 mm (0.01 mm increments)
	PD	30.00 to 99.50 mm (0.01 mm increments)
	1/2PD	15.00 to 49.75 mm (0.01 mm increments)
	Optical center height	0 to ±15.0 mm (0.1 mm increments)
	Size adjustment	0 to ±9.95 mm (0.01 mm increments)
• Blocking	Blocking method	Motorized (movable in the X, Y, and theta axis directions)
	Blocking pressure	2.5 ±0.5 kgf
	Blocking area	Within ø20 mm from the screen center

• ALM function	Range of power measurement	SPH: -10 to +10 D, CYL: ±6 D
	Accuracy of measured optical center	±0.5 mm (SPH ±0.75 D or more / CYL: 0 D within ø3 mm of detection range. For SPH of less than ±0.75 D, measurement accuracy is not guaranteed.)
	Accuracy of measured cylinder axis	±1° (CYL: ±1 D or more within ø1 mm of detection range. For CYL of less than ±1 D, measurement accuracy is not guaranteed.)
	* Measurement accuracy differs depending on the lens shape. Above is measurement accuracy when the Nidek jig lens is used. * Diopter indication function is equipped, however, indicated diopters are reference values and cannot be used for diopter measurement.	
• Shape measurement function	Demo lens outline measurement	Measurement range: 65.0 (H) × 50.0 (V) mm ±1.5 mm Circumference measurement accuracy: ±0.15 mm (when the ø45 mm jig specified by Nidek is used)
	Specification of hole position	0.01 mm increments
	Specification of hole diameter	0.5 to 10.0 mm in diameter (0.01 mm increments)
Tracing unit (except for NT model)		
• Tracing method	Automatic 3-D binocular tracing	
• Traceable size	Frame tracing	Shape width: 36 to 85 mm from the measurement center Shape height: 18.4 to 66 mm Frame horizontal width:113 to 180 mm Maximum height from clamp midpoint: 23 mm At the maximum height, maximum frame vertical width:50 mm, maximum frame horizontal width: 150 mm
	Pattern tracing	22 to 74 mm in diameter, however, 15.5 to 66 mm vertically from the measurement center
	FPD measurement function	Available
• Frame clamping	One-touch automatic clamping	
• Stylus fitting	Switchable between automatic and semiautomatic	
• Measurement accuracy	Frame tracing	±0.05 mm (circumference error with □45 standard frame)
	Pattern	±0.1 mm (circumference error with □45 standard frame)
	*Trace results just after auto calibration	
• Measurement time	Frame tracing	30 seconds or less (both-eye tracing using the standard frame)
	Pattern	20 seconds or less (tracing using the standard pattern)

Other functions		
• Frame memory function	Available	
• External communication	RS-232C	Three built-in ports EDGER 1 connector: For connection with a (first) lens edger EDGER 2 connector: For connection with a (second) lens edger or tracing unit BARCODE connector: For connection with a barcode scanner
	LAN	One built-in 10Base-T/100Base-Tx port
Power specifications		
• Power supply voltage	AC 100 to 240 V	
• Frequency	50/60 Hz	
• Power consumption	110 VA (90 VA for NT model)	
Dimensions and mass		
• Dimensions	325 (W) × 510 (D) × 345 (H) mm	
• Mass	21 kg (17 kg for NT model)	
Environmental conditions (during use)		
• Installation location	Indoors	
• Temperature	5 to 40°C	
• Humidity	5 to 31°C: 30 to 80% The minimum acceptable relative humidity is 30% for the temperature range of 31 to 40ºC. The maximum acceptable relative humidity is 80% for temperatures up to 31ºC which decreases linearly after that to 50% relative humidity at 40ºC.	
• Altitude	Up to 2,000 m above sea level	
• Overvoltage	Category II	
• Pollution degree	2	
Environmental conditions (during transport and storage)		
• Temperature	-20 to 60°C	
• Humidity	20 to 85% (non-condensing) *The conditions during transport and storage apply to the instrument when packed.	
Standard Configuration		
• Standard accessories	Power cord, RS-232C cable, touch pen, spare fuses (two units), lens clamp, frame change holder, USB flash drive, shape measurement table, dust cover, ferrite core for LAN cable, Operator's Manual, Installation Manual, accessory case, standard frame (except for NT model), standard pattern (except for NT model), stylus cover (except for NT model), pattern setting unit (except for NT model), frame support attachment (except for NT model), hexagonal wrench (except for NT model)	
• Optional accessories	Barcode scanner (handy type), barcode scanner (built-in type), 2D barcode scanner (handy type), clay for partial step processing, spatula for partial step processing, blower brush	

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