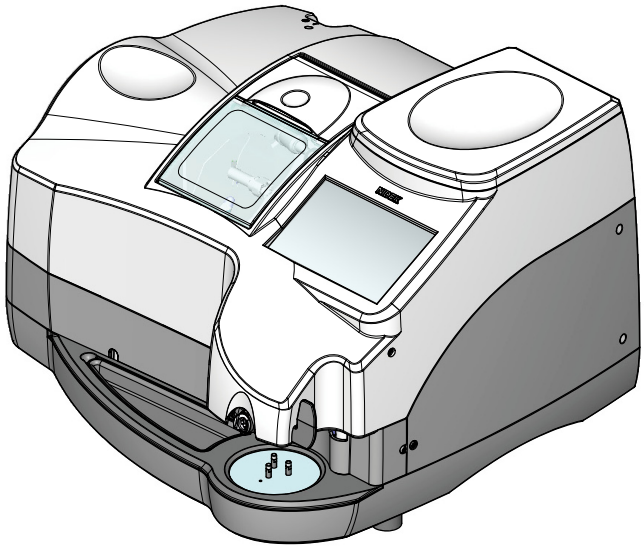
NIDEK

Edging Station
LE-800

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 Edging Station LE-800.

This manual includes operating procedures, safety precautions, specifications, and information about accessories and 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.

For 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.

SOFTWARE LICENSE AGREEMENT

This SOFTWARE LICENSE AGREEMENT (this "Agreement") is an agreement between you, whether person or legal entity, and NIDEK CO., LTD., a Japanese corporation, ("NIDEK") for software (including but not limited to software linked dynamically or statically with other software) supplied by NIDEK or its designee pursuant to this Agreement, whether software alone or embedded software in a NIDEK hardware product, whether on disk or in read only memory, or on other media, or through an authorized website or network, and any accompanying documents or materials (including, but not limited to, operation manuals and electronic documents for such software, and other software for displaying or saving the data acquired from or through other NIDEK hardware product) (collectively, the "Software").

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.

1. GRANT OF LICENSE

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.

1.2. Unless otherwise agreed in writing by NIDEK or its designee, the license is limited to using the Software on a single computer or a single NIDEK hardware product and if you replace such computer or NIDEK hardware product, you may not use the Software without a new license of the Software.

1.3. Notwithstanding the provision of 1.2, if you connect a single server computer with the Software installed to a plurality of client computers, you may use the Software on such client computers; provided, however, that the upper limit of the number of said client computers will be determined by NIDEK in writing separately and individually from this Agreement.

1.4. Notwithstanding the provision of 1.2, if NIDEK permits you to install the Software on a plurality of computers using one license key of the Software, you may install and use the Software on such computers up to the upper limit of the number determined by NIDEK in writing separately and individually from this Agreement.

1.5. The Software is only to be used for its intended purpose provided in the specifications, operation manual or related documents in accordance with applicable laws and regulations. If the Software is embedded software in a NIDEK hardware product, you will use such Software only as embedded software for the use of such NIDEK hardware product.

1.6. For the license of the Software granted in this Agreement, unless the license is granted by NIDEK or its designee explicitly free of charge, you will pay to NIDEK or its designee the price for the Software, or if the Software is embedded software in a NIDEK hardware product, the price for the NIDEK hardware product in which the Software is embedded.

2. INTELLECTUAL PROPERTY RIGHTS

2.1. NIDEK, or an owner of the Third-Party-Software, retains any and all legal rights, title and interests in and to the Software or the Third-Party-Software. Any and all rights under copyright law, patent law, design law and other intellectual property laws not expressly granted herein are reserved by NIDEK or the owner of the Third-Party-Software. The license granted herein will not be intended as, or construed to be, any assignment of the rights of NIDEK or the owner of the Third-Party-Software. The Software and the Third-Party-Software are protected by copyright and other intellectual property laws and international treaties.

3. LIMITATIONS

3.1. You may not use the Software for any products without a license of the Software.

3.2. Unless otherwise permitted and other than the part specified by NIDEK in operation manuals or any accompanying documents for the Software, you may not analyze, reverse-engineer, decompile, disassemble or otherwise attempt to discover the source code of the Software.

3.3. You may not alter, reproduce, modify, translate, adapt, or divert the Software.

3.4. You may not remove, delete or change the copyright notice or other legends of the Software.

3.5. You may not sell, distribute, rent, license, sublicense, lease, assign or otherwise transfer the Software to third parties, or operate the Software for the benefit of third parties without prior written consent of NIDEK.

3.6. You may not create derivative works or cause or permit others to create derivative works based upon the Software without prior written consent of NIDEK.

3.7. You may not disclose operation manuals for the Software to any third party without prior written consent of NIDEK; provided, however, for the avoidance of doubt, the "third party" in this section will not include doctors, examiners, nurses, employees, patients and other persons who need to know the Software.

3.8. You may not use NIDEK’s trademarks or trade names without prior written consent of NIDEK.

4. CONDITIONS OF USE

4.1. You shall take necessary measures (including but not limited to antivirus software) to prevent failure of NIDEK product due to external factors; provided, however, that in the case where it is otherwise provided in the provisions of operation manuals for NIDEK product or other documents, you shall take such necessary measures to the extent not inconsistent with such provisions.

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.

5. EXPORT RESTRICTIONS

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.

6. UPDATES

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 FOR SAFE USE

1.1 Read before Use

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

1.2 Signal Words for Safety

In this manual, signal words are used to designate the degree or level of safety alerting. 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 that are labeled ⚠ **CAUTION** might result in serious injury under certain conditions. Safety precautions must be strictly followed at all times.

1.3 Usage Precautions

Before use

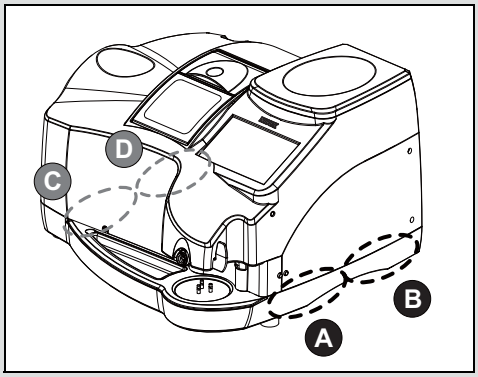
⚠ WARNING

- Use a hand cart when moving the instrument. At least two persons are necessary to lift the instrument.

  Failure due to dropping of the instrument, backache, or stumbling may occur.

- Be sure to lift the instrument by holding it at the points Ⓐ, Ⓑ, Ⓒ, and Ⓓ at the bottom of both sides (see the figure to the right). Do not lift the instrument by its cover.

  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.

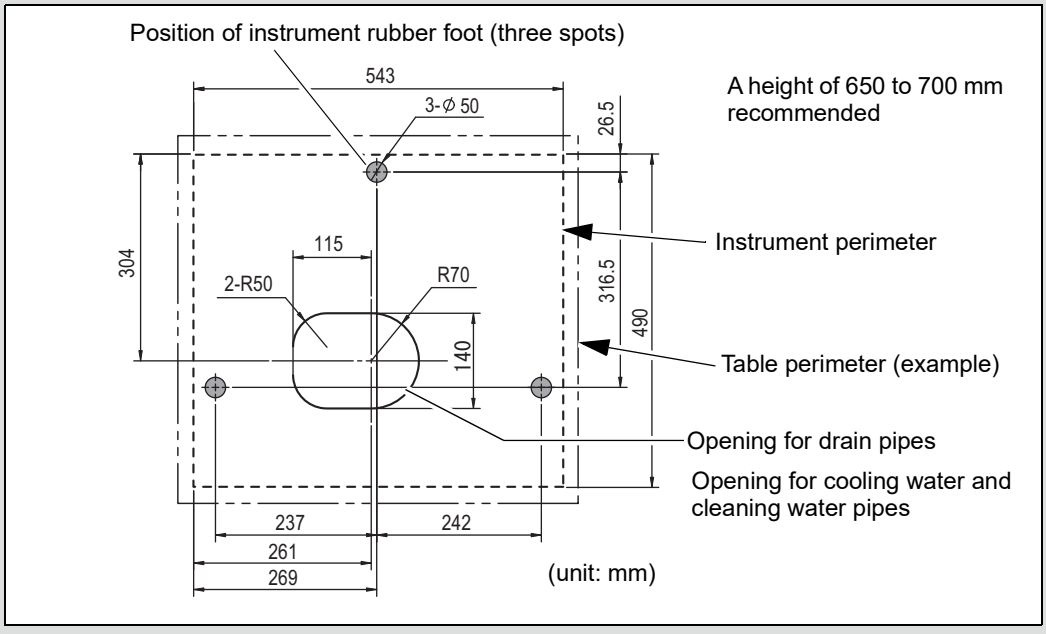
  Fingers may get caught between the table and instrument resulting in injury.

- Set the instrument on a table whose area is larger (50 mm or more) than the outer dimensions of the instrument as shown below. A table height of 650 to 700 mm is recommended to allow space for the pump tank to be installed under the table.

  Additionally, the table must be sturdy enough to bear the weight of the instrument (33 kg) and be provided with adjusters on its legs to allow it to be level and stable.

  Failure to do so could cause the instrument to fall in the event of impact or accidents.

  An opening must be made in the table to pass the pipe through.



- Install the instrument in a stable and level place where vibration or shock does not occur.

  Tilting or vibration can cause the instrument to fall or prevent normal lens processing.

⚠ CAUTION

- Do not use the instrument for any purposes other than the intended purpose.
  NIDEK is not responsible for accidents or malfunctions caused by misuse.
  For the intended purpose of the instrument, *"2.1 Outline of the Instrument" (page 11)*.
- Only personnel authorized by NIDEK or a NIDEK distributor are allowed to install the instrument.
- Install the instrument in an environment that meets the following conditions.
  The following conditions must be maintained during use.
  - Use conditions
    Temperature: 5 to 40°C (41 to 104°F)
    Humidity: 30 to 80% (5 to 31°C [41 to 87.8°F])
    The minimum acceptable relative humidity is 30%. The maximum acceptable relative humidity is 80% for temperatures up to 31°C (87.8°F) which decreases linearly to 50% at 40°C (104°F).
    Altitude: Up to 2,000 m
    Installation location: Interior (with low dust and free from smoke, vibration, and impact)
- Install the instrument in a location with an adequate operating area in front of the instrument as shown in *"Maintenance" (page 5)*.
- Be sure to wear protective gloves when using a utility knife during unpacking.
  Contact by bare hands with a utility knife or sharp edge of cardboard may result in injury.
- Install the instrument on a table with a height and depth that allows comfortable operation.
  Continued use in an awkward posture may result in backache.
- Do not block the cooling fan on the rear of the instrument.
  Should the fan be blocked, rise in temperature inside the instrument may occur resulting in fire.
- Avoid installing the instrument where it is exposed to caustic material such as corrosive gas, acid, or salt.
  Corrosion or malfunction may occur.
- Do not use the power cord other than those supplied. Also do not connect the supplied cord to any other instrument.
  Malfunction or fire may result.
- Do not overload the electrical outlet.
  A multi-outlet supplying power to too many instruments may become overheated and cause fire.
- Install the instrument in 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.
  Failure to do so may interfere with disconnecting of the power from the input power source in case of abnormality.
- Be sure to use a wall outlet which meets the power specification requirements.
  If the line voltage is too high or too low, the instrument may not perform properly. Malfunction or fire may result.
- Completely insert the power plug into a grounded outlet as far as the prongs will go.
  Electric shock or fire may occur in the event of malfunction or power leakage
- Do not place heavy objects on the power cord.
  A damaged power cord may cause fire or electric shock.
- Check the connection of the feedwater and drain hoses before activating the instrument.
  Electric shock due to water leakage or injury caused by wet slippery floor may result.
- When using a pump other than the one provided by NIDEK, use a pump whose maximum current including the inrush current is 1 A or less.
  If the current exceeds 1 A, malfunction may result.

During use

⚠ WARNING

- Only personnel authorized by NIDEK or a NIDEK distributor are allowed to remove the cover fastening screws and covers, disassemble, or touch the interior of the instrument.

  Electric shock, injury, or malfunction may result.

- Never touch the wheel while it is rotating.

  Injury may result.

- Never open the processing chamber cover during lens processing.

  Spray containing processing waste may cause eye damage.

- Be sure to use the instrument only to process spectacle lenses.

  If any other materials are processed, injury may occur.

- Be sure to visually check that wheels are not chipped or cracked before processing. If the wheels are chipped or cracked, immediately stop the instrument and contact NIDEK or your authorized distributor.

  If chipped or cracked wheels are used, they may break or shatter resulting in injury.

- Do not inhale vapor and particles produced during lens processing. Wear a protective mask, glasses, and such as necessary.

  Vapor or particles may be toxic depending on the materials.

⚠ CAUTION

- In the event of smoke or strange odors, immediately turn off the instrument and disconnect the power plug from the wall outlet. Once it is confirmed that the smoke has stopped, contact NIDEK or your authorized distributor.

  Usage of the instrument under such abnormal conditions may cause fire or electric shock. In case of fire, use a dry chemical (ABC) extinguisher to extinguish the fire.

- Immediately replace the power cord if the internal wires are exposed, power is intermittent when the power cord is moved, or the cord and/or plug are hot to the touch.

  Electric shock or fire may occur.

- In the event of malfunction, disconnect the power cord from the wall outlet. Never touch the interior of the instrument and contact NIDEK or your authorized distributor.

  Electric shock or fire may occur.

- Be careful not to injure your hand on any sharp edges when removing the processed lens.

  The lens edge may cause finger injury.

- Safety bevel the front and rear surfaces of glass lenses after processing.

  Subtle burrs may damage one’s skin.

- Be careful not to get fingers caught when chucking (securing) a lens.

  Injury may result.

- Protect the display from splashing water. Also, never operate the display with wet hands.

  Water seeping into the instrument may result in electric shock, malfunction, or fire.

- Always clean up any spilled water from the pump tank with a clean dry cloth.

  A slippery wet floor may cause injury.

After use

⚠ CAUTION

- Do not pull the power cord to disconnect it from the wall outlet. Always hold it by the plug.
  This can damage the metal core of the cord and may result in fire, short circuit or electric shock.
- Occasionally clean the prongs of the power plug with a dry cloth.
  If dust settles between the prongs, the dust will collect moisture, and short circuit or fire may occur.
- If the instrument is not to be used for a long time, disconnect the power cord from the wall outlet.
  Fire may result.
- Do not store the instrument in an area that is exposed to rain, water, or where toxic gas is present or any liquids are stored.
- Maintain the surrounding temperature and humidity at the following ranges during transport and storage of the instrument.
  - Environmental conditions
    Temperature: -20 to 60°C (-4 to 140°F)
    Humidity: 20 to 85% (non-condensing)
    Transport handling: To prevent leakage, keep the right side up, and handle with care. Only stack up to the specified number of units.
- When transporting the instrument, use the special packing materials to protect the instrument from shock or impact.
  Excessive vibration or impact to the instrument may cause malfunction.

Maintenance

⚠ WARNING

- Contact NIDEK or your authorized distributor for wheel replacement.
  Wheel replacement by other than authorized service personnel may result in injury.
- In dressing mode, the wheels are rotating with the processing chamber cover open. Work with special care during dressing.
- Wear protective glasses for wheel dressing.
  Spray containing processing waste may cause eye damage.
- Be sure to check before use and after use. It is recommended to have regular maintenance checks every two years.
  As malfunction or injury may occur, do not replace any parts other than fuses, cooling fan filter, or stocking filter. Do not attempt to repair or disassemble the instrument.
- Use only the specified fuses for replacement.
  Use of any fuses other than those specified may result in fire.
- Before fuse replacement, turn off the instrument and disconnect the power cord from the wall outlet.
  Electric shock may occur.
- Hold the dressing stick with both hands. Hold the dressing stick with a minimum of 2 or 3 mm protruding when dressing the wheel.
  Failure to do so may cause injury by hand contact with the wheel as the dressing stick wears away.
- When the dressing stick is worn to the length of 4 cm, replace it with a new one.
  It is hard to hold the shortened dressing stick resulting in finger injury or wheel damage.

⚠ CAUTION

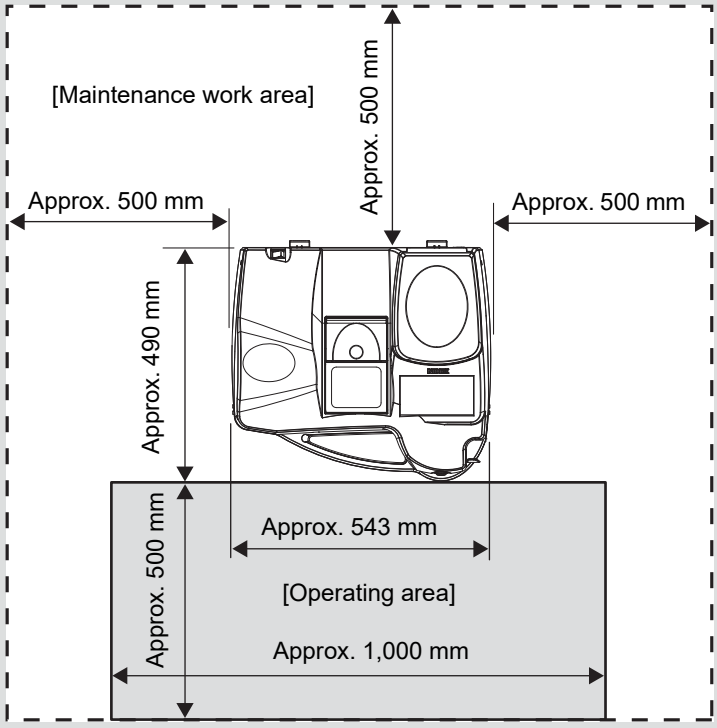
- Before moving the instrument on the specified table, disconnect all units installed in the table such as the pump tank.

  The units installed in the table may fall resulting in injury or malfunction.

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

  Maintenance work in an insufficient space may result in accident or injury.

[Operating area and maintenance work area]



*As a maintenance work area, a height of approx. 750 mm needs to be available from the level of the table on which the instrument is placed.

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.

- When disposing of lens processing waste, follow local ordinances.

  Inappropriate disposal may contaminate the environment.

Other cautions

- Before connecting the cable, turn off the power switch and disconnect the power cord from the wall outlet.
- Connect the cable to the interface connector securely, maintaining the correct orientation of the cable connector.

  Data transmission is not performed properly.
- Do not allow the water level to rise over the maximum line in the pump tank.

  Failure to do so could cause an overflow of water or bubbles or instrument malfunction.
- Be sure to confirm that cooling water (for the wheels) and cleaning water (for the inside wall of the processing chamber) flow properly.

  If the water does not flow, lenses are not processed properly and the instrument may be damaged.

  For the checking method, *"3.2.1 Check before use" (page 50).*
- Never touch the screen touch panel with any object other than fingers.

  Contact with a hard or sharp object such as a ballpoint pen may scratch the display.
- Do not put any object on the processing chamber cover.

  An object placed on the cover may fall into the processing chamber when the cover is opened.
- Be sure to select the correct lens material for the lens material being processed.

  If an improper material is selected, the lens may break or the lifetime of the processing wheels may be reduced substantially.
- If tracing or processing is started without chucking any lens, pattern, or demo lens, malfunction may result at some point.

  In such a case, press the "Chuck" button after interrupting the tracing or processing and then turn off and on the power switch without anything to be chucked.
- Clean the processing chamber after the last use of the day.

  If the chamber is left for several days after being used, the processing waste becomes settled and hard to remove.
- Do not use organic solvents such as paint thinner to clean the exterior of the instrument.

  It may ruin the surface of the instrument.
- The stocking filter is disposable. Do not reuse it.

  A filter which has a rip or run in it does not function as a filter, and therefore, the water supply pipe may be clogged.
- Use only the specified stocking filter for replacement.

  If not, the filter or water supply pipe may become clogged with processing waste.

Note

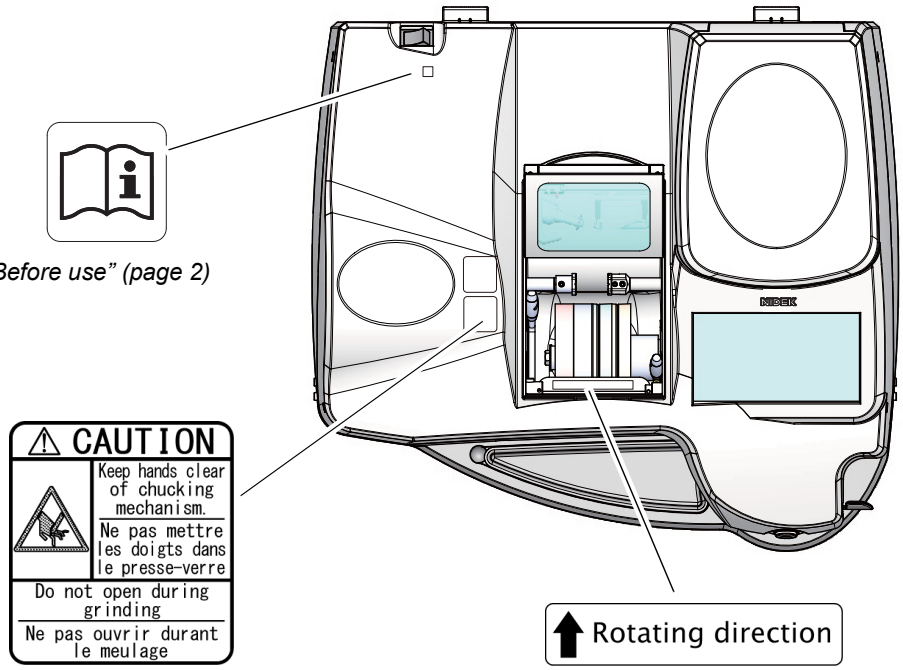
- Occasionally, a pixel may be missing on the screen or a pixel point may always be displayed in red, blue, or green. This does not represent a failure of the LCD touch screen; This is due to the structure of the liquid crystal display.

1.4 Labels and Symbols

■ Some labels and indications are provided on the instrument to convey important information. If labels are curling up or characters fading and becoming illegible, contact NIDEK or your authorized distributor.

	Indicates that the operator is advised to refer to the related instructions in the operator's manual.
	Indicates that caution must be taken. Refer to the operator's manual before use.
	Indicates that dangerous voltage may be present.
	Indicates where hand or fingers may be caught by the moving parts.
	Indicates the state of the power switch. If this symbol of the switch is pressed down, power is not supplied to the instrument.
	Indicates the state of the power switch. If this symbol of the switch is pressed down, power is supplied to the instrument.
	Indicates that the instrument must be supplied only with alternating current.
	Indicates a fuse.
	Indicates the year of manufacture.
	Indicates the manufacturer.
	Indicates that this product is to be disposed of in a separate collection of electrical and electronic equipment in EU.

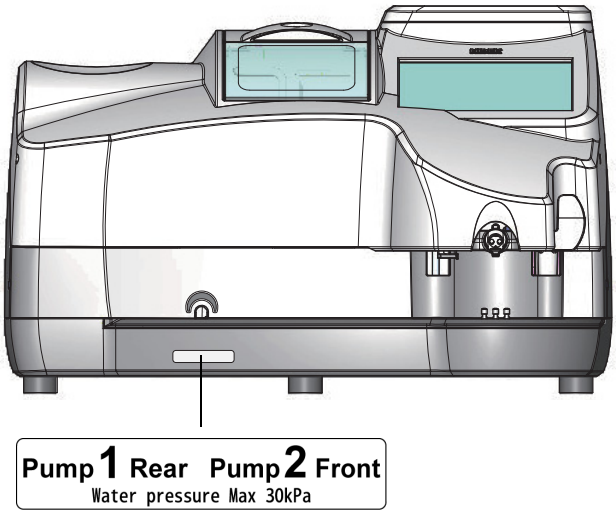
[Top view]



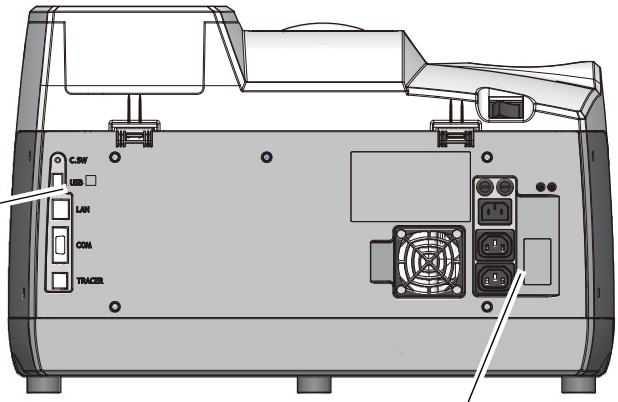
"Before use" (page 2)

"During use" (page 4)

[Front view]



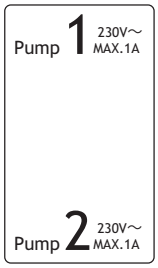
[Rear view]



“2.2 Instrument Configuration” (page 12)

(For 100 to 120 V regions)

or



(For 230 V regions)

2 INTRODUCTION

2.1 Outline of the Instrument

- The NIDEK Edging Station LE-800 is an instrument that uses data from the Satellite Tracer or a host computer to block a lens with a lens cup and then process the lens at a high speed to fit into frames.
- This instrument offers the following features:
  - Multiple wheels are provided to process a variety of lenses according to lens material and processing method.
  - Auto processing (computer-controlled beveling), guide processing, flat edging, polishing, and grooving are possible.
  - A manually-operated intelligent blocker is built into the instrument.
  - Patterns and demo lenses can be traced.
  - Shape data can be saved in the internal memory.

● Processable lens materials and processing types

Wheel type PLB-2R

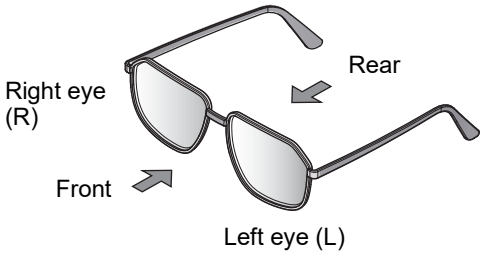
Lens material							Processing			
CR-39	High index plastic	Polycar-bonate	Acrylic resin	Trivex	Polyure-thane	Glass	Beveling	Flat edg-ing	Groov-ing	Polish-ing
○	○	○	○	○	○	○	○	○	○	○

High index plastic: Plastic lens with a refractive index 1.60 or higher

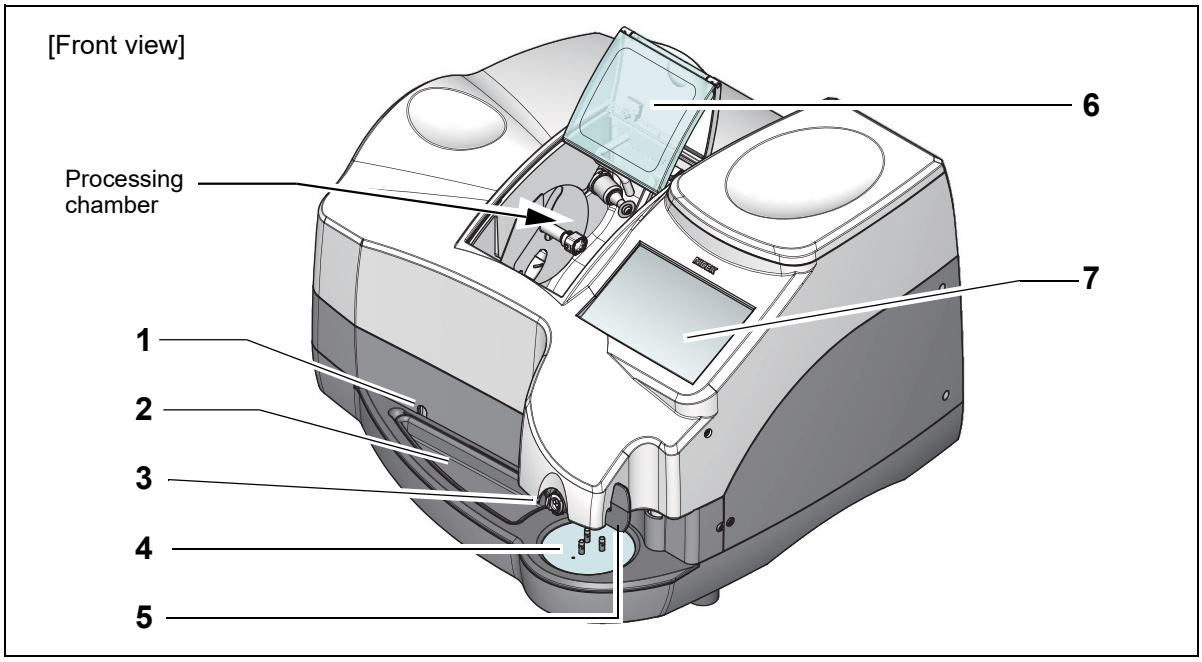
✻ Grooving and polishing cannot be performed for glass lenses.

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.



2.2 Instrument Configuration



1 Water volume control screw

Controls with a hexagonal wrench key (4.0 mm) the volume of cleaning water that provides cooling for the grooving wheel and reduces adherence of processing waste.

Use this screw only when necessary.

2 Tray

Holds objects such as lens cups. The pattern holder and calibration jig can be stored under the tray.

3 Cup holder

The lens cup is attached here for blocking.

4 Lens table

A lens is placed here for blocking.

Place the lens on the three pins with the convex surface up.

5 Blocking lever

Rotates and moves the blocking mechanism up and down.

Push the lever down to start blocking.

6 Processing chamber cover

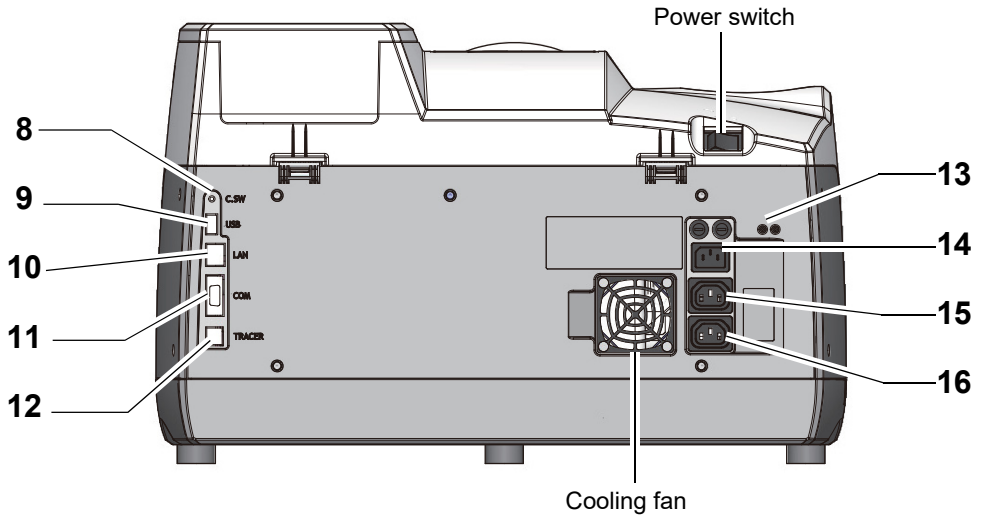
The processing chamber cover is manually operated. Processing does not start until the cover is closed.

Should the processing chamber cover be opened during processing, processing is interrupted for safety.

7 Display

Control buttons, and shape and layout settings are displayed and operated on the touch panel.

[Rear view]



8 Calibration switch (C.SW)

Used by service personnel during calibration. Only authorized service personnel is allowed to use this switch.

9 USB port (USB)

This is where the optional USB flash drive is connected.

10 LAN port (LAN)

This is where a LAN cable is connected when the system is configured as an ETHERNET*1 LAN.

11 RS-232C port (COM)

This is where the connection cable for a tracer or barcode scanner is connected.

12 Expansion port (TRACER)

This is where the connection cable for the optional tracer unit is connected.

13 Breaker switch of pump tank

Used by service personnel during maintenance of the pump tank. Only authorized service personnel is allowed to use this switch.

14 Power inlet

This is where the power cord is connected.

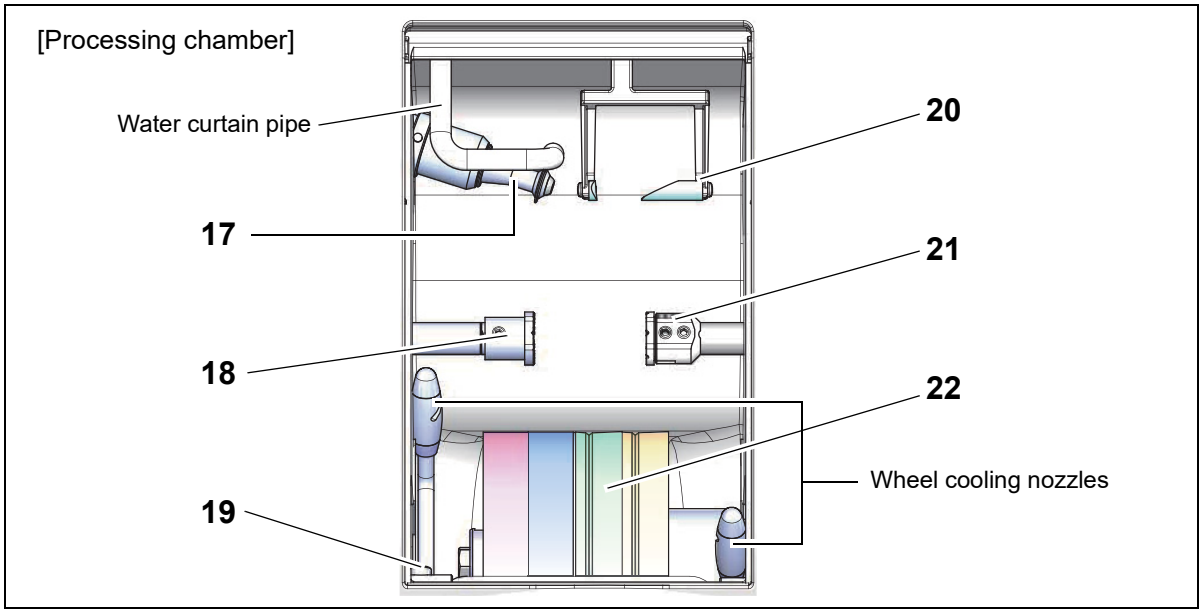
15 Outlet for cooling water (Pump 1)

This is where the power cord of the cooling water pump is connected.

16 Outlet for cleaning water (Pump 2)

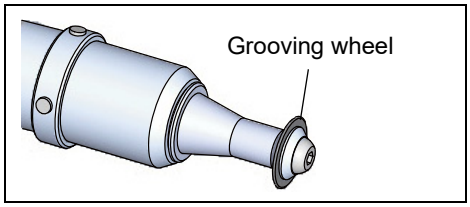
This is where the power cord of the cleaning water pump is connected.

*1. Ethernet: Standards on wiring, and access to the wiring to allow mutual accessing of various information processing terminals to the LAN. In the LE-800, communication is performed with 10 BASE-T or 100 BASE-TX.



17 Grooving unit

Grooves lenses.



18 Lens adapter

The lens with a lens cup is attached here.

19 Cooling water control screw

Controls the water volume of the cooling water poured over the wheels.

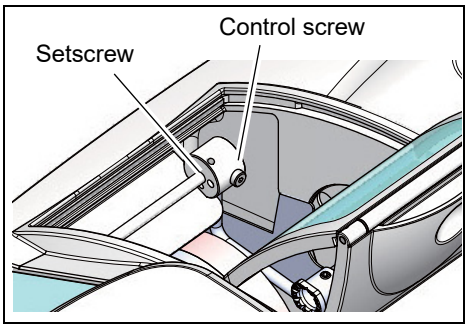
Open the processing chamber cover and loosen the setscrew.

Turn the control screw with a hexagonal wrench key (2.5 mm).

Clockwise turn → Increases the water volume.

Counterclockwise turn → Decreases the water volume.

Tighten the setscrew.



* Use this screw only when necessary.

20 Feeler unit

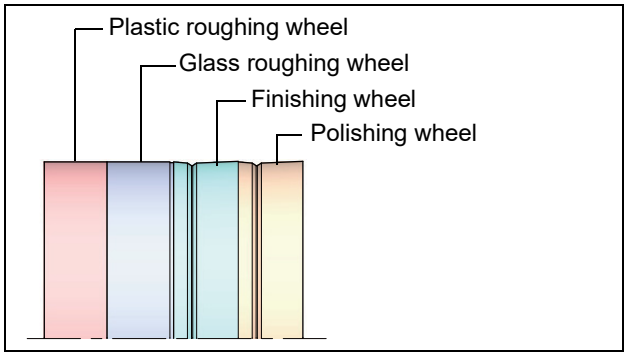
Measures the lens outer diameter, surface, pattern, and demo lens.

21 Lens clamp

Presses against a lens set in the lens adapter to secure it.

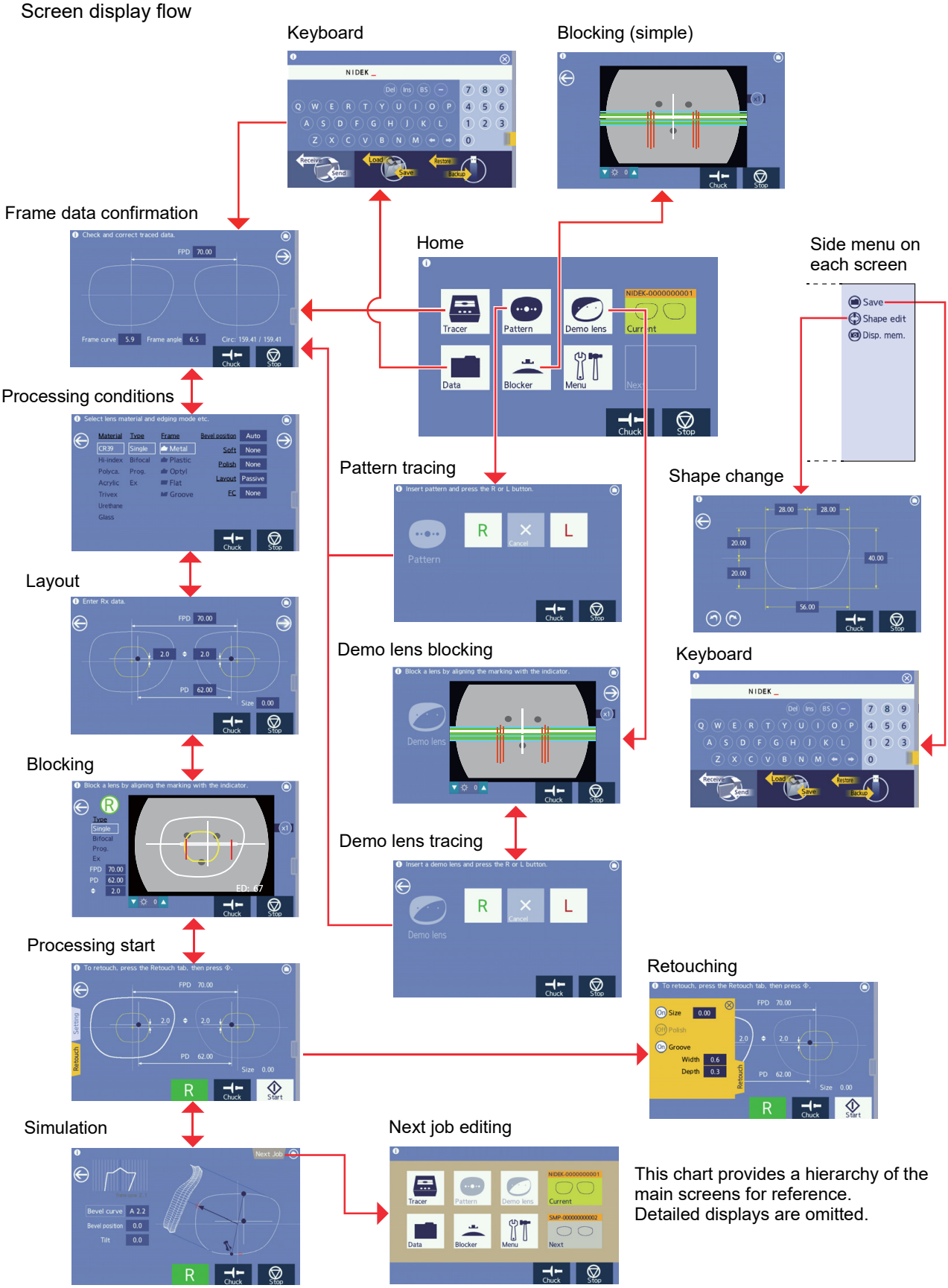
22 Wheels

The illustration to the right shows the wheel configuration of Type PLB-2R.



2.3 Display Description

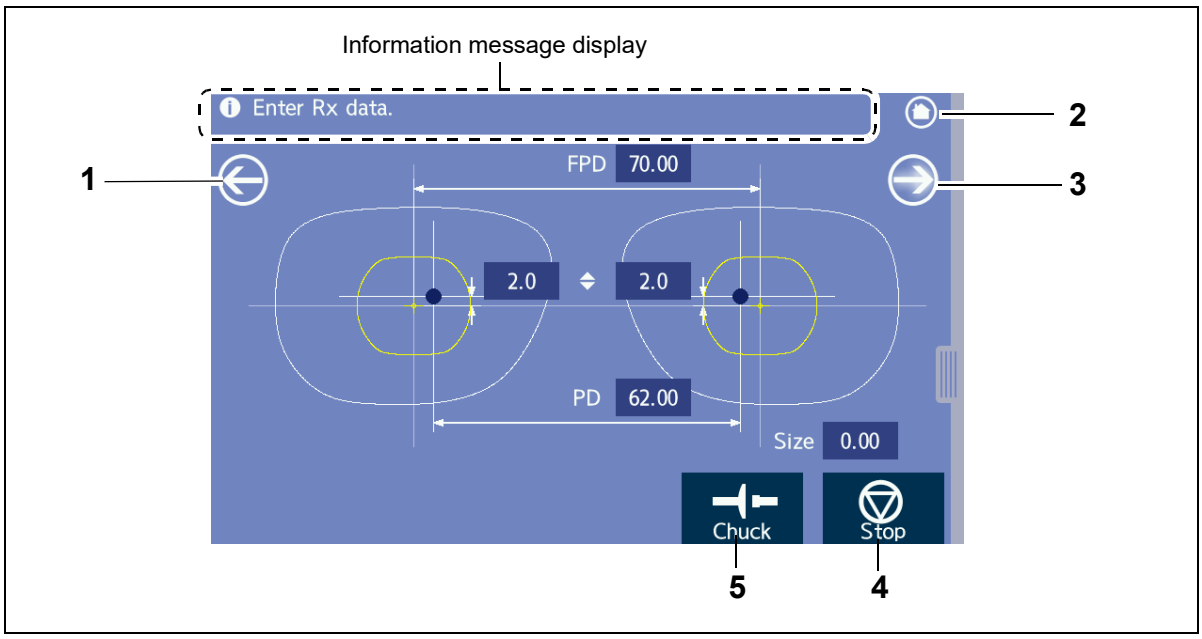
Screen display flow



This chart provides a hierarchy of the main screens for reference.
Detailed displays are omitted.

2.3.1 Buttons and indications common to each screen

The following describes button operations commonly found on each screen such as the layout screen.



1 **Back screen button**

Returns to the previous screen.

2 **Home button**

Returns to the home screen.

3 **Next screen button**

Displays the following screen.

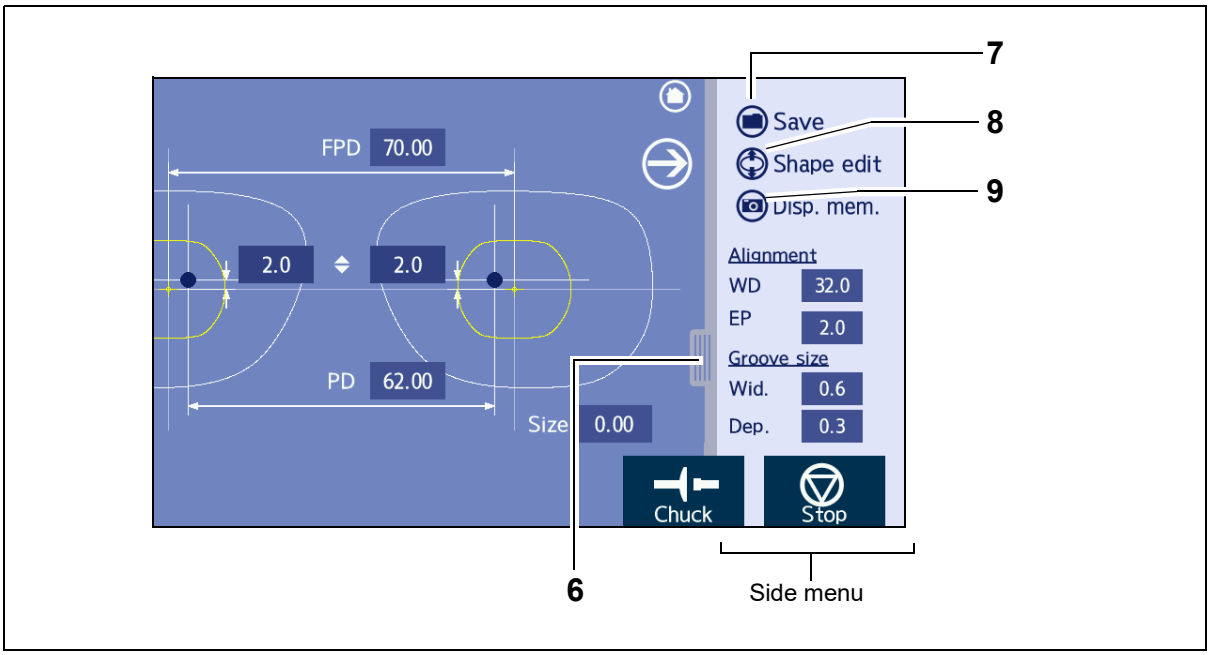
4 **Stop button**

Stops processing.

5 **Chuck button**

Secures or releases the lens. The lens is automatically secured just before processing.

○ Side menu



6 Side menu tab

Displays the side menu hidden to the right of the screen.

Pressing the tab again returns the screen to its original position and hides the side menu.

7 Save button

Displays the keyboard screen and saves or sends data.

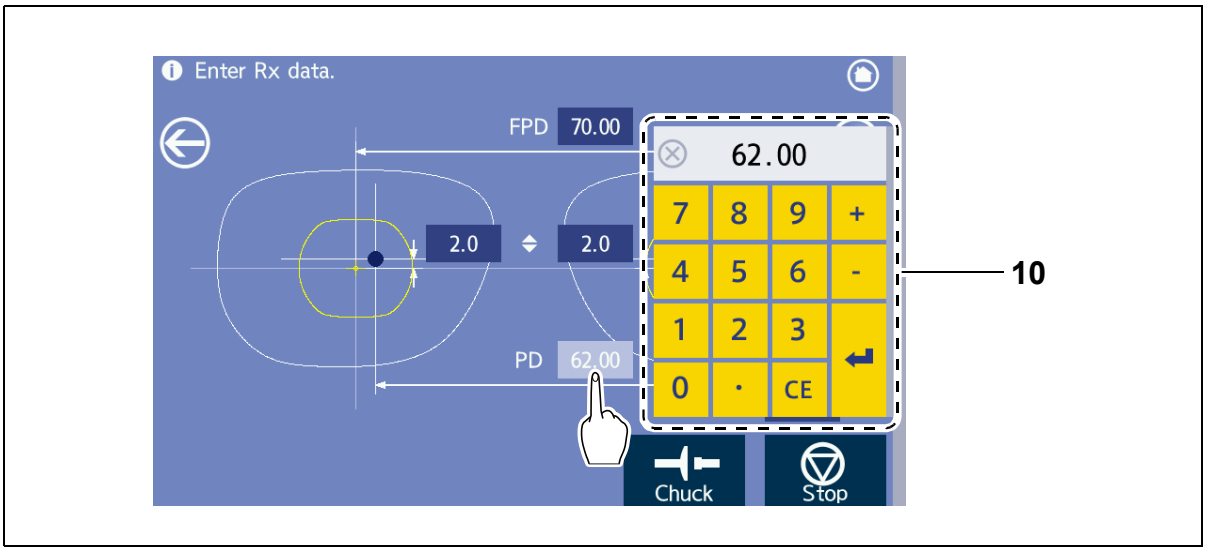
8 Shape edit button

Displays the shape editor screen for shape change.

9 Disp. mem. button

Stores the current settings as initial settings.

○ Numeric keypad



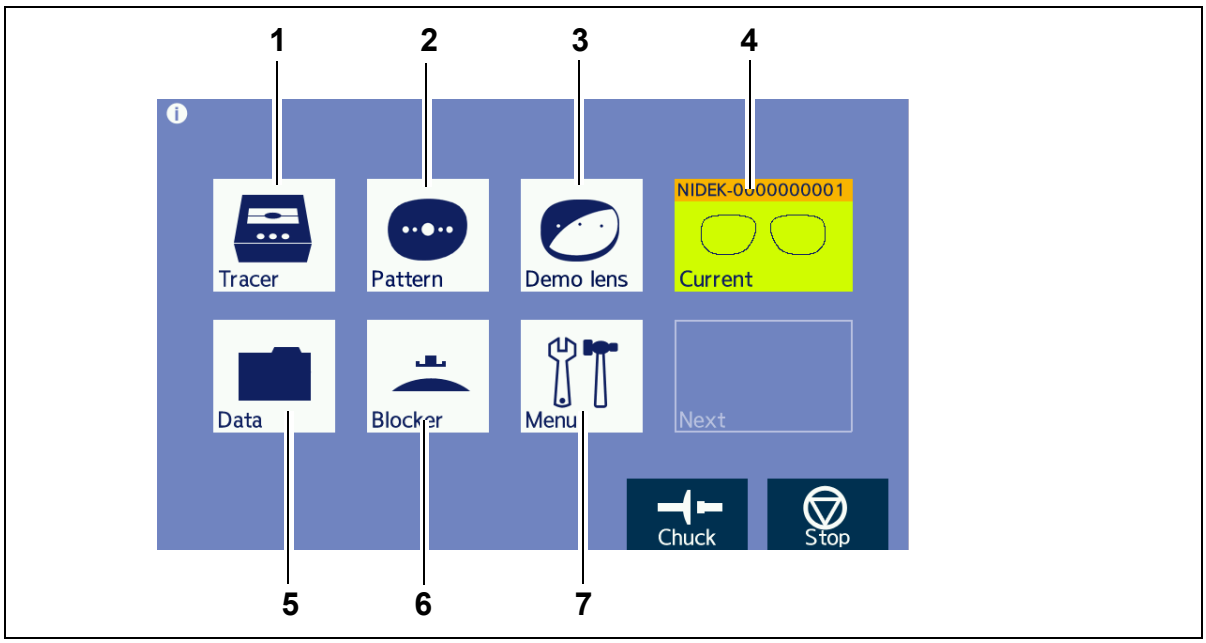
10 Numeric keypad

Pressing the numeric field displays the numeric keypad.

- Number keys, ., +/–: Enters the corresponding characters.
- CE: Cancels the entered numeric value.
- ↵: Confirms the entered numeric value.
- ⊗: Closes the numeric keypad without changing the numeric value.

2.3.2 Home screen

This is the initial screen that provides access to the desired processes.



1 Tracer icon

Receives data from the connected tracer.

The trace data confirmation screen is displayed.

2 Pattern icon

Performs pattern tracing.

The pattern tracing screen is displayed.

3 Demo lens icon

Performs demo lens tracing.

The demo lens blocking screen is displayed.

4 Current data preview icon

Displays the image of the currently selected shape for processing. This is displayed when the screen returns to the home screen during layout or processing.

When the shape is provided with a file name, the file name is also displayed above.

Pressing this icon returns to the layout or processing screen in effect.

5 Data icon

Loads data for editing and processing.

The keyboard screen is displayed.

6 Blocker icon

Displays the blocking screen for lens blocking.

"O Simple blocking" (page 91)

7 Menu icon

Performs parameter and maintenance settings.

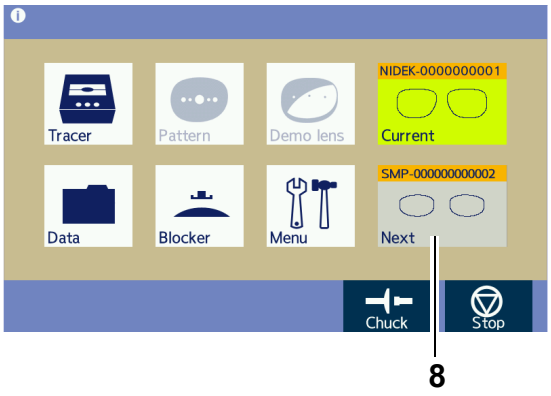
Used to display the menu screen.

8 Next data preview icon

Displays the image of a shape to be processed next. This is displayed when the screen returns to the home screen after the shape to be processed next is loaded during processing.

When the shape is provided with a file name, the file name is also displayed above.

Pressing this icon returns to the screen of the shape to be processed next.

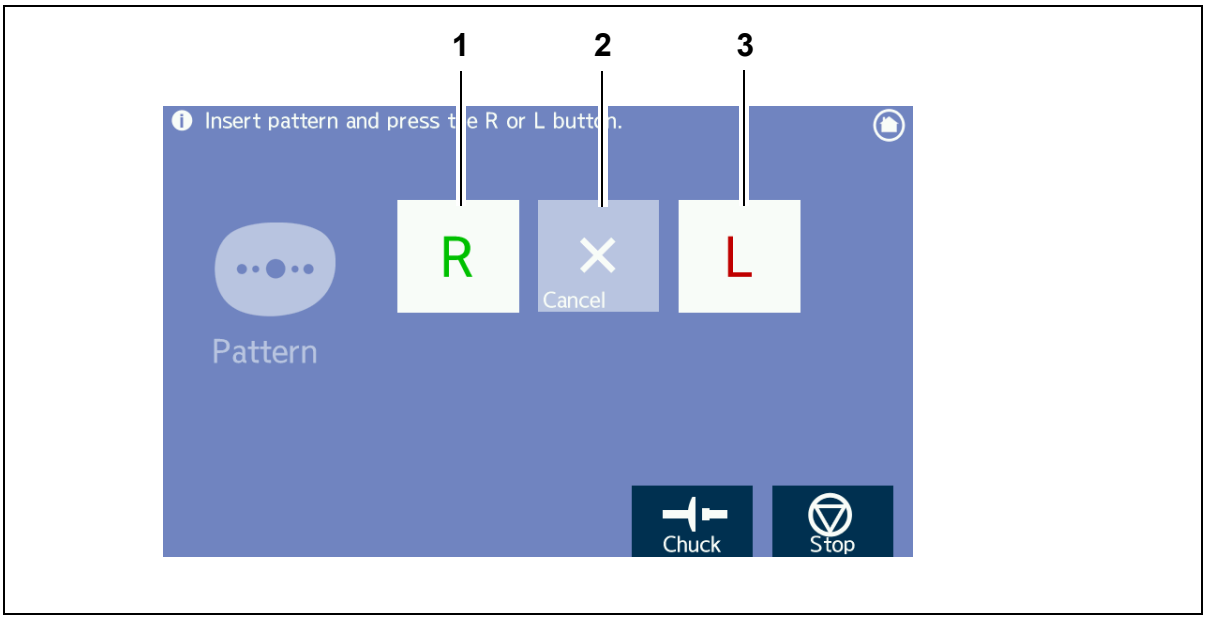


2.3.3 Pattern tracing screen

Pressing 

on the home screen displays the pattern tracing screen.

This screen is used to trace patterns.



1 R **R button**

Traces the right-eye pattern.

2 Cancel **Cancel button**

Cancels tracing.

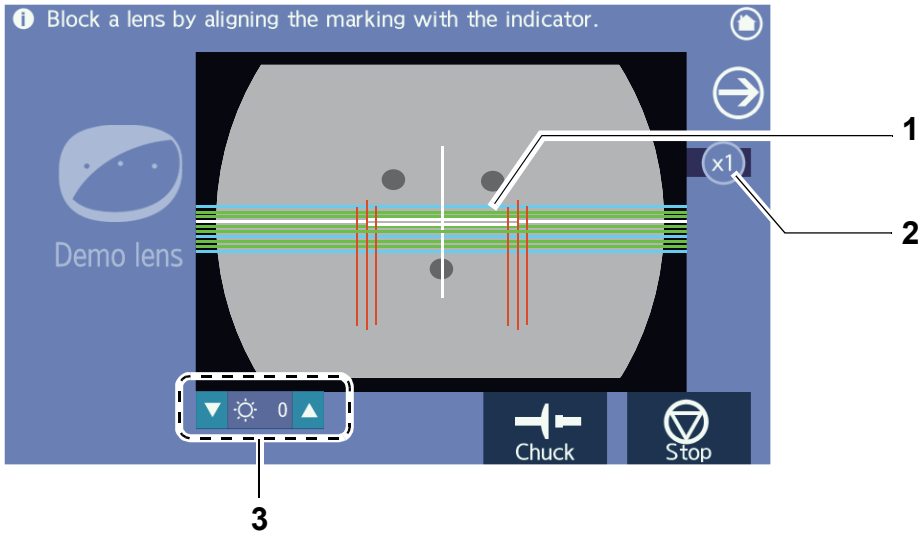
3 L **L button**

Traces the left-eye pattern.

2.3.4 Demo lens blocking screen

Pressing  on the home screen displays the demo lens blocking screen.

This screen is used to block demo lenses.



1 Alignment scale

Align the demo lens position so that the middle lens marking is aligned with the center of this scale and the markings are parallel with the scale.

2 Display magnification button

Displays the magnification of the displayed camera image. Pressing the button toggles the magnification between [x1] and [x2].

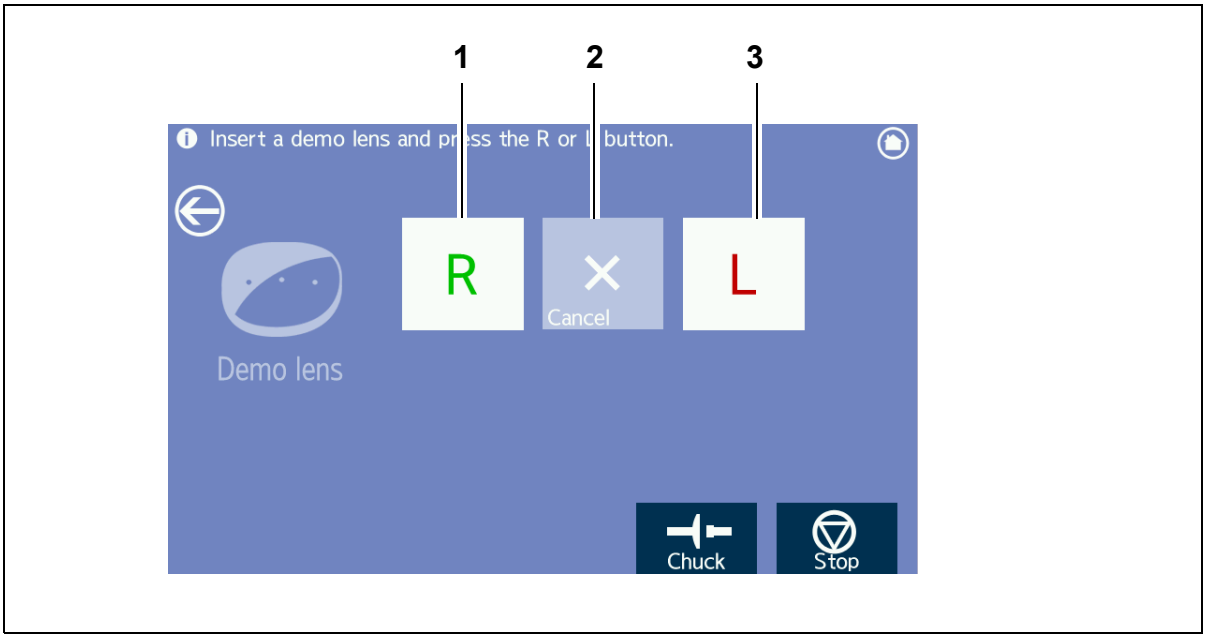
3 Brightness adjustment buttons

Adjust the screen brightness in the range of -8 (dark) to +8 (bright).

2.3.5 Demo lens tracing screen

After blocking on the demo lens blocking screen, the demo lens tracing screen is automatically displayed.

This screen is used to trace demo lenses.



1 R **R button**

Traces the right-eye demo lens.

2 Cancel **Cancel button**

Cancels tracing.

3 L **L button**

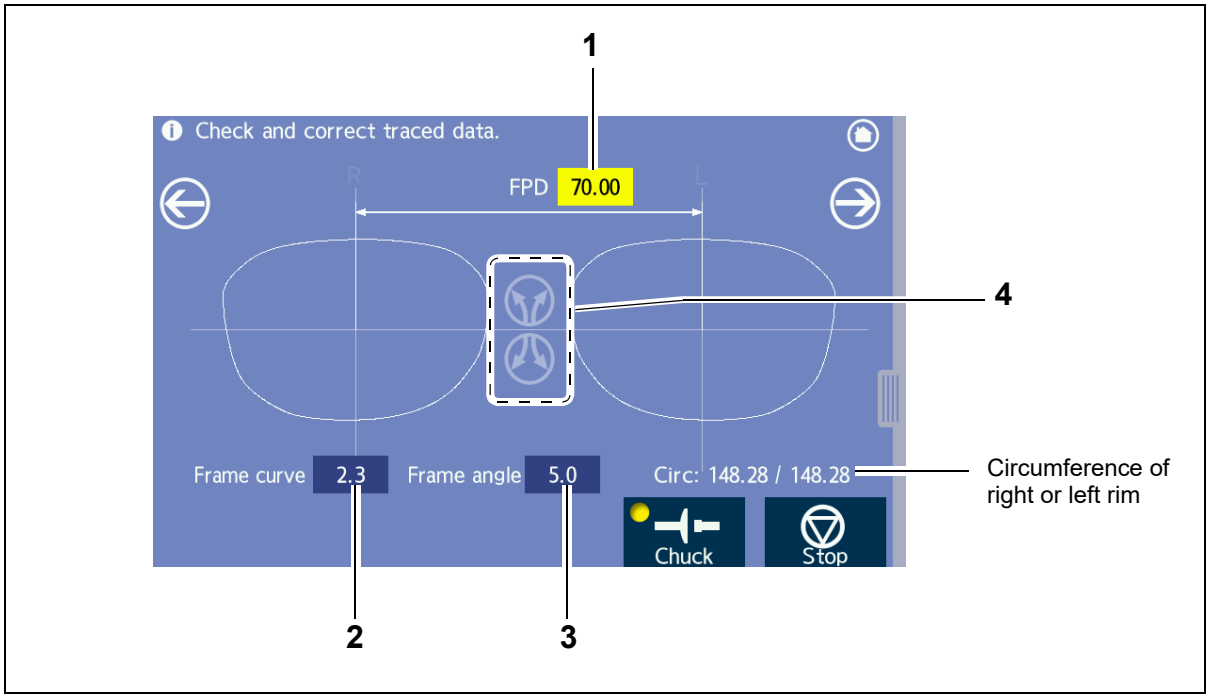
Traces the left-eye demo lens.

2.3.6 Frame data confirmation screen

This screen is used to confirm frame data. It is automatically displayed after tracing.

This screen allows the following entries and adjustment to be performed.

- FPD value (when single-eye tracing has been performed)
- Frame curve value (when single-eye tracing has been performed)
- Frame warping angle (when single-eye tracing has been performed)
- Fine adjustment of lens shape axis angle (when a pattern or demo lens has been traced with the LE-800)



1 FPD numeric field

When no FPD value has been measured, the numeric field is displayed in yellow.

Enter the desired value with the numeric keypad displayed by pressing the numeric field.

Range: 30.00 to 99.50 mm (0.01 mm increments)

Pressing the “FPD” label to the left toggles between FPD and DBL.

- 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 × cos (frame warping angle) = FPD

2 Frame curve numeric field

Enter the desired value with the numeric keypad displayed by pressing the numeric field.

Range: 0.0 to 12.0 (0.1 increments)

3 Frame angle numeric field

Enter the desired value with the numeric keypad displayed by pressing the numeric field.

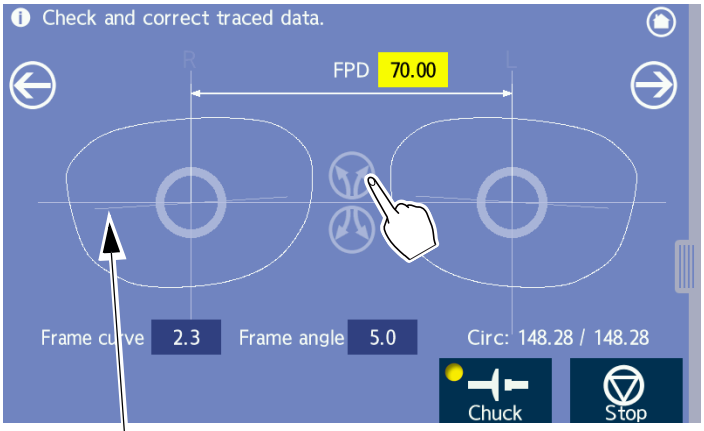
Range: 0.0 to 30.0 degrees (0.1-degree increments)

4 Axis angle adjustment buttons

Displayed only when a pattern or demo lens is traced with the LE-800. This function is used to adjust the axis angle of the traced data such as when the axis of the lens cup deviated during blocking of demo lenses.

Pressing or rotates the lens shape gradually in the direction of the arrow button.

The figure below shows an example for when is pressed. Pressing rotates the lens shape in the opposite direction.



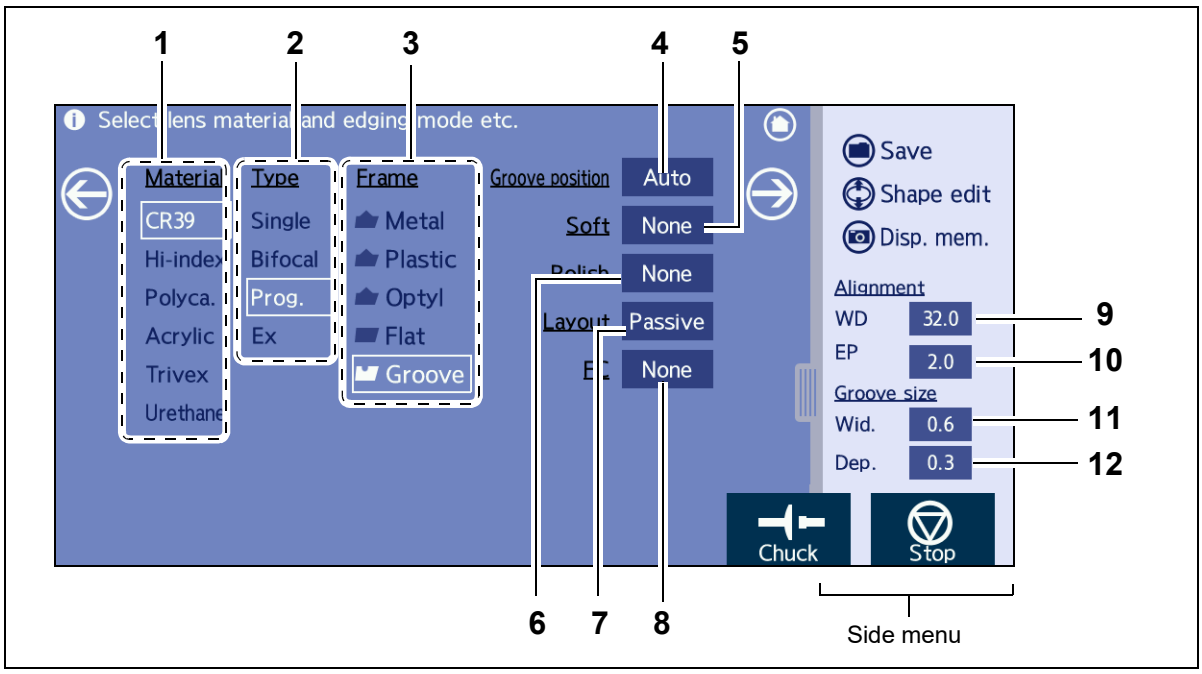
After the axis of the lens shape is adjusted, an axis line is displayed to show the amount of incline from the initial horizontal line.
When this line or the circle in the center of the lens shape disappears, the adjusted angle and original angle are in agreement.
When FPD or DBL is entered or the screen is changed, this indication is reset.

Note

- After the axis of the lens shape is adjusted, the FPD or DBL field remains to be entered. Check the shape after rotation and re-enter the value.

2.3.7 Processing conditions screen

This screen is used to enter processing conditions for the traced or received data.



1 Material field

Selects the lens material.

2 Type field

Selects the lens type.

3 Frame field

Selects the frame type.

Frame type	Application	Processing type
Metal	For metal frames	Beveling
Plastic	For plastic frames	Beveling
Optyl	For optyl frames[a]	Beveling
Flat	For two-point frames	Flat edging
Groove	For nylor frames	Grooving

a.Optyl frame: An optyl frame is a frame made of epoxy resin.

4 Processing mode setting field

Specifies the processing mode. **Auto** and **Guide** are toggled.

Auto	Processing at the computer calculated bevel or groove position
Guide	Processing at the manually entered bevel or groove position after lens shape measurement

When “Metal”, “Plastic”, or “Optyl” is selected as the frame type, the indication becomes “Bevel position”. When “Groove” is selected as the frame type, it becomes “Groove position”. When “Flat” is selected as the frame type, no indication is displayed.

Note

- When settings such as bevel or groove position are included in the lens shape received from the data server, processing is performed with the received bevel or groove setting even if Auto is set for processing mode.

5 Soft setting field

Specifies the soft processing mode. Exec and None are toggled.

To reduce axis shift due to slippery lens coating or prevent glass lenses from breaking, select Exec (soft processing is on).

In soft processing mode, the processing time increases slightly but processing noise is reduced.

6 Polish setting field

Specifies the polishing mode. Exec and None are toggled.

7 Layout setting field

Specifies the layout mode. Active and Passive are toggled.

8 FC setting field

Specifies the frame changing mode. Exec and None are toggled.

9 WD numeric field

Sets the horizontal width of the alignment scale on the blocking screen.

Since the alignment scale shape changes depending on the lens type, *"3.10 WD or EP Entry" (page 83)*.

10 EP numeric field

Sets the height of the far vision eye point.

This is displayed when "Prog." is selected as the lens type.

Range: 0.0 to 6.0 mm (0.1 mm increments)

11 Wid. numeric field

Sets the groove width.

This is displayed when "Groove" is selected as the frame type.

Range: 0.6 to 1.2 mm (0.1 mm increments)

12 Dep. numeric field

Sets the groove depth.

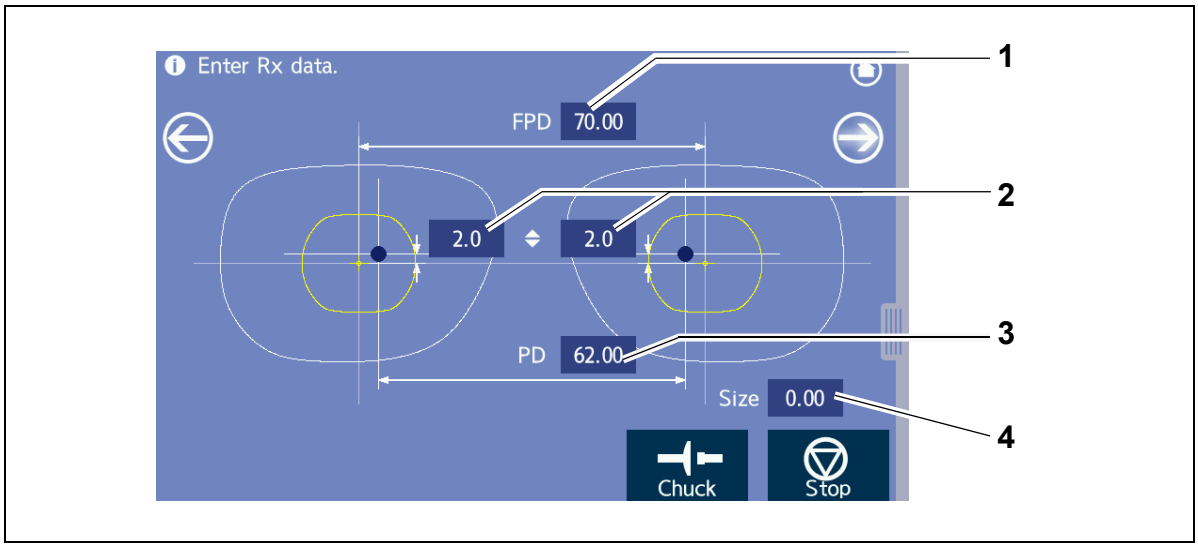
This is displayed when "Groove" is selected as the frame type.

Range: 0.0 to 0.8 mm (0.1 mm increments)

2.3.8 Layout screen

This screen is displayed when  is pressed on the processing conditions screen.

This screen is used to enter layout conditions such as FPD, PD, and optical center height.



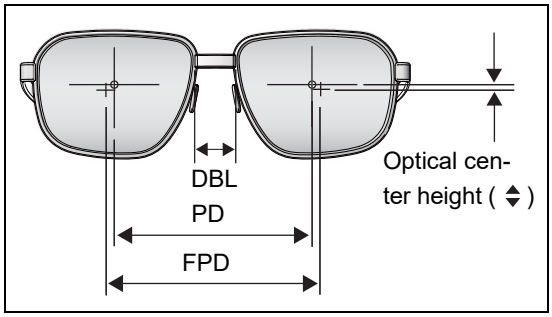
1 FPD numeric field

Enter the frame pupillary distance.

FPD is calculated by the boxing system.

Range: 30.00 to 99.50 mm and 5.00 mm or more by DBL conversion (0.01 mm increments)

Pressing the “FPD” label to the left toggles between FPD and DBL.



For the DBL entry, take note of the following point.

“• *The DBL value should be regarded as a reference value.” (page 24)*

2 Optical center height numeric fields ( )

Enter the height of the optical center from the frame center (boxing center).

Range: -15.00 to +15.00 mm (0.1 mm increments)

Pressing toggles among , PD , and BT .

3 PD numeric field

Enter the prescribed pupillary distance.

Range: 30.00 to 99.50 mm (0.01 mm increments)

The monocular PD (1/2PD) can be entered.

Range: 15.00 to 49.75 mm (0.01 mm increments)

Pressing the “PD” label to the left toggles between PD and 1/2PD.

4 Size numeric field

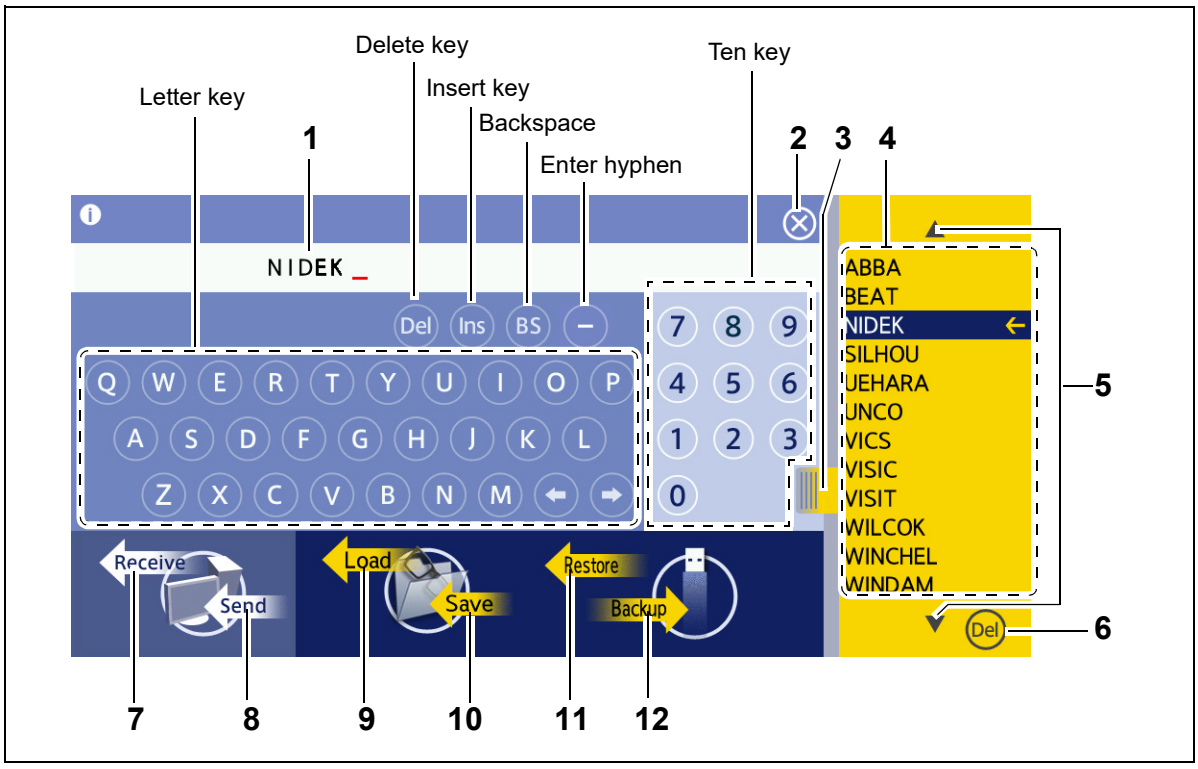
Enter the compensation value for the lens finish size based on the frame diameter (0.0).

Range: -9.95 mm to 9.95 mm (0.01 mm increments)

2.3.9 Keyboard screen

Pressing  on the home screen displays the keyboard screen. Pressing  in the side menu also displays the screen.

This screen is used to receive/send or load/save shape data. Backup and deletion of the internal memory are also possible.



1 File name display field

Displays the entered contents.

The file name consists of a brand name and number separated by a hyphen.

Ex.: NIDEK - 0000000001

Brand name Number

2 Close button

Interrupts operation and returns to the original screen.

3 Entry list tab

Displays the entry list normally hidden to the right of the screen.

Pressing this tab again hides the entry list.

4 Entry list

In accordance with the entered file name, the listed brand names or numbers are displayed from the internal memory.

Pressing a brand name or number in the entry list selects and highlights the brand name or number. Pressing the selected brand name or number again displays the brand name or number in the file name displayed field.

The method of association between the character(s) entered in the file name field and the resulting listed items is presented as an example in the table below.

File name display field	Entry list
(Blank)	All registered brand names
N	Brand names starting with the letter N
NIDEK-	All file numbers for the brand name “NIDEK”
NIDEK-11	All file numbers for the brand name “NIDEK” that contain the number combination “11”

5 Scroll buttons

Scrolls the entry list up or down.

These buttons are displayed when the list of names exceeds its limit.

6 Delete button

Pressing Del with a brand name or number selected in the entry list deletes the brand name or number data.

7 Receive button

Imports data of the specified name from the server (except when the “Ethernet port” parameter is set to “None”).

8 Send button

Saves the data being edited with the specified file name in the server (except when the “Ethernet port” parameter is set to “None”).

9 Load button

Loads shape data of the specified file name from the internal memory into the layout screen.

10 Save button

Saves shape data displayed on the layout screen in the internal memory.

11 Restore button

Restores the backup data from the USB flash drive (only when a USB flash drive is inserted).

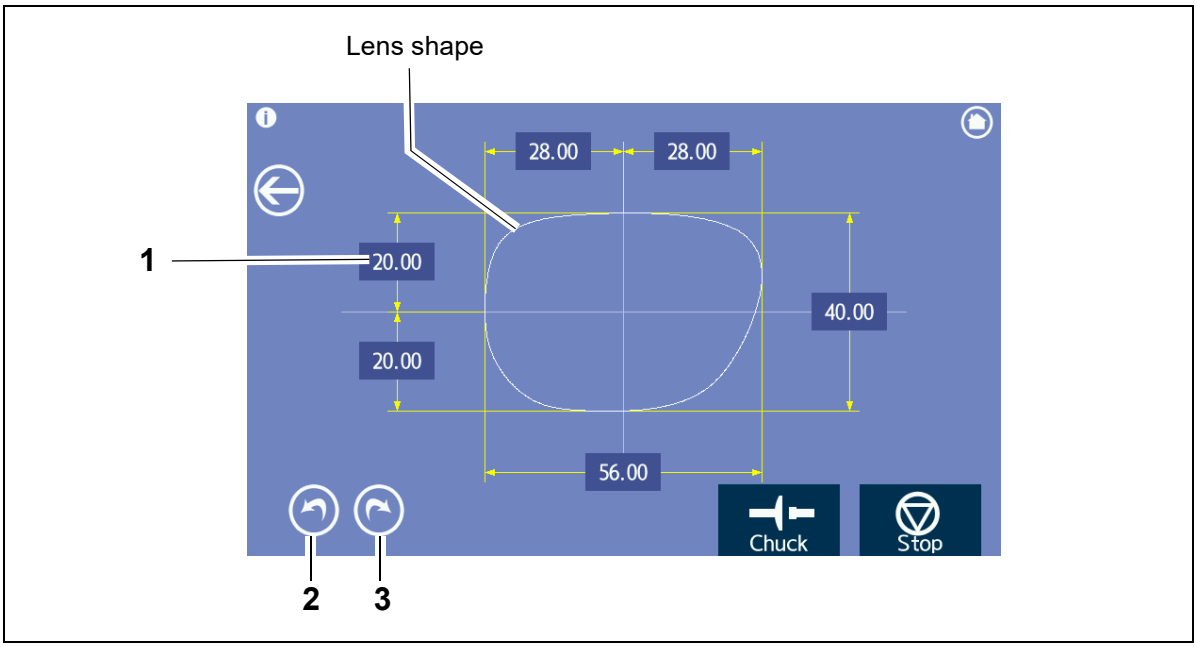
12 Backup button

Backs up shape data in the internal memory to a USB flash drive (only when a USB flash drive is inserted).

2.3.10 Shape editor screen

Pressing in the side menu on each screen displays the shape editor screen.

By specifying the width and height based on the shape being edited, the shape can be changed.



1 Size numeric field

Displays the size of each part of the shape.

Change the value with the numeric keypad displayed by pressing the numeric field.

2 Undo button

Undoes the last change.

Up to five operations can be undone.

3 Redo button

Restores the change by (undo).

Up to five operations can be restored.

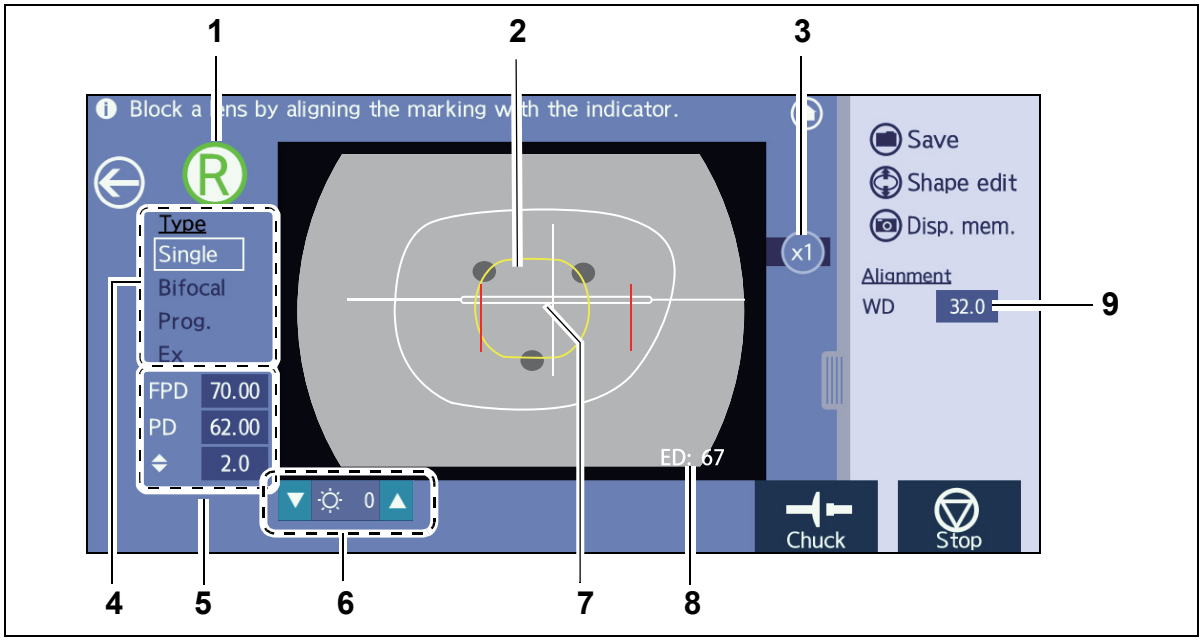
2.3.11 Blocking screen

Pressing on the layout screen displays the blocking screen.

This screen is used to block lenses. Manually block the lens.

○ Blocking screen (Single/Ex)

This is a screen sample when “Single” or “Ex” is selected as the lens type.



1 R/L button

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

2 Cup mark

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

To use lens cups other than the standard half-eye lens cup, settings must be changed by authorized service personnel.

Note

- As the cup mark display is a guide, processing may not be possible with the displayed cup depending on the layout or such.

3 Display magnification button

Displays the magnification of the displayed camera image. Pressing the button toggles the magnification between [x1] and [x2].

4 Lens type display

The same indications in the “Type” field on the processing conditions screen are displayed. The lens type can be changed on this screen.The alignment scale shape changes depending on the specified lens type.

5 Layout value display

Layout values such as FPD, PD, and optical center height are displayed. Layout values can be changed here.The alignment scale changes depending on the layout values.

6 Brightness adjustment buttons

Adjust the screen brightness in the range of -8 (dark) to +8 (bright).

7 Alignment scale

Used to align the marking of the lens. The optical center of the lens is aligned to the scale center.

Align the lens position so that the lens marking is aligned on this scale center and the mark tilt is parallel with the scale.

8 Minimum lens diameter display

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

9 WD numeric field

Sets the width of the alignment scale (unit: mm).

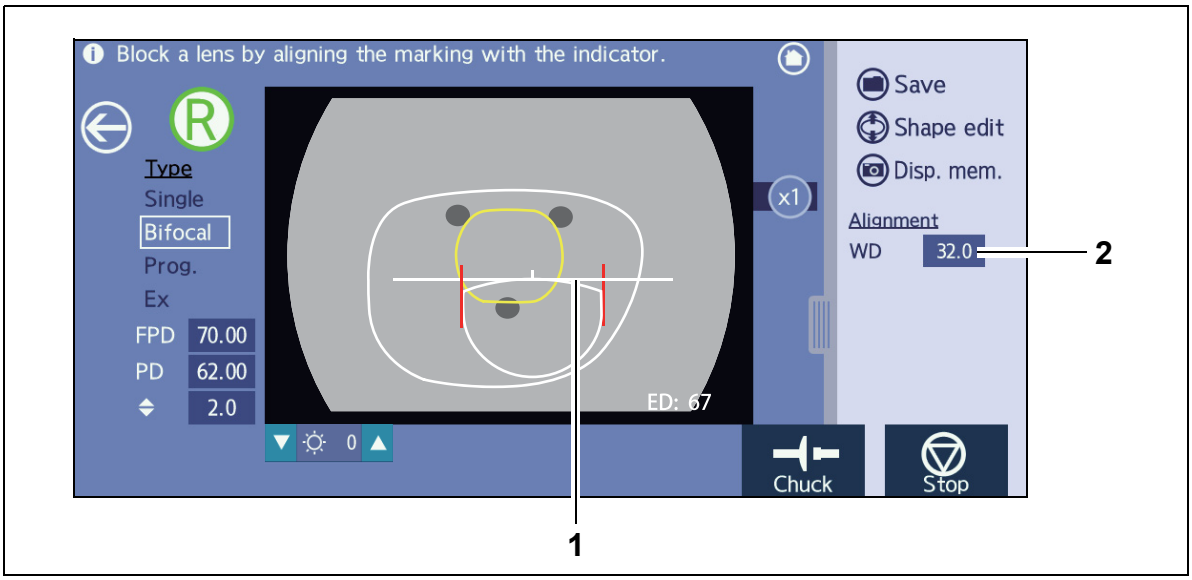
Set the width in accordance with the lens marking spacing so that the lens position can be aligned easily.

Range: 15.0 to 45.0 mm (0.1 mm increments)

○ Blocking screen (Bifocal)

This is a screen sample when “Bifocal” is selected as the lens type.

* The items not described in the following are the same as those for the blocking screen (Single/Ex).



1 Alignment scale

Indicates the guide for the segment position. When blocking, align the lens segment position with this scale.

2 WD numeric field

Sets the width of the alignment scale (unit: mm).

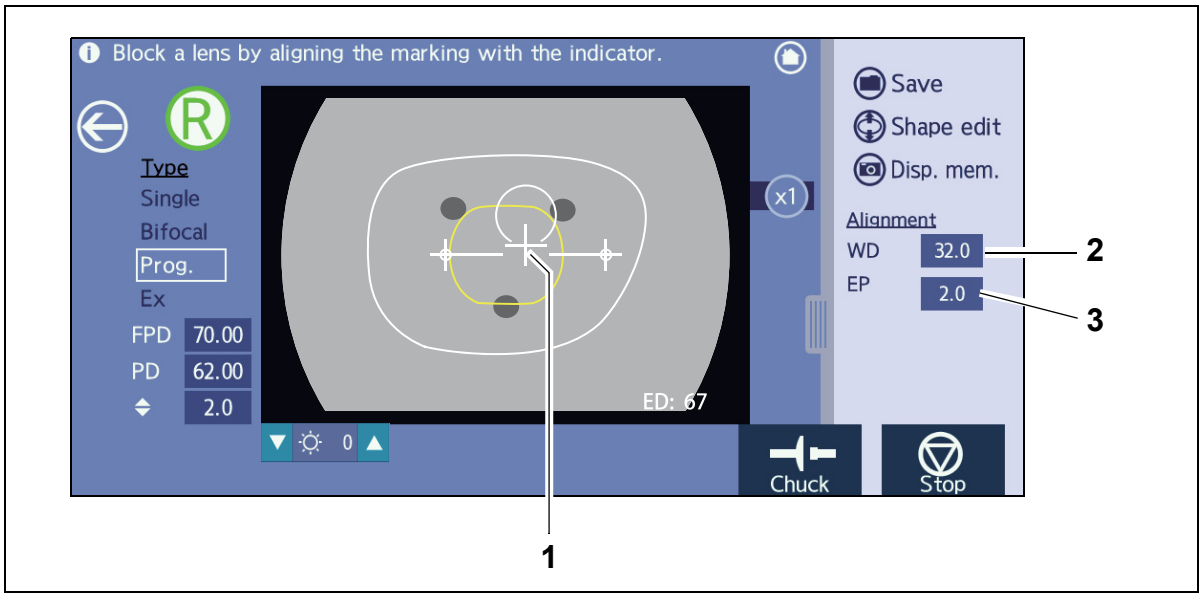
Set the width in accordance with the segment size so that the lens position can be aligned easily.

Range: 15.0 to 45.0 mm (0.1 mm increments)

○ Blocking screen (Progressive)

This is a screen sample when “Prog.” is selected as the lens type.

* The items not described in the following are the same as those for the blocking screen (Single/Ex).



1 Alignment scale

Indicates the position of the far vision eye point entered in the layout screen.

The “+” mark position changes with the entered EP value. When blocking, align the far vision eye point of the lens with this “+” mark.

2 WD numeric field

Sets the width of the alignment scale (unit: mm).

Range: 15.0 to 45.0 mm (0.1 mm increments)

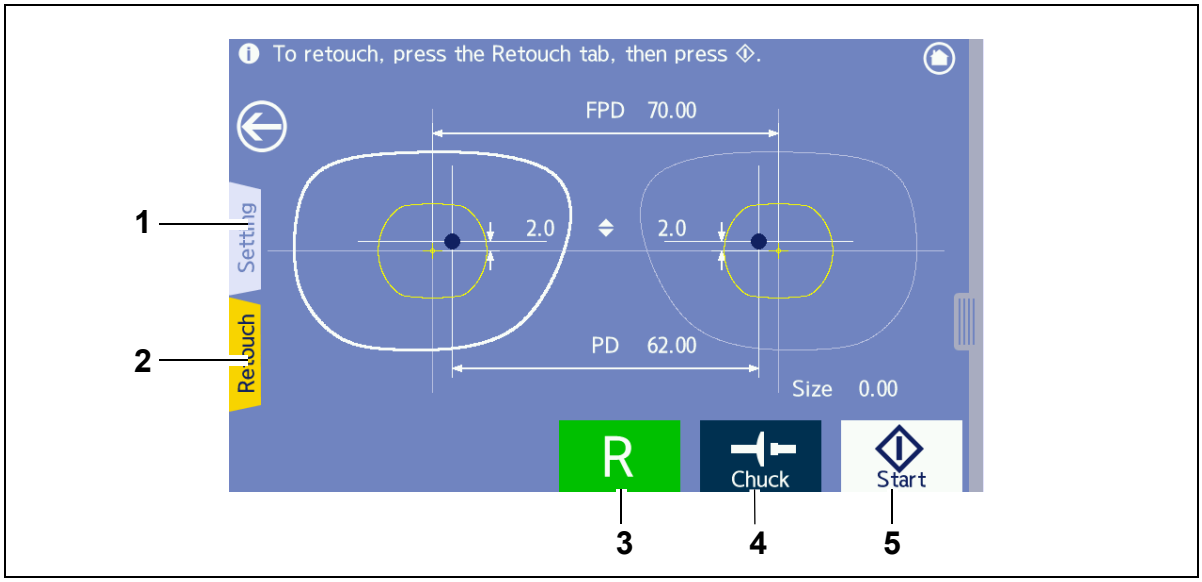
3 EP numeric field (far vision eye point)

Sets the height of the far vision eye point (unit: mm).

Range: 0.0 to 6.0 mm (0.1 mm increments)

2.3.12 Processing start screen

After blocking on the blocking screen, the processing start screen is automatically displayed.
This screen is used to start lens processing.



1 Setting tab

Displays the processing conditions confirmation panel in which processing conditions can be confirmed.

“2.3.15 Processing conditions confirmation panel” (page 39)

2 Retouch tab

Displays the retouch panel. This tab is displayed after lens processing.

“2.3.14 Retouch panel” (page 38)

3 R/L button

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

4 Chuck button

Secures or releases the lens. The lens is automatically secured just before processing.

5 Start button

Starts processing.

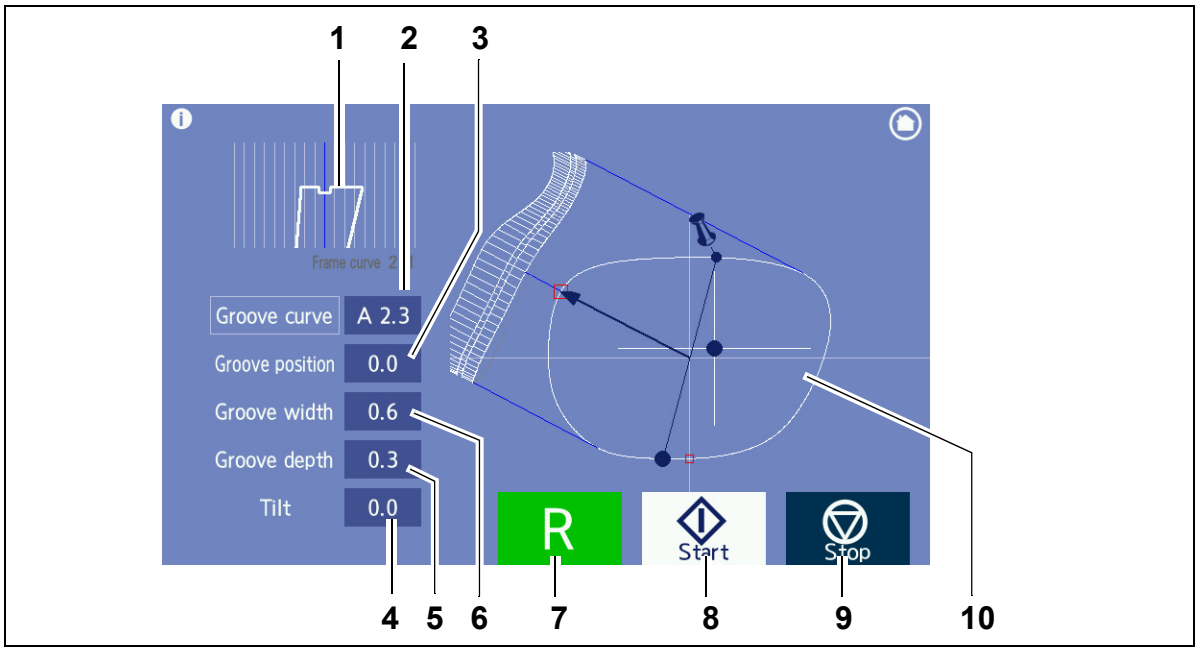
Once processing has started, this button changes to the “Stop” button.

2.3.13 Simulation screen

This screen is used to check by simulation how beveling or grooving is performed.

After lens shape measurement, the simulation screen is displayed.

With the processing mode set to Guide on the processing conditions screen, the bevel position or such can be changed while the simulation is checked on this screen.



1 Sectional view simulation

The sectional view of the currently selected edge position is simulated.

2 Bevel curve / Groove curve numeric field

Select the desired curve from among “Auto”, “Curve”, “Front”, “Rear”, “Ratio”, and “Frame”.

Range: 0.1 to 12.0 (0.1 increments)

3 Bevel position / Groove position numeric field

Enter the value with the numeric keypad displayed by pressing the “Bevel position” or “Groove position” numeric field.

Range: -10.0 to +10.0 mm (0.1 mm increments)

4 Tilt numeric field

Enter the tilt amount of the bevel or groove with the numeric keypad by pressing the “Tilt” numeric field.

5 Groove depth numeric field

Enter the groove depth with the numeric keypad by pressing the “Groove depth” numeric field.

6 Groove width numeric field

Enter the groove width with the numeric keypad by pressing the “Groove width” numeric field.

7 R/L button

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

8 Start button

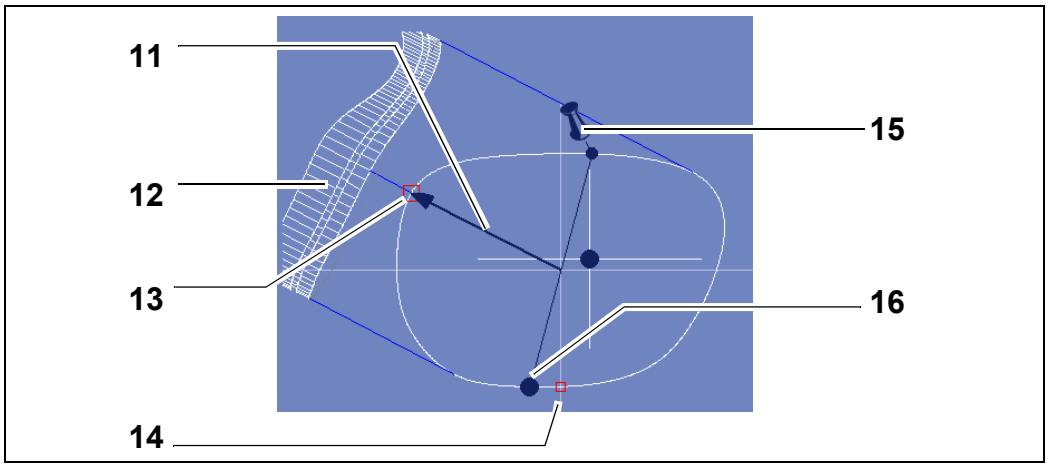
Restarts processing after the bevel position or such is changed. This button is displayed only when Guide is selected.

9 Stop button

Stops lens processing.

10 Lens shape

A simulation viewed from the front and side of the shape is displayed.



11 Sectional view position line

Indicates the position where the sectional view simulation is displayed.

Pressing the lens shape moves the sectional view position line in the order of edge's thinnest point, edge's thickest point, tilt base point, tilt point, and edge's thinnest point.

Pressing the outside of the lens shape rotates or stops the sectional view position line.

12 Side view

This is a simulated side view of the processed lens as viewed along the sectional view position line.

13 Edge's thickest point mark (□)

This is the position where the edge is the thickest.

14 Edge's thinnest point mark (□)

This is the position where the edge is the thinnest.

15 Tilt base point mark

The position where the pin is stuck shows the tilt base point.

16 Tilt point mark (●)

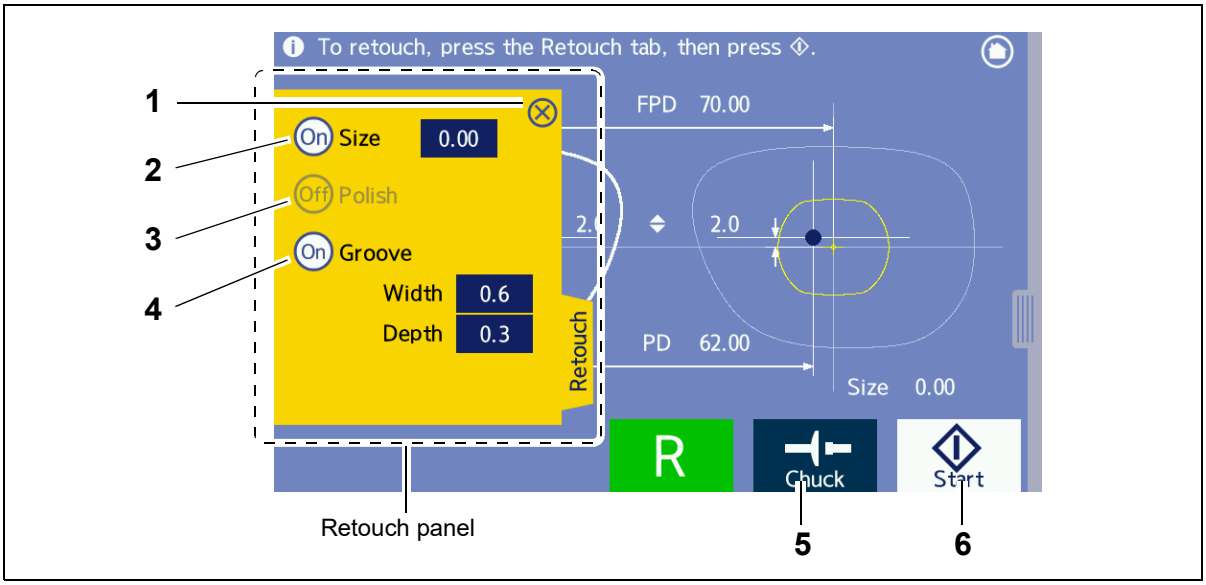
This is the position diagonally opposite to the tilt base point where the tilt is most pronounced.

- When settings such as bevel or groove position are changed on the simulation screen, the entered value is copied to the opposite lens as an initial value as long as the opposite lens has not been processed. However, when settings such as bevel or groove position are included in the lens shape received from the data server, the received settings are protected and are not automatically overwritten.

2.3.14 Retouch panel

Pressing the “Retouch” tab after lens processing displays the retouch panel.

Set the retouching conditions in accordance with the processed lens state.



1 Close button

Closes the retouch panel.

2 Size button

When this button is set to “On”, periphery processing is performed during retouching.

When this button is set to “On”, the “Size” numeric field is enabled. To reduce the outer diameter, change the setting of the “Size” numeric field with the numeric keypad. Only values smaller than those of the previous processing can be entered.

3 Polish button

When this button is set to “On”, polishing is performed during retouching.

4 Groove button

When this button is set to “On”, grooving is performed during retouching.

When this button is set to “On”, the “Width” and “Depth” fields are enabled. The groove width and depth can be specified with the numeric keypad. Only values larger than those of the previous processing can be entered.

5 Chuck button

Secures or releases the lens. The lens is automatically secured just before processing.

6 Start button

Starts retouching.

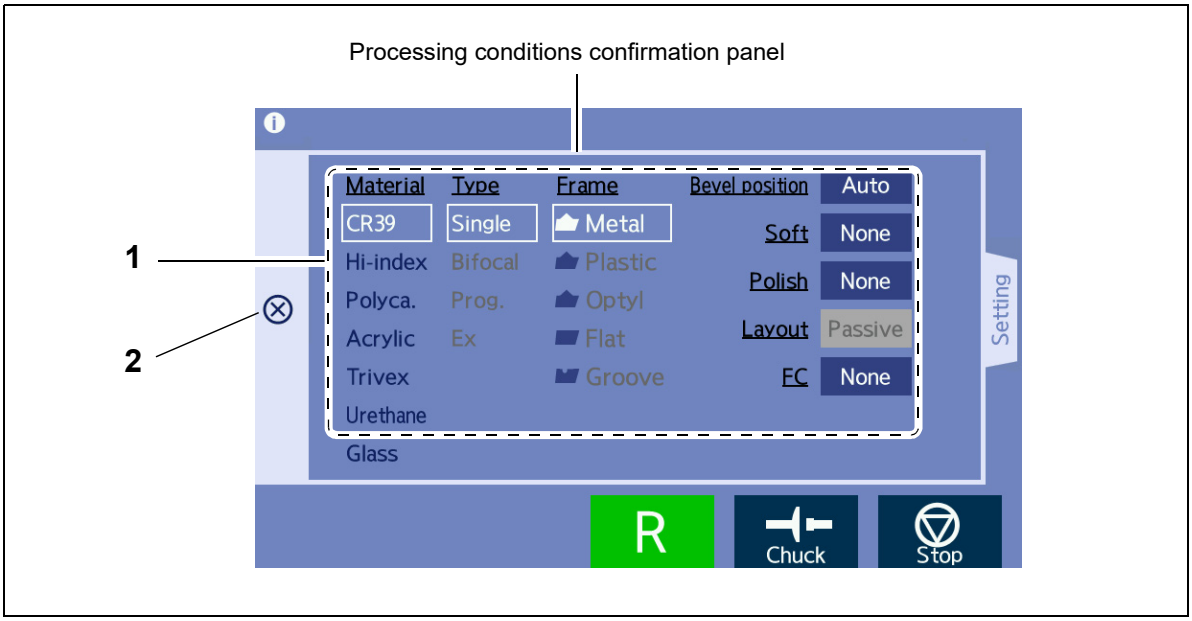
Note

- When the opposite lens (R/L) has not been processed, the groove depth and groove width set on the retouching screen are applied to the processing of that lens.

2.3.15 Processing conditions confirmation panel

Pressing the “Setting” tab on the processing start screen displays the processing conditions confirmation panel.

Processing conditions entered in the processing conditions screen can be confirmed.



1 Processing conditions display

Displays processing conditions.

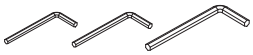
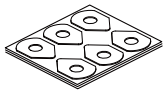
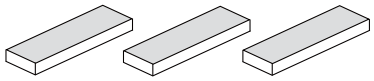
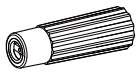
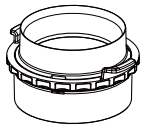
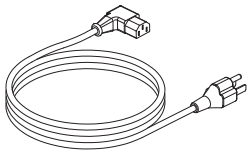
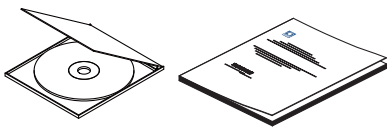
Processing conditions can be changed here. (Setting items that are grayed out cannot be changed.)

2 ⊗ Close button

Closes the processing conditions confirmation panel.

2.4 Packed Contents

■ Unpack the contents from the shipping carton and check them.

Part name	Quantity	Appearance
Spare fuse	2 units	
Hexagonal wrench (2.0 mm, 2.5 mm, 4.0 mm)	1 unit each	
Half-eye lens cup (green/red)	5 units each	
Double-coated adhesive pad for half-eye lens cup	1 set	
Cushion for lens clamp	2 units	
Dressing stick for glass roughing wheel Dressing stick for finishing wheel Dressing stick for polishing wheel	1 unit each	
Cup remover	1 unit	
Pattern holder	1 unit	
Calibration jig	1 unit	
Adapter set	1 set	
Power cord	1 unit	
OPERATOR'S MANUAL (CD) Read Before Use	1 set	

2.5 Connection Configuration

■ The LE-800 can be connected to a tracer such as LT-980 as well as to a data server that supports VCA or NIDEK LAN.

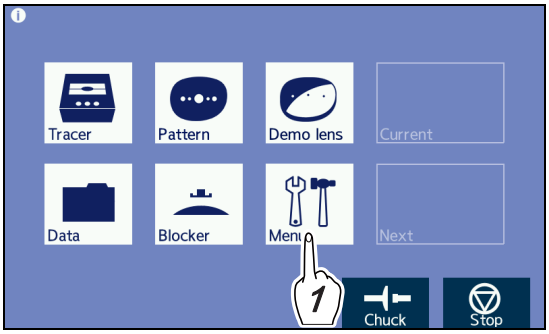
- Before connecting instruments, be sure that all instruments are turned off.

2.5.1 LT-980 connection and communication setting

This is the configuration in which the LE-800 communicates with the LT-980 using the RS-232C cable.

1 Press  on the home screen of the LE-800.

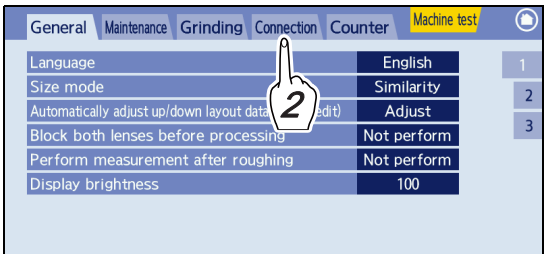
The menu screen appears.



2 Press the “Connection” tab on the menu screen.

The connection screen appears.

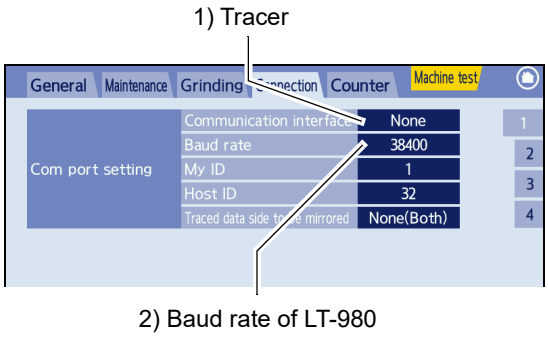
Pressing the setting to be changed displays the pop-up menu or numeric keypad and the setting can be changed.



3 Conduct communication settings of the LE-800.

1) Set “Communication interface” of “Com port setting” to “Tracer”.

2) Set the communication speed of the LT-980 to “Baud rate”.



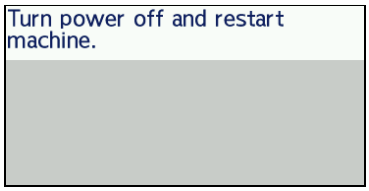
Note

- The communication speed of the LT-980 differs depending on the RS-232C port used and setting. Contact NIDEK service personnel for details.

4 Press to return to the home screen.

Note

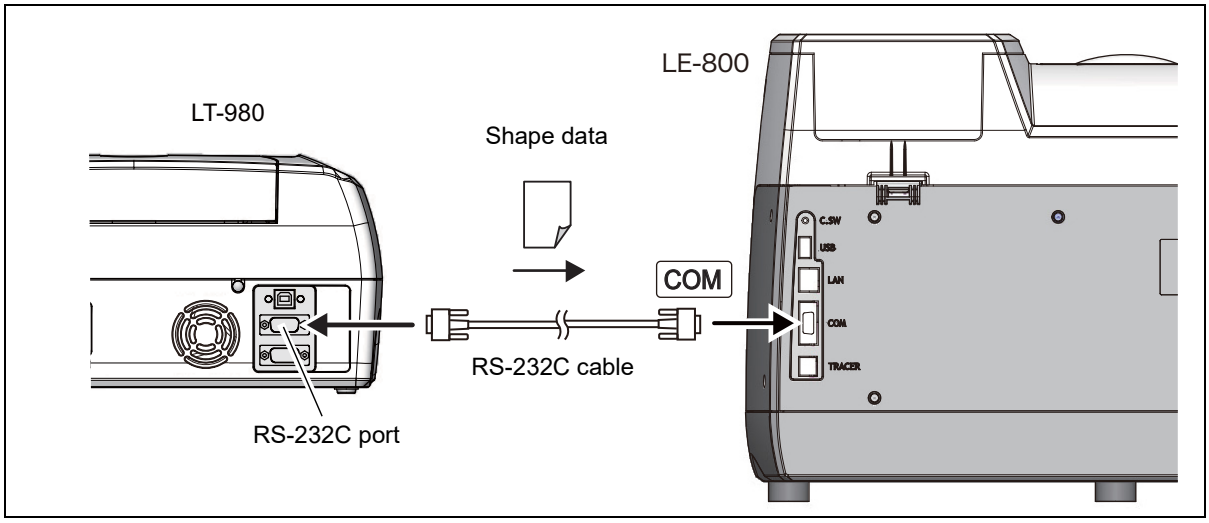
- Restarting the LE-800
  Depending on the setting contents of the communication setting, pressing may display the message as shown to the right. In such a case, turn off and on the power switch.



5 Turn off（ ○ ）the power switch of the LE-800.

6 Connect the RS-232C cable supplied with the LT-980 to the RS-232C port on the LT-980.

7 Connect the other end of the RS-232C cable to the RS-232C port (COM) on the LE-800.

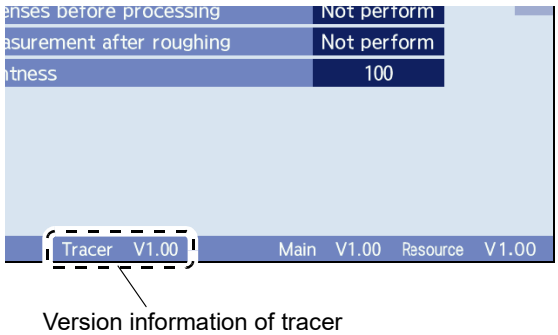


8 Turn on（ | ）the power switch of the LT-980 and LE-800.

9 Press Menu on the home screen of the LE-800.

The menu screen appears.

10 Confirm that the version information of the tracer is displayed on the general screen.



Press the “General” tab to display the general screen.

When the instrument is connected to a tracer, the version information of the tracer is displayed in the lower part of the general screen.

If correct communication cannot be performed for reasons such as the tracer is not turned on, “Unconnected” is displayed.

11 Press to return to the home screen.

2.5.2 NIDEK LAN connection

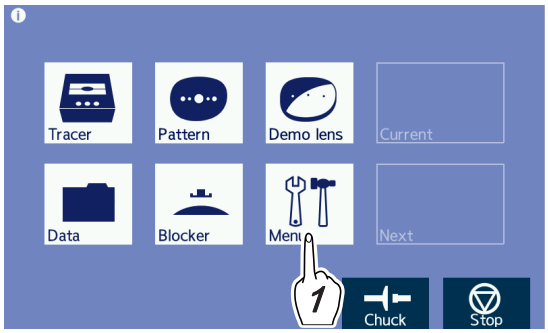
This is the configuration using a LAN cable in which the server computer or Ice series serves as a data server. Use a commercially available 10BASE-T or 100BASE-TX compatible LAN cable.

If necessary, connect the optional barcode scanner.

- Do not use the instrument in a network connected to an intranet or Internet.
  Communication failure may result.

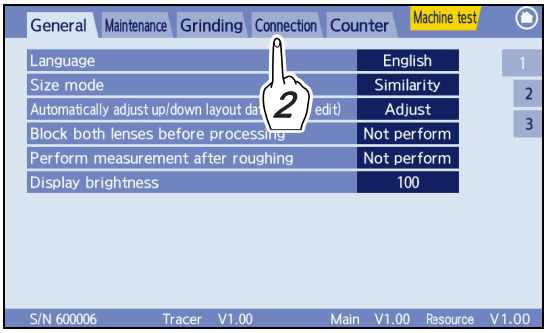
1 Press  on the home screen of the LE-800.

The menu screen appears.



2 Press the “Connection” tab on the menu screen.

The connection screen appears.

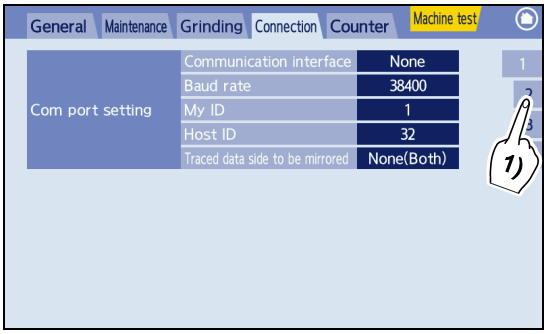


Note

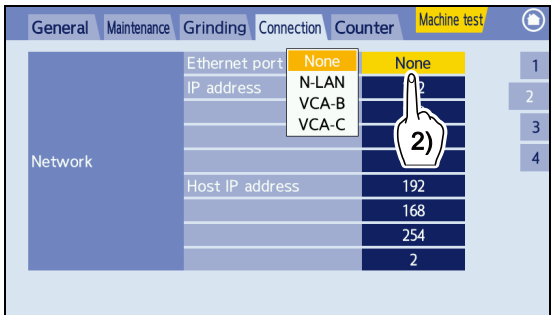
- “IP address”, “Host IP address”, “Subnet mask”, and “Default gateway” settings need to be configured for a LAN connection. Contact a network administrator.

3 Conduct communication settings of the LE-800.

1) Press Tab 2 on the connection screen.

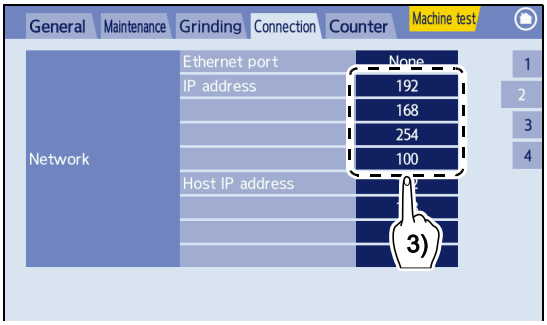


2) Set “Ethernet port” of “Network” to “N-LAN”.



3) Sets the IP address of the LE-800.

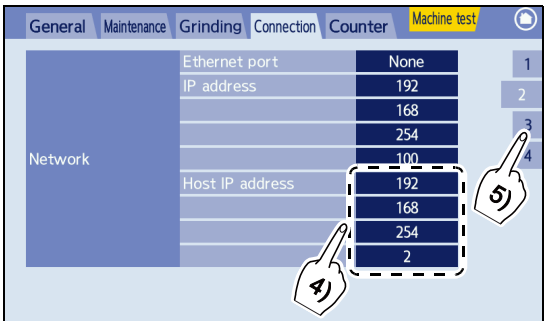
The “IP address” entry field is divided into four rows. Pressing the desired numeric field displays the numeric keypad to change the setting.



4) Enter the IP address of the data server.

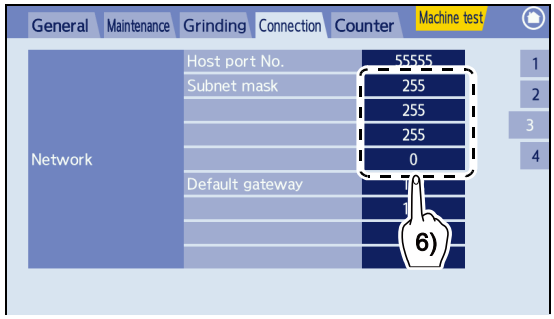
The “Host IP address” entry field is divided into four rows. Pressing the desired numeric field displays the numeric keypad to change the setting.

5) Press Tab 3 on the connection screen.



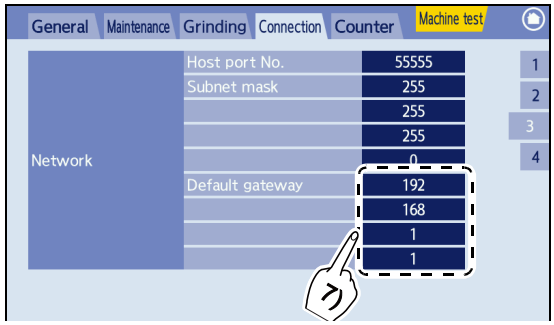
6) Enter the subnet mask if necessary.

The “Subnet mask” entry field is divided into four rows. Pressing the desired numeric field displays the numeric keypad to change the setting.



7) Enter the default gateway if necessary.

The “Default gateway” entry field is divided into four rows. Pressing the desired numeric field displays the numeric keypad to change the setting.



4 Press  to return to the home screen.

"2.5.1 LT-980 connection and communication setting" (page 41) - (Step 4)

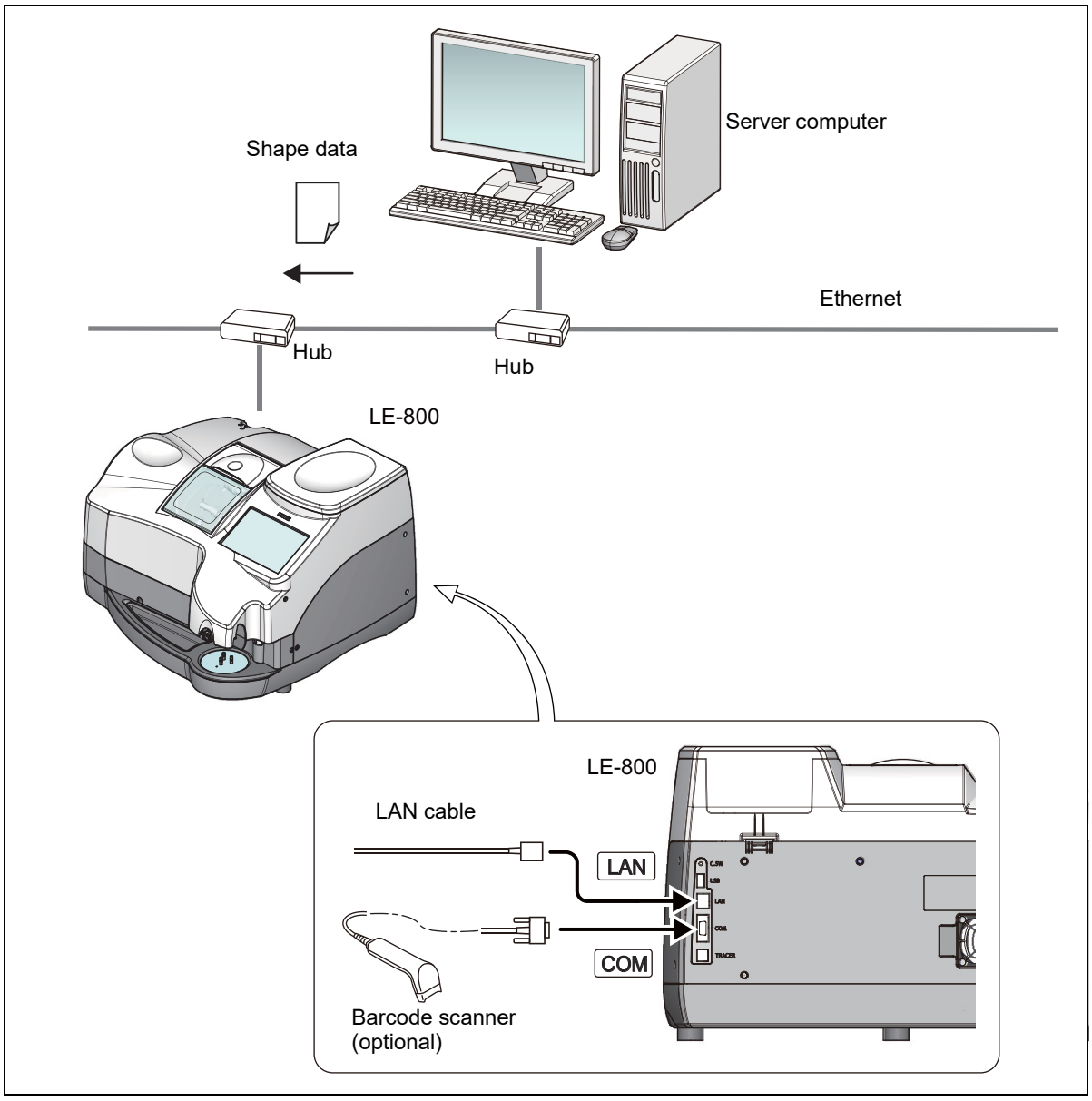
5 Turn off (○) the power switch of the LE-800.

6 Connect a LAN cable for the LE-800 to the hub connected with the LAN system.

7 Connect the other end of the LAN cable to the LAN port on the LE-800.

Note

- When connecting the barcode scanner (optional), consult NIDEK or your authorized distributor because setting change is required by service personnel.



2.5.3 VCA connection

This is the configuration in which the LE-800 communicates with a server computer over Ethernet using the VCA standard protocol.

Use a commercially available 10BASE-T or 100BASE-TX compatible LAN cable.

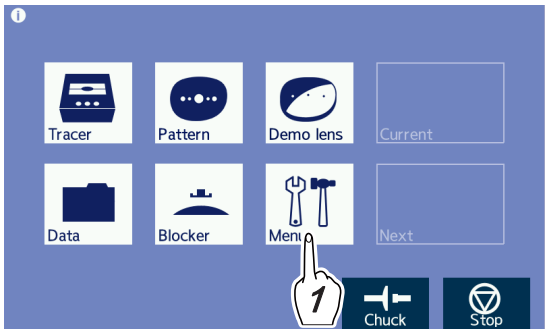
If necessary, connect the optional barcode scanner.

- Do not use the instrument in a network connected to an intranet or Internet. Communication failure may result.

1 Press 

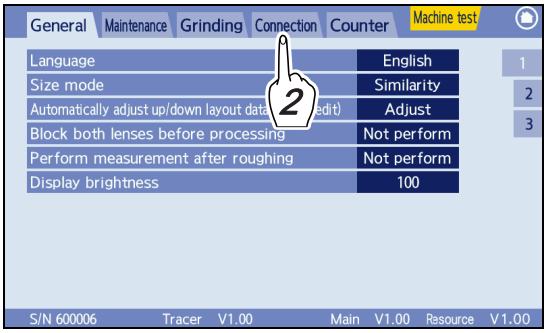
on the home screen of the LE-800.

The menu screen appears.



2 Press the “Connection” tab on the menu screen.

The connection screen appears.

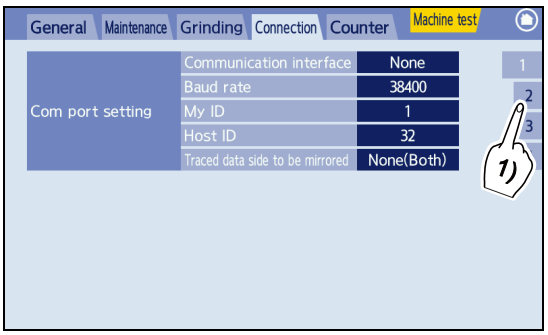


Note

- “IP address”, “Host IP address”, “Subnet mask”, and “Default gateway” settings need to be configured for a VCA connection. Contact a network administrator.

3 Conduct communication settings of the LE-800.

1) Press Tab 2 on the connection screen.



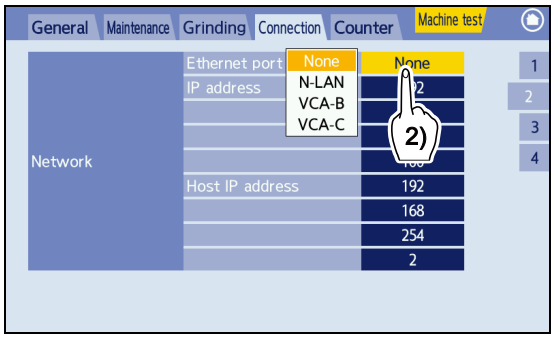
2) Set “Ethernet port” of “Network” to “VCA-B” or “VCA-C”.

- VCA-B:

  For when the circumference sent is not used but rather recalculation of the 3-D lens circumference by the frame curve is used.

- VCA-C:

  For when FPD is calculated from a conversion of DBL sent is used.



4 Enter the IP address, host IP address, subnet mask, and default gateway.

Enter the “IP address”, “Subnet mask”, and “Default gateway” in the same procedure as Step 3 of *“2.5.2 NIDEK LAN connection” (page 43)*.

5 Press  to return to the home screen.

“2.5.1 LT-980 connection and communication setting” (page 41) - (Step 4)

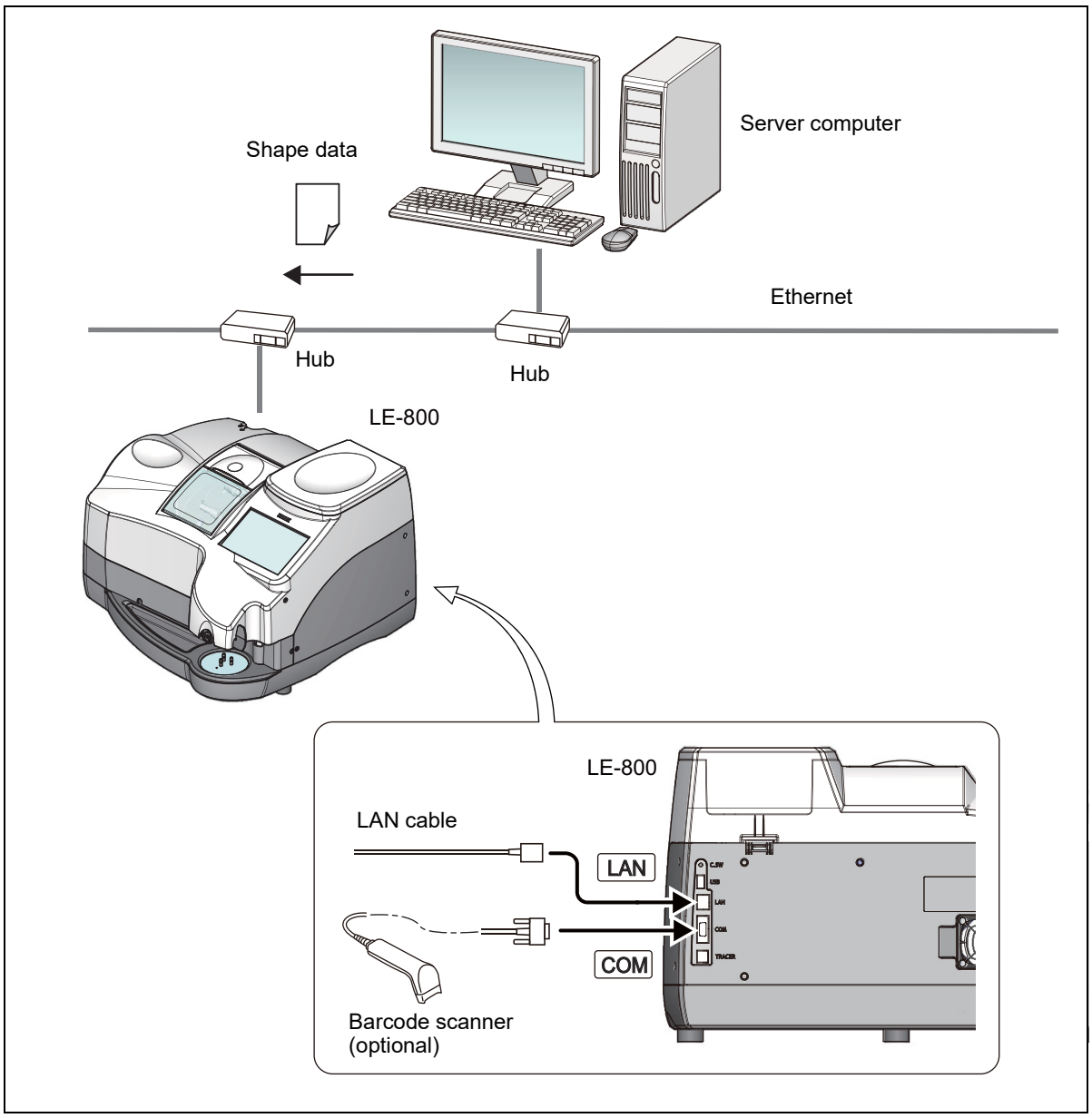
6 Turn off（ ○ ）the power switch of the LE-800.

7 Connect a LAN cable for the LE-800 to the hub connected with the LAN system.

8 Connect the other end of the LAN cable to the LAN port on the LE-800.

Note

- When connecting the barcode scanner (optional), consult NIDEK or your authorized distributor because setting change is required by service personnel.


Server computer
Shape data
Ethernet
Hub
Hub
LE-800
LE-800
LAN cable
LAN
COM
Barcode scanner
(optional)

3 OPERATING PROCEDURE

3.1 Operation Flow

Power-on

“3.2.1 Check before use” (page 50)
“3.2.2 Startup” (page 51)

Loading shape data

“3.3.1 Pattern tracing” (page 53)
“3.3.2 Demo lens tracing” (page 55)
“3.4.1 Loading data from the internal memory” (page 57)
“3.4.2 Loading data from the server” (page 58)
“3.4.3 Loading data from a tracer” (page 59)

Layout data entry

“3.7 Processing Conditions Entry” (page 70)
“3.8.1 Entering layout data for single vision lenses” (page 73)
“3.8.2 Entering layout data for bifocal lenses” (page 77)
“3.8.3 Entering layout data for progressive power lenses” (page 79)
“3.8.4 Entering layout data for Ex lenses” (page 80)
“3.9 Shape Change” (page 82)

Blocking

“3.12 Lens Blocking” (page 87)

Processing

“3.13 Beveling” (page 93)
“3.15 Flat Edging” (page 104)
“3.16 Grooving” (page 106)
“3.21 Editing the Next Shape during Processing” (page 124)

Size check

“3.18 Size Check and Retouching” (page 116)

Processing the opposite lens

“3.19 Opposite Lens Processing” (page 119)

Power-off

“3.2.3 Shutdown” (page 52)
“3.2.4 Check after use” (page 52)

3.2 Startup and Shutdown

3.2.1 Check before use

⚠ WARNING

- Be sure to check the instrument before every use. It is recommended that a checklist be prepared and the check results recorded.
- Before turning on the power switch, be sure to check the instrument, power plug, wall outlet, and wheel cracks.

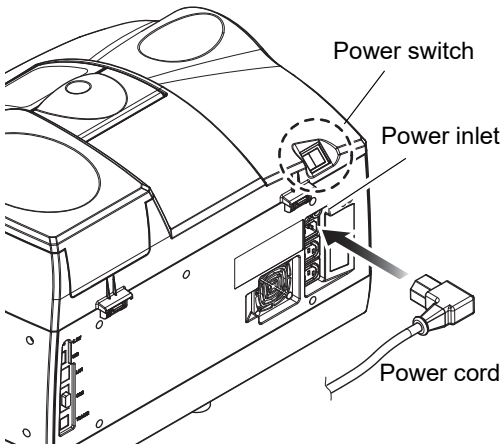
  Failure to do so may result in injury, accident, or instrument malfunction.

"Before use" (page 2)

1 Connect the power cord to the power inlet.

2 After confirming that the power switch is turned off (○), connect the power cord to a wall outlet.

3 Confirm that instruments connected to the LE-800 using the RS-232C cable or USB cable are turned on.



4 Is the amount of processing water in the tank proper?

The water level must be between the Max and Min lines inscribed on the tank.

If processing water becomes very dirty, replace it. Failure to do so may decrease the accuracy of polishing.

"5.8 Processing Water and Filter Replacement" (page 165)

5 Check visually that wheels are not be chipped or cracked.

⚠ WARNING

- Should the wheels be chipped or cracked, immediately stop the instrument and contact NIDEK or your authorized distributor.

  Failure to do so may result in the wheels breaking or shattering causing injury.

3.2.2 Startup

- If an error message appears or abnormal conditions are generated, *"5.1 Troubleshooting" (page 153)* and *"O Error code table" (page 154)* for remedies.

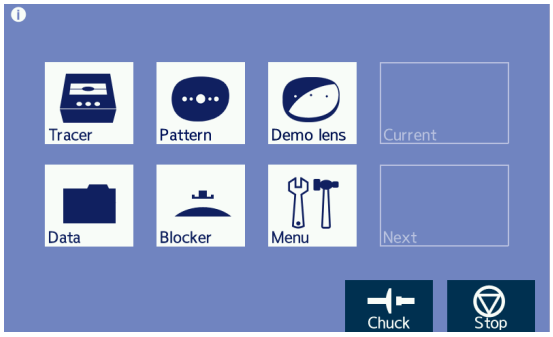
  Should the trouble not be remedied, contact NIDEK or your authorized distributor.

1 Turn on（ | ）the power switch.

The startup screen is displayed and initialization starts.

Confirm that the instrument is properly activated.

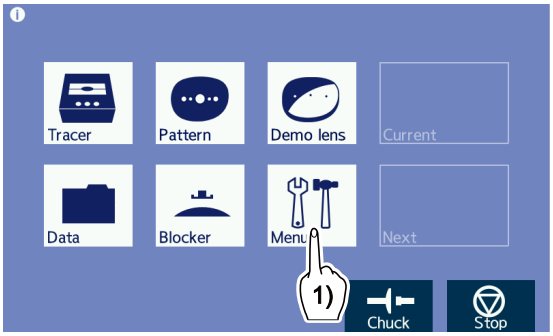
Confirm that the home screen is displayed without any error message after initialization.



2 Always be sure to confirm that cooling water (for the wheels) and cleaning water (for the inside wall of the processing chamber) flow properly before first use of the day.

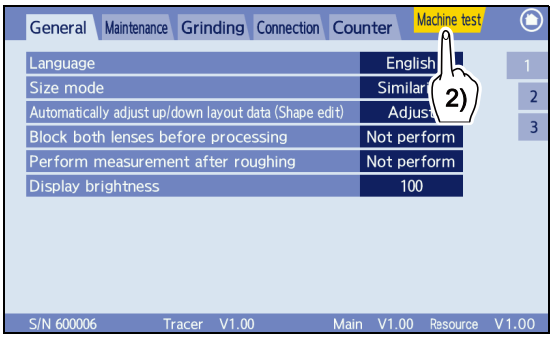
1) Press  on the home screen.

The menu screen appears.



2) Press the "Machine Test" tab.

The machine test screen appears.

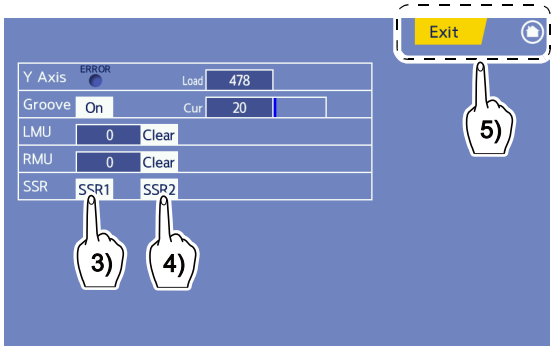


3) Press the “SSR1” button to confirm that the cooling water flows properly.

4) Press the “SSR2” button to confirm that the cleaning water flows properly.

   If the cooling water or cleaning water does not flow properly, confirm that the Pump 1 and Pump 2 hoses and power cord are properly connected.

5) If both the cooling water and cleaning water flow properly, press the “Exit” tab to return to the menu screen or press  to return to the home screen.



⚠ CAUTION

- Keep eyes away from spray.
  Spray containing processing waste may cause eye damage.

3 Confirm that processing waste does not settle on the feeler of the feeler unit. Lightly wipe the processing waste with a soft cloth.

✻ **The LE-800 is now ready for use.**

3.2.3 Shutdown

After confirming that the LE-800 is not in the process of lens processing, turn off (◯) the power.

- Do not turn off power during processing.
  Malfunction may result.
- After power has been turned off, always wait at least 10 seconds before turning power on again.
  The instrument may not operate normally.

3.2.4 Check after use

Be sure to check the following after use of the day.

It is recommended that a checklist be prepared and the check results recorded.

- Is the power turned off?
- Is the processing chamber clean?
- Is the instrument free from dirt or damage?
- Are the display and lens table clean?
- Are all the accessories accounted for and free from damage?

“2.4 Packed Contents” (page 40)

3.3 Pattern or Demo Lens Tracing

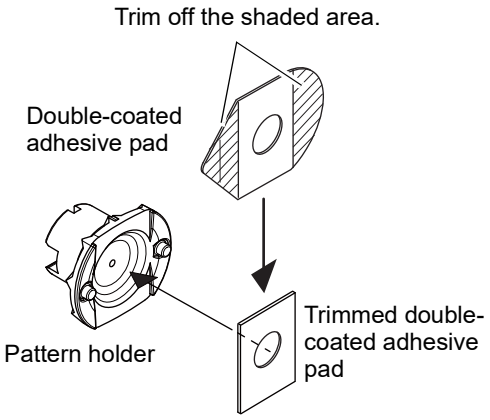
- The following is the description to load data by tracing patterns or demo lenses with the LE-800.
- FPD (Frame Pupillary Distance) cannot be measured during pattern or demo lens tracing.
  For processing, a FPD or DBL value needs to be entered after tracing.
- There are thickness limitations to patterns and demo lenses that can be measured. Those with a thickness of 4 mm or greater at the area where the pattern holder or lens cup is attached cannot be measured.

3.3.1 Pattern tracing

Trace the pattern shape such as for two-point frames.

1 Attach the trimmed double-coated adhesive pad to the pattern holder to prevent the pattern from dropping off.

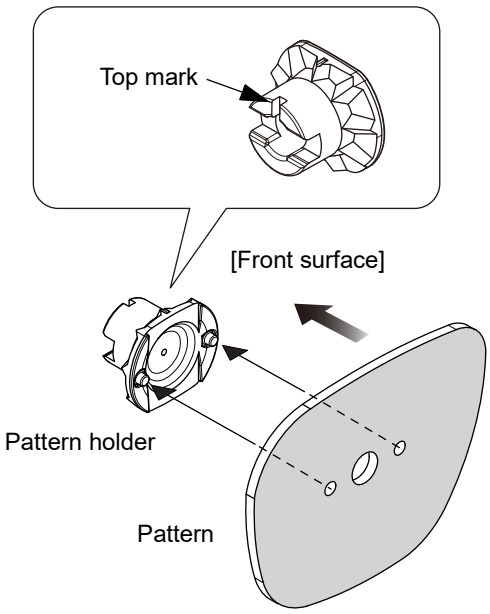
Trim off the shaded area of the double-coated adhesive pad with scissors as shown in the figure to the right and attach the pad to the pattern holder.



2 Attach the supplied pattern holder to the pattern.

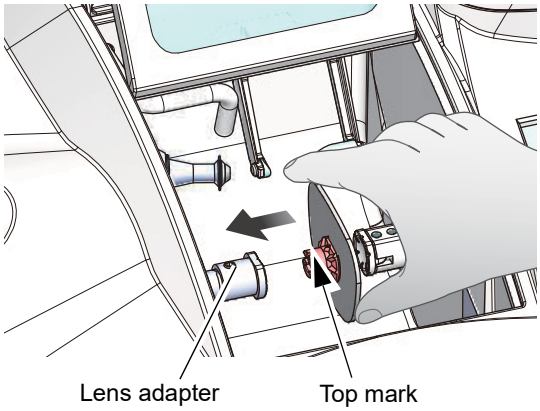
As shown in the figure to the right, attach the pattern holder to the front surface of the pattern with its top mark oriented to the upper side of the pattern.

* The figure to the right shows the pattern as viewed from the wearer's perspective (rear surface).



3 Set the pattern to the lens adapter.

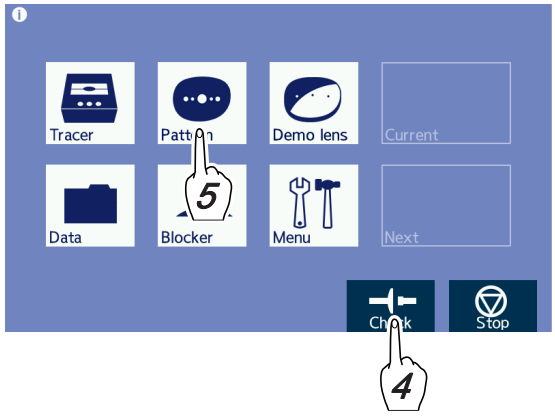
Securely insert the pattern holder into the lens adapter with its top mark oriented to the upper side of the lens adapter.



4 Press Chuck on the home screen to secure the pattern.

⚠ CAUTION

- Be careful not to get fingers caught when chucking (securing) a lens.



5 Press Pattern.

The pattern tracing screen appears.

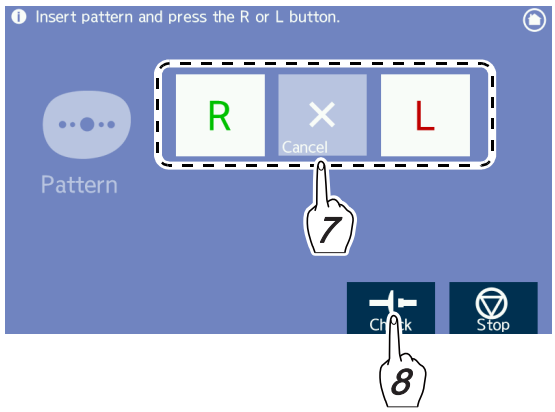
6 Close the processing chamber cover.

7 Press R (right eye) or L (left eye) depending on the pattern to be traced.

Tracing starts. The screen changes to the frame data confirmation screen automatically after tracing and then displays the trace results.

To stop tracing, press Cancel.

To retry tracing after the instrument has stopped, press R or L again. To return to the home screen, press .



8 Open the processing chamber cover and press Chuck to remove the pattern while holding the pattern by hand.

For saving and deletion of shape data, *"3.5 Saving or Deleting Shape Data" (page 60)*.

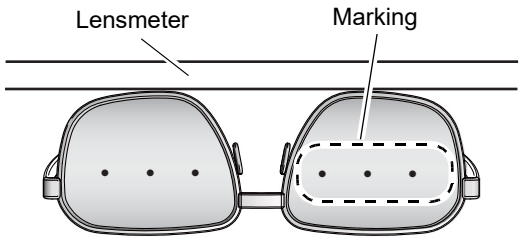
For edition of shape data, *"3.6 Frame Data Confirmation Screen Entry" (page 69)*, *"3.7 Processing Conditions Entry" (page 70)*, or *"3.8 Layout Entry" (page 73)*.

3.3.2 Demo lens tracing

A processed lens that was mounted in frames is traced as a demo lens in the same manner as pattern tracing.

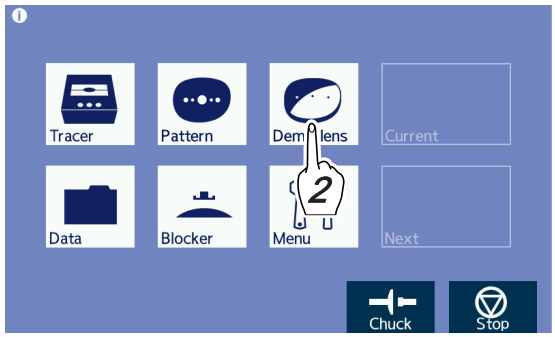
1 Mark the demo lens with a lensmeter as shown in the figure to the right.

When marking is complete, remove the lens from the spectacle frame.

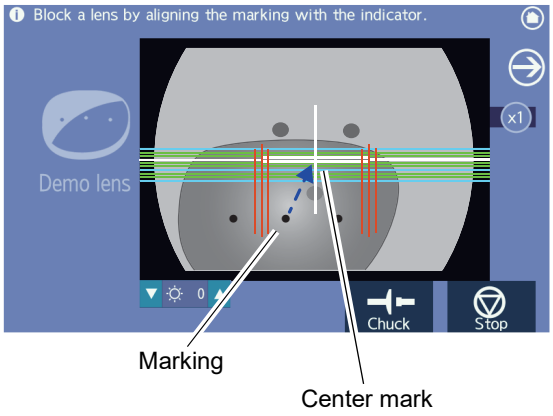


2 Press  on the home screen.

The demo lens blocking screen appears.



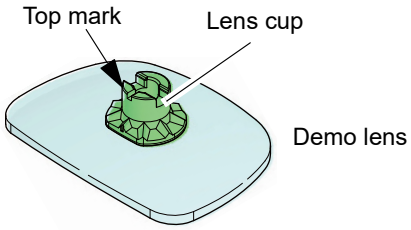
3 On the demo lens blocking screen, align the demo lens marking with the center mark.



4 Block the demo lens with the lens cup.

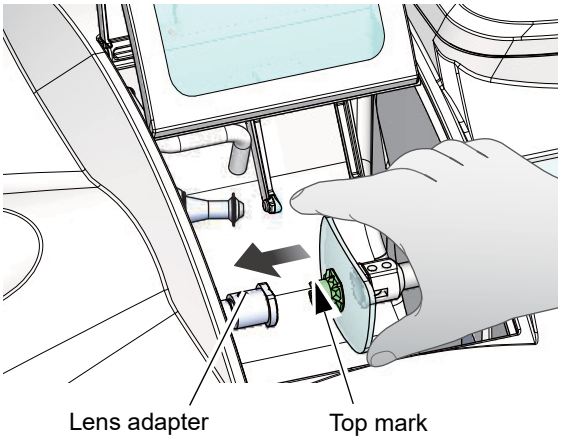
For blocking, *"3.12 Lens Blocking" (page 87)*.

After blocking, the screen automatically changes to the demo lens tracing screen.



5 Open the processing chamber cover and set the demo lens to the lens adapter.

Securely insert the lens cup into the lens adapter with its top mark oriented to the upper side of the lens adapter.

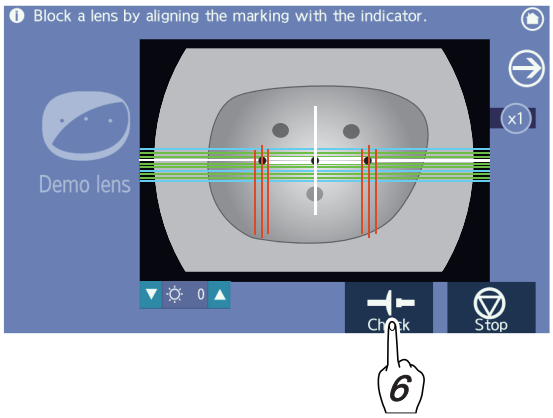


6 Press Chuck to secure the demo lens.

⚠ CAUTION

- Be careful not to get fingers caught when chucking (securing) a lens.

7 Close the processing chamber cover.



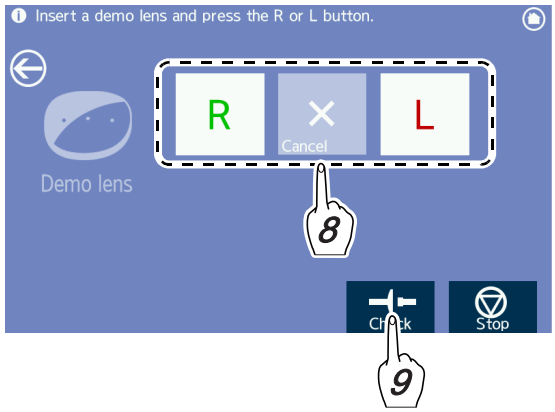
8 Press R (right eye) or L (left eye) depending on the demo lens to be traced.

Tracing starts.

The screen changes to the frame data confirmation screen automatically after tracing and then displays the trace results.

To stop tracing, press Cancel.

To retry tracing after the instrument has stopped, press R or L again. To return to the home screen, press .



9 Open the processing chamber cover and press Chuck to remove the demo lens while holding the demo lens by hand.

For saving and deletion of shape data, *"3.5 Saving or Deleting Shape Data" (page 60)*.

For edition of shape data, *"3.6 Frame Data Confirmation Screen Entry" (page 69)*, *"3.7 Processing Conditions Entry" (page 70)*, or *"3.8 Layout Entry" (page 73)*.

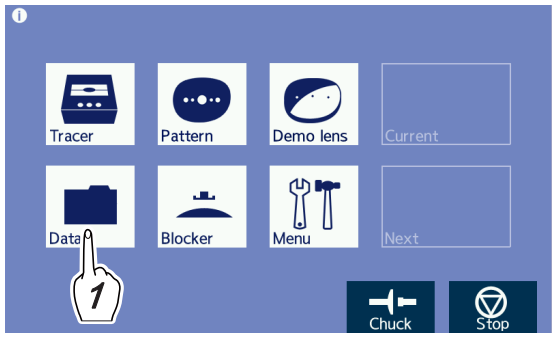
3.4 Loading Shape Data

■ About 20,000 items of shape data can be stored in the internal memory of the LE-800.
This memory function allows shapes used repeatedly to be saved and loaded as registered shapes.
Data can also be received from a connected server or tracer.

3.4.1 Loading data from the internal memory

1 Press  on the home screen.

The keyboard screen appears.



2 Specify the shape data.

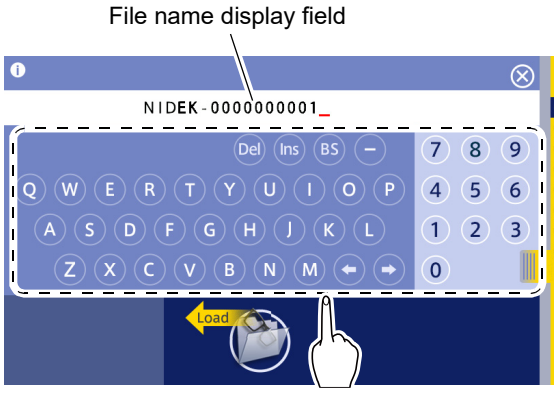
- When entering the shape data name with the keyboard

  Enter the shape data name (16-character including a hyphen) with the keyboard to display it in the file name display field.

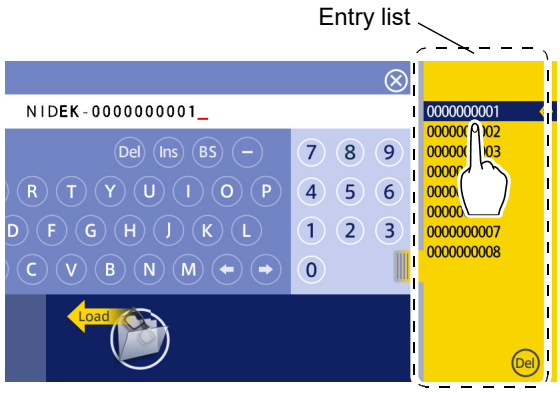
  If the entered characters are less than 16, the remaining preceding digits in the number are automatically filled with 0's.

  Ex.— NIDEK-0000001234

  "• *"Brand" and "shape data" naming method and storage capacity" (page 61)*



- When specifying the shape data from the entry list
  - If the entry list is displayed with the file name display field left blank, all brand names in memory are displayed. If necessary, enter a part of the file name for search refinement.
  - Pressing the brand name displayed in the entry list twice (selection and confirmation) displays it in the file name display field and closes the entry list. Display the entry list again and press the desired shape data name twice for selection.



  - To specify the brand name with the keyboard, enter the brand name and a hyphen and then display the entry list. Press the desired shape data name twice for selection.

- When using the optional barcode scanner

  Reading the bar code with the keyboard shown displays the read shape data name in the file name display field.

3 Press  to load shape data.

The frame data confirmation screen appears. Press  to change screens and enter items that remain to be entered.

For saving and deletion of shape data, *"3.5 Saving or Deleting Shape Data" (page 60)*.

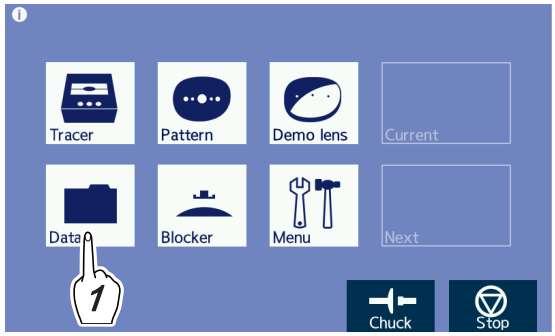
For edition of shape data, *"3.6 Frame Data Confirmation Screen Entry" (page 69)*, *"3.7 Processing Conditions Entry" (page 70)*, or *"3.8 Layout Entry" (page 73)*.

3.4.2 Loading data from the server

The following is the description to import data when the LE-800 is connected to the server.

1 Press  on the home screen.

The keyboard screen appears.



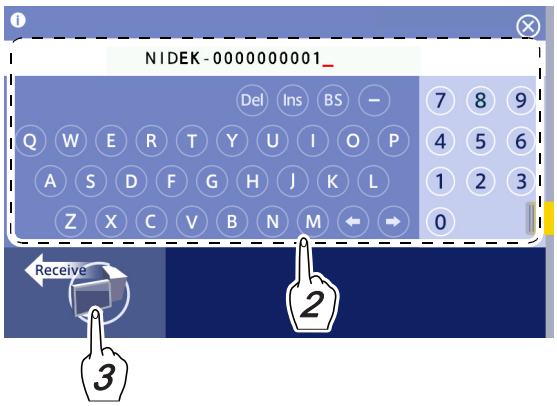
2 Enter the shape data name.

3 Press  to load shape data.

The frame data confirmation screen appears. Press  to change screens and enter items that remain to be entered.

For saving and deletion of shape data, *"3.5 Saving or Deleting Shape Data" (page 60)*.

For edition of shape data, *"3.6 Frame Data Confirmation Screen Entry" (page 69)*, *"3.7 Processing Conditions Entry" (page 70)*, or *"3.8 Layout Entry" (page 73)*.



3.4.3 Loading data from a tracer

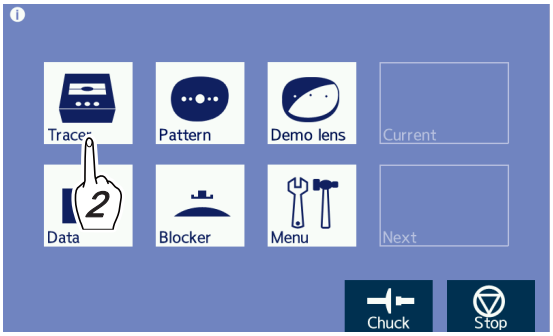
The following is the operating procedure for when the LE-800 and NIDEK tracer LT-980 are connected.

* For the operating procedure of the LT-980, refer to the operator's manual of the LT-980.

1 Trace frames with the LT-980.

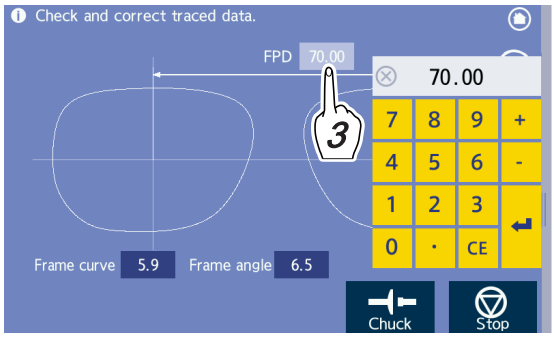
2 Press  on the home screen of the LE-800.

Data is loaded from the tracer and the screen changes to the frame data confirmation screen automatically.



3 Press  to change screens and enter data (LE-800).

For saving and deletion of shape data, ↳ *"3.5 Saving or Deleting Shape Data" (page 60)*. For edition of shape data, ↳ *"3.6 Frame Data Confirmation Screen Entry" (page 69)*, *"3.7 Processing Conditions Entry" (page 70)*, or *"3.8 Layout Entry" (page 73)*.

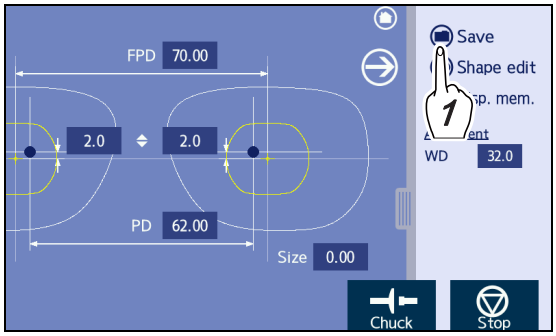


3.5 Saving or Deleting Shape Data

■ Shape data being edited can be saved in the internal memory and sent to the server.

3.5.1 Saving shape data in the internal memory

1 With shape data to be saved in the internal memory displayed on a screen such as the layout screen, display the side menu and press .

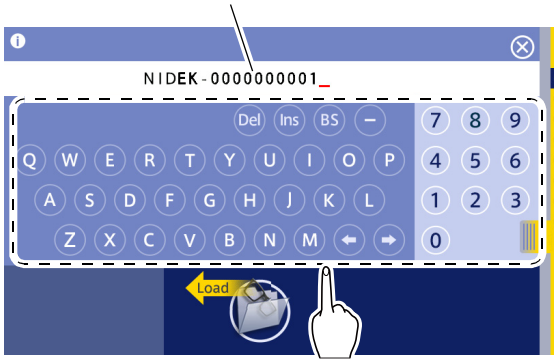


The keyboard screen appears.

Note

- If there are any items that remain to be entered in the shape data to be saved, numeric values initially displayed in the layout screen are saved as entered data.

2 Enter the shape data name.



- When entering the shape data name with the keyboard

  Enter the shape data (16-character including a hyphen) name with the keyboard to display it in the file name display field.

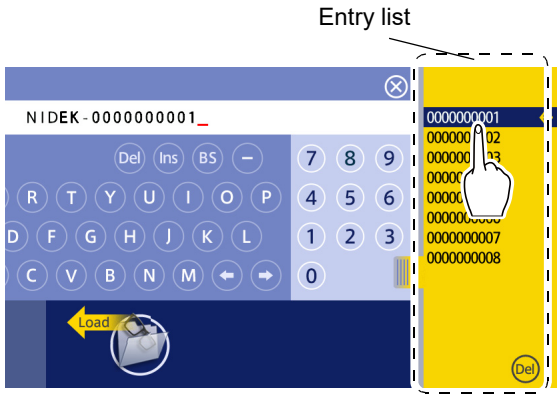
  If the entered characters are less than 16, the remaining preceding digits in the number are automatically filled with 0's.

  Ex.— NIDEK-0000001234

  When the entered shape data name does not exist, the entered shape data name is automatically created.

  "• *"Brand" and "shape data" naming method and storage capacity" (page 61)*

- When specifying the shape data from the entry list

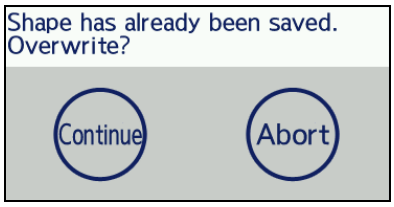


  - If the entry list is displayed with the file name display field left blank, all brand names in memory are displayed. If necessary, enter a part of the file name for search refinement.
  - Pressing the brand name displayed in the entry list twice (selection and confirmation) displays it in the file name display field and closes the entry list. Display the entry list again and press the desired shape data name twice for selection.
  - To specify the brand name with the keyboard, enter the brand name and a hyphen and then display the entry list. Press the desired shape data name twice for selection.

- When using the optional barcode scanner

  Reading the bar code with the keyboard shown displays the read shape data name in the file name display field.

3 Press  to save the data.



If shape data with the same name exists in the save location, a message asking whether to overwrite the data is displayed.

- Press  to overwrite.

- Press  to close the window without overwriting.

Note

- "Brand" and "shape data" naming method and storage capacity

  "Brand"

  - Specify the brand name with a maximum of 12 characters containing at least one alphabet letter and no hyphen.

    Ex.— NIDEK0000001
  - The brand name becomes the folder name. When the folder for the brand name specified does not exist, the folder is automatically created.
  - A maximum of 500 brand folders can be stored.

  "Shape data"

  - Shape data is entered as "brand name - number" with a maximum of 16 characters.
  - If the entered characters are less than 16, the remaining preceding digits in the number are automatically filled with 0's.

    Ex.— If "NIDEK-1234" is entered, it is saved as "NIDEK-00000000001234".
  - A maximum of 500 folders with up to 500 data items per folder to a maximum of 20,000 shape data items can be saved.

    * The maximum number of data that can be saved depends on the size of the data.

- Contents saved in the internal memory

  Lens shape, FPD, DBL, PD, 1/2PD, optical center height, size, frame curve, frame warping angle, circumference, EP, groove width, groove depth, lens material, lens type, frame type, bevel/groove position (Auto/Guide), soft processing ON/OFF, polishing ON/OFF, layout (Passive/Active)
- When shape data of "Nylor, Flat edging" received from the server or blocker is saved in the internal memory, the data is replaced by "Nylor, Auto".

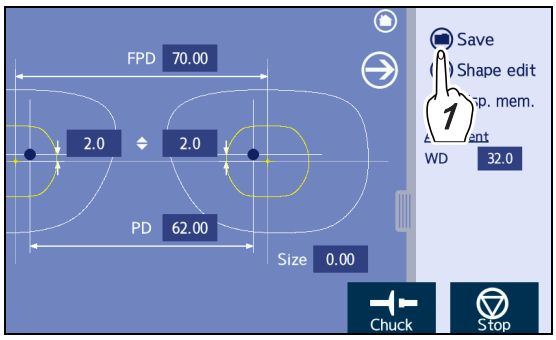
3.5.2 Sending shape data to the server

The following is the description to send shape data being displayed on the screen to the server while the LE-800 is connected with the server.

To send shape data registered in the internal memory to the server, load the data to display it on the screen.

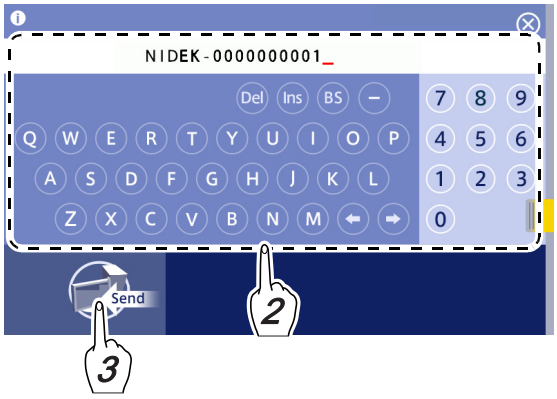
1 With shape data to be sent displayed, display the side menu and press  .

The keyboard screen appears.



2 Enter the shape data name with the keyboard.

"• *"Brand" and "shape data" naming method and storage capacity" (page 61)*



Note

- When data is sent to the server, only the number with the brand name removed is accepted.
  For the manner that data names are saved, refer to the instructions for the connected server or such.

3 Press  to send the shape data to the server.

3.5.3 Deleting data

The following is the description to delete brand folders or shape data from the internal memory.

- As the amount of data increases, the time required for saving or loading data also increases, so delete any unnecessary data.

○ When deleting shape data

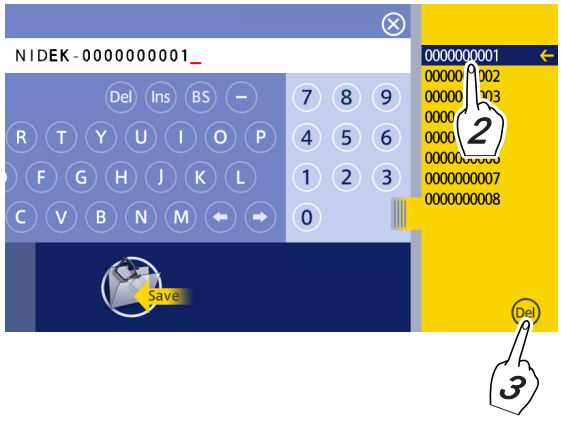
1 Press Data on the home screen or press in the side menu of a screen such as the layout screen.

The keyboard screen appears.

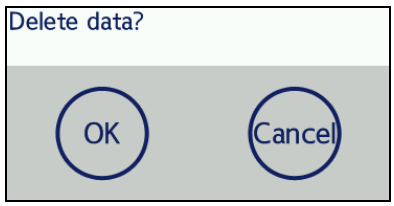
2 Select the shape data to be deleted in the entry list.

3 Press Del.

The deletion confirmation message appears.



- Press OK to delete the data.
- Press Cancel to close the window without deleting.



○ Deleting a brand folder

1 Press Data on the home screen. Press in the side menu of a screen such as the layout screen.

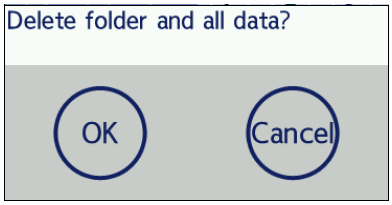
The keyboard screen appears.

2 Select the brand folder to be deleted in the entry list.

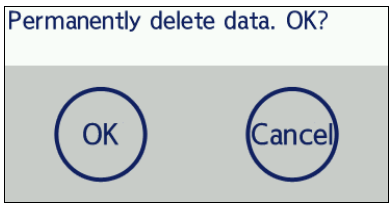
3 Press Del.

The deletion confirmation message appears.

- Press OK to delete the data.
- Press Cancel to close the window without deleting.



- Press OK to delete the data.
- Press Cancel to close the window without deleting.



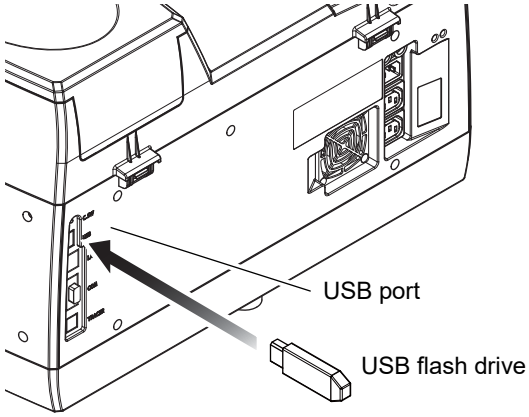
3.5.4 Backing up shape data to the optional USB flash drive

- NIDEK is not responsible for any data loss if a USB flash drive other than that specified by NIDEK is utilized.
- 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 back-up.
- All shape data in the internal memory is backed up to the USB flash drive. Backup of individually selected data is not possible.
- Never disconnect the USB flash drive during data backup. Do not change the write-protection switch setting.

  It may cause instrument malfunction or data corruption in the USB flash drive.

1 As shown in the figure to the right, insert the USB flash drive for backup into the USB port on the rear of the instrument.

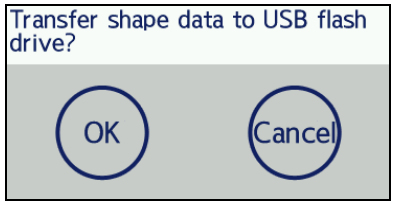


2 Press  on the home screen or press  in the side menu of a screen such as the layout screen.

The keyboard screen appears.

3 Press  (Backup button).

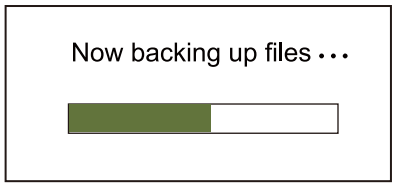
- Press OK to back up the data.
- Press Cancel to close the window without backing up.



The “Now backing up files...” message appears.

All shape data in the internal memory is backed up to the USB flash drive.

When backup is complete, the message disappears.



Note

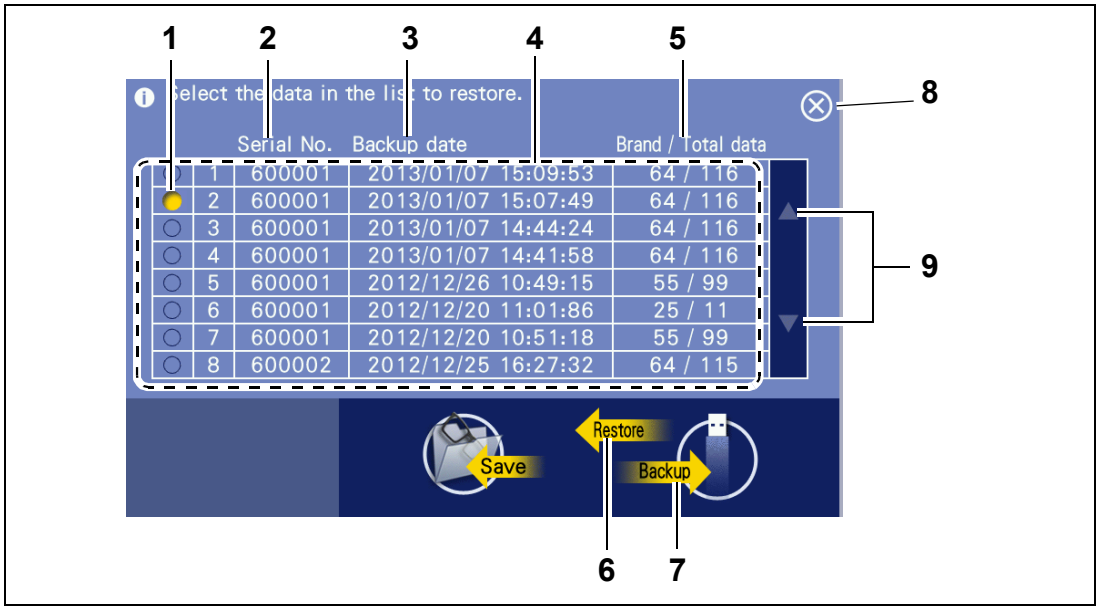
- During backup to the USB flash drive, no other operation can be performed.
  Depending on the data amount, backup may require a significant amount of time. Back up data to other media periodically.
- The folder name of the data backed up to the USB flash drive is in the order of (BAK) folder, (serial number) folder, (date, time) folder, and (each brand name) folder.

4 After backup has been completed, turn off (○) the instrument and remove the USB flash drive.

3.5.5 Restoring shape data from the optional USB flash drive

- If shape data is restored, shape data stored in the LE-800 are all deleted and replaced with the data in the USB flash drive.
  NIDEK is not responsible for data loss or corruption due to data restoration.
- Be sure to back up all data in the LE-800 to the USB flash drive before restoration.
- Only data backed up with the LE-800 can be restored. Never restore data backed up by any other instrument or data modified by users as it may cause instrument malfunction. (There are limitations to restorable data names and number of data.)

Description of restoration data list



1 Selection indicator

When the data field is selected, the selection indicator lights up in yellow.

2 Serial No.

Serial number of the instrument backed up

3 Backup date

Backup date and time

4 Data field

Restoration data list

5 Brand/Total data

Number of brands / Total data number (The number of brand folders and the total number of all shape data are displayed.)

6 Restore button

A restoration data list to restore data from the USB flash drive to the internal memory is displayed.

7 Backup button

All shape data in the internal memory is backed up to the USB flash drive.

8 Close button

Returns to the keyboard screen.

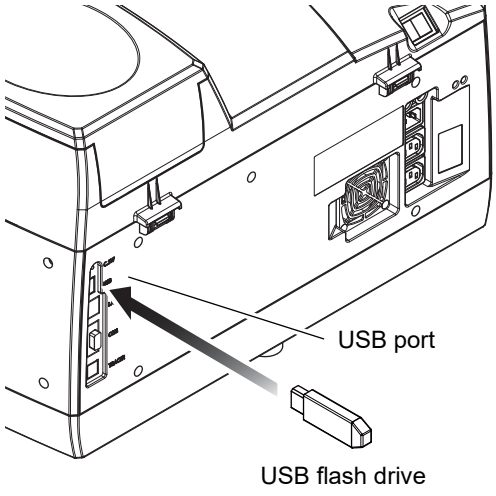
9 Scroll buttons

When the number of data items reaches 8 items, scroll buttons are displayed to the right of the data list.

Press ▲or ▼.

○ Restoring procedure from the USB flash drive

1 Insert the USB flash drive for restoration into the USB port on the rear of the instrument.

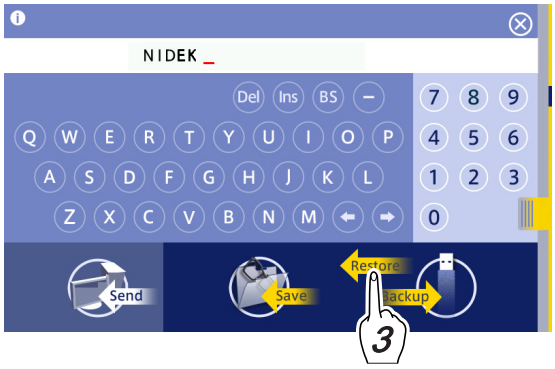


2 Press  on the home screen. Press  in the side menu of a screen such as the layout screen.

The keyboard screen appears.

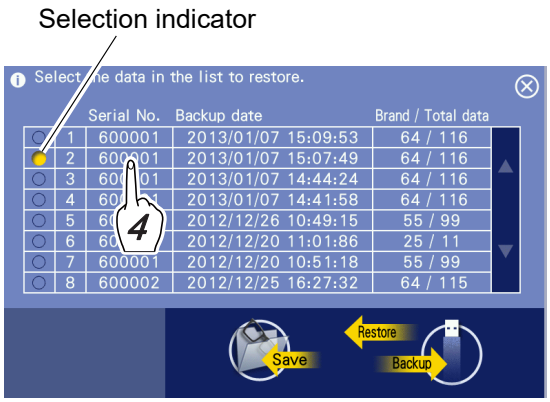
3 Press  (Restore button).

The restoration data list is displayed.

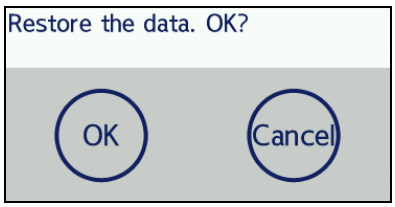


4 Select the data to be restored.

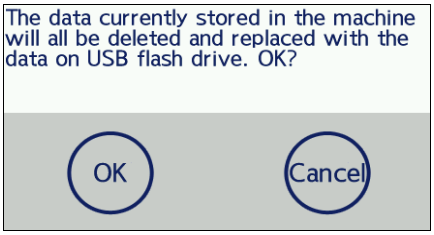
When data is selected, the selection indicator lights up in yellow and a restoration confirmation message appears.



- Press OK to restore the data.
- Press Cancel to close the window without restoring.



- Press OK to restore the data.
- Press Cancel to close the window without restoring.



Note

- During restoration of the data, no other operation can be performed.
- Data restoration may take a considerable amount of time depending on the data volume.

5 After data restoration has been completed, turn off (○) the instrument and remove the USB flash drive.

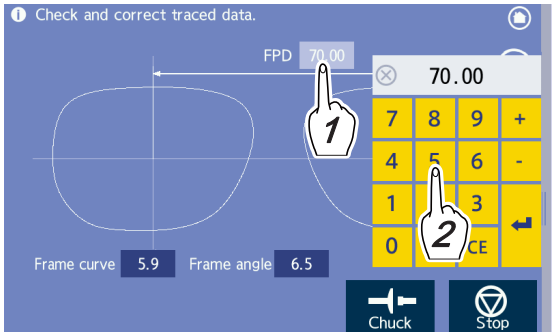
3.6 Frame Data Confirmation Screen Entry

- When tracing is performed or data is loaded from the internal memory, the frame data confirmation screen is automatically displayed.
- Values such as FPD by single-eye tracing or frame curve value by pattern tracing may not be obtained depending on the measurement method. These entry fields are displayed in yellow and can be entered with the numeric keypad.

  When items on the screen have been all entered,  blinks.

- When a demo lens is traced with the LE-800, the measured front curve value of the demo lens is displayed as the default value of the Frame curve field. Change the frame curve value as necessary.
- When a pattern is traced with the LE-800 or a pattern or demo lens is traced with a tracer, the Frame curve field shows “0.0” as its default value. Change the frame curve value as necessary.
- When a frame warping angle is changed, FPD is automatically recalculated. When the frame warping angle is changed after FPD has been entered, reenter FPD if necessary.

1 On the frame data confirmation screen, press the numeric field.



2 The numeric keypad appears. Enter any value and press ↵ to confirm the entry.

- FPD/DBL
  Range: 30.00 to 99.50 mm
  Increments: 0.01 mm
- Frame curve
  Range: 0.0 to 12.0
  Increments: 0.1
- Frame angle
  Range: 0.0 to 30.0 degrees
  Increments: 0.1 degree

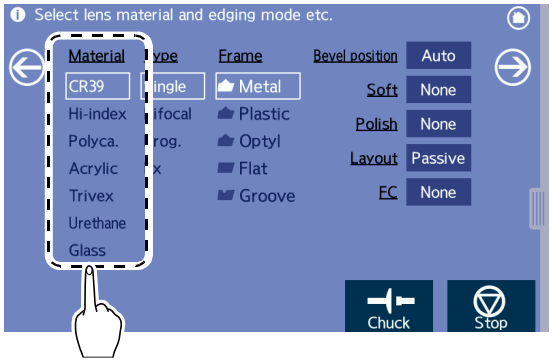
3 Press  to display the processing conditions screen.

3.7 Processing Conditions Entry

- The screen is displayed in the order of the trace data confirmation screen, and processing conditions screen.
- As processing conditions, lens material, lens type, frame type, processing mode, soft processing, polishing, layout mode, and frame changing are specified.

● Selecting the lens material

Select the material of a lens to be processed from the “Material” field.



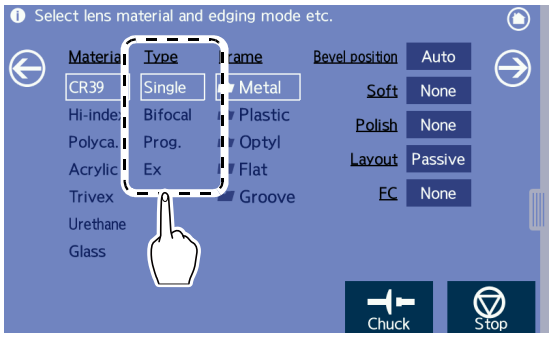
Lens material
• CR39 (CR-39)
• Hi-index (plastic lens with a refractive index 1.60 or higher)
• Polyca. (polycarbonate)
• Acrylic (acrylic resin)
• Trivex
• Urethane (polyurethane)
• Glass

- Be sure to select the correct lens material.

  If incorrect lens material is selected, processing may not be performed properly. Damage to the wheels may also occur.
- When processing a lens material that is susceptible to heat such as Trivex lenses, select “Trivex”.

● Selecting the lens type

Select the type of a lens to be processed from the “Type” field.



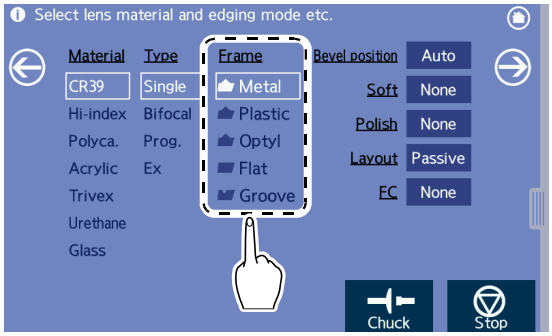
Lens type
• Single vision lens
• Bifocal lens
• Progressive lens
• Ex lens

- Be sure to select “Ex” when processing Ex or cataract lenses.

  The feelers of the feeler unit may be damaged during lens shape measurement.

● Selecting the frame type

Select the desired frame type from the “Frame” field.



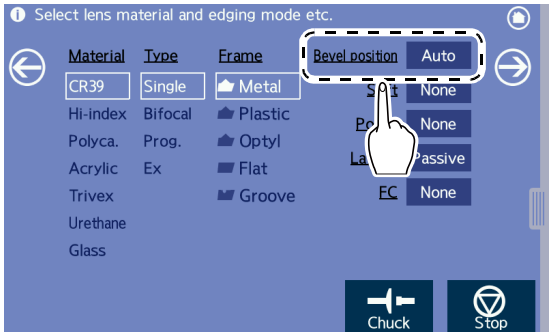
Frame type	Processing
• Metal	Beveling
• Plastic	Beveling
• Optyl	Beveling
• Flat (two-point)	Flat edging
• Groove (nylor)	Grooving

● Specifying the processing mode

Specify whether to automatically calculate or manually enter the bevel/groove position and curve.

Pressing the processing mode setting field toggles between “Auto” and “Guide”.

When “Ex” is selected as the lens type, “Guide” is automatically set. When “Flat” is selected as the frame type, no indication is displayed.



Auto processing	Auto	The bevel/groove position and curve are automatically computer calculated.
Guide processing	Guide	The bevel/groove position and curve are manually entered.

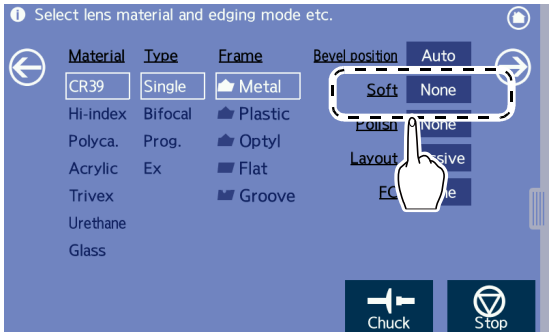
● Specifying the soft processing mode

Specify whether to perform soft processing.

Pressing the “Soft” setting field toggles between “None” and “Exec”.

For processing lenses with a slippery coating, select “Exec” to reduce any axis shift due to slippage.

Processing time in this mode is increased slightly but roughing control is much more precise.



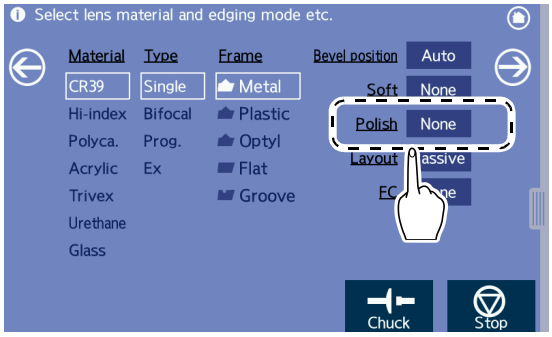
No soft processing	None
Soft processing	Exec

● Specifying the polishing mode

Specify whether to polish the edge or bevel of a lens.

Pressing the “Polish” setting field toggles between “None” and “Exec”.

No polishing	None
Polishing	Exec



Note

- Depending on the lens material and processing mode, this setting may change automatically.

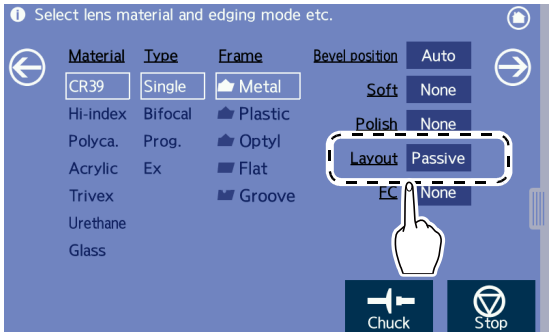
● Specifying the layout mode

Specify whether to block at the optical center or boxing center.

Pressing the “Layout” setting field toggles between “Active” and “Passive”.

For bifocal lenses, the layout mode cannot be specified. Based on the segment position, block the lens at the position specified by the parameter.

“O Tab 3 (Blocker, Maintenance message)” (page 134)



Active	Active	Blocking at the optical center.
Passive	Passive	Blocking at the boxing center.

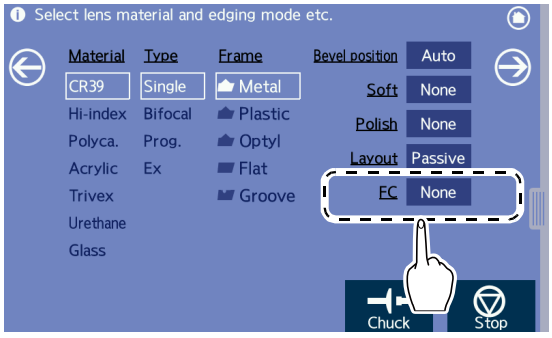
● Specifying the frame changing mode

Specify whether to perform frame changing.

This function is used to mount reprocessed spectacle lenses into other frames.

Pressing the “FC” setting field toggles between “None” and “Exec”.

No frame changing	None
Frame changing	Exec



3.8 Layout Entry

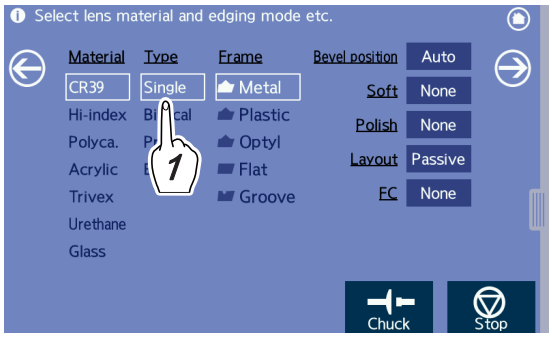
- The layout screen is displayed in the order of the trace data confirmation screen, processing conditions screen, and layout screen.
- The following describes the layout entry for single vision lenses, bifocal lenses, progressive lenses, and Ex lenses.

3.8.1 Entering layout data for single vision lenses

If the necessary items are not entered in the layout screen, the corresponding numeric fields are highlighted in yellow.

Enter FPD (DBL), PD (1/2PD), optical center height, and such as prescribed.

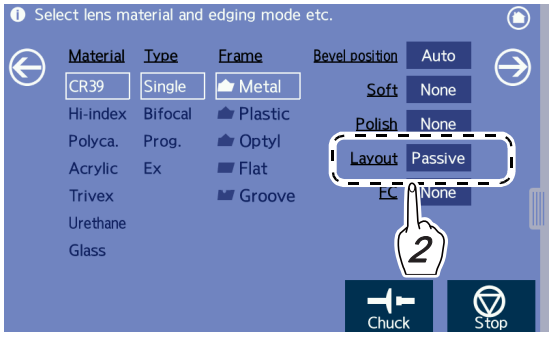
1 Select “Single” as the lens type on the processing conditions screen.



Single vision lens	Single	Block the lens with the lens cup while aligning the lens marking with the center of the alignment scale along with the horizontal position.

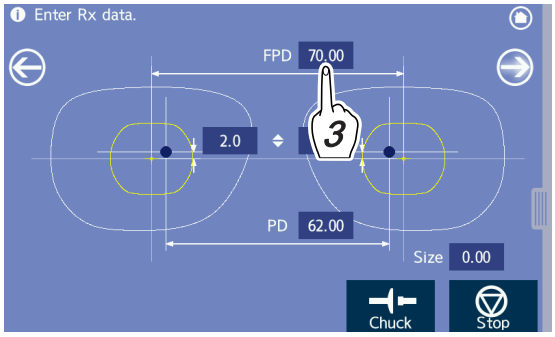
2 Specify the layout mode on the processing conditions screen.

Press the “Layout” setting field to specify “Active” or “Passive” as the layout mode.



Active	Active	Block the demo lens with the lens cup at the optical center.
Passive	Passive	Block the lens with the lens cup at the boxing center.

3 Specify the FPD (or DBL) on the layout screen.



- Specifying the FPD

  Press the “FPD” numeric field.

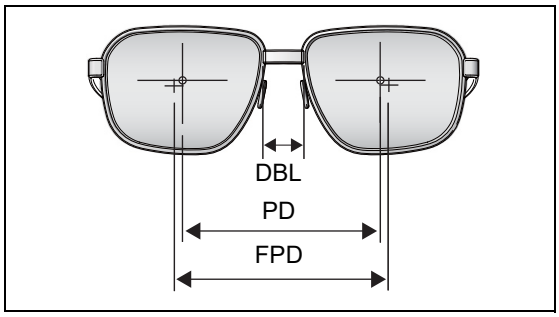
  The numeric keypad appears.

  Enter any value and press ↵ to confirm the entry.
  - Range: 30.00 to 99.50 mm and 5.00 mm or more by DBL conversion
  - Increments: 0.01 mm

- Specifying the DBL

  For the DBL entry, take note of the following point.

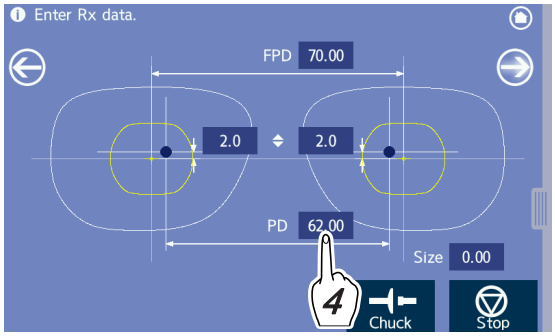
  “• The DBL value should be regarded as a reference value.” (page 24)



Note

- When the traced data includes the frame data (both-rim tracing), the FPD value is automatically entered together with the traced data.

4 Specify the PD (or 1/2PD).



- Specifying the PD

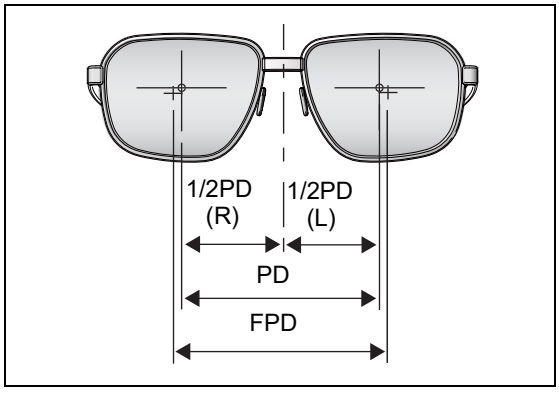
  Press the “PD” numeric field.

  The numeric keypad appears.

  Enter any value and press ↵ to confirm the entry.
  - Range: 30.00 to 99.50 mm
  - Increments: 0.01 mm

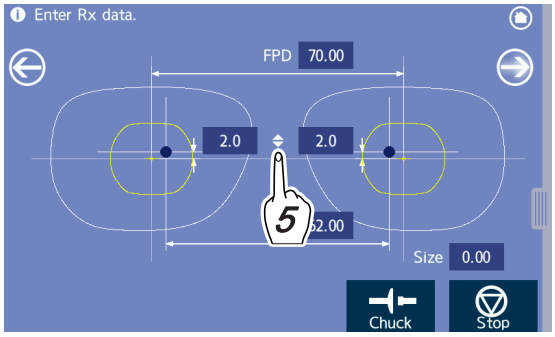
- Specifying the 1/2PD

  It is possible to enter the distance from the bridge center to the optical center separately.



  1) Press the “PD” label to change to “1/2PD”.
  2) The other procedures are the same as those for “Specifying the PD”.
     - Range: 15.00 to 49.75 mm
     - Increments: 0.01 mm
  3) If no value of the opposite side is entered, the same value is automatically copied to the opposite side. Enter the left lens information as necessary.

5 Specify the optical center height.



1) Select the specifying method of the optical center height.

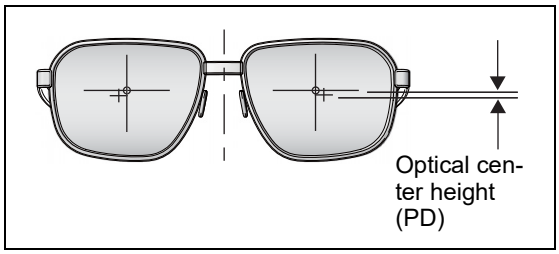
   Pressing ⬍ toggles among PD⬍,BT⬍, and ⬍.

2) Press the numeric field of the right lens.

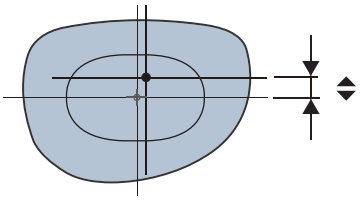
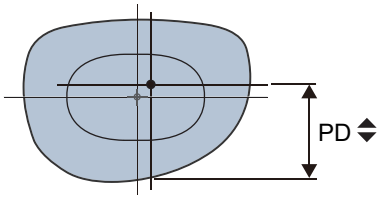
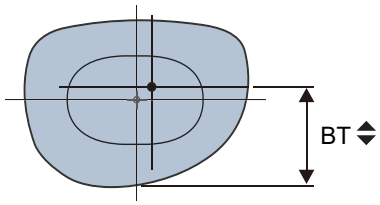
   The numeric keypad appears.

3) Enter any value and press ↵ to confirm the entry.

   - Range: -15.0 to +15.0 m for ⬍
   - Range: -15.0 to +15.0 mm with ⬍ conversion for PD⬍, BT⬍
   - Increments: 0.1 mm



4) If no value of the opposite side is entered, the same value is automatically copied to the opposite side. Enter the left lens information as necessary.

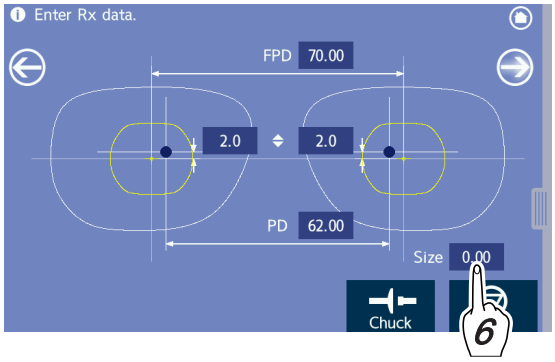
⬍	Enter the optical center height from the frame center. The minus mark indicates that the optical center shifts downward. The plus mark indicates that the optical center shifts upward.	
PD⬍	Enter the distance between the optical center and the straight down point of the lens shape.	
BT⬍	Enter the distance between the optical center and the lowest point of the lens shape.	

Note

- The default displayed in the optical center height numeric field can be entered by setting the “Optical center height” parameter.
- Defaults such as FPD can also be entered.

“4.2 General Settings” (page 132)

6 Enter the size (enlargement or reduction of shape size) as necessary.



1) Press the “Size” numeric field.

   The numeric keypad appears.

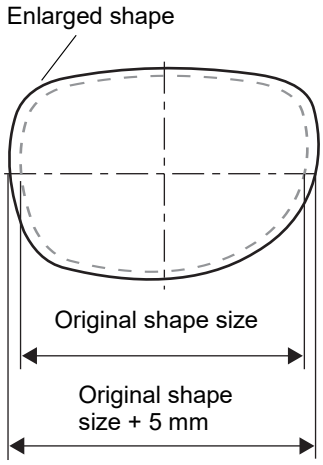
2) Enter any value and press ↵ to confirm the entry.

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

   The minus mark indicates that the size is reduced. The plus mark indicates that the size is enlarged.

With the entered value, the lens shape is enlarged or reduced on the basis of the shape center while a similar form is maintained.

Example in the figure to the right) Size = +5 mm



Note

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

“4.2 General Settings” (page 132)

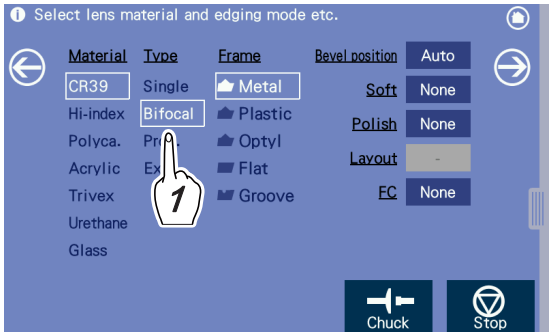
3.8.2 Entering layout data for bifocal lenses

For bifocal lenses, the lens is blocked while the lens position is aligned based on the segment base point (top line center of segment).

In accordance with the prescription, enter lens layout data such as FPD, near PD, and optical center height.

1 Select “Bifocal” as the lens type on the processing conditions screen.

“-” is displayed as the layout mode and no entry is possible.



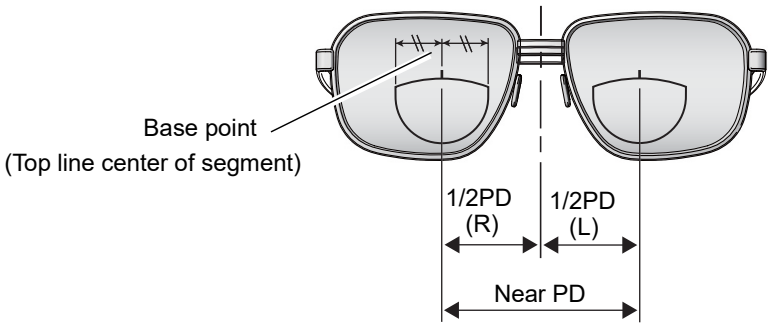
Bifocal lens	Bifocal	The lens is blocked with the lens cup while the lens position is aligned based on the segment base point (top line center of segment).

2 Specify the FPD (or DBL).

“3 Specify the FPD (or DBL) on the layout screen.” (page 74)

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

“4 Specify the PD (or 1/2PD).” (page 74).

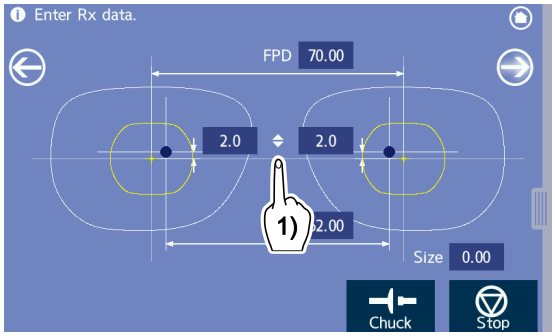


4 Specify the optical center height.

1) Pressing ▲▼ toggles among PD▲▼, BT▲▼, and ▲▼. Select the specifying method of the optical center height.

2) Press the numeric field of the right lens.

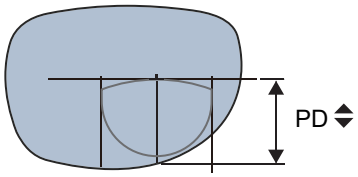
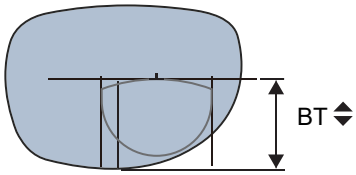
The numeric keypad appears.



3) Enter any value and press ↵ to confirm the entry.

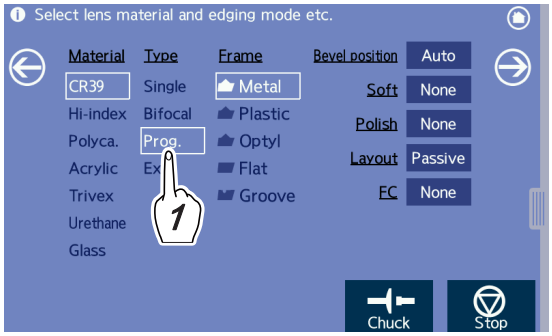
- Range: -15.0 to +15.0 mm with ⇕ conversion
- Increments: 0.1 mm

4) If no value of the opposite side is entered, the same value is automatically copied to the opposite side. Enter the left lens information if necessary.

PD ⇕	Enter the distance from the center point on the top line of the segment straight down to the point on the lens shape.	
BT ⇕	Enter the distance from the center point on the top line of the segment to the lowest point on the lens shape.	

3.8.3 Entering layout data for progressive power lenses

1 Select “Prog.” as the lens type on the processing conditions screen.



Progressive lens	Prog.	Set the lens based on the marked eye point for far vision and block the lens with the lens cup.

2 Specify “Active” or “Passive” as the layout mode on the processing conditions screen.

“3.8.1 Entering layout data for single vision lenses” (page 73) - Step 2

3 Specify the FPD (or DBL).

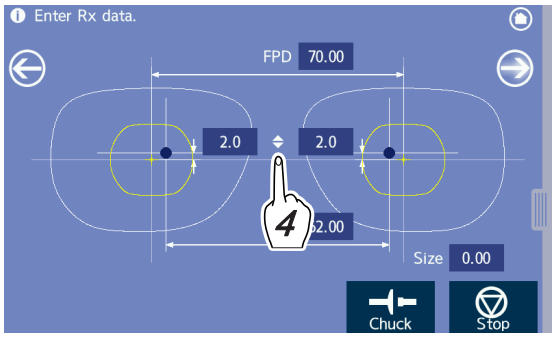
“3 Specify the FPD (or DBL) on the layout screen.” (page 74)

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

“4 Specify the PD (or 1/2PD).” (page 74)

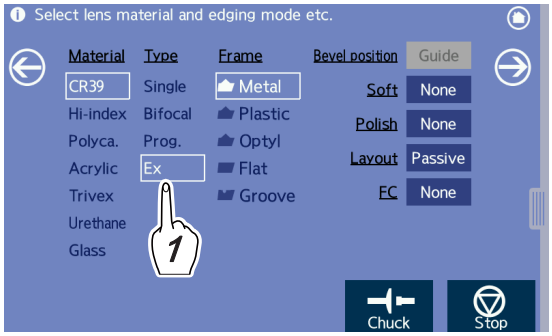
5 Enter the height of the eye point.

“5 Specify the optical center height.” (page 75)



3.8.4 Entering layout data for Ex lenses

1 Select “Ex” as the lens type on the processing conditions screen.



Ex lens	Ex	Block the lens with the lens cup while aligning the lens marking with the center of the alignment scale along with the horizontal position.

2 Specify “Active” or “Passive” as the layout mode on the processing conditions screen.

“3.8.1 Entering layout data for single vision lenses” (page 73) - Step 2

3 Specify the FPD (or DBL).

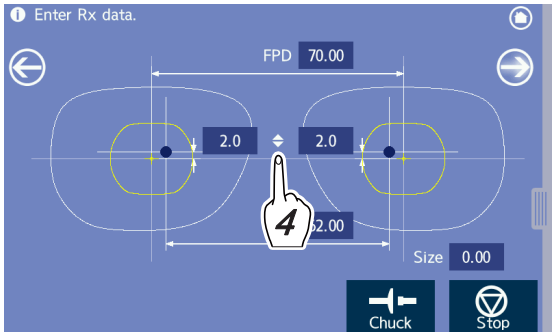
“3 Specify the FPD (or DBL) on the layout screen.” (page 74)

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

“4 Specify the PD (or 1/2PD).” (page 74)

5 Enter the height of the eye point.

“5 Specify the optical center height.” (page 75)



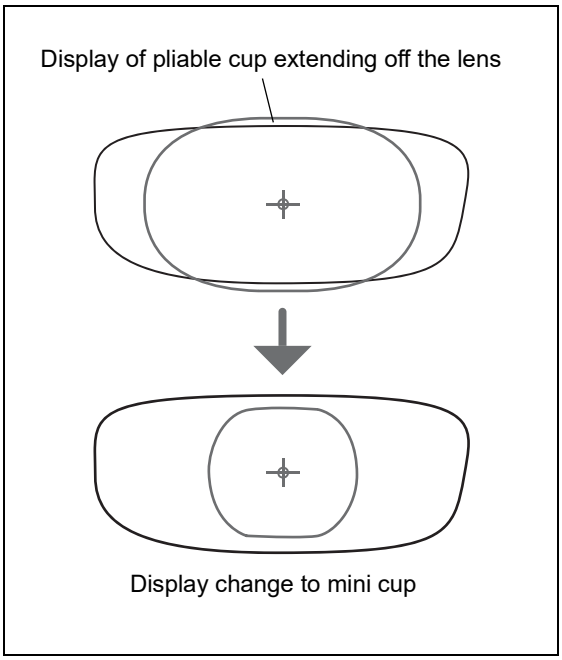
○ Changes in the cup mark shape resulting from the layout setting

Note

- The mini cup and pliable cup are optional equipment. Consult NIDEK service personnel for their use.

If use of the mini cup or pliable cup is set to be enabled and the cup mark on the layout screen changes to the mini cup shape as shown in the figure to the right, use the mini cup for blocking.

This is a warning display to prevent the lens adapter or lens cup from contacting the processing wheels when a pliable cup that extends off the lens is used for lenses such as half-eye lenses whose vertical size is narrow.



Note

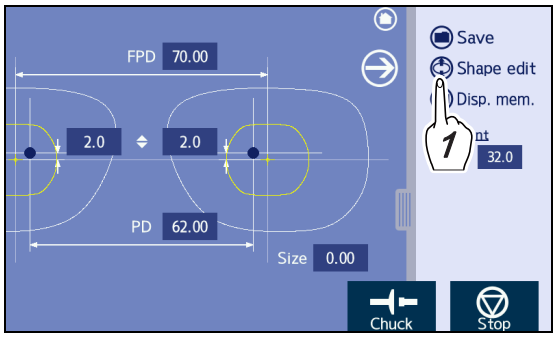
- Since the cup mark display is only a guide, actual processing may not be possible with the displayed cup depending on the layout or such.
- When the “Cup type for small shape” parameter is set to “Mini” in the “General” tab, the displayed cup mark is constant in size. However, when the cup mark contacts the lens shape and processing is initiated, a message is displayed in the information bar indicating that processing is not possible.
- Do not block the lens if the mini cup mark contacts the lens shape.

3.9 Shape Change

■ The shape editor function is used to change the entire width and height or the width and height separately from the center to right and left or up and down based on the displayed lens shape.

1 With the lens shape displayed, press in the side menu of a screen such as the layout screen.

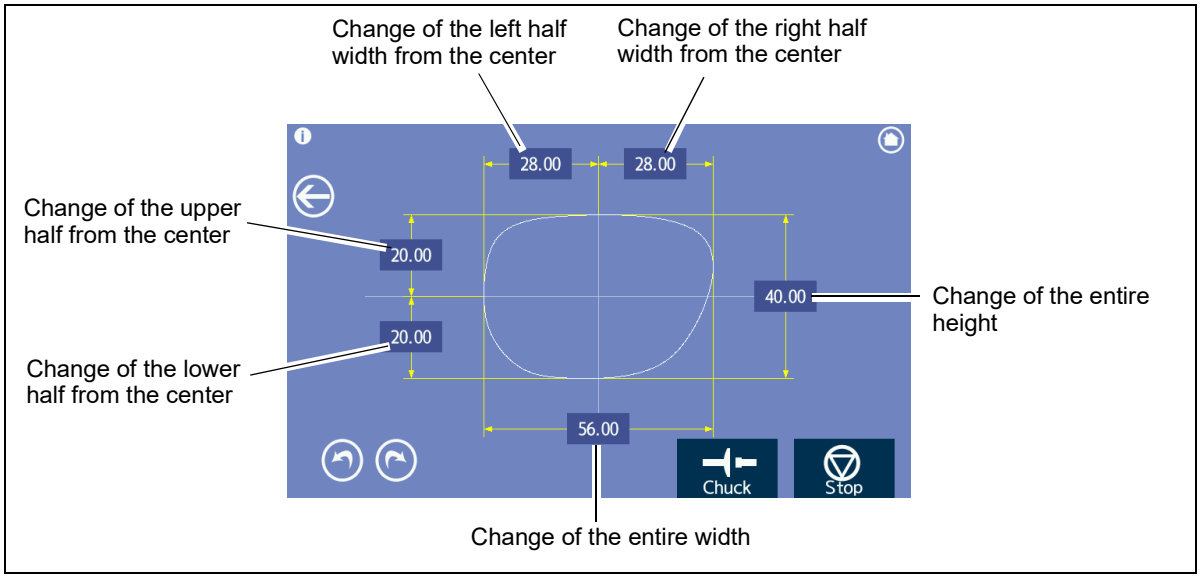
The shape editor screen appears.



2 Change the whole width and height from the center to right and left or up and down as necessary.

Press the desired numeric field to display the numeric keypad and enter a value.

- → Undoes the last change (up to five times).
- → Restores the change by undo.



3 After changing the lens shape, press to return to the original screen.

Note

- Returning to the original screen confirms the shape change and cannot be canceled. To restore the shape, load the data again.

3.10 WD or EP Entry

- The WD label and/or EP label are displayed in the side menu depending on the lens type on the processing conditions screen, layout screen, and blocking screen. These are used to adjust the size of the alignment scale displayed on the blocking screen during blocking.
- WD is used to adjust the width of the alignment scale. EP is displayed when “Prog.” is selected as the lens type and used to adjust the height of eye point for far vision

○ Entry example of WD/EP in the blocking screen

Adjust the size of the alignment scale so that the lens can be easily aligned on the blocking screen.

1 Display the side menu of the blocking screen.

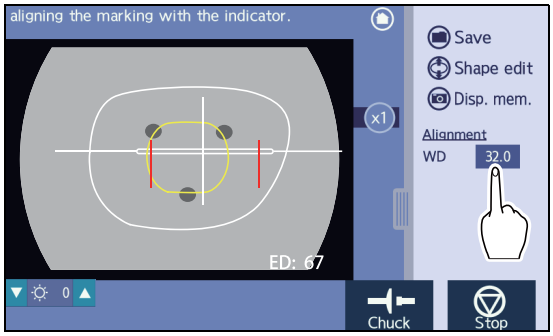
2 Set the WD and/or EP.

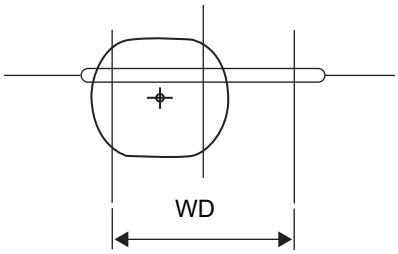
- When specifying the WD for single vision lenses or Ex lenses

  Press the “WD” numeric field to set the width of the alignment scale.

  The numeric keypad appears.

  Enter any value and press ↵ to confirm the entry.
  - Range: 15.0 to 45.0 mm
  - Increments: 0.1 mm



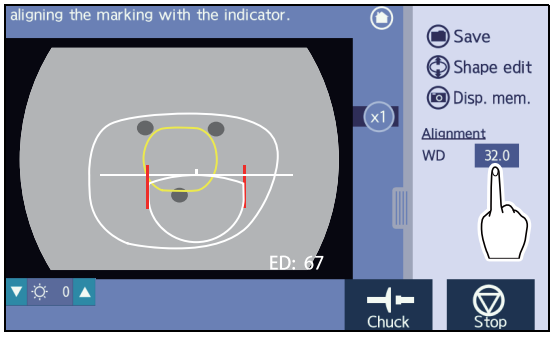


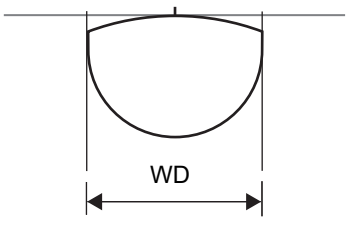
- Specifying the WD for bifocal lenses

  Press the “WD” numeric field to set the width of the alignment scale.

  The numeric keypad appears.

  Enter any value and press ↵ to confirm the entry.
  - Range: 15.0 to 45.0 mm
  - Increments: 0.1 mm





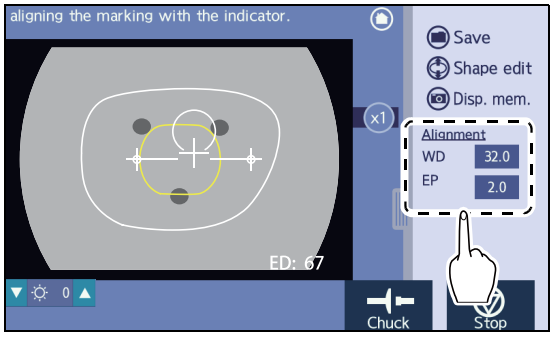
- Specifying the WD for progressive power lenses

  Press the “WD” numeric field to set the width of the alignment scale.

  The numeric keypad appears.

  Enter any value and press ↵ to confirm the entry.

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



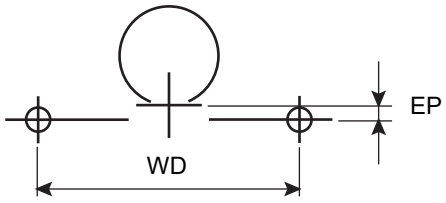
- Specifying the EP for progressive power lenses

  Press the “EP” numeric field to set the height of the far vision eye point.

  The numeric keypad appears.

  Enter any value and press ↵ to confirm the entry.

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



3.11 Initial Screen Customize Function

- This function is used to set the initial state of each item such as processing conditions displayed when power is turned on.
- If the factory settings for the layout screen and shape editor screen differ from those normally used, it is possible to change and save the items to be displayed on the initial screens upon instrument activation.

○ Procedures

When initial settings common to each screen are saved, the values of the screen saved last are set and replace the prior settings.

1 Display the screen for which the initial settings are to be saved.

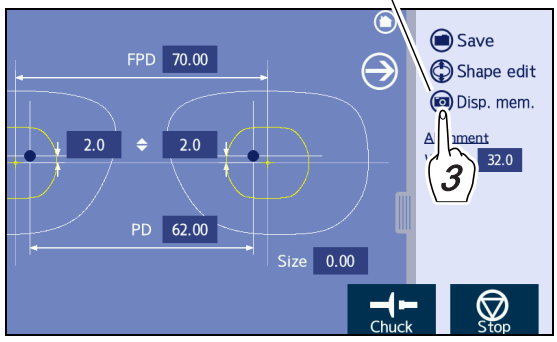
2 Change each item to the desired setting.

3 Press  to save the screen settings.

Press  in the side menu of a screen such as the layout screen (sample to the right).

The same operating procedures are used for a screen such as the processing conditions screen.

After completion, the side menu is automatically closed.



Sample of layout screen

○ Items to be saved

- Frame data confirmation screen
  - FPD mode (FPD, DBL)
- Processing conditions screen
  - Lens material (CR39, Hi-Index, Polyca., Acrylic, Trivex, Urethane, Glass)
  - Lens type (Single, Bifocal, Prog., Ex)
  - Frame type (Metal, Plastic, Optyl, Flat, Groove)
  - Bevel position / Groove position (Auto, Guide)
  - Polishing mode (Exec, None)
  - Layout mode (Active, Passive)
  - WD (Single/Ex, Bifocal, Prog.)
  - EP (Prog.)

- Layout screen
  - FPD mode (FPD, DBL)
  - PD mode (PD, 1/2PD)
  - Optical center height mode (▲▼, PD▲▼, BT▲▼)
  - WD (Single/Ex, Bifocal, Prog.)
  - EP (Prog.)

- Blocking screen
  - Lens type (Single, Bifocal, Prog., Ex)
  - FPD mode (FPD, DBL)
  - PD mode (PD, 1/2PD)
  - Optical center height mode (▲▼, PD▲▼, BT▲▼)
  - R/L
  - WD (Single/Ex, Bifocal, Prog.)
  - EP (Prog.)

- Processing start screen
  - Lens material (CR39, Hi-Index, Polyca., Acrylic, Trivex, Urethane, Glass)
  - Lens type (Single, Bifocal, Prog., Ex)
  - Frame type (Metal, Plastic, Optyl, Flat, Groove)
  - Bevel position / Groove position (Auto, Guide)
  - Polishing mode (Exec, None)
  - Layout mode (Active, Passive)
  - FPD mode (FPD, DBL)
  - PD mode (PD, 1/2PD)
  - Optical center height mode (▲▼, PD▲▼, BT▲▼)
  - R/L

Note

- The setting between R and L 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.

  For the setting method, *“4.2 General Settings” (page 132)*.
- Though the WD initial setting for when “Ex” is selected as the lens type is common to that for when “Single” is selected, individual WD can be set for other lens types. Enter WD with the intended lens type selected and save the screen.

3.12 Lens Blocking

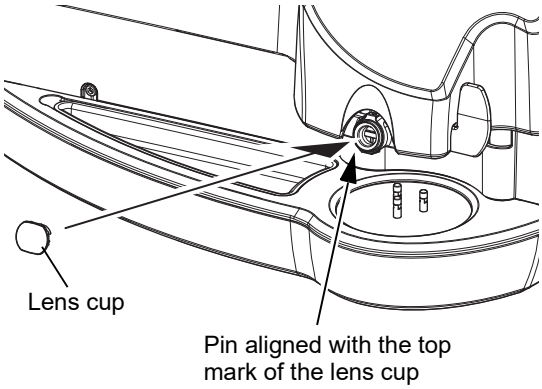
- The blocking screen is displayed in the order of the frame data confirmation screen, processing conditions screen, layout screen, and blocking screen.
- The following describes blocking for single vision lenses, bifocal lenses, progressive lenses, and Ex lenses, and simple blocking.
- Before blocking, load the traced data, then set processing conditions and layout data.
- There are thickness limitations to lenses that can be processed. Those with a thickness of 11 mm or greater at the area where the lens cup is attached cannot be processed.

1 Set the lens cup with the double-coated adhesive pad to the cup holder.

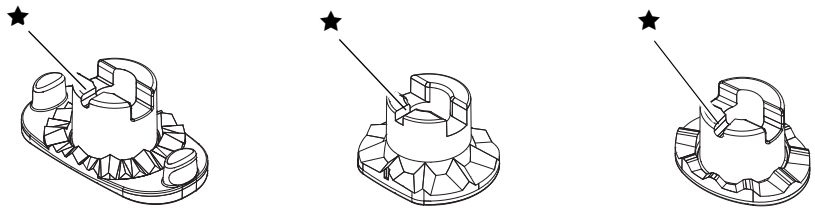
Insert the lens cup as far as it will go with the top mark oriented downward.

Use the lens cup of the color appropriate to the lens being processed as indicated below (to prevent confusion of R/L).

Right lens	Green lens cup
Left lens	Red lens cup



★: The groove on the cup indicates the top mark.



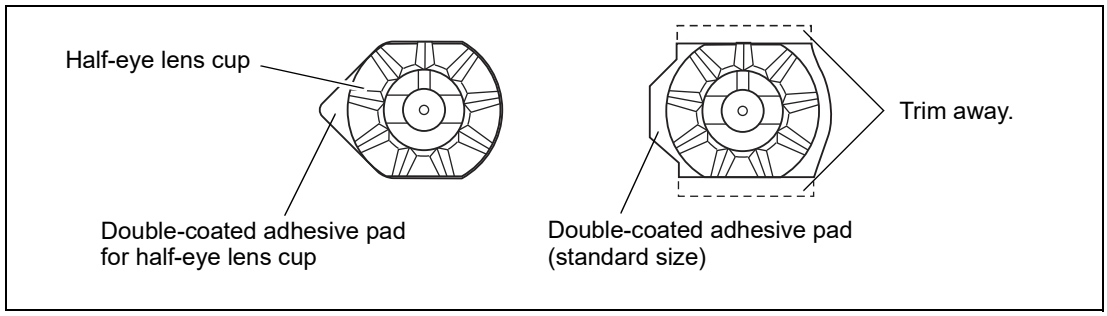
When using the half-eye lens cup, use the double-coated adhesive pad for half-eye lens cup.

When using the mini cup, use the double-coated adhesive pad for half-eye lens cup. Trim away any excess parts of the double-coated adhesive pad along the edge of the mini cup.

Note

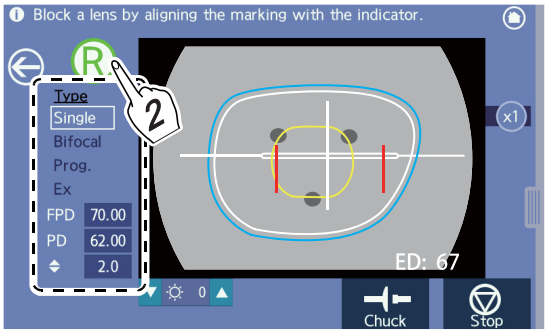
- The suction cup, full-eye lens cup, and nano cup cannot be used. Only use the above lens cups.

When using the standard double-coated adhesive pad, trim away any excess parts along the edge of the lens cup.



2 Display the blocking screen and press R (right eye) or L (left eye) depending on the lens.

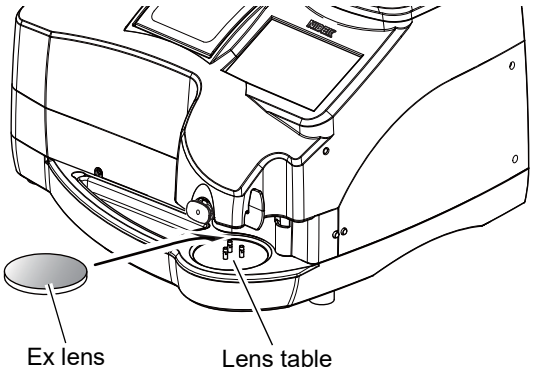
Change the lens type, FPD, and such as necessary.



- Confirm that the color of the lens cup is the same as R (green) or L (red) displayed on the blocking screen.
  The green lens cup is used for the right-eye lens and the red one is used for the left-eye lens, so when this is not the case, the lenses may be in error.

3 Place the lens on the lens table with the convex side up.

While watching the lens projected on the blocking screen, position the center of the lens at an approximate center of the lens table.



4 While checking on the blocking screen, align the lens marking with the alignment scale.

Press the display magnification button x1 or x2 to toggle enlargement of the screen display for easy alignment. Also, press the brightness adjustment buttons to make the lens marking easy to see.

Confirm that the outer diameter of the lens is sufficient for the displayed layout.
Depending on the layout or processing conditions, a shape slightly larger than the lens shape may be displayed in light blue around the lens shape. It is displayed as a guide for the required lens size when a lens larger than the finish size is required. Use a lens large enough to cover the shape displayed in light blue.

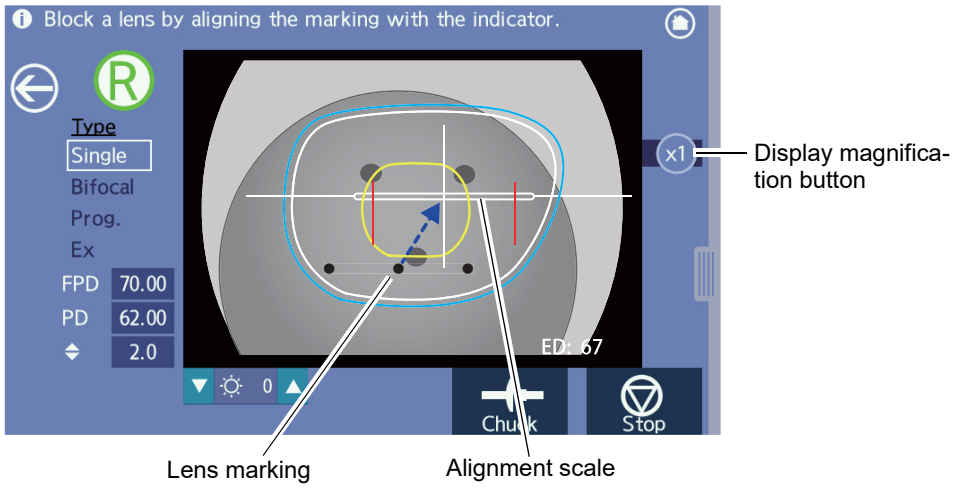
- For single vision lenses or Ex lenses

  For single vision lenses, align the lens marking with the center of the alignment scale along with the horizontal position on the blocking screen.

  Press the “WD” numeric field of the side menu to set the width of the alignment scale as necessary.

  “O Entry example of WD/EP in the blocking screen” (page 83).

  Display sample of “Passive” for single vision lenses



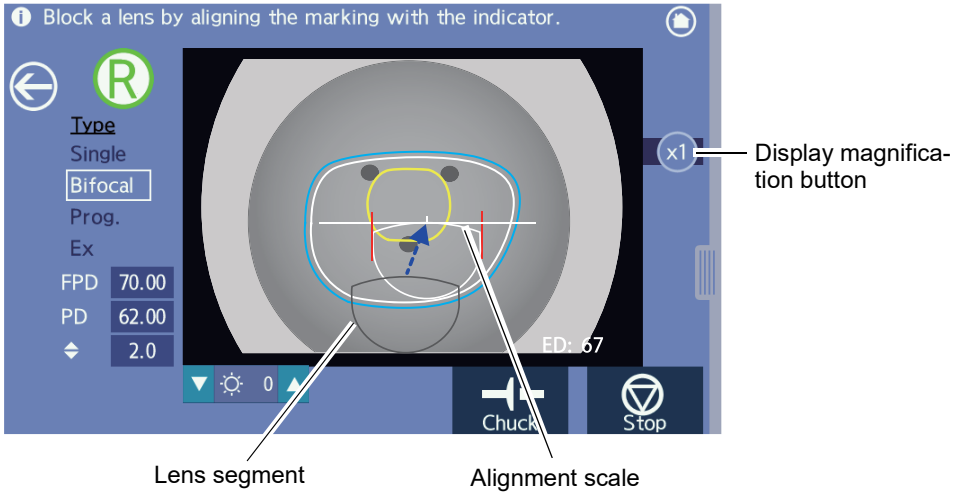
- For bifocal lenses

  For bifocal lenses, align the segment of the lens with the alignment scale on the blocking screen.

  Press the “WD” numeric field of the side menu to set the width of the alignment scale as necessary.

  “O Entry example of WD/EP in the blocking screen” (page 83)

  Display sample of “Passive” for bifocal lenses



- For progressive power lenses

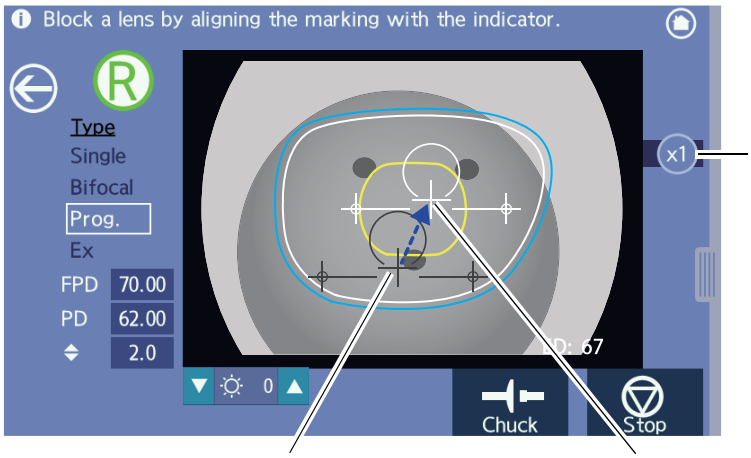
For progressive power lenses, align the “+” of the far vision eye point mark of the lens with the “+” of the alignment scale on the blocking screen.

Set the lens position so that the horizontal reference line (or hidden marking) of the lens is aligned with that on the screen.

Press the “WD” or “EP” numeric field of the side menu to set the size of the alignment scale as necessary.

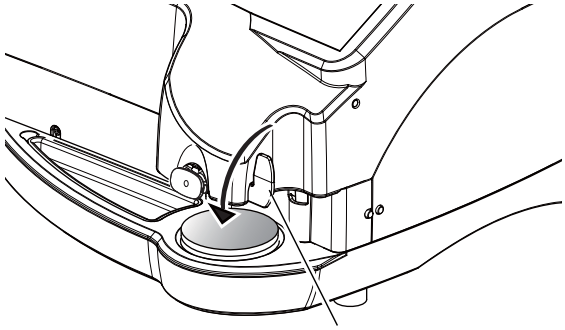
“O Entry example of WD/EP in the blocking screen” (page 83).

Display sample of “Passive” for progressive power lenses



5 Block the lens.

1) Push the blocking lever down by hand as shown by the arrow in the figure to the right to rotate it about 90 degrees.

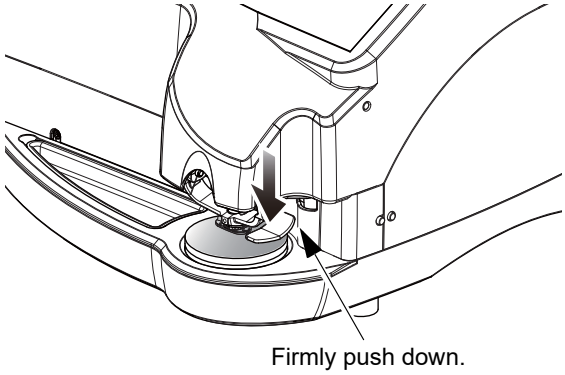


- When blocking, hold the lens by hand so that the lens does not move out of place.

2) Push the blocking lever down to start blocking.

Firmly push the lever down so that the double coated adhesive pad adheres to the lens.

3) Release the blocking lever.



After blocking, the processing start screen is automatically displayed.

Note

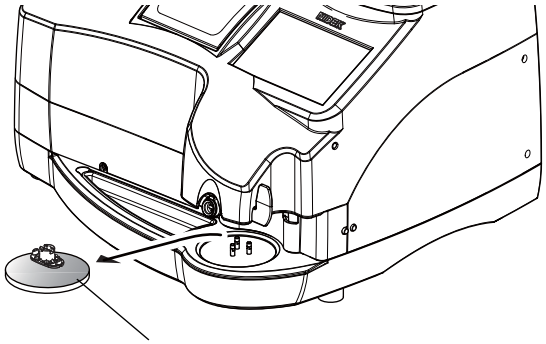
- When the “Block both lenses before processing” parameter is set to “Perform”, the screen does not change to the processing start screen automatically and R and L are reversed. Check the displayed settings and block the opposite lens. Or to display the processing start screen without blocking, press  .

“● *Block both lenses before processing: Perform, Not perform” (page 132)*

6 Remove the lens from the lens table.

7 Store the blocked lens in a tray or such marked with the shape number.

Identify the stored lens as right or left.



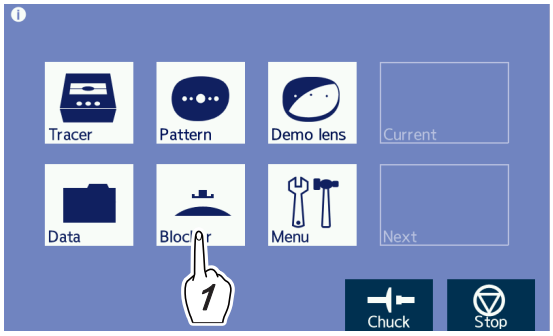
Blocked lens

○ Simple blocking

1 Press 

on the home screen.

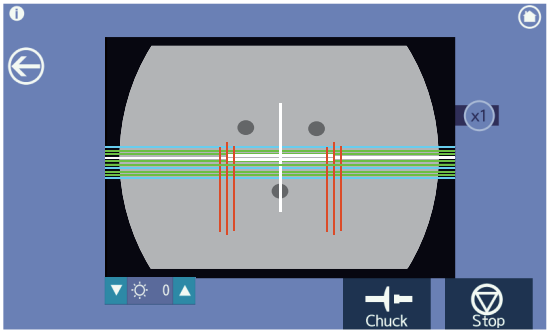
The blocking screen (simple) appears.



2 Align the lens with the alignment scale.

Align the lens marking with the center of the alignment scale along with the horizontal position on the blocking screen.

Press the display magnification button x1 or x2 to toggle enlargement of the screen display for easy alignment. Also, press the brightness adjustment buttons to make the lens marking easy to see.



Note

- The value initially saved as WD for single vision lenses is reflected in the alignment scale spacing.

“3.11 Initial Screen Customize Function” (page 85)

✻ **Blocking is the same as that for normal use.**

“3.12 Lens Blocking” (page 87) - Steps 5 and later

○ When using the mini cup (optional)

When processing is performed using the mini cup, the lens adapter and lens clamp need to be replaced with those for the mini cup.

When the mini cup will need to be used to process lenses for small height frames, set the “Display message for small cup check” parameter to “Exec” in the general screen (factory setting: Exec). By doing so, when processing is attempted to be started by pressing the “Start” button, the “Replace with smaller cup lens adapter and lens clamp.” message appears.

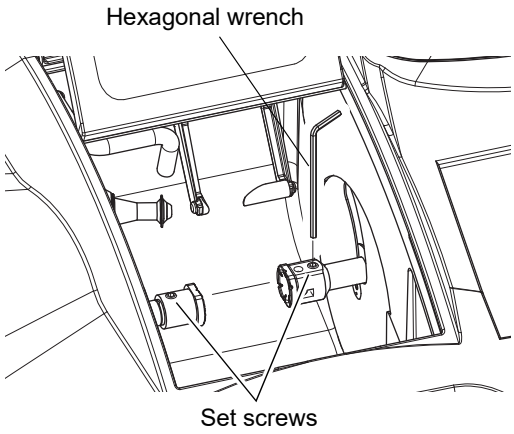
Pressing the “Cancel” button interrupts the processing. Replace the lens adapter and lens clamp with those for the mini cup. Then, set the lens and press the “Start” button to start processing.

If the lens adapter and lens clamp for the mini cup have been already set, press the “Continue” button to start processing.

- Replacement procedure for the mini cup

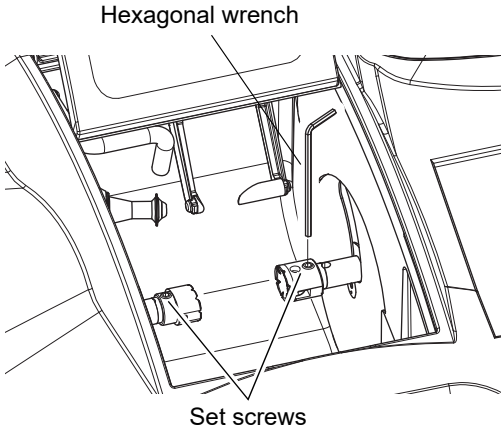
1 Remove the standard lens adapter and lens clamp.

1) Loosen the set screw with a hexagonal screwdriver (2.5 mm) to remove the standard lens adapter.
2) Loosen the set screw with a hexagonal screwdriver (2.5 mm) to remove the standard lens clamp.



2 Attach the lens adapter and lens clamp for the mini cup.

1) While aligning the grooves on the lens adapter for the mini cup with the pins, insert the lens adapter with the set screw facing up. Secure the lens adapter by tightening the set screw with the hexagonal screwdriver (2.5 mm).
2) While aligning the grooves on the lens clamp for the mini cup with the pins, insert the lens clamp with the set screw facing up. Secure the lens clamp by tightening the set screw with the hexagonal screwdriver (2.5 mm).



3 Stick the double-sided adhesive pad for the half-eye lens cup on the mini cup.

Trim away any excess parts of the double-coated adhesive pad along the edge of the mini cup.

4 Block the lens with the mini cup.

5 Set the lens. The subsequent procedures are the same as those in normal use.

3.13 Beveling

- Auto processing, guide processing, and Ex lens processing of beveling are described here.
- The following describes the operating procedure after the processing conditions screen is displayed.

3.13.1 Auto beveling

The bevel curve and position are automatically computer calculated.

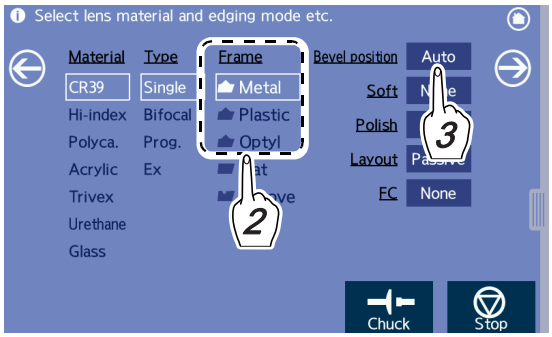
1 Display the processing conditions screen, then specify the lens material, lens type, soft processing, polishing, and layout mode.

"3.7 Processing Conditions Entry" (page 70)

2 Select the desired frame type.

Select the desired frame type from the "Frame" field.

Frame type
Metal, Plastic, Optyl



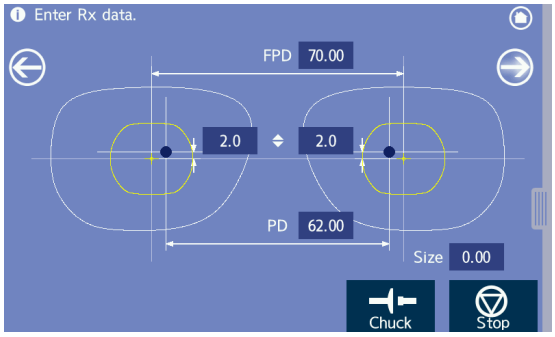
3 Set the processing mode setting field to "Auto".

Processing mode
Auto

4 Press  to display the layout screen.

Enter the layout settings as prescribed.

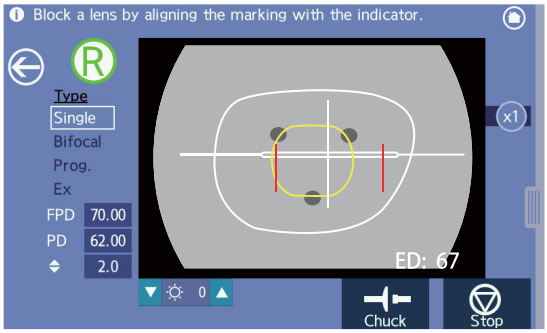
For the layout entry, *"3.8 Layout Entry" (page 73)*.



5 Press  to display the blocking screen for blocking.

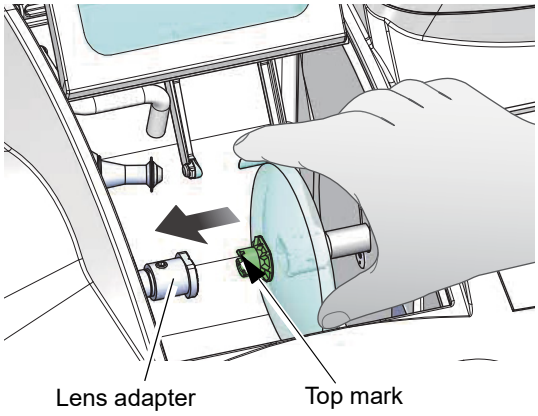
For blocking, *"3.12 Lens Blocking" (page 87)*.

When blocking is complete, the blocking screen changes to the processing start screen automatically.



6 Set the lens to the lens adapter.

Securely insert the lens cup into the lens adapter with the top mark facing up.

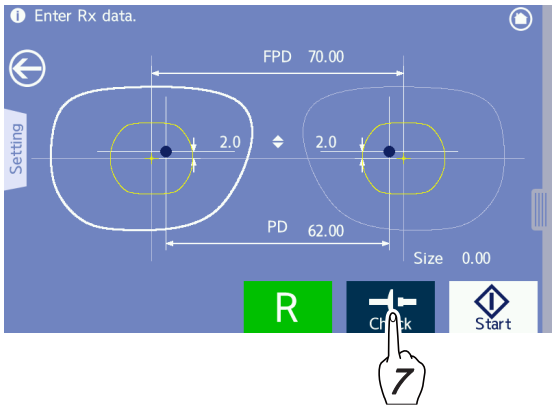


7 While holding the lens by hand, press Chuck to secure the lens.

⚠ CAUTION

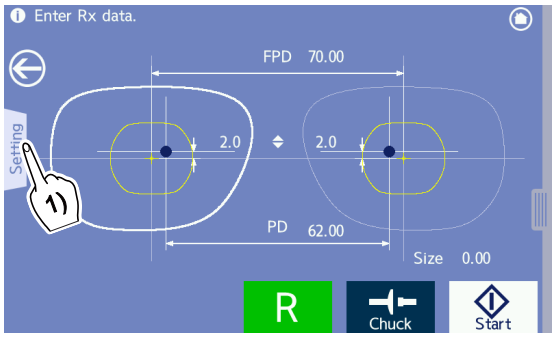
- Be careful not to get fingers caught when chucking (securing) a lens.

8 Close the processing chamber cover.



9 Check and change the processing conditions in the processing condition confirmation panel as necessary.

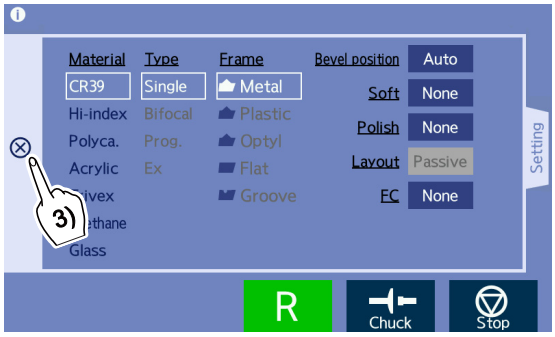
1) Press the “Setting” tab on the processing start screen to display the processing conditions confirmation panel.



2) Confirm that the processing conditions set in Steps 1 to 3 are proper. If they are not, change them in the same manner as in the processing conditions screen.

However, items that are grayed out cannot be changed in the processing conditions confirmation panel.

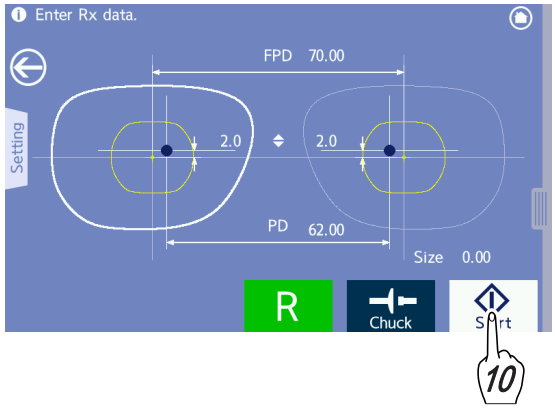
If necessary, return to the processing conditions screen for change. In such a case, blocking needs to be performed again.



3) After the processing conditions have been checked and changed, press ⊗ to close the processing conditions confirmation panel.

10 Press Start to start processing.

Processing starts and the simulation screen is displayed during processing.



Note

- During lens measurement or roughing, auto processing can be switched to guide processing in the processing conditions confirmation panel.
  Press the processing mode setting field to switch to “Guide” in the processing conditions confirmation panel.
  In such a case, after lens shape measurement or roughing, the instrument pauses and switches to guide mode in which the bevel position can be entered.
- When a lens edge is thick and cannot be measured, the message, “The lens may be too thick. Do you want to perform roughing first?” is displayed. In this case, the instrument stops operating after roughing. To continue the processing, Step 10 needs to be performed again.
  To continue processing, press Continue. After roughing, “Roughing is complete. Start processing again.” is displayed. Press the OK button to start processing from Step 10.

11 When processing is complete, the screen returns to the processing start screen automatically. Open the processing chamber cover and press Chuck to remove the lens while holding the lens by hand.

Note

- After the simulation screen is displayed, pressing or such allows access to other screens during processing.
  However, if processing is complete while some other screen is displayed, the screen does not change automatically to the processing start screen. Press or such to return to the processing start screen.

3.13.2 Guide beveling

This mode is used to enter the bevel curve and position manually.

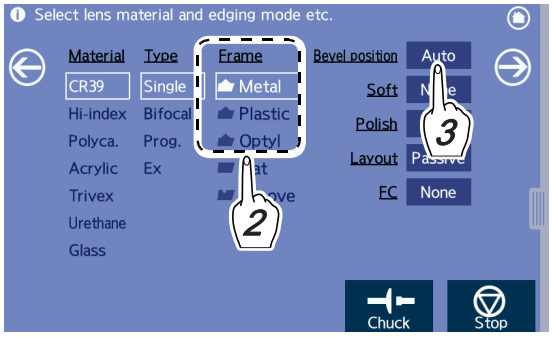
1 Display the processing conditions screen, then specify the lens material, lens type, soft processing, polishing, and layout mode.

“3.7 Processing Conditions Entry” (page 70)

2 Select the desired frame type.

Select the desired frame type from the “Frame” field.

Frame type
Metal, Plastic, Optyl



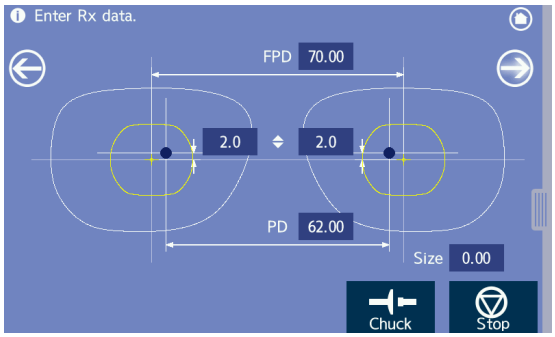
3 Set the processing mode setting field to “Guide”.

Processing mode
Guide

4 Press  to display the layout screen.

Enter the layout settings as prescribed.

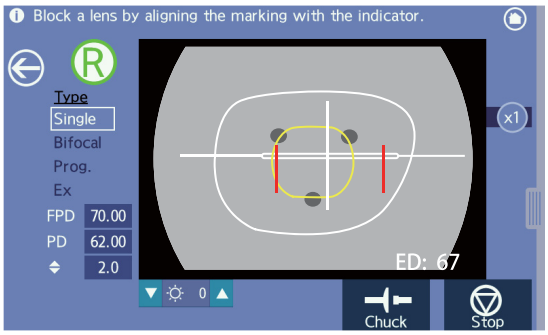
For the layout entry, *“3.8 Layout Entry” (page 73)*.



5 Press  to display the blocking screen for blocking.

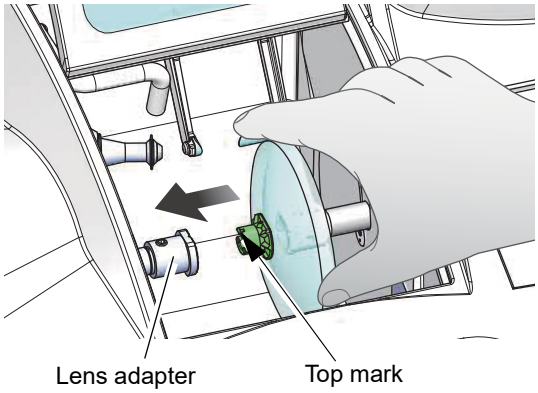
For blocking, *“3.12 Lens Blocking” (page 87)*.

When blocking is complete, the blocking screen changes to the processing start screen automatically.



6 Set the lens to the lens adapter.

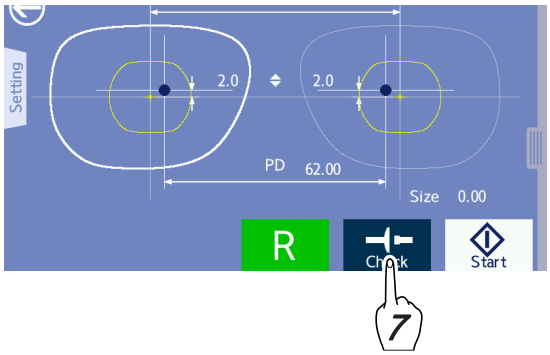
Securely insert the lens cup into the lens adapter with the top mark facing up.



7 While holding the lens by hand, press Chuck to secure the lens.

⚠ CAUTION

- Be careful not to get fingers caught when chucking (securing) a lens.



8 Close the processing chamber cover.

9 Check and change the processing conditions in the processing conditions confirmation panel as necessary.

"3.13.1 Auto beveling" (page 93) - Step 9

10 Press Start to start processing.

In guide beveling, the instrument pauses in the simulation screen that is displayed in a short time after processing starts. Perform settings and operations required for guide beveling.

Note

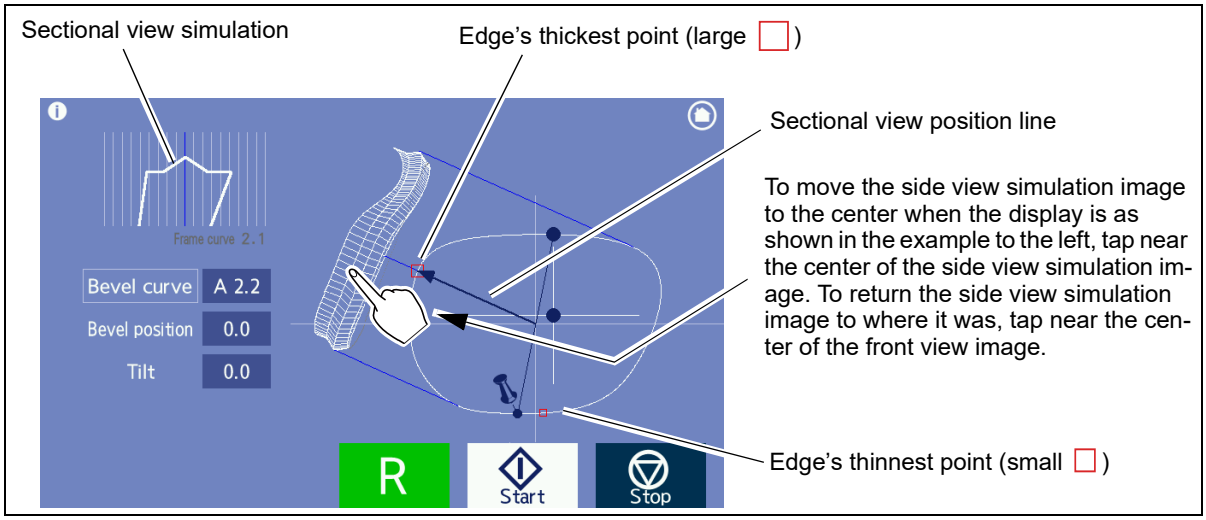
- When a lens edge is thick and cannot be measured, the message, "The lens may be too thick. Do you want to perform roughing first?" is displayed. The operation method in this case is the same as that for automatic beveling mode.

"3.13.1 Auto beveling" (page 93) - Note in Step 10

- Operating the simulation screen for guide beveling

The bevel sectional view indicated by the sectional view position line on the shape is displayed in the sectional view simulation.

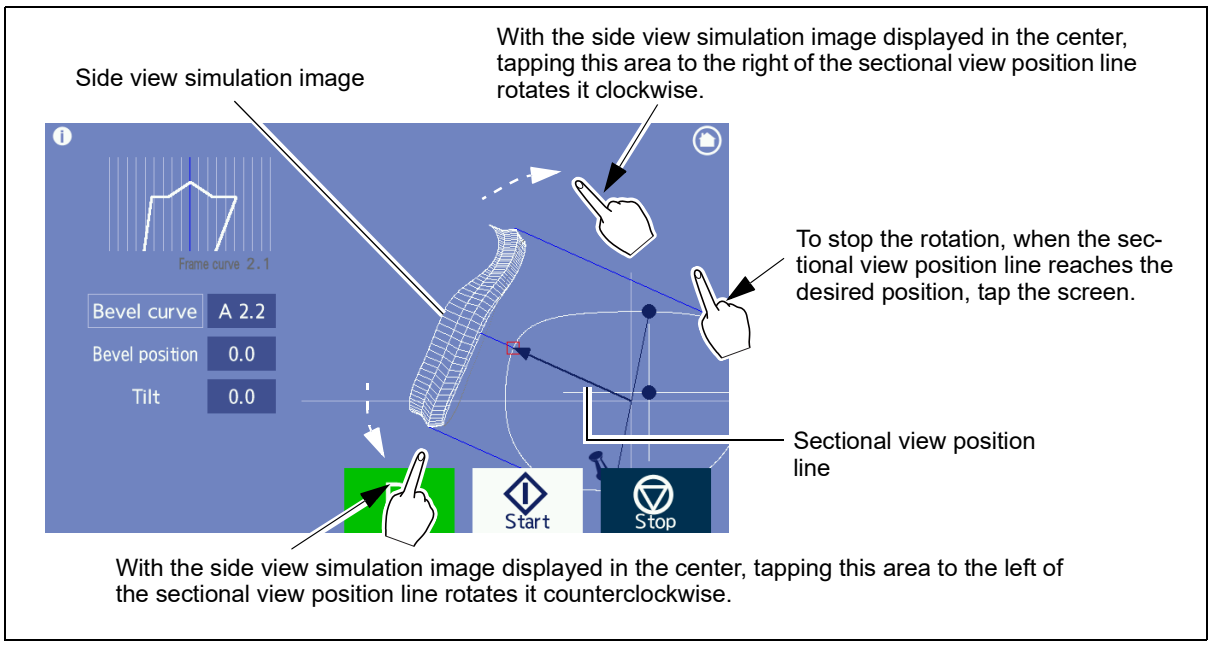
The large □ indicates the edge's thickest point and the small □ indicates the edge's thinnest point.



- Operating the simulation screen for guide beveling

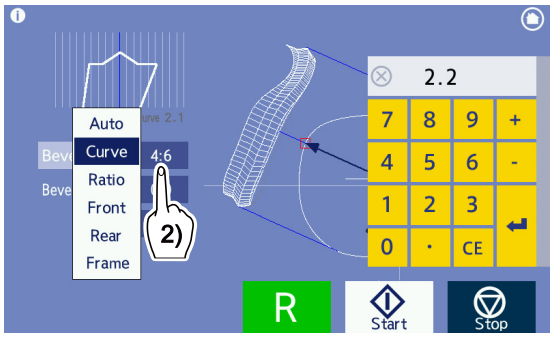
With the side view simulation image displayed in the center, tapping the screen starts the sectional view position line rotating toward the point of the tap.

To stop the rotation, when the sectional view position line reaches the desired position, tap the screen (see below).



11 Rotate the sectional view position line and check the bevel sectional view at each position in the sectional view simulation.

12 Adjust the bevel curve setting.

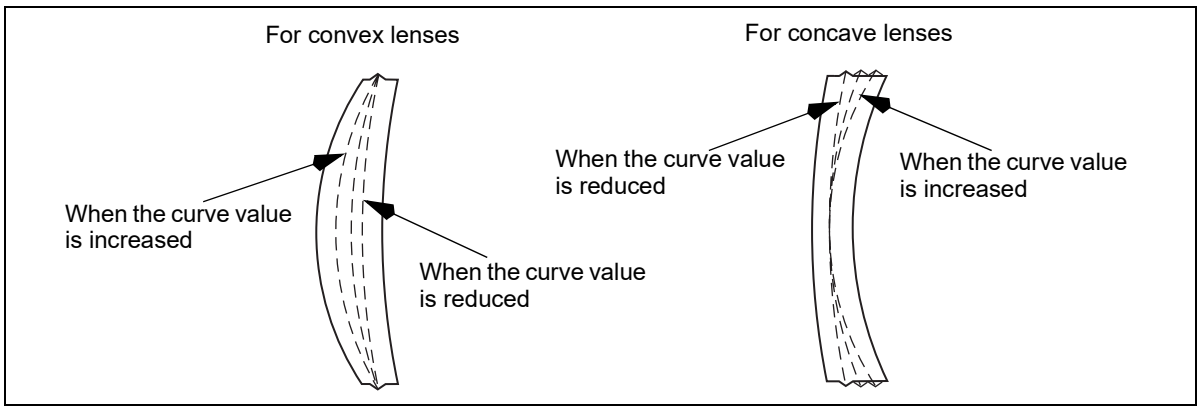


1) Tap the screen to rotate the sectional view position line and tap the screen again to stop it at the edge's thickest point (large ☐).

2) Press the "Bevel curve" numeric field.
The pop-up menu for curve selection appears.

3) Select the desired curve mode from the pop-up menu.

- [Auto] → Computer-calculated curve (The curve value that is the same as the auto processed curve is preceded by an "A".)
- [Curve] → The numeric keypad appears. Enter the desired curve value.
  Curve value (0.1 to 12.0) Increments (0.1)
- [Ratio] → The ratio pop-up menu appears. Select the desired ratio.
  Ratio (3:7/4:6/5:5/6:4/7:3)
- [Front] → Curve profiled along the front surface of a lens
- [Rear] → Curve profiled along the rear surface of a lens
- [Frame] → Curve profiled along the frame



Note

- When the curve value is preceded by an "A", the curve value being displayed is the same as the computer-calculated value.
- When the frame curve is 0.0, "Frame" cannot be selected. When rounded frames are traced, the frame curve may become 0.0.
- When the front surface or rear surface curve of a lens is 12 or steeper, "Front" or "Rear" cannot be selected in the curve field.

Selecting the optimum processing mode depending on the lens type for beveling

Processing mode / Lens type	Auto	Guide			
		Curve	Front	Rear	Ratio
• Single vision lens	ⓞ	ⓞ			○[a]
• Progressive	ⓞ	ⓞ			
• Bifocal	ⓞ	ⓞ			
• Ex				ⓞ	

a.When selecting a ratio, refer to the following.

Plus low single vision lens ➞5:5

Plus medium or high single vision lens, or minus low single vision lens: 4:6 or 5:5

Minus medium single vision lens ➞3:7 or 4:6

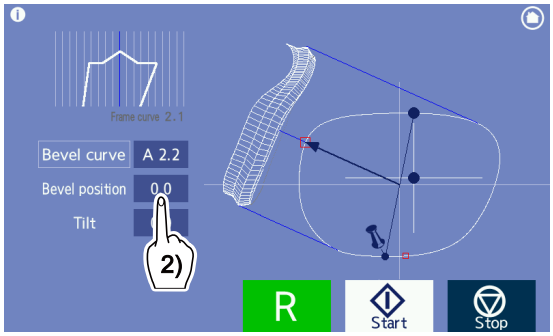
Minus high single vision lens ➞3:7

ⓞ: Optimum mode, ○: Recommended mode

- For Ex lenses, the default is set to “Rear”. Do not change the setting.
  Proper beveling is not possible with a setting such as “Front”. For the bevel position adjustment, use the tilt function. When data for which curve mode is specified is imported from the server or such, the specified curve mode is initially displayed.

“3.20.2 Tilting” (page 121)

13 Change the bevel position for the entire perimeter of the lens as necessary.



1) Tap the screen to rotate the sectional view position line and then tap the screen again to stop it at the edge’s thinnest point (small □).
2) Press the “Bevel position” numeric field.
   The numeric keypad appears.
3) Enter the amount to move the bevel toward the front or rear surface with the numeric keypad. (unit: mm)
   – value ➞The bevel moves toward the front surface.
   + value ➞The bevel moves toward the rear surface.

Ex.— Entering “-0.4” with the numeric keypad ➞ “←0.4” is displayed in the “Bevel position” numeric field and the bevel position moves 0.4 mm toward the front surface.

A left arrow (←) preceding the value indicates that the bevel is moved toward the front surface and a right arrow (→) indicates that the bevel is moved toward the rear surface.

Note

- To avoid the bevel coming off the lens edge, change the bevel position while confirming the bevel sectional view at the edge’s thinnest position (small □).

  ex.) Bevel curve: 5.0 Bevel position: ←0.4

  This indicates that the bevel was moved 0.4 mm from the bevel whose curve value was 5.0 toward the front surface parallel to itself.

14 Confirm whether the desired bevel is obtained in the same manner as Step 11. Repeat Steps 11 to 13 until the desired bevel is obtained.

15 Press 

to restart processing.

16 When processing is complete, the screen returns to the processing start screen automatically. Open the processing chamber cover and press 

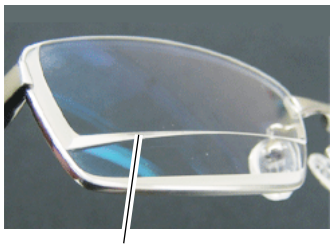
to remove the lens while holding the lens by hand.

Note

- After processing has been restarted, pressing  or such allows access to other screens. However, if processing is complete while some other screen is displayed, the screen does not change automatically to the processing start screen. Press  or such to return to the processing start screen.

3.14 Ex lens processing (beveling)

- When processing Ex lenses, be sure to select “Ex” as the lens type. With other settings, the lens shape cannot be measured because the feelers of the feeler unit get caught between the two levels.
- When “Ex” is selected as the lens type, guide processing is automatically performed. In this mode, beveling with the curve profiled along the rear surface is performed.



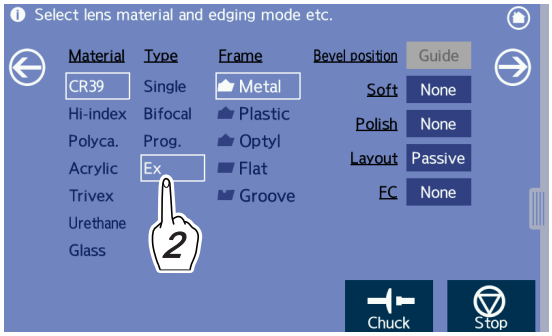
Level difference of Ex lens

1 Display the processing conditions screen, then specify the lens material, lens type, soft processing, polishing, and layout mode.

“3.7 Processing Conditions Entry” (page 70)

2 Select “Ex” from the “Type” field.

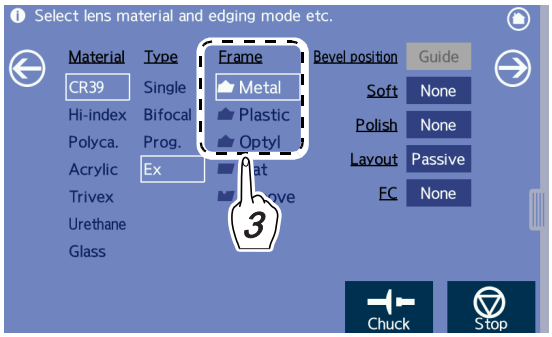
Lens type
Ex



3 Select the desired frame type.

Select the desired frame type from the “Frame” field.

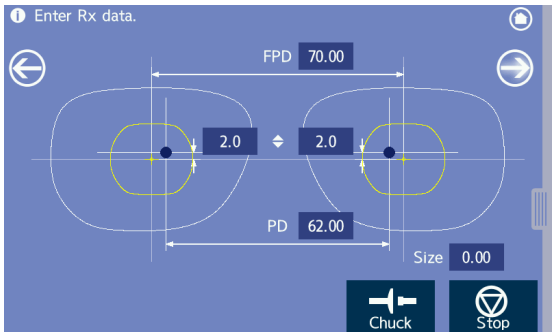
Frame type
Metal, Plastic, Optyl



4 Press  to display the layout screen.

Enter the layout settings as prescribed.

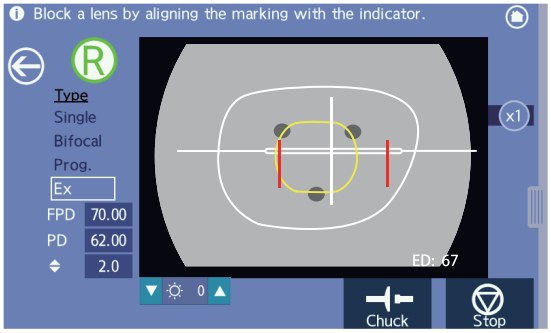
For the layout entry, “3.8 Layout Entry” (page 73).



5 Press to display the blocking screen for blocking.

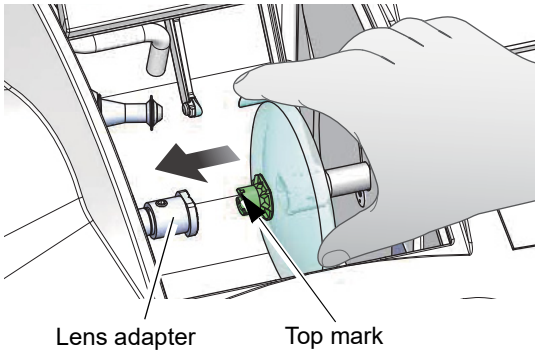
For blocking, *"3.12 Lens Blocking" (page 87)*.

When blocking is complete, the blocking screen changes to the processing start screen automatically.



6 Set the lens to the lens adapter.

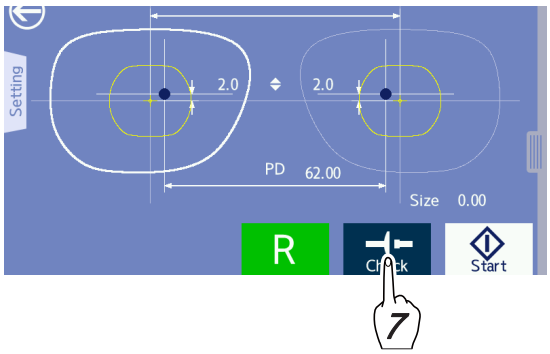
Securely insert the lens cup into the lens adapter with the top mark facing up.



7 While holding the lens by hand, press Chuck to secure the lens.

⚠ CAUTION

- Be careful not to get fingers caught when chucking (securing) a lens.



8 Close the processing chamber cover.

9 Check and change the processing conditions in the processing condition confirmation panel as necessary.

"3.13.1 Auto beveling" (page 93) - Step 9

10 Press Start to start processing.

For beveling of Ex lenses, the simulation screen is displayed soon after processing starts. Perform the same procedure as Steps 10 and later for guide beveling.

"Operating the simulation screen for guide beveling" (page 98)

- For Ex lenses, the default is set to "Rear". Do not change the setting.
  Proper beveling is not possible with a setting such as "Front". For the bevel position adjustment, use the tilt function. When data for which curve mode is specified is imported from the server or such, the specified curve mode is initially displayed.

"3.20.2 Tilting" (page 121)

3.15 Flat Edging

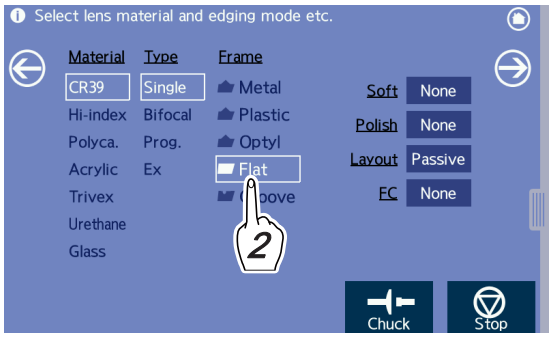
■ Processing for two-point frames is explained here.

1 Display the processing conditions screen, then specify the lens material, lens type, soft processing, polishing, and layout mode.

“3.7 Processing Conditions Entry” (page 70)

2 Select “Flat” from the “Frame” field.

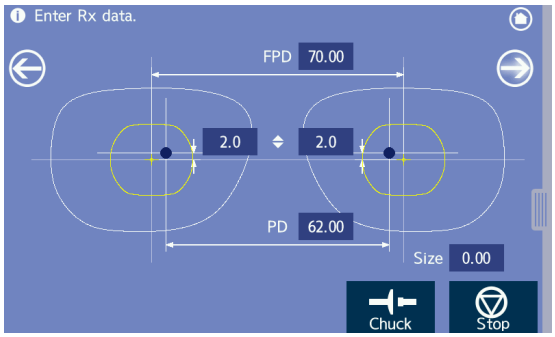
Frame type
Flat (two-point)



3 Press to display the layout screen.

Enter the layout settings as prescribed.

For the layout entry, *“3.8 Layout Entry” (page 73)*.



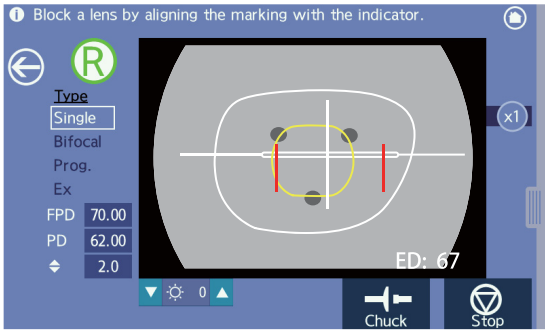
Note

- When “Flat” is selected and a size is entered, FPD is automatically changed so that DBL remains constant.

4 Press to display the blocking screen for blocking.

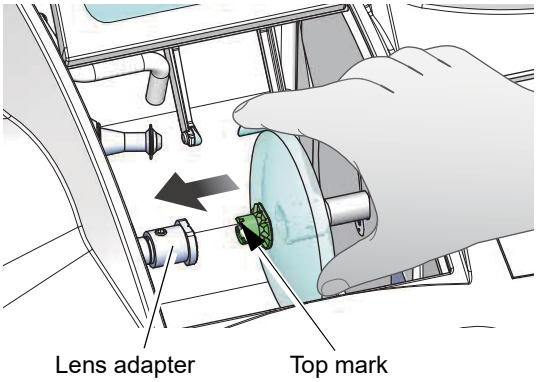
For blocking, *“3.12 Lens Blocking” (page 87)*.

When blocking is complete, the blocking screen changes to the processing start screen automatically.



5 Set the lens to the lens adapter.

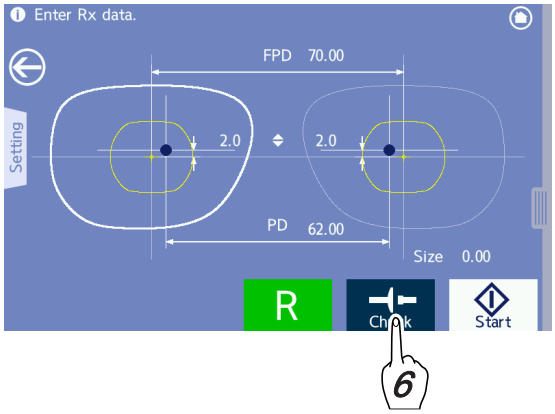
Securely insert the lens cup into the lens adapter with the top mark facing up.



6 While holding the lens by hand, press [Chuck] to secure the lens.

⚠ CAUTION

- Be careful not to get fingers caught when chucking (securing) a lens.



7 Close the processing chamber cover.

8 Check and change the processing conditions in the processing conditions confirmation panel as necessary.

"3.13.1 Auto beveling" (page 93) - Step 9

9 Press [Start] to start processing.

Processing starts and the simulation screen is displayed during processing.

Note

- After lens shape measurement, the "Lens grinding is changed because the lens is too thick." message may appear. Selecting the "Continue" button allows the lens to be processed even if the lens is thicker than the wheel width. However, in this case streaks may appear on portions of the processed surface. This is because processing has been performed in steps, not because of an instrument abnormality.
- When a lens edge is thick and cannot be measured, the message, "The lens may be too thick. Do you want to perform roughing first?" is displayed. The operation method in this case is the same as that for automatic beveling mode.

"3.13.1 Auto beveling" (page 93) - Note in Step 10

10 When processing is complete, the screen returns to the processing start screen automatically. Open the processing chamber cover and press [Chuck] to remove the lens while holding the lens by hand.

Note

- After the simulation screen is displayed, pressing [←] or such allows access to other screens during processing.
  However, if processing is complete while some other screen is displayed, the screen does not change automatically to the processing start screen. Press [→] or such to return to the processing start screen.

3.16 Grooving

- In addition to normal flat edging, grooving is performed.
- Auto grooving, guide grooving, and Ex lens processing are described here.

  • Grooving is not available for glass lenses.

- The following is the operating procedure after the processing conditions screen is displayed.

3.16.1 Auto grooving mode

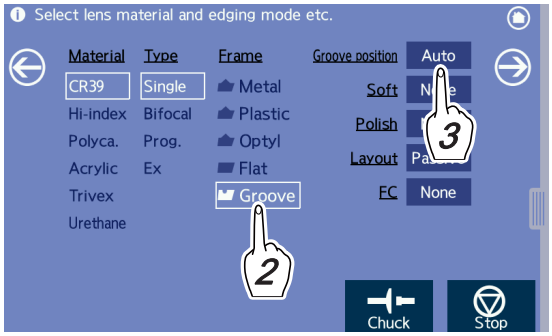
This mode is used to groove lenses for nylor frames at a computer-calculated position and curve.

1 Display the processing conditions screen, then specify the lens material, lens type, soft processing, polishing, and layout mode.

“3.7 Processing Conditions Entry” (page 70)

2 Select “Groove” from the “Frame” field.

Frame type
Groove (nylor)



3 Set the processing mode setting field to “Auto”.

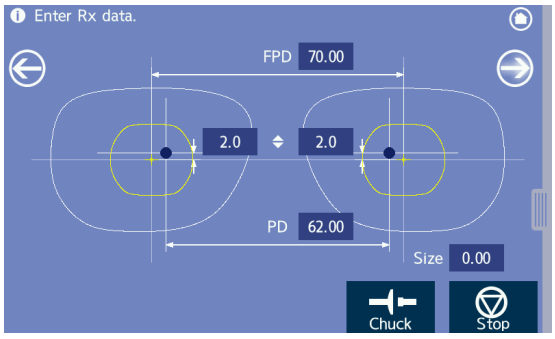
Processing mode
Auto

4 Press  to display the layout screen.

Enter the layout settings as prescribed.

For the layout entry, *“3.8 Layout Entry” (page 73)*.

* Enter the groove width and groove depth in the side menu if necessary.



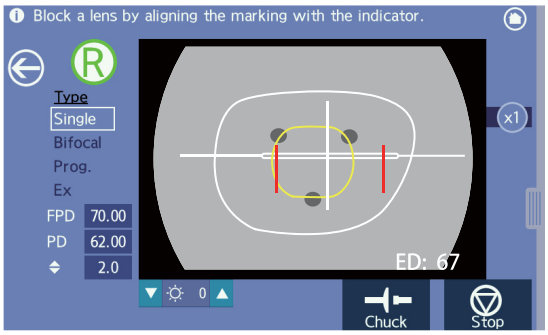
Note

- When “Groove” is selected and the size is entered, FPD is not automatically changed so that DBL remains constant.
- When the groove width and groove depth need to be entered while the simulation screen is checked after lens shape measurement, perform guide grooving.

5 Press to display the blocking screen for blocking.

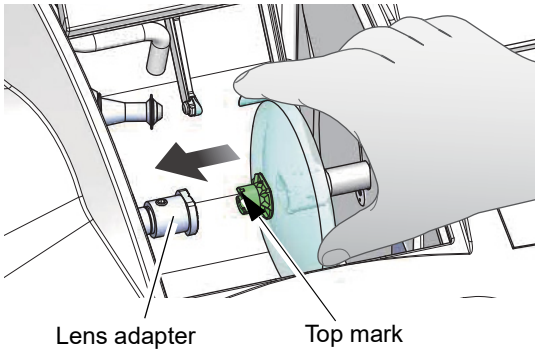
For blocking, *"3.12 Lens Blocking" (page 87)*.

When blocking is complete, the blocking screen changes to the processing start screen automatically.



6 Set the lens to the lens adapter.

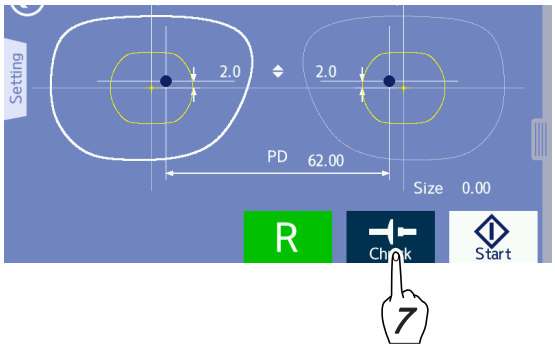
Securely insert the lens cup into the lens adapter with the top mark facing up.



7 While holding the lens by hand, press Chuck to secure the lens.

⚠ CAUTION

- Be careful not to get fingers caught when chucking (securing) a lens.



8 Close the processing chamber cover.

9 Check and change the processing conditions in the processing condition confirmation panel as necessary.

"3.13.1 Auto beveling" (page 93) - Step 9

10 Press Start to start processing.

Processing starts and the simulation screen is displayed.

Note

- During lens measurement or roughing, auto processing can be switched to guide processing in the processing conditions confirmation panel.

  Press the processing mode setting field to switch to "Guide" in the processing conditions confirmation panel.

  In such a case, after lens shape measurement or roughing, the instrument pauses and switches to guide mode in which the groove position can be entered.
- When a lens edge is thick and cannot be measured, the message, "The lens may be too thick. Do you want to perform roughing first?" is displayed. The operation method in this case is the same as that for automatic beveling mode.

"3.13.1 Auto beveling" (page 93) - Note in Step 10

11 When processing is complete, the screen returns to the processing start screen automatically. Open the processing chamber cover and press Chuck to remove the lens while holding the lens by hand.

Note

- When the minimum edge thickness is thinner than the default, a message indicating that the edge thickness is insufficient is displayed and the instrument pauses.
  Processing "Continue" displays the simulation screen. Adjust the groove width or such while checking the groove sectional view in the sectional view simulation. " " *(page 108)*
  Pressing "Abort" stops processing.

3.16.2 Guide grooving mode

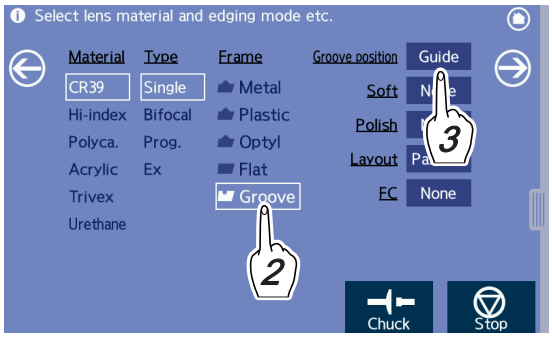
This mode is used to groove lenses for nylor frames at a position and curve entered manually.

1 Display the processing conditions screen, then specify the lens material, lens type, soft processing, polishing, and layout mode.

"3.7 Processing Conditions Entry" (page 70)

2 Select "Groove" from the "Frame" field.

Frame type
Groove (nylor)



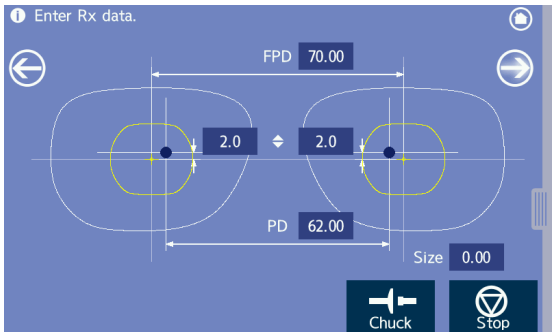
3 Set the processing mode setting field to "Auto".

Processing mode
Guide

4 Press to display the layout screen.

Enter the layout settings as prescribed.

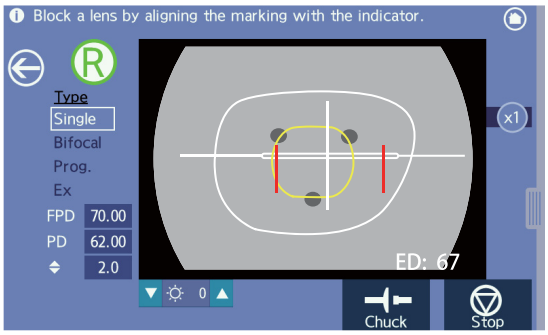
For the layout entry, *"3.8 Layout Entry" (page 73)*.



5 Press  to display the blocking screen for blocking.

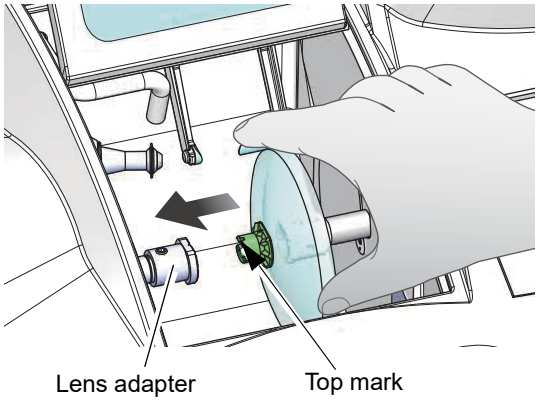
For blocking, *"3.12 Lens Blocking" (page 87)*.

When blocking is complete, the blocking screen changes to the processing start screen automatically.



6 Set the lens to the lens adapter.

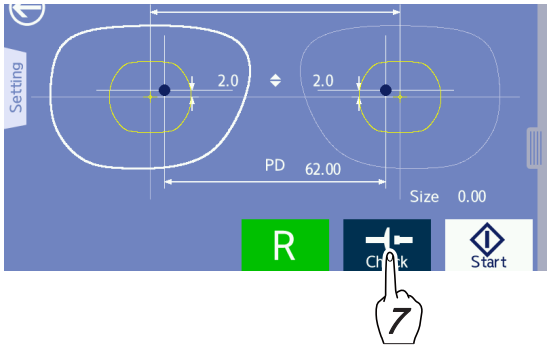
Securely insert the lens cup into the lens adapter with the top mark facing up.



7 While holding the lens by hand, press  to secure the lens.

⚠ CAUTION

- Be careful not to get fingers caught when chucking (securing) a lens.



8 Close the processing chamber cover.

9 Check and change the processing conditions in the processing conditions confirmation panel as necessary.

"3.13.1 Auto beveling" (page 93) - Step 9

10 Press  to start processing.

In guide grooving, the instrument pauses in the simulation screen that is displayed in a short time after processing starts. Perform settings and operations required for guide grooving.

Note

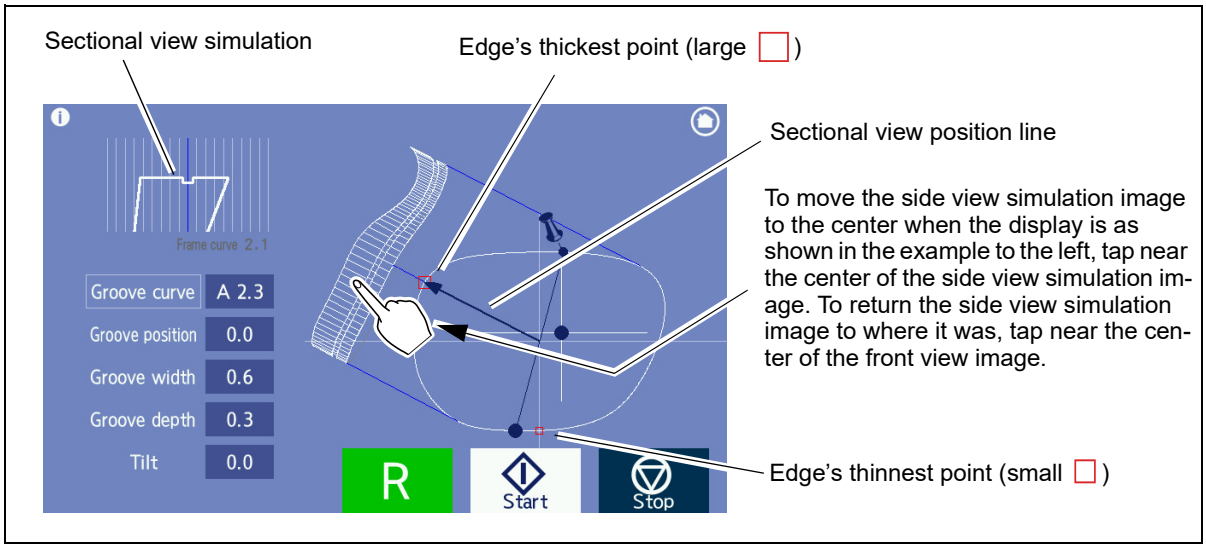
- When a lens edge is thick and cannot be measured, the message, "The lens may be too thick. Do you want to perform roughing first?" is displayed. The operation method in this case is the same as that for automatic beveling mode.

"3.13.1 Auto beveling" (page 93) - Note in Step 10

- Operating the simulation screen for guide grooving

The groove sectional view indicated by the sectional view position line on the shape is displayed in the sectional view simulation.

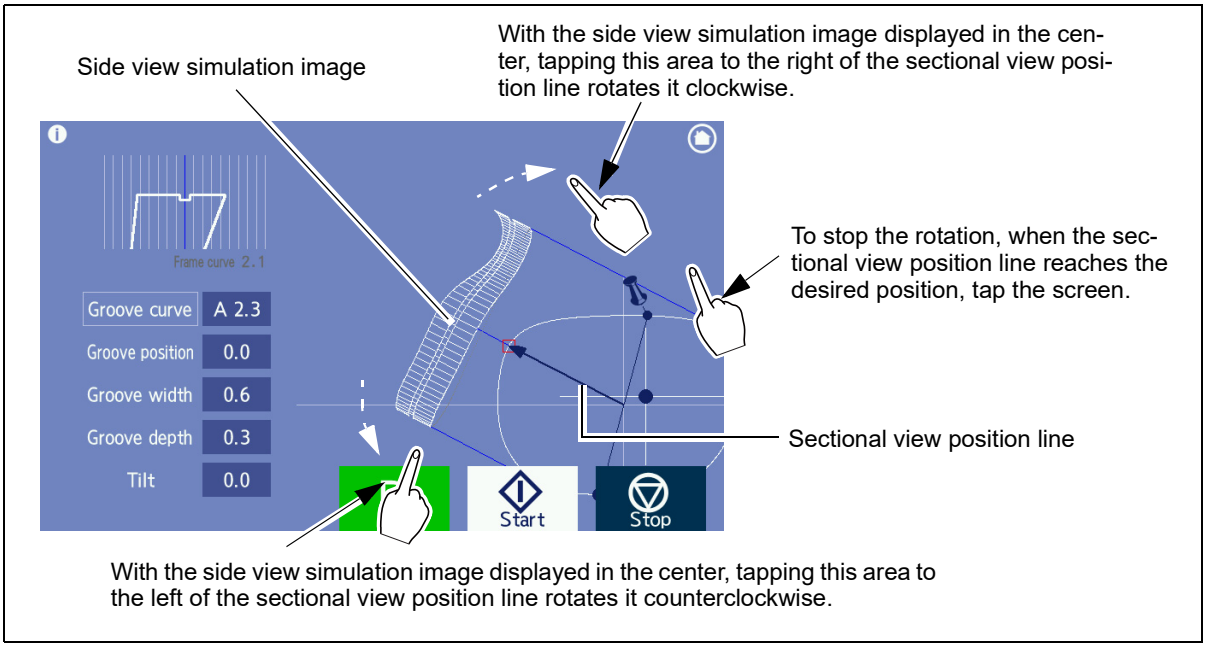
The large ☐ indicates the edge's thickest point and the small ☐ indicates the edge's thinnest point.



- Operating the simulation screen for guide grooving

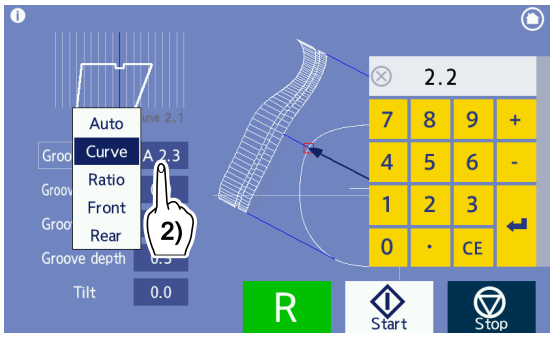
With the side view simulation image displayed in the center, tapping the screen starts the sectional view position line rotating toward the point of the tap.

To stop the rotation, when the sectional view position line reaches the desired position, tap the screen (see below).



11 Rotate the sectional view position line and check the groove sectional view at each position in the sectional view simulation.

12 Adjust the groove curve setting.

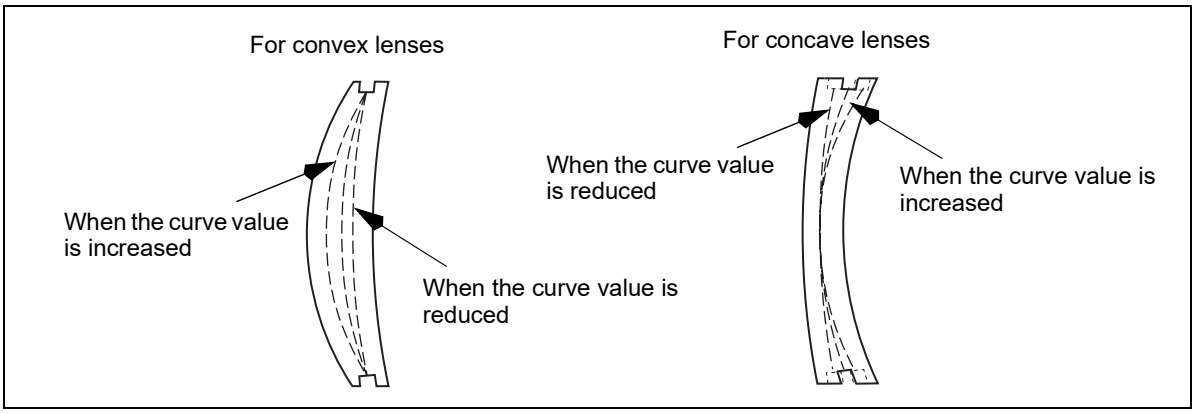


1) Tap the screen to rotate the sectional view position line and tap the screen again to stop it at the edge's thickest point (large □).

2) Press the "Groove curve" numeric field.
The pop-up menu for curve selection appears.

3) Select the desired curve from the pop-up menu.

- [Auto] → Computer-calculated curve (The curve value that is the same as the auto processed curve is preceded by an "A".)
- [Curve] → The numeric keypad appears. Enter the desired curve value.
  Curve value (0.1 to 12.0) Increments (0.1)
- [Ratio] → The ratio pop-menu appears. Select the desired ratio.
  Ratio (3:7/4:6/5:5/6:4/7:3)
- [Front] → Curve profiled along the front surface of a lens
- [Rear] → Curve profiled along the rear surface of a lens



Note

- When the curve value is preceded by an "A", the curve value being displayed is the same as the computer-calculated value.
- When the front surface or rear surface curve of a lens is 12 or steeper, "Front" or "Rear" cannot be selected in the curve field.

Selecting the optimum processing mode depending on the lens type for grooving

Processing mode / Lens type	Auto	Guide			
		Curve	Front	Rear	Ratio
• Single vision lens	ⓞ	ⓞ			○[a]
• Progressive	ⓞ	ⓞ			
• Bifocal	ⓞ	ⓞ			
• Ex				ⓞ	

a.When selecting a ratio, refer to the following.

Plus low single vision lens → 5:5

Plus medium or high single vision lens, or minus low single vision lens: 4:6 or 5:5

Minus medium single vision lens → 3:7 or 4:6

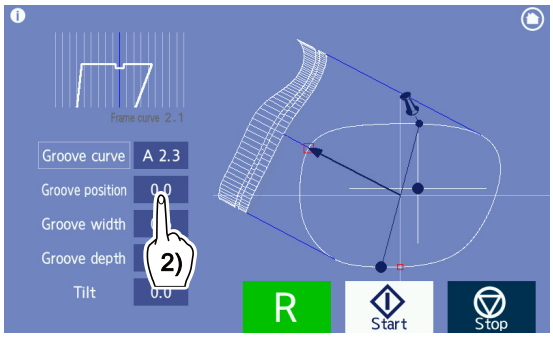
Minus high single vision lens → 3:7

ⓞ: Optimum mode, ○: Recommended mode

- For Ex lenses, the default is set to “Rear”. Do not change the setting.
  Proper grooving is not possible with a setting such as “Front”. For the groove position adjustment, use the tilt function. When data for which curve mode is specified is imported from the server or such, the specified curve mode is initially displayed.

“3.20.2 Tilting” (page 121)

13 Change the groove position for the entire perimeter of the lens if necessary.



1) Tap the screen to rotate the sectional view position line and tap the screen again to stop it at the edge’s thickest point (large □).

2) Tap the screen to rotate the sectional view position line and press the “Groove position” numeric field.
   The numeric keypad appears.

3) Enter the amount to move the groove toward the front or rear surface with the numeric keypad. (unit: mm)
   – value → The groove moves toward the front surface.
   + value → The groove moves toward the rear surface.

Ex.— Entering “-0.4” with the numeric keypad → “←0.4” is displayed in the “Groove position” numeric field and the groove position moves 0.4 mm toward the front surface.

Note

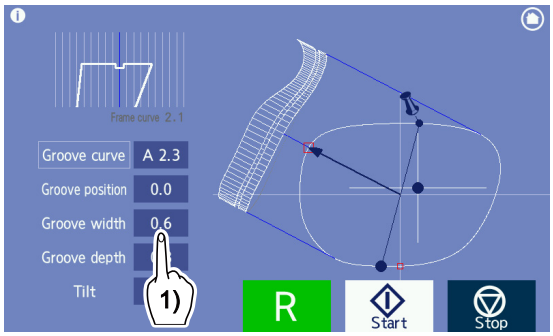
- To avoid the groove coming off the lens edge, change the groove position while checking the groove sectional view at the edge's thinnest position.

  ex.) Groove curve: 5.0 Groove position: ←0.4

  This indicates that the groove was moved 0.4 mm from the groove whose curve value was 5.0 toward the front surface parallel to itself.

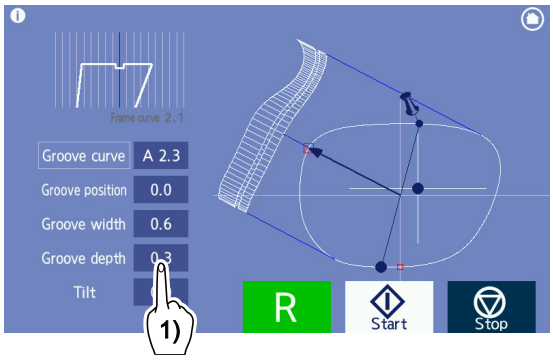
14 Enter the groove width if necessary.

1) Press the "Groove width" numeric field.
   The numeric keypad appears.
2) Enter the groove width with the numeric keypad. (unit: mm)
   - Range: 0.6 to 1.2 mm
   - Increments: 0.1 mm



15 Enter the groove depth if necessary.

1) Press the "Groove depth" numeric field.
   The numeric keypad appears.
2) Enter the groove depth with the numeric keypad. (unit: mm)
   - Range: 0.0 to 0.8 mm
   - Increments: 0.1 mm



16 Confirm whether the desired groove is obtained in the same manner as Step 10. Repeat Steps 11 to 15 until the desired groove is obtained.

17 Press Start to restart processing.

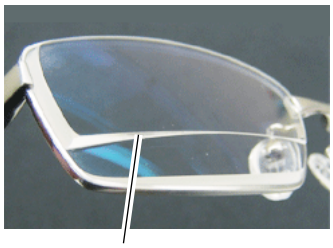
18 When processing is complete, the screen returns to the processing start screen automatically. Open the processing chamber cover and press Chuck to remove the lens while holding the lens by hand.

Note

- After processing has been restarted, pressing or such allows access to other screens. However, if processing is complete while some other screen is displayed, the screen does not change automatically to the processing start screen. Press or such to return to the processing start screen.

3.17 Ex lens processing (grooving)

- When processing Ex lenses, be sure to select “Ex” as the lens type. With other settings, the lens shape cannot be measured because the feelers of the feeler unit get caught between the two levels.
- When “Ex” is selected as the lens type, guide processing is automatically performed. In this mode, grooving with the curve profiled along the rear surface is performed.



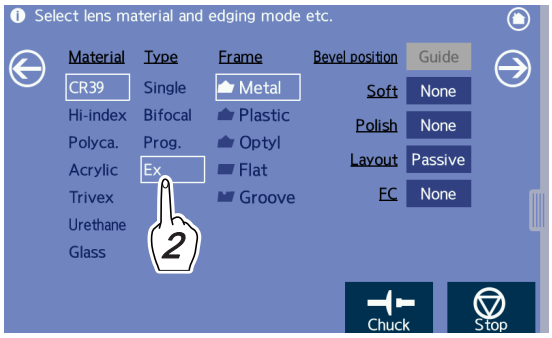
Level difference of Ex lens

1 Display the processing conditions screen, then specify the lens material, lens type, soft processing, polishing, and layout mode.

“3.7 Processing Conditions Entry” (page 70)

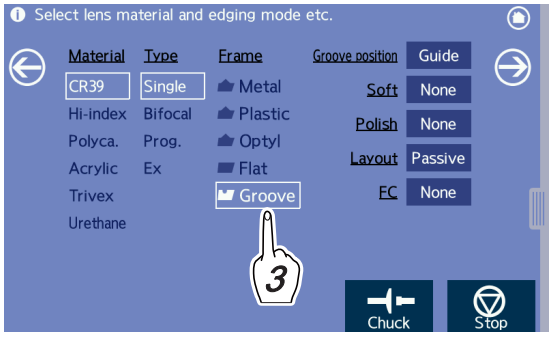
2 Select “Ex” from the “Type” field.

Lens type
Ex



3 Select “Groove” from the “Frame” field.

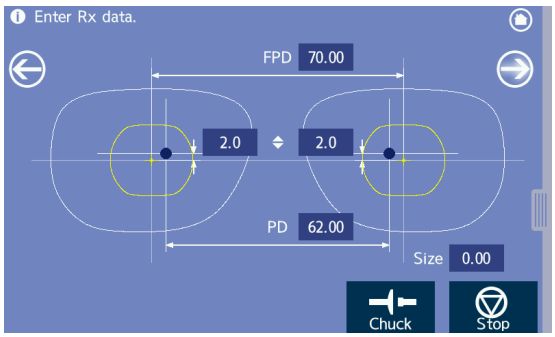
Frame type
Groove (nylor)



4 Press  to display the layout screen.

Enter the layout settings as prescribed.

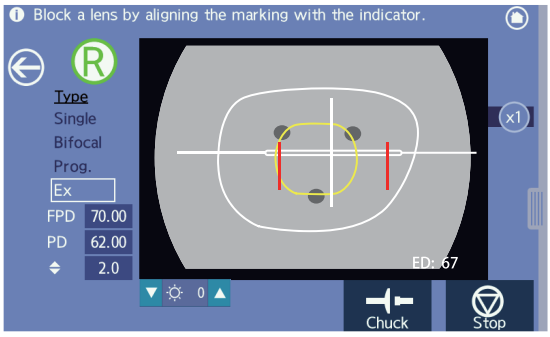
For the layout entry, “3.8 Layout Entry” (page 73).



5 Press  to display the blocking screen for blocking.

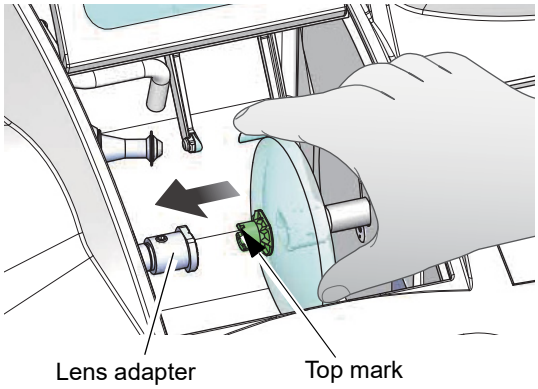
For blocking, *"3.12 Lens Blocking" (page 87)*.

When blocking is complete, the blocking screen changes to the processing start screen automatically.



6 Set the lens to the lens adapter.

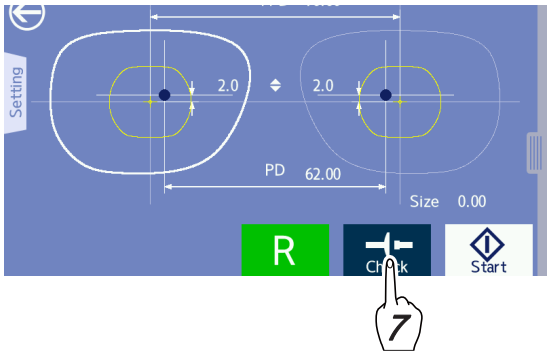
Securely insert the lens cup into the lens adapter with the top mark facing up.



7 While holding the lens by hand, press  to secure the lens.

⚠ CAUTION

- Be careful not to get fingers caught when chucking (securing) a lens.



8 Close the processing chamber cover.

9 Check and change the processing conditions in the processing conditions confirmation panel as necessary.

"3.13.1 Auto beveling" (page 93) - Step 9

10 Press  to start processing.

Processing starts and the simulation screen is displayed during processing.

For grooving of Ex lenses, the simulation screen is displayed soon after processing starts. Perform the same procedure as Steps 10 and later for guide grooving.

"● Operating the simulation screen for guide grooving" (page 110)

- For Ex lenses, the default is set to "Rear". Do not change the setting.

  Proper grooving is not possible with a setting such as "Front". For the groove position adjustment, use the tilt function. When data for which curve mode is specified is imported from the server or such, the specified curve mode is initially displayed.

  "3.20.2 Tilting" (page 121)

3.18 Size Check and Retouching

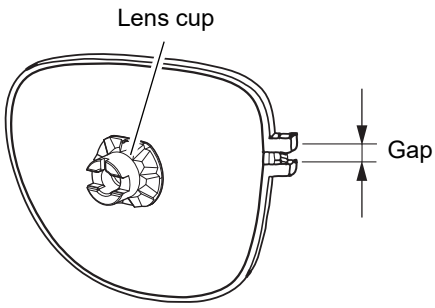
- Check the lens size after processing. If the lens is too large, retouch it to correct the size.
- If polishing is inadequate, it can be performed again. If the groove depth or width is smaller than intended, resizing is possible.

Note

- Pressing the “Setting” tab on the processing start screen displays the processing conditions confirmation panel. This panel allows confirmation of the processing status, however, processing conditions cannot be changed here.

3.18.1 Size check

Fit the lens with the lens cup into the frame and measure the gap at the rim joint.

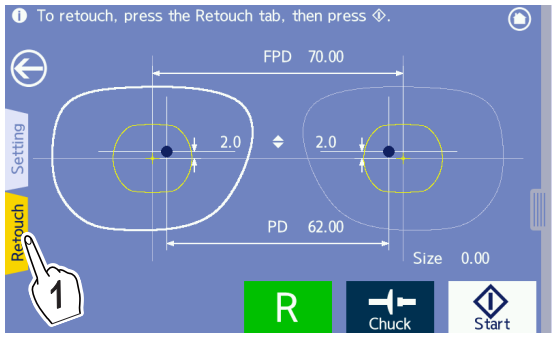


- Do not remove the lens cup.
  If the lens cup is removed, retouching may not be possible.

3.18.2 Retouching

1 Press the “Retouch” tab on the processing start screen.

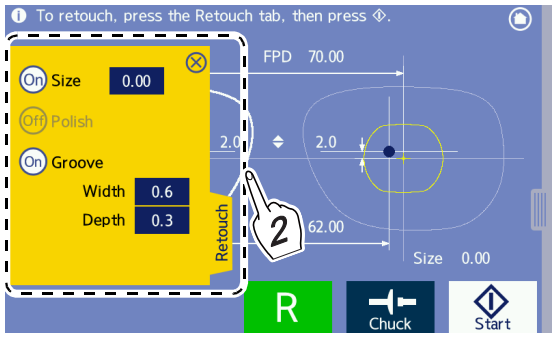
The retouch panel appears.



2 Change the retouching contents if necessary.

“On” indicates that retouching is enabled for their processing.

Buttons that are grayed out cannot be changed.



- For resizing

  Press the “Size” numeric field to display the numeric keypad.

  Subtract the value of the gap at the rim joint divided by the circular constant (about 3) from the Size value.

  Ex.— When the gap is 1.2 mm

  1.2 mm (gap) ÷ 3 (circular constant) = 0.4 mm

  Reduce the “Size” value by 0.4.

- For re-polishing

  Press the “Polish” button.

- For grooving

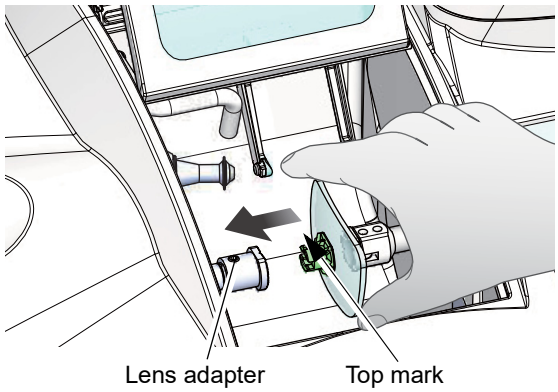
  Press the “Depth” or “Width” numeric field to display the numeric keypad.

  Increments: 0.1 mm

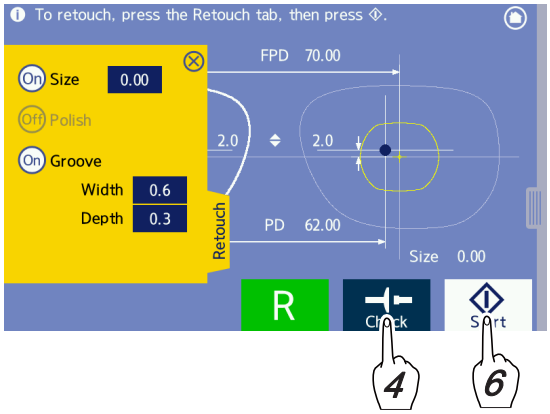
When stopping retouching, press ⊗ to close the retouch panel.

3 Set the lens to the lens adapter.

Securely insert the pliable cup into the lens adapter with the top mark facing up.



4 While holding the lens by hand, press Chuck to secure the lens.



⚠ CAUTION

- Be careful not to get fingers caught when chucking (securing) a lens.

5 Close the processing chamber cover.

6 Press Start to start retouching.

Processing starts and the simulation screen is displayed during processing.

Note

- When retouching is performed with “Groove” set to “On” after guide processing, it is possible to pause the simulation screen so that the groove width or groove depth can be changed.

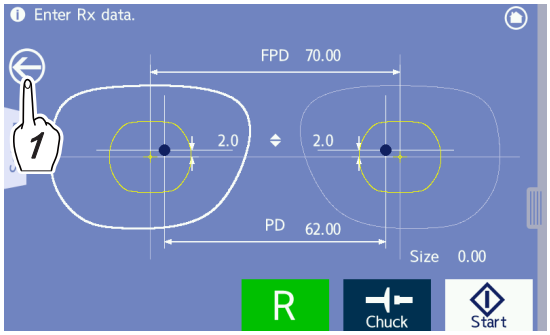
7 When processing is complete, the screen returns to the processing start screen automatically. Open the processing chamber cover and press Chuck to remove the lens while holding the lens by hand.

8 When processing is complete, check the lens size. If the size is still too large, retouch the lens again.

3.19 Opposite Lens Processing

■ The following describes processing of the opposite lens after one lens has been processed.

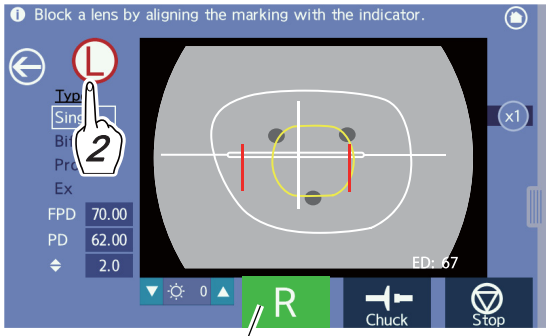
1 After lens processing, the screen returns to the processing start screen automatically. Press  to display the blocking screen.



2 Switch to the side of the lens to be processed (R) (right eye) or (L) (left eye) and block the lens.

For blocking, *"3.12 Lens Blocking" (page 87)*.

When blocking is complete, the blocking screen changes to the processing start screen automatically.



This shows R or L of the lens being processed. If not during processing, it changes in synchronization with the top left R/L button.

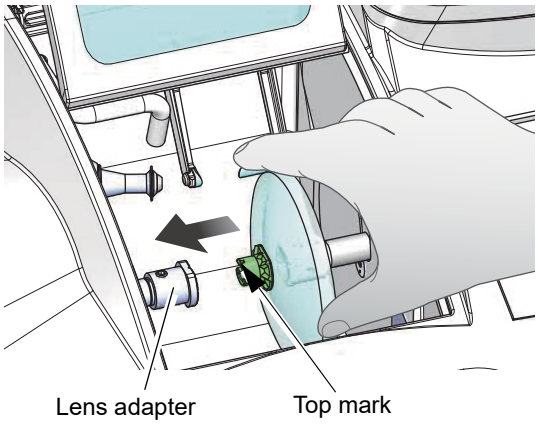
Note

- By pressing  during processing after the simulation screen is automatically displayed, the opposite lens can be blocked.
- For guide processing, after data is entered in the simulation screen and processing is restarted by pressing the start button, the opposite lens can be blocked.

3 Set the lens to the lens adapter.

Securely insert the lens cup into the lens adapter with the top mark facing up.

* **The subsequent procedures are the same as those for normal lens processing.**



3.20 Other Processing

■ The following describes the other processing procedures: frame changing and tilting.

3.20.1 Frame changing

This function is used to mount eyeglass lenses in use into other frames.

The following is the operating procedure after the processing conditions screen is displayed.

- In frame changing mode, the lens shape is measured and processed 1.5 mm inside from the actual shape to prevent the feelers from being detached during lens shape measurement.
- Before processing, be sure to confirm whether a lens size is sufficient for processing.
  In frame changing mode, as the lens shape is measured 1.5 mm inside the actual lens shape, inadequate lens size cannot be identified and processing may affect the bevel apex shape.
- In frame changing mode, the bevel or groove position may be lowered in accuracy depending on the lens curve or lens shape in comparison with that of normal processing because the lens shape is not actually measured.

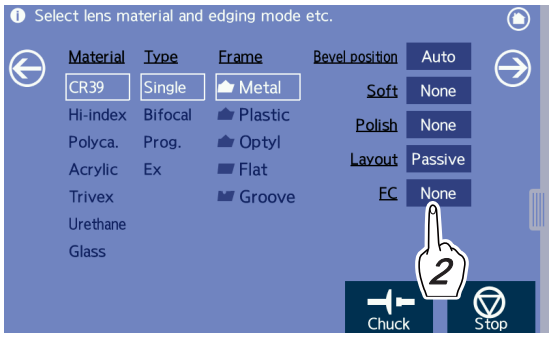
1 Display the processing conditions screen, then specify processing conditions.

“3.7 Processing Conditions Entry” (page 70)

2 Specify the frame changing mode.

Set the “FC” setting field to “Exec”.

Frame changing	Exec



✻ **The subsequent procedures are the same as those for normal lens processing.**

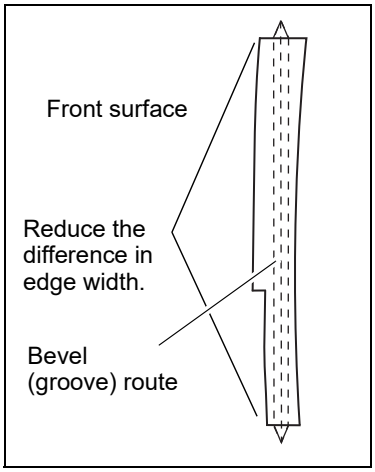
3.20.2 Tilting

The appearance of lenses with an extreme difference in width between the edge's thickest and thinnest positions may be impaired when lenses are mounted in frames. However, this appearance will be improved if the tilt function (beveling or grooving with tilt) is used.

Note

- As shown in the figure to the right, an Ex lens has a difference in edge width between the upper and the lower. Such a difference in level causes the lens surface to be not attractive when the lens is processed.

  The tilt function allows the appearance to be attractive by adjusting the bevel (or groove) position on the upper part toward the front surface and lower part toward the rear surface.



○ Example of tilt function for guide beveling

*** For guide grooving, perform the same procedure as guide beveling.**

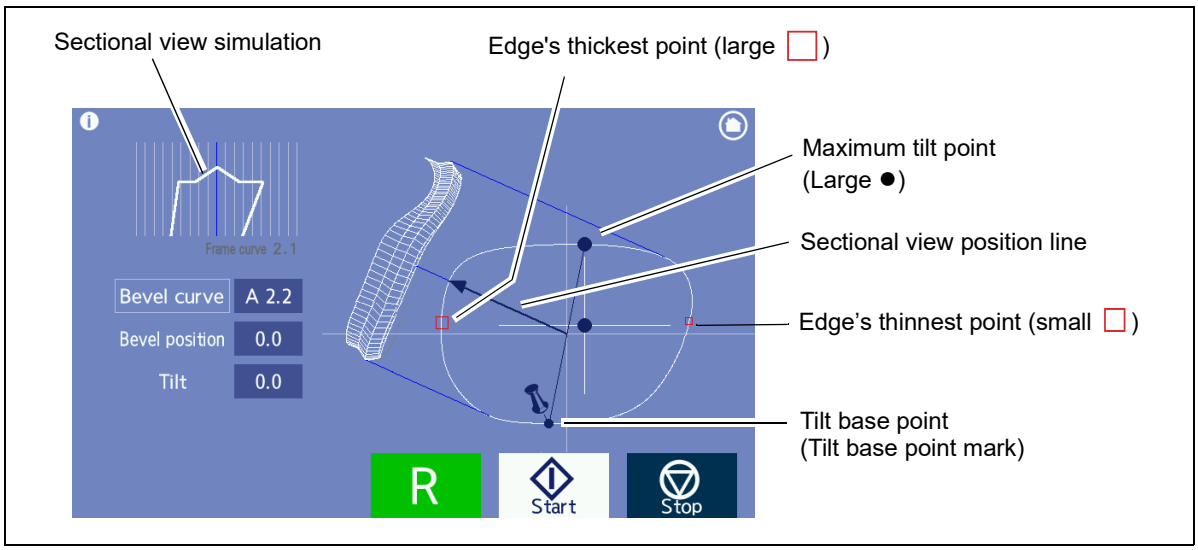
1 Perform Steps 1 to 10 in guide beveling.

The screen changes to the simulation screen and processing pauses.

"3.13.2 Guide beveling" (page 96)

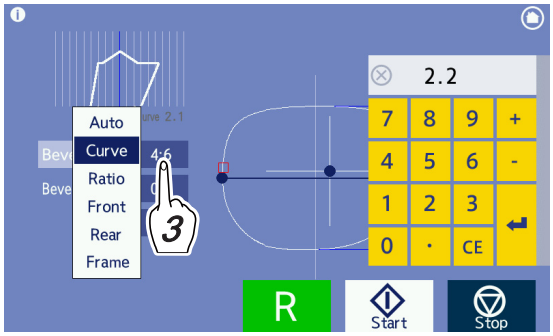
For guide grooving, *" " (page 108)*

● Explanation of simulation screen (tilt function)



2 Press the “Bevel curve” numeric field and set the desired curve.

“3.13.2 Guide beveling” (page 96) - Steps 11 to 14



Note

- An “A” preceded by the curve value indicates the bevel position is computer calculated. The absence of an “A” indicates the bevel position is calculated from the spherical curve of the lens.
- For the tilt function, the bevel position is adjusted based on the spherical curve value of the lens. For this reason, when a curve value with an “A” is set, the set tilt value may differ from the actual till amount of the bevel.

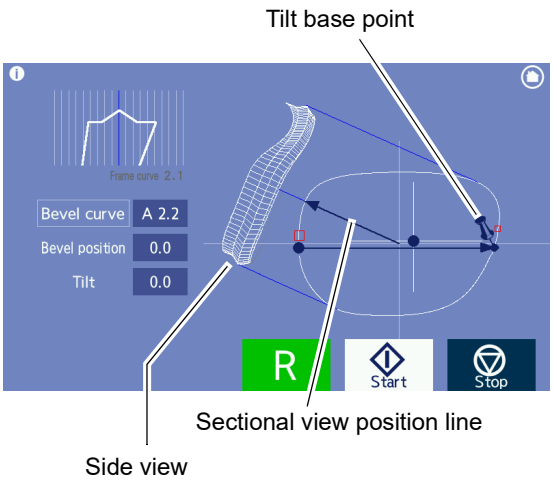
3 Set the tilt base point and bevel position.

1) Drag the tilt base point mark around to the position diagonally opposite to the edge’s thickest point (large □) to determine the tilt base point.

   (This is the base position when the bevel route is tilted.)

   Determining the tilt base point by releasing the mark moves the sectional view position line to the diagonally opposite position which is the maximum tilt point (large ●).

   (This is where the bevel position is most tilted.)



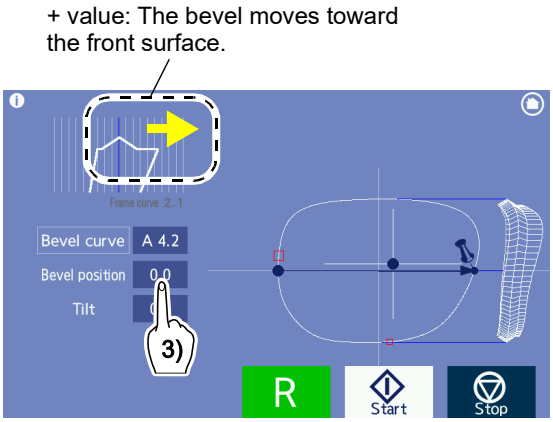
2) Tap the screen around the left, right, upper, or lower of the side view to rotate the sectional view position line and tap again around the tilt base point to stop the rotation.

   The sectional view simulation of around the tilt base point is displayed.

   For operation of the simulation screen, *“● Operating the simulation screen for guide beveling” (page 98)*.

3) Set the bevel position of the tilt base point while checking the sectional view simulation by entering a numeric value in the “Bevel position” numeric field.

   - + value: The bevel moves toward the rear surface.
   - – value: The bevel moves toward the front surface.



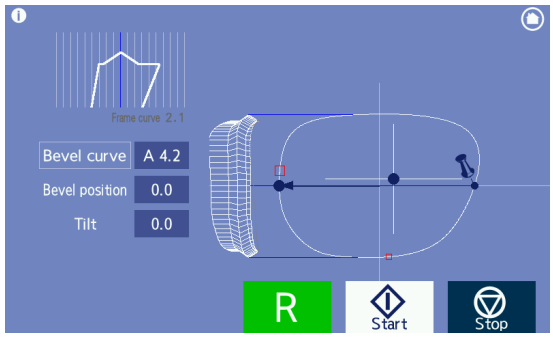
● Guide of bevel position for tilt base position

- If the lens edge is thin, move the bevel toward the rear surface (→ side) as much as possible.
- If the edge is relatively thick, move the bevel backward by about 1/3 from the rear surface.

4 Set the bevel position of the maximum tilt point.

1) Tap the screen around the left, right, upper, or lower of the side view to rotate the sectional view position line and tap again around the maximum tilt point to stop the rotation.

The sectional view simulation of around the maximum tilt point is displayed.



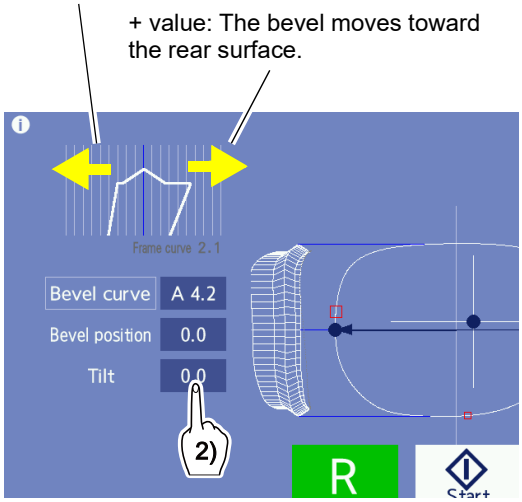
2) Set the bevel position of the maximum tilt point while checking the sectional view simulation by entering a numeric value in the Bevel position numeric field.

Move the bevel toward the front surface as much as possible.

- – value: The bevel moves toward the front surface.
- + value: The bevel moves toward the rear surface.

– value: The bevel moves toward the front surface.

+ value: The bevel moves toward the rear surface.



- For the edge's thinnest position (the boundary between the far-vision and near-vision parts)
  - Increase or decrease the tilt amount so that bevel apex barely remains within the lens edge.
  - If the bevel completely comes off the lens edge, increase the tilt amount (toward the rear surface).
  - While the bevel completely remains within the lens edge, decrease the tilt amount (toward the front surface).

5 Check the entire bevel position.

Tap the screen to rotate the sectional view position line and confirm that the bevel position is proper at each point while checking that the bevel does not come off at the edge's thinnest point (small □).

6 Repeat Steps 4 to 5 until the desired bevel position is obtained.

7 Press Start to start processing.

8 When processing is complete, the screen returns to the processing start screen automatically. Open the processing chamber cover and press Chuck to remove the lens while holding the lens by hand.

9 When processing the opposite lens by switching R or L, the previous settings values are displayed as defaults.

The previous values such as the tilt base position, tilt amount, curve, and position are displayed as defaults.

3.21 Editing the Next Shape during Processing

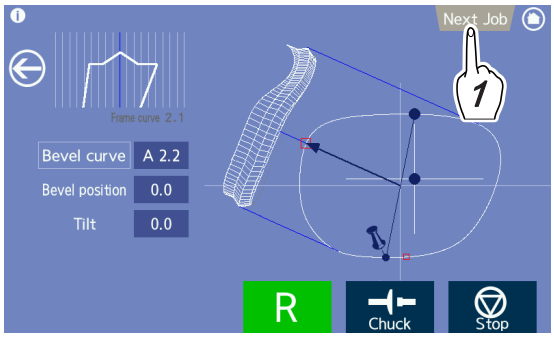
■ Without waiting for a processing completion, operations such as shape data loading and layout data entry can be performed in advance for the next processing.

For operation by pressing the “Next Job” tab, some functions such as pattern or demo lens tracing cannot be used.

1 Press the “Next Job” tab displayed on the simulation screen during processing.

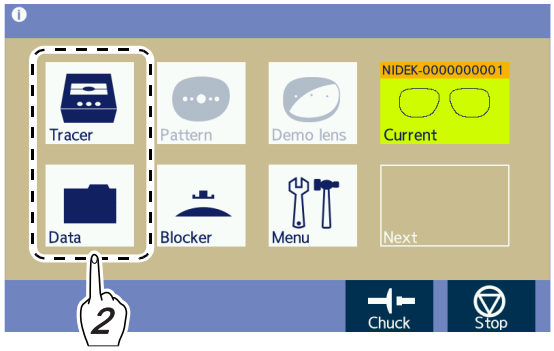
The home screen appears.

The background color of the home screen and screens displayed later change to light brown indicating that next data is being edited.



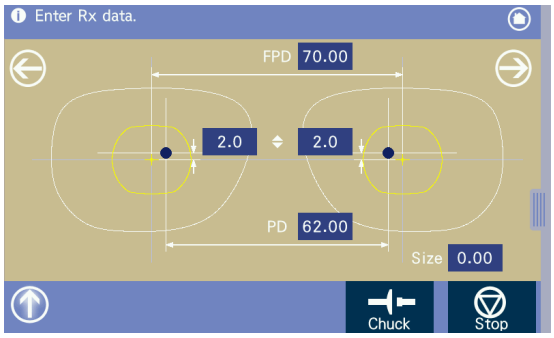
2 Press  to receive data or press  to load data from the internal memory or computer.

The “Pattern” and “Demo lens” icons are disabled.



3 As in normal use, perform operations from the frame data confirmation screen to the layout screen.

As shown in the sample screen to the right, the background is displayed in light brown.



Sample of layout screen

- When the screen changes to the blocking screen, the “Currently grinding. Please wait.” message appears and subsequent processes cannot be performed until the current process is complete.

  When the current process is complete, operations can be continued.

Pressing  during processing cancels the edition and returns to the simulation screen.

When processing is complete while new data is being edited,  blinks. Pressing  returns to the processing start screen.

When the current data is displayed after edition of new data is interrupted, press the Next data preview icon to restart the edition.

4 When the current processing is complete, blocking and later operations can be performed.

- At the point where blocking is performed, the data of the currently processed lens is replaced by new data. Retouching with data of the currently processed lens cannot be performed any longer.

*** The subsequent procedures are the same as those for normal use.**

3.22 Removing the Lens Cup

■ The following describes the removing method of the half-eye lens cup, pliable cup (optional), or mini cup (optional).

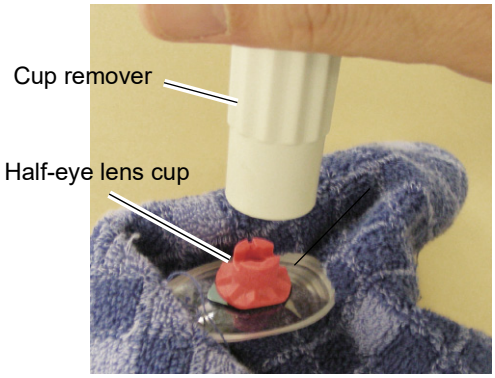
⚠ CAUTION

- When removing the lens cup by twisting the cup remover, hold the lens with a soft cloth or such.
  If the lens is held directly, hands may be injured by the lens edges.

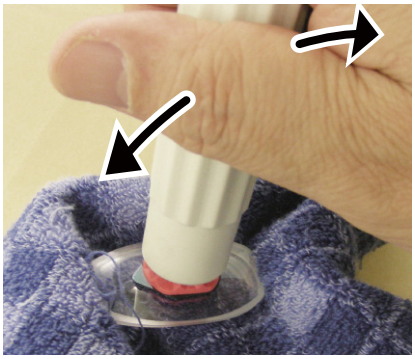
3.22.1 Removing the half-eye lens cup

Use the provided cup remover to remove the half-eye lens cup from a lens.

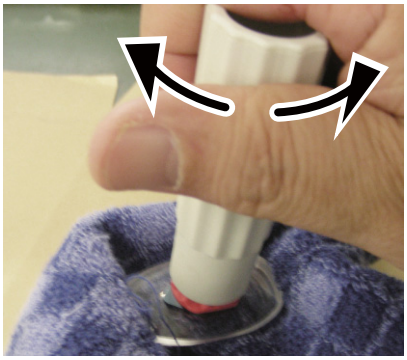
1 Insert the cup remover into the groove of the half-eye lens cup.



2 Pry the lens cup to remove the lens cup.



3 If the coating surface of a lens such as thin polycarbonate lenses may become cracked, twist the cup remover to remove the lens cup.



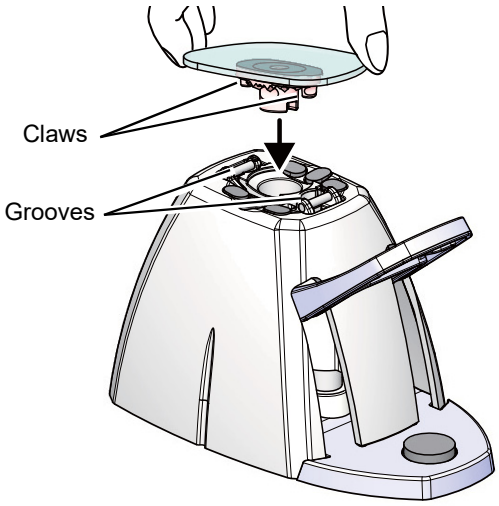
3.22.2 Removing the optional pliable cup

Use the pliable cup remover to remove the pliable cup from a lens.

* The pliable cup and pliable cup remover are included in the optional pliable cup set.

1 Set a lens with the pliable cup on the pliable cup remover.

Fit the claws on both sides of the pliable cup into the grooves on the top of the pliable cup remover.



2 Press the lever so that the pliable cup is removed downward.

The pliable cup may still not be removed even if the lever is lowered to its limit depending on the lens curve or coating. In such cases, remove the pliable cup using fingers with the lever lowered.

Note

- Pliable cups are consumables. Replace the pliable cup with a new one when it becomes hard to remove the double-coated adhesive pad from the cup.
- Lightly wipe processing waste or moisture off the lens before setting the lens on the pliable cup remover.

  Processing waste or moisture getting into the pliable cup remover may result in failure.

3.22.3 Removing the optional mini cup

Use the mini cup remover to remove the mini cup from a lens.

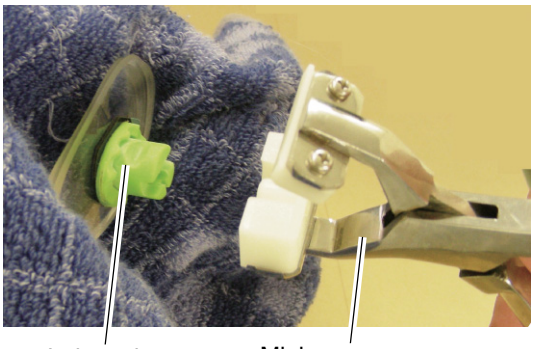
* The mini cup and mini cup remover are included in the optional mini cup set.

⚠ CAUTION

- Always hold the lens with a soft cloth.
  Hands may be injured by the lens edges when holding the lens directly.

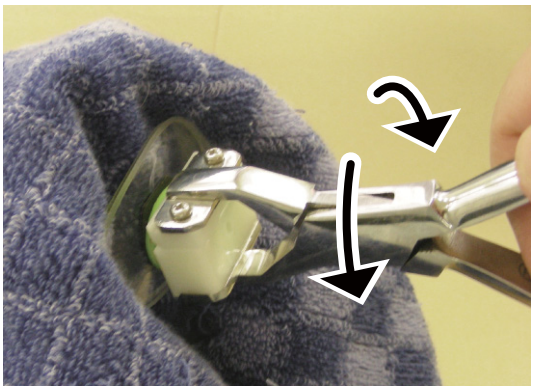
1 Set the lens with the mini cup to the mini cup remover.

Insert the mini cup into the groove of the mini cup remover so that the part with an indentation becomes visible.



2 Squeeze the handles of the mini cup remover to grip the mini cup.

3 Gently twist (rotate) the mini cup remover to remove the mini cup.



- Do not pry the mini cup remover horizontally or vertically to remove the mini cup.
  The coated lens surface may be damaged.

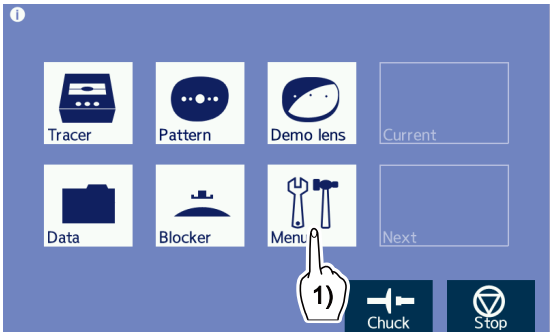
3.23 After Use

1 Clean the processing chamber.

In cleaning mode, turn on the cleaning water and remove the processing waste settled on the processing unit with a brush.

1) Press  on the home screen.

   The menu screen appears.



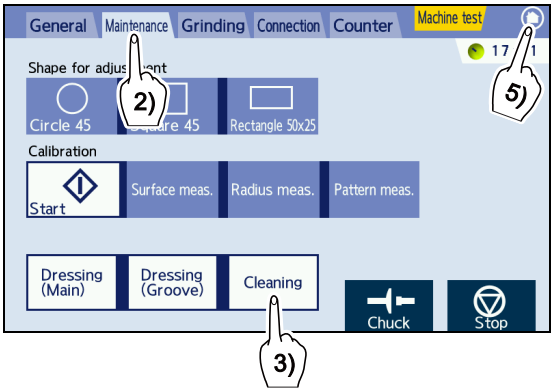
2) Press the “Maintenance” tab on the menu screen.

   The maintenance screen appears.

3) On the maintenance screen, press the “Cleaning” button to turn on the cleaning water and remove the processing waste settled on the processing unit with a brush.

   Press  to turn off the cleaning water.

4) In the same manner, remove the processing waste settled on the arm of the grooving wheel and feeler unit.



5) Press  to return to the home screen.

⚠ CAUTION

- Do not splash water into the interior of the instrument.
  Protect the display from splashing water. Also, never operate the display with wet hands.
  Water seeping into the instrument may result in electric shock, malfunction, or fire.

- Clean the processing chamber after the last use of the day. If the chamber is not cleaned for several days after use, the processing waste becomes settled and difficult to remove.

2 Turn off power.

3 Perform check after use.

Store accessories. Wipe the accessories and store them free from loss or damage.

“3.2.4 Check after use” (page 52)

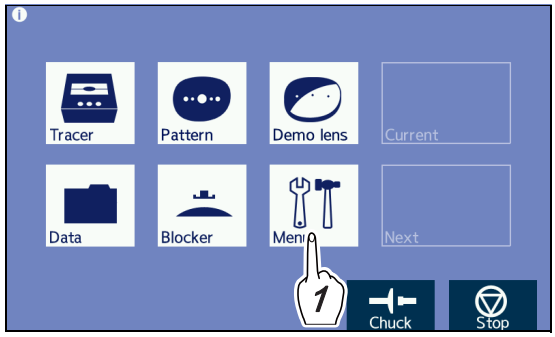
4 SETTING AND ADJUSTMENT

4.1 Menu Screen Operation

- The menu screen is used to access to all the parameter settings and adjustments. The menu screen options are “General”, “Maintenance”, “Grinding”, “Connection”, and “Counter”.
- Change the parameter settings as necessary. For details of each parameter, *“4.2 General Settings” (page 132)* to *“4.6 Counter Display” (page 140)*.

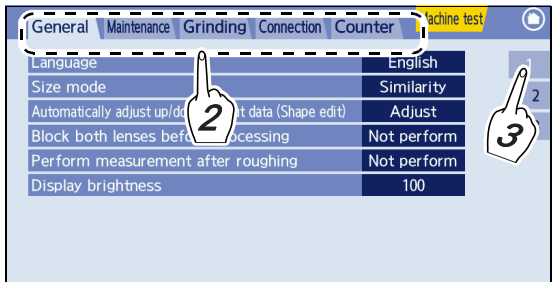
1 Press  on the home screen.

The menu screen appears.



2 Select the desired tab from among “General”, “Maintenance”, “Grinding”, “Connection”, and “Counter”.

3 When multiple pages are available for a tab, select the page where the parameter to be changed is found with the page button to the right.



4 Change the desired parameter setting.

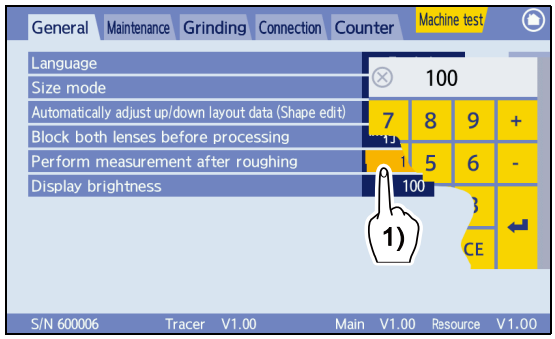
1) Press the setting field of the parameter to be changed.

The selected setting field turns orange and the numeric keypad or pop-up menu appears.

2) Change the setting contents.

Numeric keypad → Enter a value and press ↵.

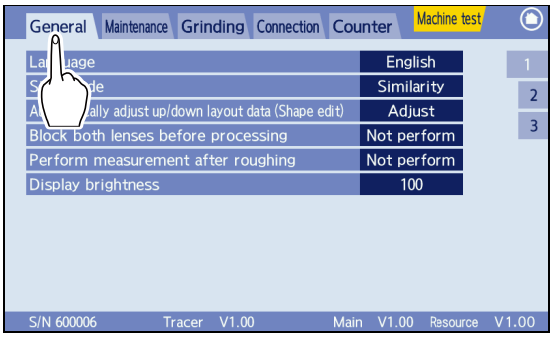
Pop-up menu → Select from the pop-up menu.



5 Press  to return to the home screen.

4.2 General Settings

Press the “General” tab on the menu screen.



○ Tab 1

- Language: English, Japanese

  Factory setting: English

  Selects the display language.

- Size mode: Similarity, Concentric

  Factory setting: Similarity

  Selects how to change the size when the size value is changed.

- Cup type for small shape: None, Mini

* This parameter is displayed only when the optional pliable cup or mini cup is used.

  Factory setting: None

  When using the pliable cup only, set “None”. When using both the pliable cup and mini cup, set “Mini.”

- Display message for small cup check: Exec, None

* This parameter is displayed only when the optional pliable cup or mini cup is used.

  Factory setting: Exec

  Sets whether to display a confirmation message informing the user to replace the lens adapter and lens clamp when the mini cup will need to be used.

- Automatically adjust up/down layout data (Shape edit): Adjust, Not adjust

  Factory setting: Adjust

  Sets whether to adjust the optical center height automatically during shape change.

- Block both lenses before processing: Perform, Not perform

  Factory setting: Not perform

  Sets whether to change to the processing start screen automatically or block the opposite lens subsequently after blocking. To block the opposite lens continuously, set “Perform”.

- Perform measurement after roughing: Not perform, Perform, CR39 / Hi-index only

  Factory setting: Not perform

  Sets whether to remeasure the lens shape after roughing.

  Remeasuring the lens shape after roughing increases the processing time. However, the shifting of a bevel or groove from the desired position due to lens distortion occurring during roughing is reduced.

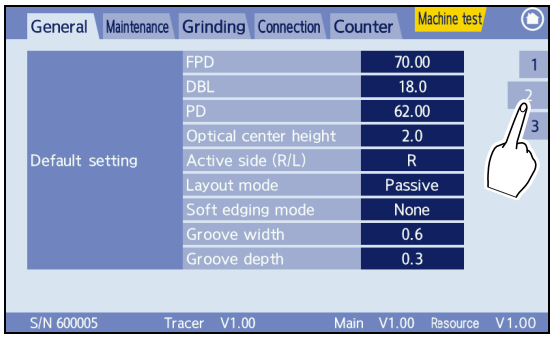
  Regardless of this setting, lens shape measurement after roughing is not performed for glass lenses.

- Display brightness: 10 to 100

  Factory setting: 100

  Sets the brightness of the display.

○ Tab 2 (Default setting)



- FPD: 30.00 to 99.50

  Factory setting: 70.00

  Sets the default value of FPD.

- DBL: 5.00 to 30.00

  Factory setting: 18.00

  Sets the default value of DBL.

- PD: 30.00 to 99.50

  Factory setting: 62.00

  Sets the default value of PD.

- Optical center height: -15.0 to 15.0

  Factory setting: 2.0

  Sets the default value of the optical center height ⬍.

- Active side (R/L): R, L, Received

  Factory setting: Received

  Selects the lens shape to be displayed, right or left, when shape data is loaded.

  Received: Right lens shape (left lens shape when left eye trace data is received.)

- Layout mode: Active, Passive, Received

  Factory setting: Received

  Selects the default of layout mode.

  Received: Follows the layout mode of the loaded shape data.

- Soft edging mode: None, Exec, Glass

  Factory setting: None

  Selects the default of soft processing mode.

  Glass: When “Glass” is selected for the lens material, soft processing mode turns on automatically.

- Groove width: 0.6 to 1.2

  Factory setting: 0.6

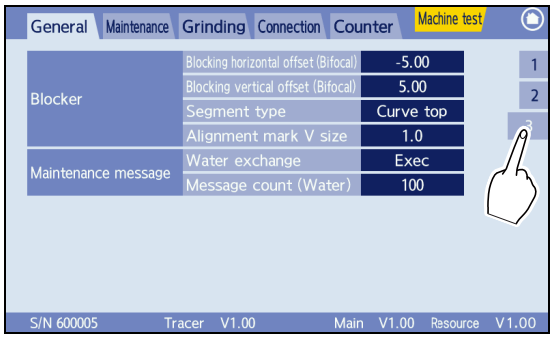
  Sets the default value of the groove width.

- Groove depth: 0.0 to 0.8

  Factory setting: 0.3

  Sets the default value of the groove depth.

○ Tab 3 (Blocker, Maintenance message)



- Blocking horizontal offset (Bifocal): -10.00 to +10.00

  Factory setting: -5.00

  Sets the offset in the horizontal direction of the blocking position for bifocal lenses.

- Blocking vertical offset (Bifocal): -10.00 to +10.00

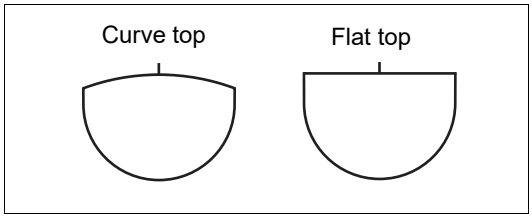
  Factory setting: 5.00

  Sets the offset in the vertical direction of the blocking position for bifocal lenses.

- Segment type: Curve top, Flat top, Received

  Factory setting: Curve top

  Selects the type of the alignment scale on the blocking screen (bifocal).



  When this parameter is set to “Received” and the “Ethernet port” parameter is set to “VCA-B” or “VCA-C”, the segment type switches between “Curve top” and “Flat top” in accordance with instructions from the server.

- Alignment mark V size: 0.0, 1.0, 2.0

  Factory setting: 1.0

  Selects the vertical width of the alignment scale (lateral length ellipse) displayed on the blocking screen from among 0.0 mm, 1.0 mm, and 2.0 mm.

  When “0.0 mm” is selected, the horizontally long ellipse becomes a straight line.

- Water exchange: Exec, None

  Factory setting: Exec

  Selects whether to notify the replacement timing of processing water in the tank.

- Message count (Water): 10 to 1000

  Factory setting: 100

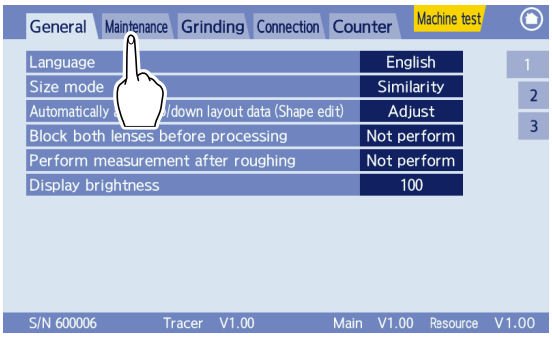
  Sets the number of lenses after which the processing water replacement message is displayed when the “Water exchange” parameter is set to “Exec”.

4.3 Maintenance Settings

■ The maintenance screen is used to load the internal data, and perform calibration, dressing, and date and time setting.

Press the “Maintenance” tab on the menu screen.

The maintenance screen appears.



○ Loading internal shape

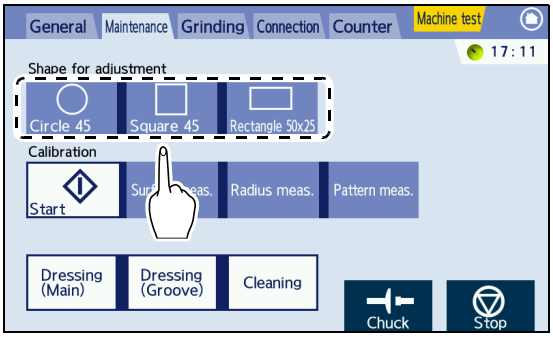
Load the internal data.

Circle45 internal data → Press the “Circle45” button.

Square45 internal data → Press the “Square45” button.

Square50×25 internal data → Press the “Rectangle50×25” button.

When internal data is loaded, the screen changes to the processing conditions screen automatically.



○ Calibration

“4.7 Calibration” (page 141)

○ Dressing (Main)

Mode for wheel dressing. “5.7 Wheel Dressing” (page 160)

○ Dressing (Groove)

Mode for grooving wheel dressing. “5.7 Wheel Dressing” (page 160).

○ Cleaning

Mode for cleaning the processing chamber. “3.23 After Use” (page 129).

○ Time

Date and time settings are performed. “4.8 Date and Time Setting” (page 144).

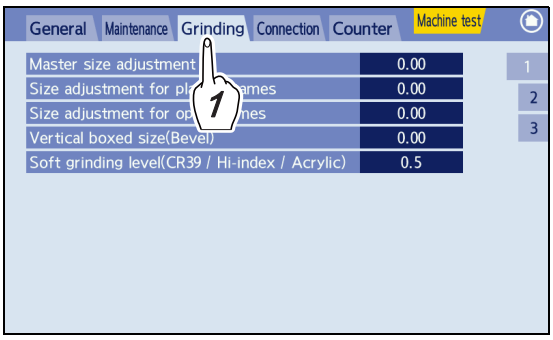
4.4 Grinding Settings

■ The grinding screen is used to adjust the size, axis, bevel position, and groove position.

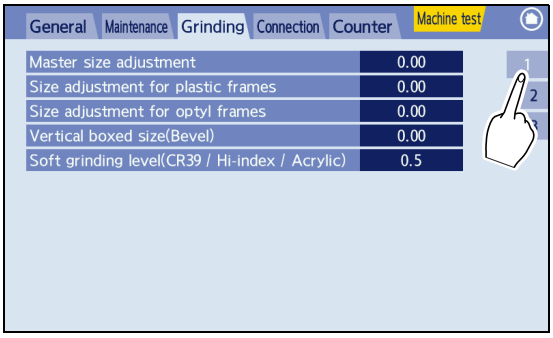
1 Press the “Grinding” tab.

The adjustment list is displayed.

2 Press the desired parameter setting to change the setting with the numeric keypad.



○ Tab 1



- Master size adjustment: -9.95 to 9.95

  Sets the compensation value for the finish size of all lens materials.

  Increasing the value increases the finish lens size.

- Size adjustment for plastic frames: -9.95 to 9.95

  Sets the compensation value for the processed lens size when “Plastic” is selected as the frame type.

  Increasing the value increases the finish lens size.

- Size adjustment for optyl frames: -9.95 to 9.95

  Sets the compensation value for the processed lens size when “Optyl” is selected as the frame type.

  Increasing the value increases the finish lens size.

- Vertical boxed size (Bevel): -9.95 to 9.95

  Sets the compensation value for the vertical size of the beveled lens shape.

  Increasing the value increases the vertical size of the shape.

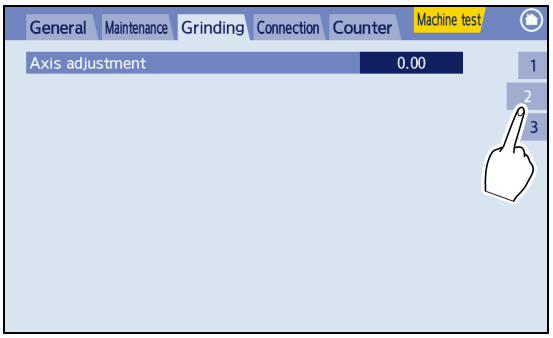
- Soft grinding level (CR39 / Hi-index / Acrylic): 0.1 to 0.8

  Factory setting: 0.8

  Sets the ratio of the soft processing speed to normal processing speed.

  Increasing the value sets the processing speed closer the standard one.

○ Tab 2



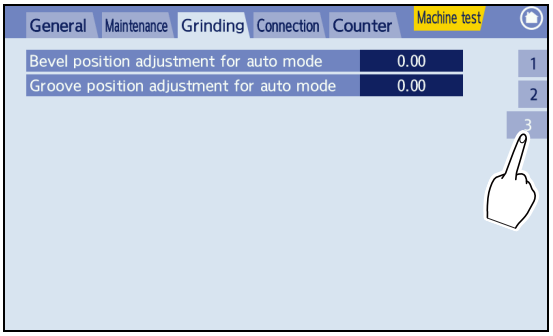
- Axis adjustment: -9.95 to 9.95

  Sets the compensation value for the axis angle.

  Entering a positive value tilts the axis to the lower right when viewed from the front surface (concave surface).

  "4.10 Axis Adjustment" (page 147)

○ Tab 3



- Bevel position adjustment for auto mode: -9.95 to 9.95

  Sets the compensation value for the desired bevel position during auto beveling.

  Increasing the value moves the bevel toward the rear surface.

  "4.11 Bevel Position Adjustment" (page 149)

- Groove position adjustment for auto mode: -9.95 to 9.95

  Sets the compensation value for the desired bevel position during auto grooving.

  Increasing the value moves the groove toward the rear surface.

  "4.12 Groove Position Adjustment" (page 151)

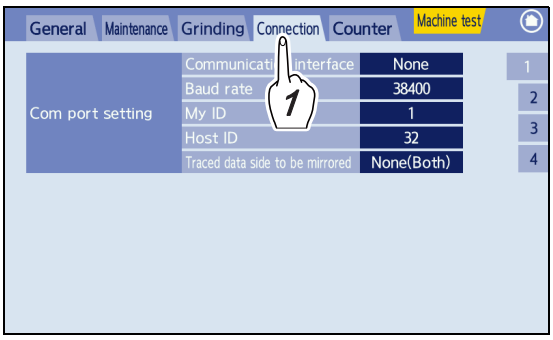
4.5 Connection Settings

■ The connection screen is used to perform communication by connecting to the server.

1 Press the “Connection” tab.

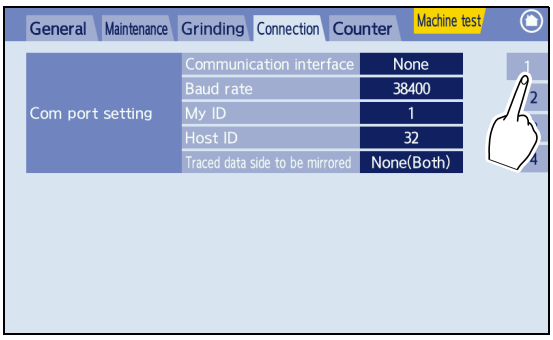
The setting list is displayed.

2 Press the desired parameter setting to change the setting with the numeric keypad.



- Do not use the instrument in a network connected to an intranet or Internet.
  Communication failure may result.
- Setup must be performed by authorized service personnel or personnel knowledgeable of network systems.

○ Tab 1 (Com port setting)



- Communication interface: None, Tracer, Barcode

  Factory setting: None

  Selects the external communication type using the RS-232C port.

  None: Selected when no external communication is to occur.

  Tracer: Selected when a tracer is connected.

  Barcode: Selected when the barcode scanner is connected.

- Baud Rate: 9600, 38400

  Factory setting: 38400

  Sets the bit transmission speed during communication.

- My ID:1 to 32767

  Factory setting: 1

  Sets the number which is not overlapped with that of other instruments that are connected to a network. Normally, this setting does not need to be changed.

- Host ID: 1 to 32767

  Factory setting: 32

  Normally, this setting does not need to be changed.

- Traced data side to be mirrored: Right, Left, None (Both)

  Factory setting: None (Both)

  Sets whether to mirror the shape data received from the tracer.

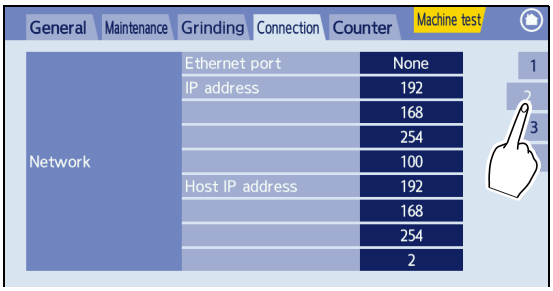
  Right: Mirrors the right side shape to the left side.

  Left: Mirrors the left side shape to the right side.

  None (Both): The trace data is not mirrored and the data is saved for each side.

  * When single-eye tracing is performed, the shape of the traced side is mirrored regardless of this setting.

○ Tab 2 (Network)



- Ethernet port: None, N-LAN, VCA-B, VCA-C

  Factory setting: None

  Selects the type of communication with other instruments or a server using Ethernet.

  None: Disables the communication function of the LAN port

  N-LAN: Selected when NIDEK LAN format, Ice 1000, ICE mini+, Ice 900, or such is connected

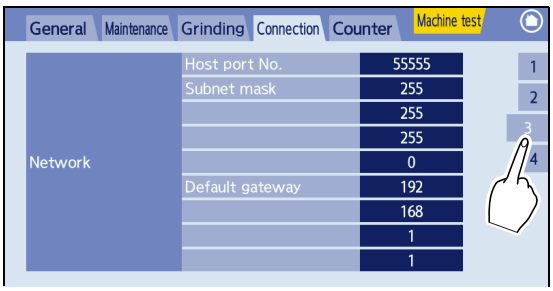
  VCA-B: Selected when the circumference as sent by VCA (OMA) communication is not used but rather a recalculation of the 3-D lens circumference based on the frame curve is used.

  VCA-C: Selected when FPD calculated from a conversion of DBL sent by VCA (OMA) communication is used.

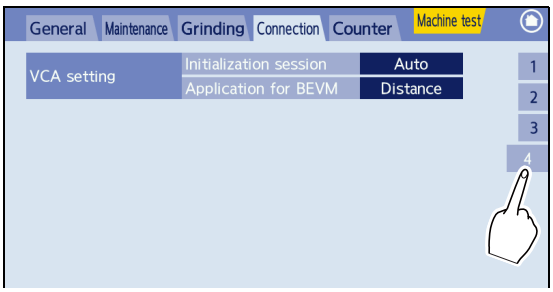
- Contact a network administrator for the “IP address” and “Host IP address” settings.

○ Tab 3 (Network)

- Contact a network administrator for the “Host port No.”, “Subnet mask”, and “Default gateway” settings.



○ Tab 4 (VCA setting)



- Initialization session: Auto, Preset

  Factory setting: Auto

  Selects either auto initialization or preset initialization.

- Application for BEVM: Offset, Distance

  Factory setting: Distance

  Selects the bevel position data either by the distance from the front/rear surface or to be offset from the auto position.

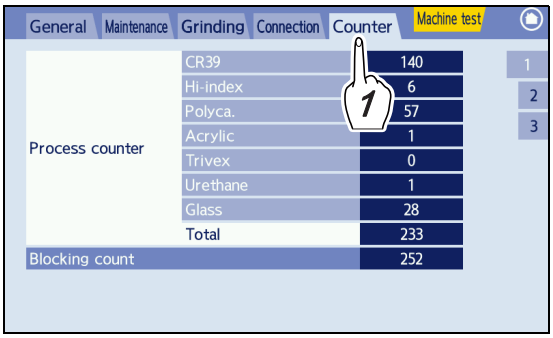
  When this parameter is set to “Distance”, only a positive value can be entered as the bevel/groove position in the guide screen in which data received via VCA is processed.

4.6 Counter Display

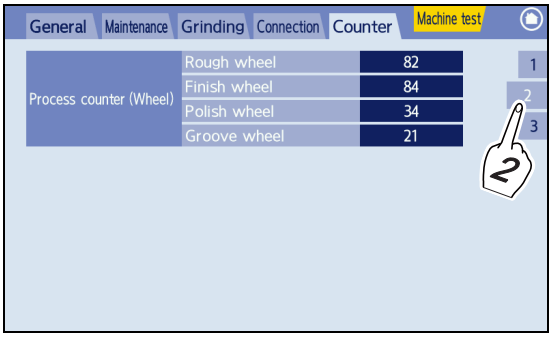
■ The counter screen is used to display the number of lenses processed to date by lens material and wheel type.

1 Press the “Counter” tab.

The counter screen is displayed and the number of blocked lenses and number of processed lenses by lens material are displayed.



2 To check the number of processed lenses by wheel type, select Tab 2.



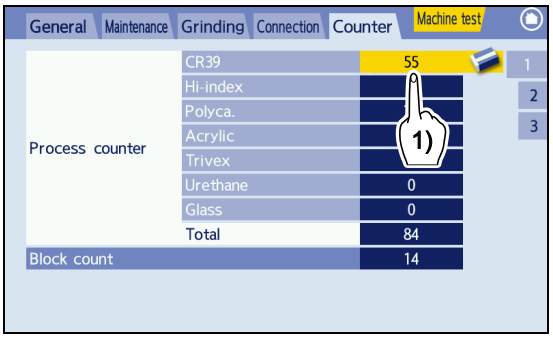
○ Counter reset

1) To reset the process count to “0”, press the desired numeric field.

   The numeric field turns orange and  appears.

2) Hold down  to reset the selected process count to “0”.

3) Press  to return to the home screen.



4.7 Calibration

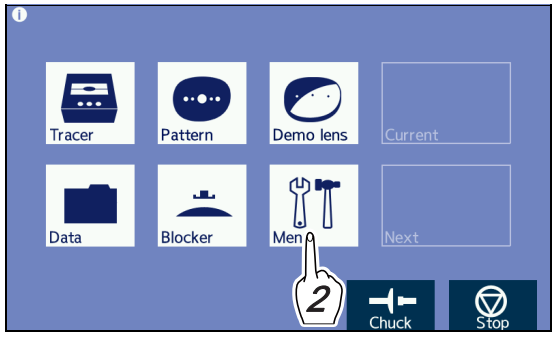
■ Using the calibration jigs supplied with the instrument, perform calibration for outer diameter measurement (RMU - Radius Measurement Unit), surface measurement (LMU - Lens surface Measurement Unit), and pattern tracing.

- Before calibration, clean the RMU feeler and LMU feeler. If the feeler is soiled, correct measurement may not be possible.
- To prevent the calibration jig from dropping off, be sure to hold it when attaching or removing.
  The jig may become detached from the lens adapter and fall into the processing chamber.

1 Open the processing chamber cover.

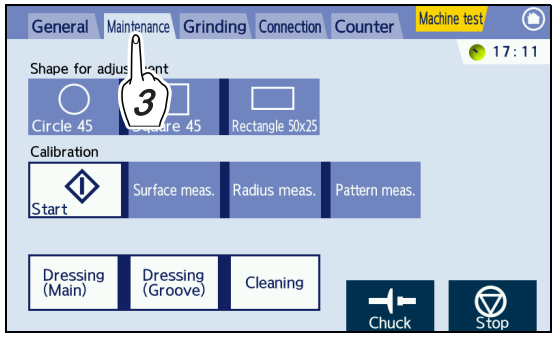
2 Press  on the home screen.

The menu screen appears.



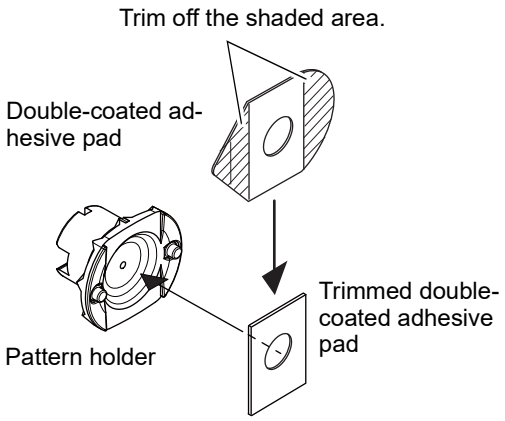
3 Press the “Maintenance” tab on the menu screen.

The maintenance screen appears.



4 To prevent the calibration jig from dropping off, attach the trimmed double-coated adhesive pad to the pattern holder.

Trim off the shaded area of the double-coated adhesive pad with scissors as shown in the figure to the right and attach the pad to the pattern holder.

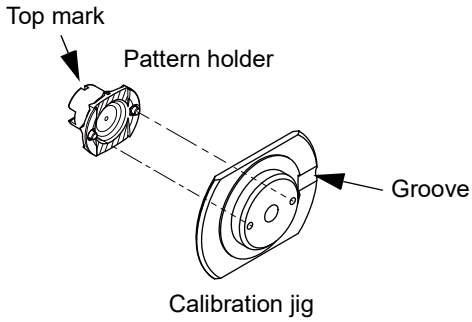


5 Attach the pattern holder to the calibration jig in the orientation shown to the right.

Insert the two pins of the pattern holder into the holes of the calibration jig.

Attach the pattern holder to the flat surface of the calibration jig.

The top mark on the pattern holder and the groove of the calibration jig must be orientated as shown to the right.



6 Set the calibration jig to the lens adapter.

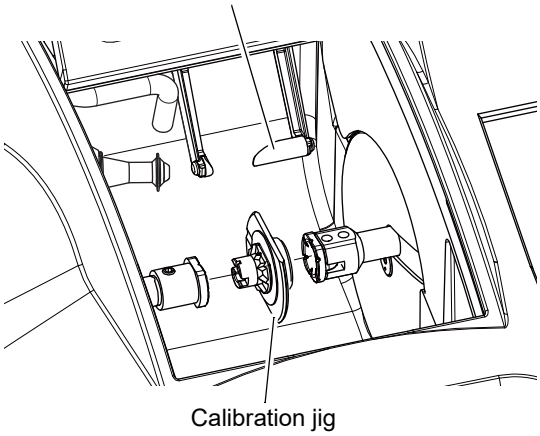
1) Fit the calibration jig to the lens adapter as shown to the right and hold it by hand.

2) Press Chuck to secure the jig.

⚠ CAUTION

- Be careful not to get fingers caught when chucking (securing) the calibration jig.

RMU (feeler for outer diameter measurement)
LMU (feeler for surface measurement)



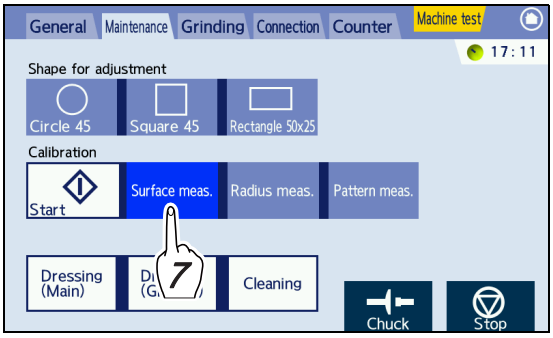
7 Select the desired calibration buttons in the Calibration field. Two or more options can be selected.

The selected buttons turn blue.

"Surface meas.": Calibration of surface measurement

"Radius meas.": Calibration of outer diameter measurement

"Pattern meas.": Calibration of pattern tracing



Note

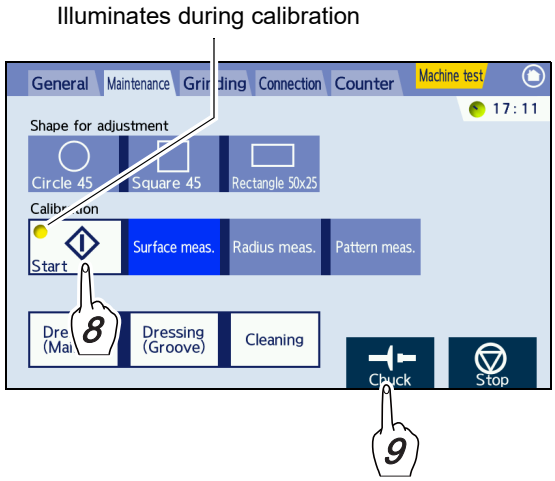
- Depending on the selected item, other items may automatically be selected at the same time. This is because additional calibration is required at the same time and it cannot be cancelled. Continue with calibration.

8 Press the “Start” button.

Calibration starts.

9 When calibration is complete, press Chuck to remove the jig while holding the jig by hand.

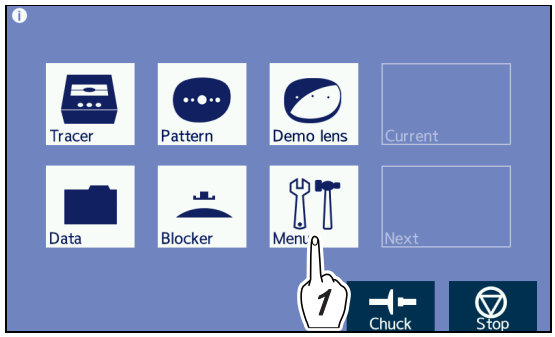
10 Press to return to the home screen.



4.8 Date and Time Setting

1 Press  on the home screen.

The menu screen appears.

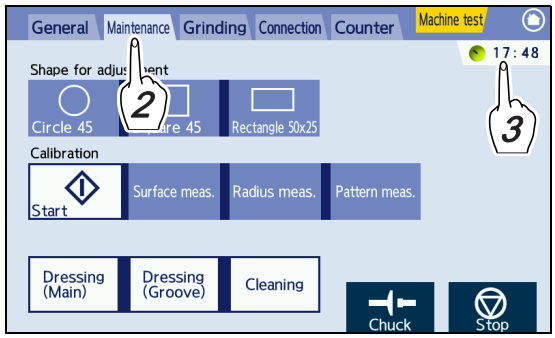


2 Press the “Maintenance” tab on the menu screen.

The maintenance screen appears.

3 Press the time indication on the maintenance screen.

The date and time setting panel appears.

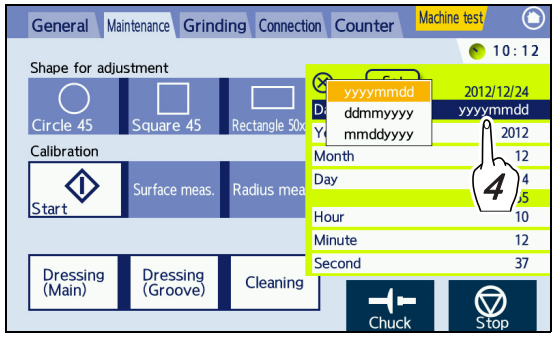


The current year, month, day, time,  , and “Set” buttons are displayed in the date and time setting panel.

4 If necessary, select the display format by pressing the date format.

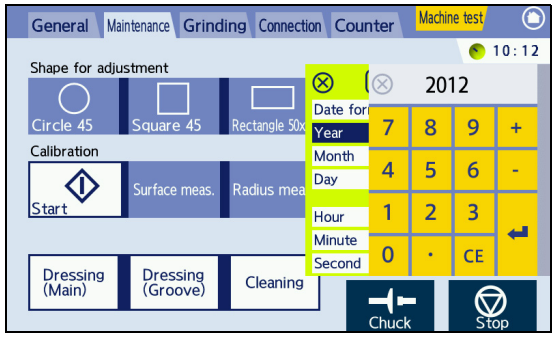
Date format

(yyyymmdd)→(Year/Month/Day)
(ddmmyyyy)→(Day/Month/Year)
(mmddyyyy)→(Month/Day/Year)



5 Press “Year”, “Month”, “Day”, and time change buttons to display the numeric keypad, enter the desired value, and then press ↵.

6 After all changes, press the “Set” button to update the time.



7 Press  to close the date and time setting panel.

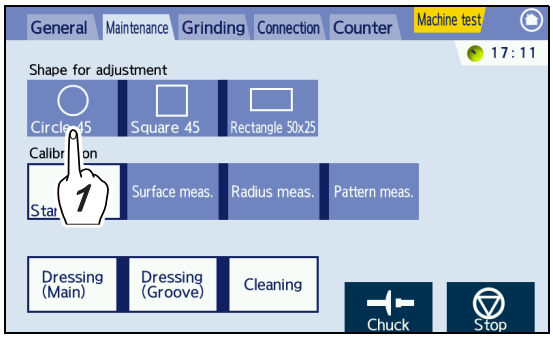
8 Press  to return to the home screen.

4.9 Size Adjustment

■ After repeated processing, the wheels wear down resulting in an increased lens finish size. When this occurs, compensate by adjusting the size parameters after size check.

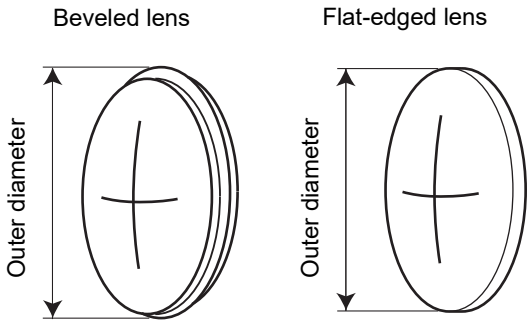
1 Load the Circle45 internal data and perform processing.

For the loading procedure of the Circle45 internal data, *"O Loading internal shape" (page 135)*.



2 Measure the outer diameter (diameter) of the processed lens and check the size.

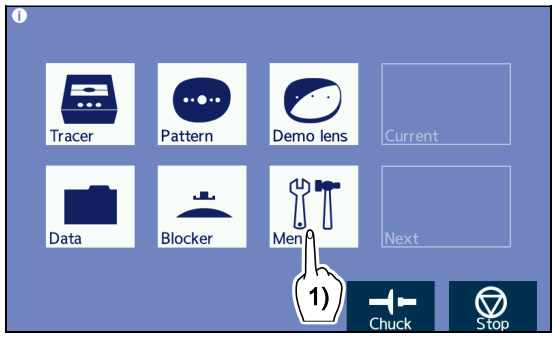
When the outer diameter is out of the range of φ45.00±0.10 mm, adjust the size parameters.



3 Adjust the master size parameter.

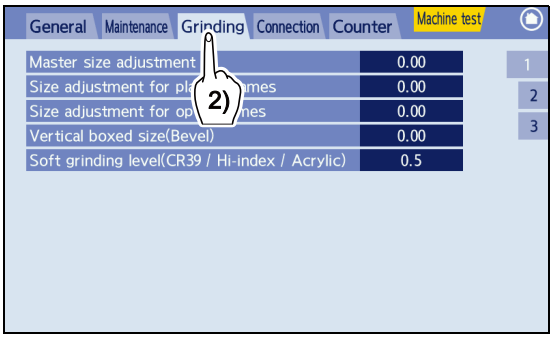
1) Press  on the home screen.

The menu screen appears.



2) Press the "Grinding" tab.

The adjustment list is displayed.



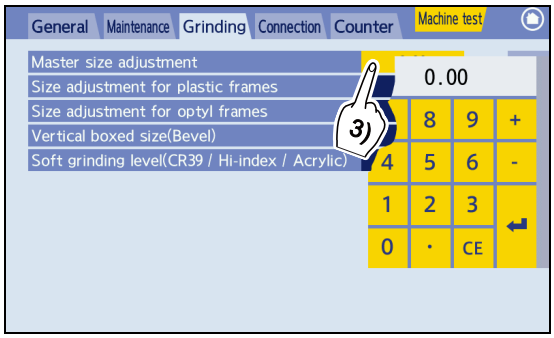
3) Press the “Master size adjustment” numeric field.

The numeric field turns orange and the numeric keypad appears.

4) Change the parameter value by the outer diameter difference from 45.00 mm.

Enter a value with the numeric keypad and press ↵.

When the outer diameter is 45.20 mm in diameter, reduce the parameter value by 0.20.



4 Press to return to the home screen.

5 Repeat Steps 1 to 4 until the outer diameter becomes within ø45.00±0.10 mm.

For size adjustment specific to frame material, change the “Size adjustment for plastic frames” or “Size adjustment for optyl frames” parameter in the same procedure.

“4.4 Grinding Settings” (page 136)

4.10 Axis Adjustment

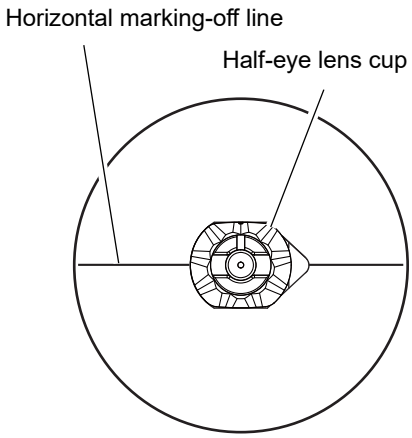
■ When the axis angle of finished lenses is shifted, follow the procedure below for axis adjustment.

1 Check the axis shift.

1) Make a horizontal marking-off line on the lens.

   Make the horizontal line along the middle of the lens using a utility knife.

2) Block the lens with the half-eye lens cup aligning the line to the horizontal direction.



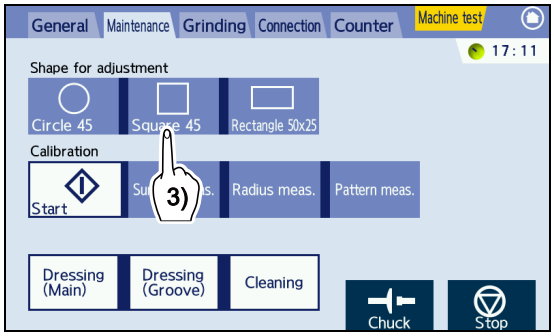
3) Load the Square45 internal data and perform flat edging.

   "O Loading internal shape" (page 135)

4) Place the processed lens on a graph paper and align the lens edge with the square.

5) Measure the angle between the horizontal line on the graph paper and the marking-off line on the lens using a protractor.

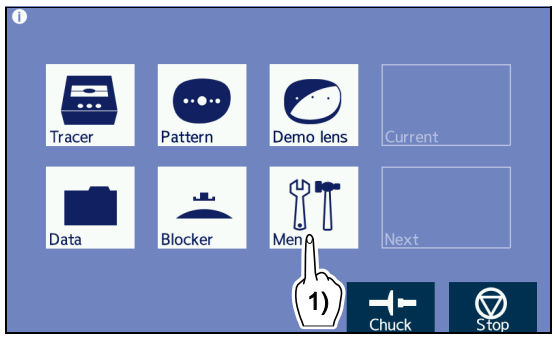
   When the angle is out of the range of ±1°, adjust the axis angle.



2 Adjust the axis parameter.

1) Press  on the home screen.

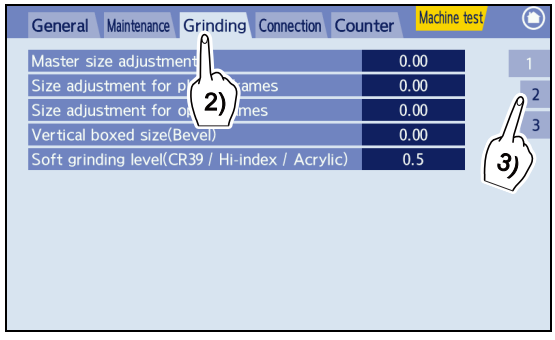
   The menu screen appears.



2) Press the "Grinding" tab.

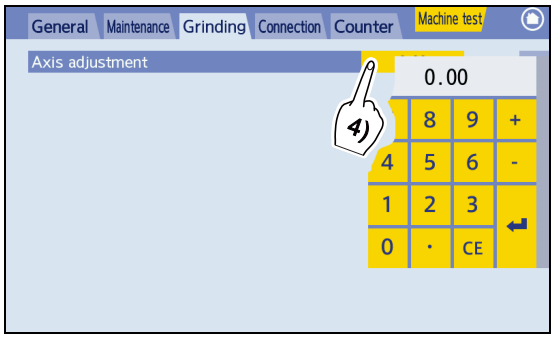
   The adjustment list is displayed.

3) Press Tab 2.



4) Press the “Axis adjustment” numeric field.

The numeric field turns orange and the numeric keypad appears.



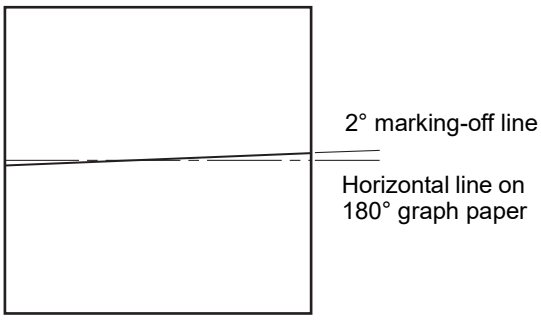
5) Change the parameter value.

Enter a value with the numeric keypad and press ↵.

Change the parameter value by the axis angle difference.

When the marking-off line is shifted to the upper right when viewed from the lens front, increase the parameter value.

Ex.— When the marking-off line is shifted by 2° to the upper right, increase the parameter value by 2.00.



3 Press  to return to the home screen.

4 Repeat Steps *1* to *3* until the axis shift becomes within ±1°.

4.11 Bevel Position Adjustment

■ The auto-processed bevel position can be adjusted toward the front or rear surface of the lens.

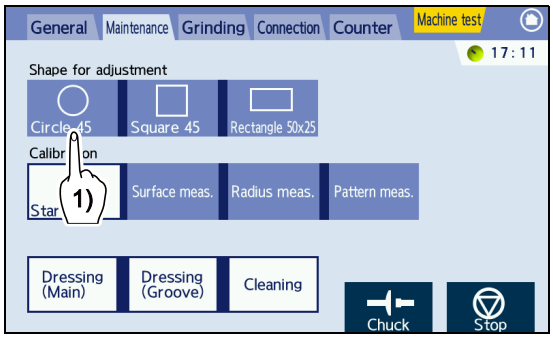
1 Check the bevel position.

1) Load the Circle45 internal data and process a lens with frequently used thickness in auto beveling mode.

“O Loading internal shape” (page 135)

2) Check the bevel position of the processed lens.

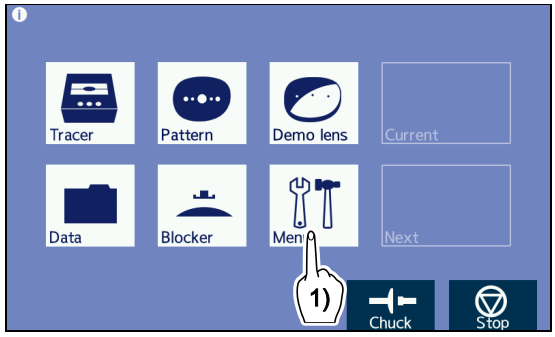
To move the bevel position forward or backward, adjust the bevel position in the following procedure.



2 Adjust the bevel position.

1) Press  on the home screen.

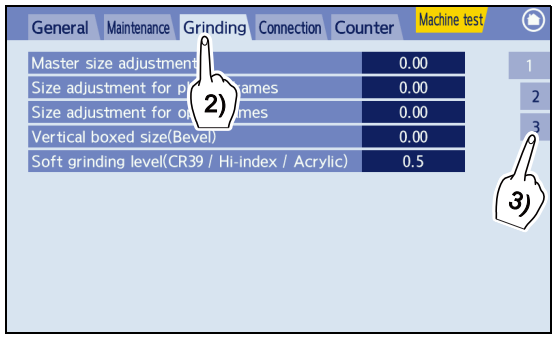
The menu screen appears.



2) Press the “Grinding” tab.

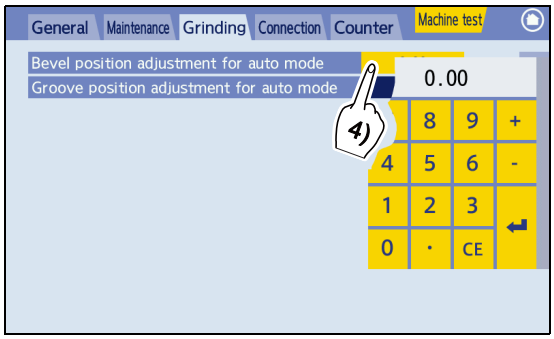
The adjustment list is displayed.

3) Press Tab 3.



4) Press the “Bevel position adjustment for auto mode” numeric field.

The numeric field turns orange and the numeric keypad appears.



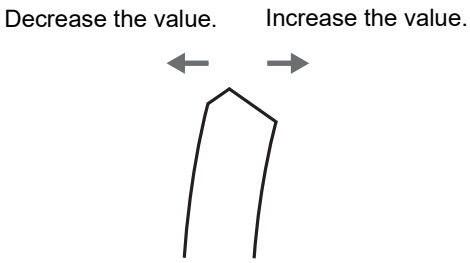
5) Change the parameter value.

Enter a value with the numeric keypad and press ↵.

Decrease the numeric value. → The bevel moves toward the front surface.

Increase the numeric value. → The bevel moves toward the rear surface.

Ex.— To shift the bevel position to the front surface by 0.5 mm, decrease the value by 0.50.



3 Press  to return to the home screen.

4 Repeat Steps *1* to *3* until the desired bevel position is obtained.

4.12 Groove Position Adjustment

■ The auto-processed groove position can be adjusted toward the front or rear surface of the lens.

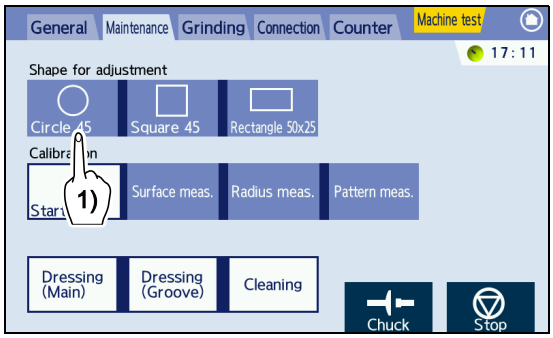
1 Check the groove position.

1) Load the Circle45 internal data and process a lens with frequently used thickness in auto grooving mode.

"O Loading internal shape" (page 135)

2) Check the groove position of the processed lens.

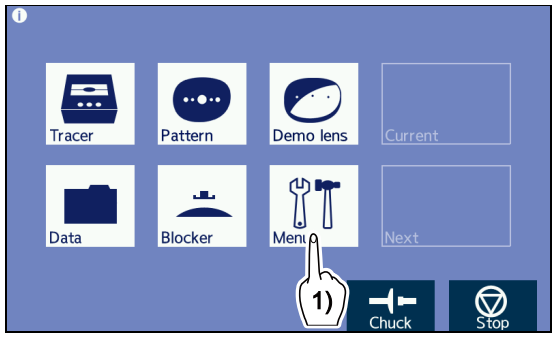
To move the groove position forward or backward, adjust the groove position in the following procedure.



2 Adjust the groove position until the groove is in the proper position.

1) Press  on the home screen.

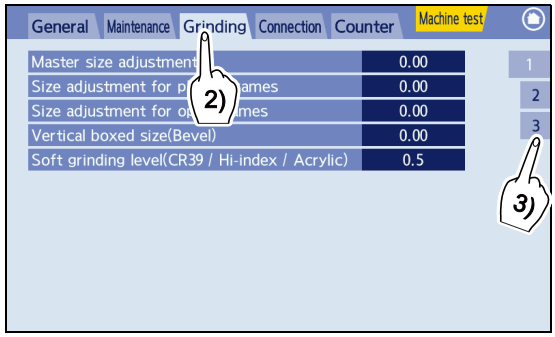
The menu screen appears.



2) Press the "Grinding" tab.

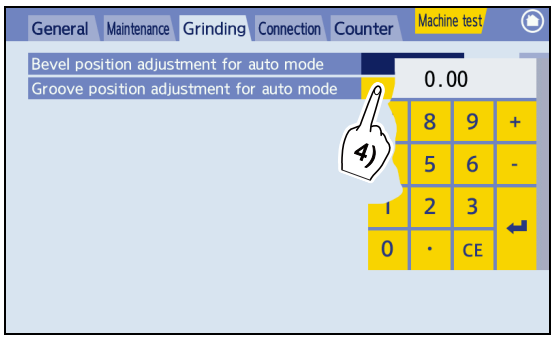
The adjustment list is displayed.

3) Press Tab 3.



4) Press the "Groove position adjustment for auto mode" numeric field.

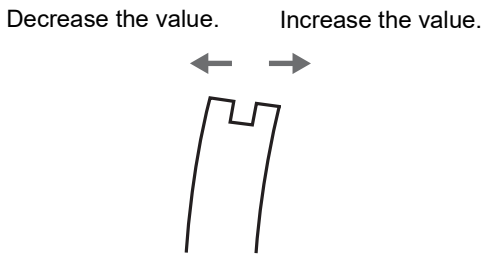
The numeric field turns orange and the numeric keypad appears.



5) Change the parameter value.

Enter a value with the numeric keypad and press ↵.
Decrease the numeric value. → The groove moves toward the front surface.
Increase the numeric value. → The groove moves toward the rear surface.

Ex.— To shift the groove position to the front surface by 0.5 mm, decrease the value by 0.50.



3 Press  to return to the home screen.

4 Repeat Steps 1 to 3 until the desired groove position is obtained.

5 MAINTENANCE

5.1 Troubleshooting

■ In the event that the instrument does not work correctly, attempt to correct the problem in accordance with the following table before contacting NIDEK or your authorized distributor.

Symptom	Remedy
The instrument does not work even though the power switch is turned on (▎).	• Confirm that the power cord is properly connected. • Confirm that voltage applied to the wall outlet is within the range specified. • Check the fuses. If any fuses are blown, replace all fuses with new ones. For fuse replacement, *"5.4 Fuse Replacement" (page 157)*.
Communication cannot be performed.	• Confirm that the RS-232C cable or LAN cable is properly connected.
A part of the displayed lens shape on the layout screen blinks after lens shape measurement.	• The lens diameter is insufficient. The blinking section indicates where the diameter is insufficient. After pressing Chuck to release the lens, replace the lens with a larger one or change the layout. (To change the layout, return to the layout screen.)
Processing does not start even though Start is pressed.	• Confirm that the processing chamber cover is closed. • The instrument is attempting to process a lens that is already processed. Switch the side of the lens to be processed.
The lens cup cannot be inserted into the lens adapter smoothly or easily detached.	• Adjust the plunger of the cup holder. For the adjustment procedure of the plunger, *"5.5 Cup Holder Adjustment" (page 158)*.
A maintenance message is displayed and the instrument stops.	• Perform the remedy according to the maintenance message. If the maintenance message is displayed again, contact NIDEK or your authorized distributor.
An error message is displayed and the instrument stops.	• An abnormality has been detected. Turn off and on the instrument. If an error message is displayed again, contact NIDEK or your authorized distributor.
The traced or processed size, axis, bevel, groove position, or such has suddenly become deviated.	• Perform readjustment after calibration. *"4.7 Calibration" (page 141)*

*** If the symptom cannot be corrected with the above remedy, contact NIDEK or your authorized distributor.**

5.2 Safety Features

■ For safe use, the instrument is provided with the following features.

● Processing chamber cover check function at the start of processing

Lens processing will not start unless the cover is closed.

⚠ WARNING

- Should the processing cover be opened during processing, the wheels will not stop their rotation immediately. Never open the processing chamber cover during lens processing.
  Before opening the processing chamber cover after processing, confirm that the wheels have come to a complete stop.

● Self-diagnosis function

This instrument is equipped with a self-diagnosis function, which monitors the instrument during operation.

If any malfunction occurs, the instrument stops automatically and an error code is displayed on the display. Please report the error code as well as the symptoms when contacting NIDEK or your authorized distributor regarding the malfunction. This will assist in accurate servicing.

The following table indicates the details of the error codes. Attempt to correct the problem according to the remedy in the table before reporting the malfunction.

○ Error code table

Code	Error indication	Details of the error	Remedy
101	Roughing not completed.	Roughing does not come to completion.	Check that the wheel for glass lenses is sufficiently dressed. Check the lifetime of the plastic roughing wheel or abnormality.
102	Finishing not completed.	Finishing does not come to completion.	Check that the wheel is sufficiently dressed.
103	Polishing not completed.	Polishing does not come to completion.	Contact NIDEK or your authorized distributor.
104	Grooving not completed.	Grooving does not come to completion.	
105	Edging end sensor error	Processing completion sensor detection voltage is abnormal.	
201	Feeler off error	The feelers become detached during lens measurement.	Check that the lens diameter is sufficient.
202	There is no lens.	No lens is detected at the start of lens measurement.	Check that the lens diameter is sufficient.
203	Front & rear measuring data error	Abnormal measurement data (front and rear surfaces intersect)	Check that the lens does not warp during lens shape measurement due to its thinnest.
204	Start & end measuring data error	Start point and end point do not match.	Contact NIDEK or your authorized distributor.

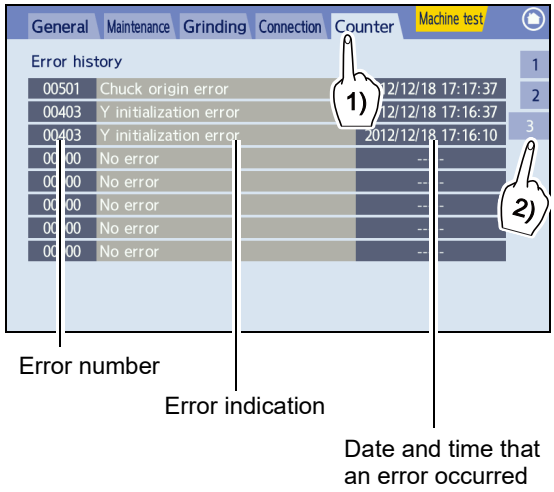
205	Feeler lift up error	The feeler is caught on a lens during measurement.	Check the cleanliness of the lens surface.
206	Exceeded the measurement limit.	The lens is too thick.	The lens is too thick to process.
208	LMU origin error	Response abnormality of LMU sensor	Turn off power and clean the feeler unit.
209	RMU origin error	Response abnormality of RMU sensor	
210	Pattern is not set.	No pattern is detected at the start of pattern measurement.	Check that a pattern is set.
401	XYRf initialization error	X, Y, and Rf axes do not initialize.	Contact NIDEK or your authorized distributor.
402	X initialization error	X axis does not initialize.	
403	Y initialization error	Y axis does not initialize.	
404	Rf initialization error	Rf axis does not initialize.	
405	Rr initialization error	Rr axis does not initialize.	
406	XY initialization error	X and Y axes do not initialize.	
407	XR initialization error	X and R axes do not initialize.	
408	YR initialization error	Y and R axes do not initialize.	
501	Chuck origin sensor	Response abnormality of origin sensor	
502	Chuck close error	Chucking is not accomplished.	
601	Main wheel does not rotate.	The wheel for the outside shape does not rotate.	
602	Groove wheel does not rotate.	The grooving wheel does not rotate.	
603	The electric current of the main wheel is abnormal.	Abnormal current flow occurred during processing.	

○ Error history display

- The error history can be checked.

1) Press the “Counter” tab in the menu screen.

2) Press Tab 3.
The error history is displayed.



5.3 Periodic Check

- It is recommended to perform a periodic check every two years to ensure continued use under normal conditions.The periodic check contains the performance check of the entire instrument and replacement of maintenance parts.
- Contact NIDEK or your authorized distributor if desired.

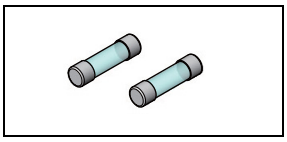
⚠ CAUTION

- Wheels are periodically inspected and replaced by authorized service personnel only.
  As malfunction or injury may occur, do not replace any parts other than fuses, stocking filter, or cooling fan filter. Do not attempt to repair or disassemble the instrument.

Periodic maintenance item	Details of maintenance
Wheels	Confirm that there is no deterioration in the processing performance. Replace a wheel if the processing surface is worn to the point that will cause problems in practical use.
Spindle unit	Apply more grease to the waterproof seal. Replace if the waterproof seal is deteriorated. Replace if abnormal sound or vibration is found.
Spindle drive belt	Replace if worn, deteriorated, or damaged.
Processing chamber	Confirm that the processing chamber has no cracks, breaks, deterioration, or problematic water leakage. Replace if necessary.
Carriage	Apply more grease to the slide part of the lens chuck shaft. Apply more grease to the Y-axis feed screw. Apply more grease to the chuck drive shaft feed screw. Replace if the chuck shaft leaf spring is deformed.
Instrument interior	Confirm that no processing waste splatters inside the instrument. Clean the interior of the instrument if this occurs.
Grooving unit	Apply more grease to the waterproof seal. Replace if the waterproof seal is deteriorated.
Feedwater and drain hoses (including feedwater hoses in the instrument)	Confirm visually and by touch that the feedwater and drain hoses have no cracks, deterioration, or clogging. Replace the hose if necessary.
Feeler	Replace if worn, cracked, or damaged.
Lens clamp	Replace if worn, deteriorated, or damaged.

- Wheels must be replaced every two years or after processing of 5,000 lenses. Contact NIDEK or your authorized distributor. However, the lens number referred to here is only a guide, so replacement at an earlier period may be needed under conditions such as successive processing of hard lenses or processing of numerous high-power minus lenses.
- In addition, if the wheels are damaged by operation mistakes such as processing glass lenses dressing with the roughing wheel for plastic lenses, the lifetime may be reduced substantially.

5.4 Fuse Replacement



- If the instrument is not started even though the power switch is turned on(|), the fuses may be blown. If any fuses are blown, replace all fuses with new ones.
- Replace all fuses at the same time.

  Even if only one fuse is blown, the other may blow soon.

  After replacing fuses, restock them.

⚠ WARNING

- Before fuse replacement, turn off the instrument and disconnect the power cord from the wall outlet.

  If fuses are replaced with the power switch turned on, 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.

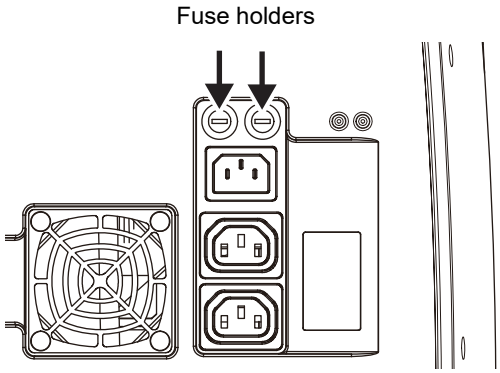
2 Disconnect the power cord from the wall outlet.

3 Disconnect the power cord from the power inlet.

4 Push the fuse holder on the rear side with a flatblade screwdriver and rotate it counter-clockwise.

- Be sure to rotate the fuse holder while pushing to remove or install the fuse holder.

  If it is rotated without pushing, the fuse holder may break.

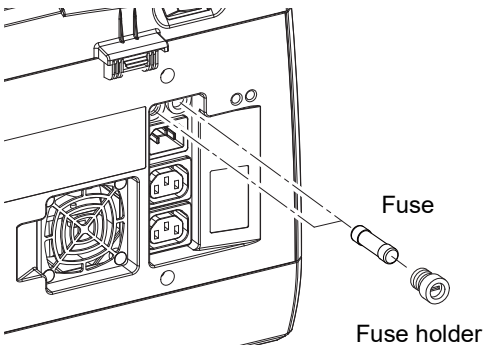


5 Pull out the fuse holder.

6 Remove the used fuses and replace them with a new one.

Fuse rating

T 12 AL 250 V	AC 100 to 120 V regions
T 8 AL 250 V	AC 230 V regions



7 Press and rotate the fuse holder with a screwdriver until it is secured in its original position.

5.5 Cup Holder Adjustment

■ The following describes the adjustment procedure for when the lens cup cannot be inserted into the cup holder smoothly or easily detached.

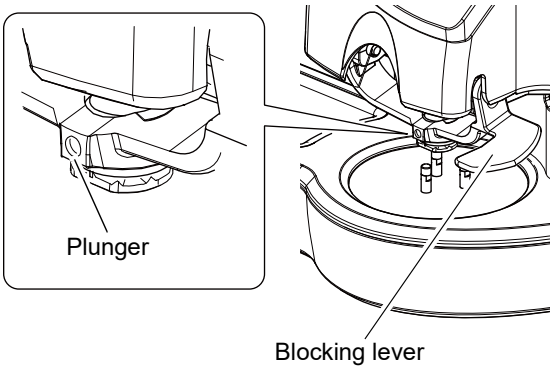
- If the lens cup wears out and cannot hold a lens, replace the lens cup with a new one without adjusting the cup holder.

1 Lower the blocking lever so that the plunger can be seen.

2 Turn the plunger with a hexagonal wrench key (2.0 mm).

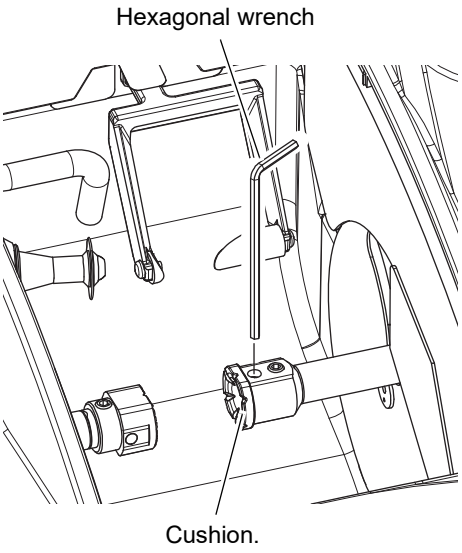
Make an adjustment so that the lens cup can be held securely and attached or detached smoothly.

Turning the plunger clockwise increases the holding force of the lens cup. Turning counterclockwise reduces it.



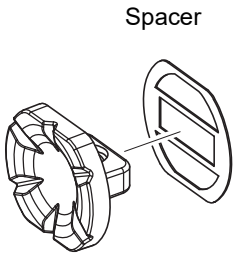
5.6 Replacing the cushion for lens clampis

1 Loosen the set screw with a hexagonal wrench (2.5 mm) to remove the cushion.



2 Remove the spacer from the cushion.

3 After fitting the shape of the new cushion to that of the spacer, attach the cushion to the lens clamp, and tighten the set screw to secure the cushion.



5.7 Wheel Dressing

■ If wheels are dull, the processing time becomes longer or the accuracy in size and polishing is degraded. Dress the wheels periodically.

⚠ WARNING

- In dressing mode, the wheels are rotating with the processing chamber cover open. Work with special care during dressing so that hands do not come in contact with the wheels.
- Wear protective glasses for wheel dressing.
  Spray containing processing waste may cause eye damage.
- Hold the dressing stick with both hands. Hold the dressing stick with a minimum of 2 or 3 mm protruding when dressing the wheel.
  Failure to do so may cause injury by hand contact with the wheel as the dressing stick wears away.
- When the dressing stick is worn to the length of 4 cm, replace it with a new one.
  It is hard to hold the shortened dressing stick resulting in finger injury or wheel damage.

⚠ CAUTION

- Protect the display from splashing water. Also, never operate the display with wet hands.
  Water seeping into the instrument may result in electric shock, malfunction, or fire.

- Be sure to select the dressing stick suited to the wheel type.
  An improper dressing stick may damage the wheel, which impairs normal lens processing.
  Glass roughing wheel→ Use the dressing stick for glass roughing wheel (orange) WA80K.
  Finishing wheel→ Use the dressing stick for finishing wheel (white) WA320K.
  Polishing wheel→ Use the dressing stick for polishing wheel (light blue) WA4000.
  Grooving wheel→ Use the dressing stick for finishing wheel (white) WA320K.
- Never dress the roughing wheel for plastic lenses and grooving wheel.
  It may damage the wheel, which impairs normal lens processing.
- Apply only the flat surface of the tip of the dressing stick to the wheel, not its corners or edges.
  The wheel may be damaged.
- Lightly apply the dressing stick to the wheel.
  The wheel may be damaged.
- Do not repeatedly start and stop wheel rotation.
  Operation may be prevented by the over-heat protection function.

Note

- When processing cannot be finished within a specified time due to a dull glass roughing wheel or finishing wheel, processing is discontinued and the “Roughing not completed” or “Finishing not completed” message is displayed. In such a case, dress the wheel.

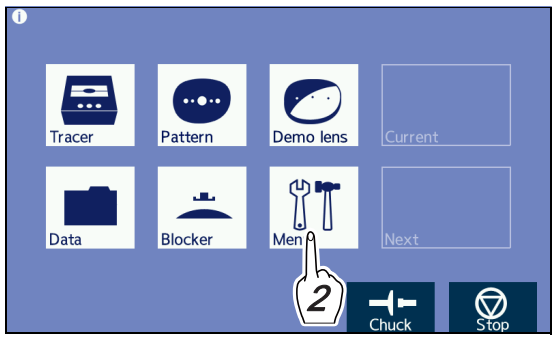
○ For glass roughing wheel, finishing wheel, and polishing wheel

- Roughing wheel for glass lenses→ Use the dressing stick for glass roughing wheel (orange) WA80K.
- Finishing wheel→ Use the dressing stick for finishing wheel (white) WA320K.
- Polishing wheel→ Use the dressing stick for polishing wheel (light blue) WA4000.

1 Soak the dressing stick in water for about 5 minutes.

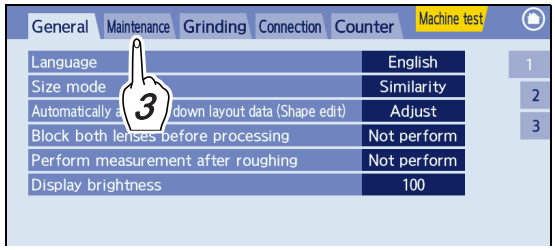
2 Press  on the home screen.

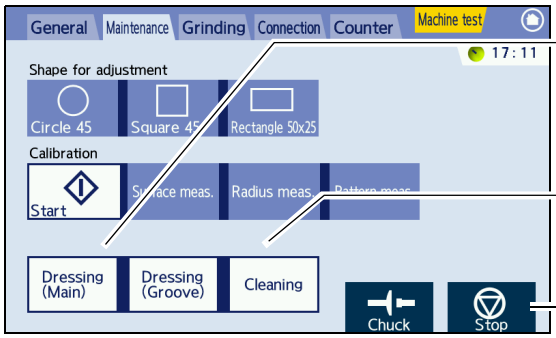
The menu screen appears.



3 Press the “Maintenance” tab.

The maintenance screen appears.





“Dressing (Main)” button: The wheels rotate. Water runs over the wheels for several seconds and pauses for about 10 seconds. The process is then repeated.

“Cleaning” button: Applies water to the wheels. The wheels do not rotate.

“Stop” button: Turns off the “Dressing (Main)” button or “Cleaning” button.

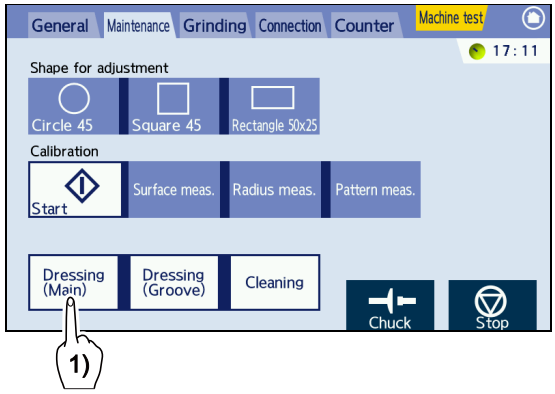
4 Dress the wheels.

1) Press the “Dressing (Main)” button to turn on the water from the cooling water nozzle.

   The wheels rotate and water comes out of the cooling water nozzle.

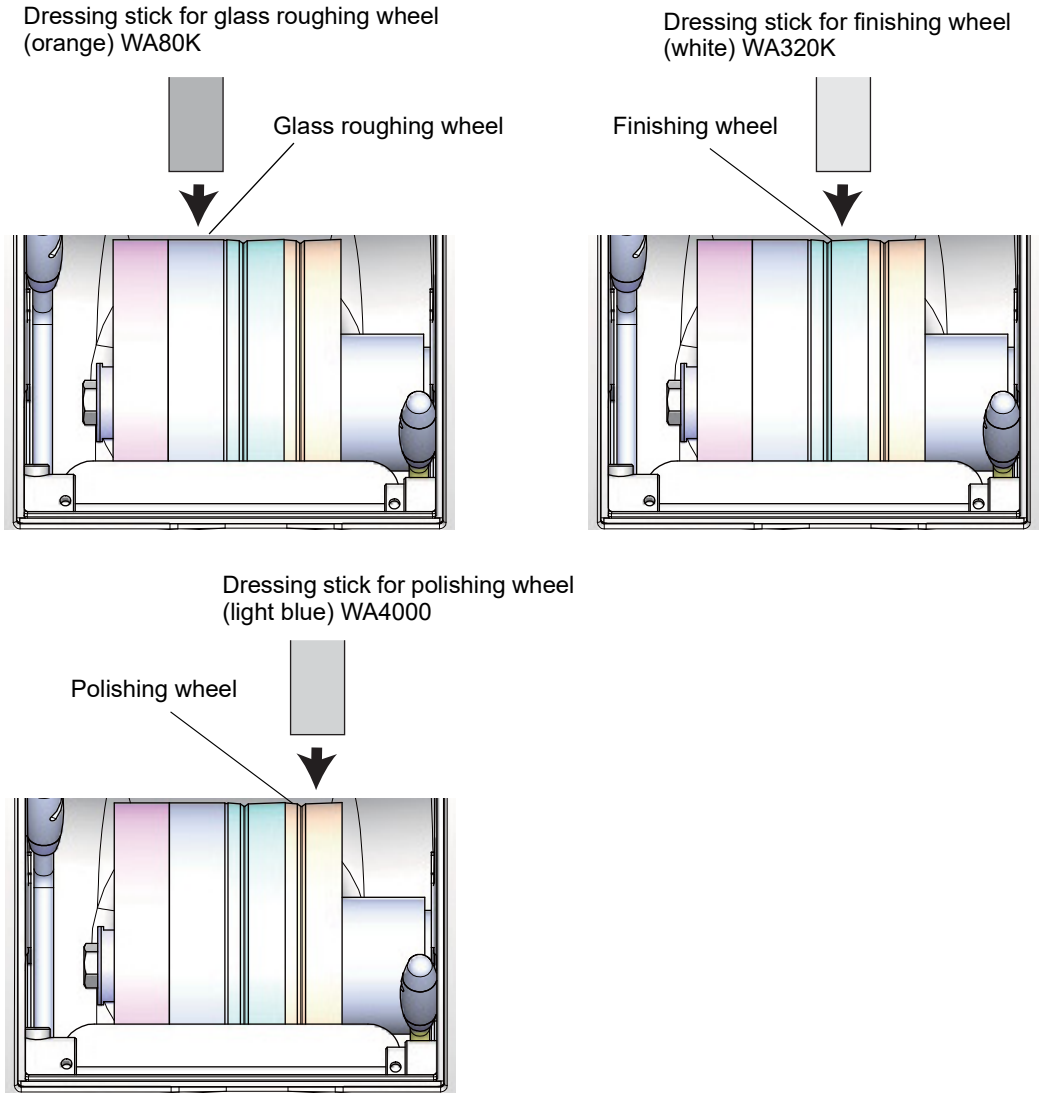
2) Wet the dressing stick well with running water.

3) After water has stopped running, lightly apply the dressing stick to the wheel.



Note

- As the polishing wheel is easily damaged, handle it carefully.
- Even though the dressing stick is applied to the wheel lightly, be sure to maintain a firm grip of the dressing stick.
- Apply only the flat surface of the dressing stick tip flush to the wheel, and not on edge or corner. If the wheel is dressed with a tilted dressing stick, an inclination may occur between the finishing wheel and polishing wheel resulting in polish unevenness.



4) When the water begins running again, release the dressing stick from the wheel and wash the wheel surface and dressing stick with the running water.

5) Repeat Steps 3) to 4) two or three times.

6) Press Stop.

The water and wheels come to a stop.

5 Press to return to the home screen.

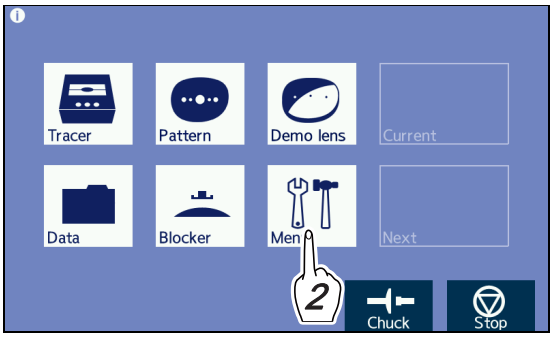
○ For grooving wheel

- Grooving wheel→ Use the dressing stick for finishing wheel (white) WA320K.

1 Soak the dressing stick in water for about 5 minutes.

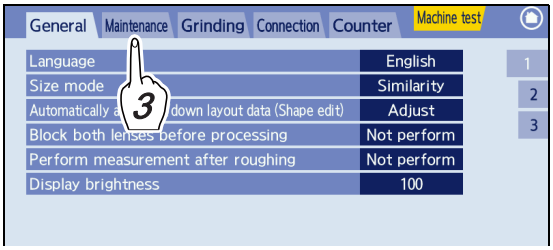
2 Press  on the home screen.

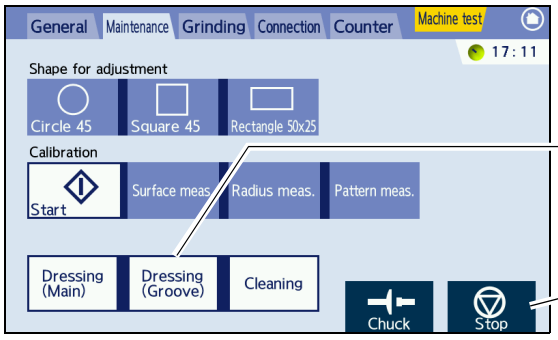
The menu screen appears.



3 Press the “Maintenance” tab.

The maintenance screen appears.





“Dressing (Groove)” button: The grooving wheel rotates at a low speed. Water runs over the wheels for several seconds and pauses for about 10 seconds. The process is then repeated.

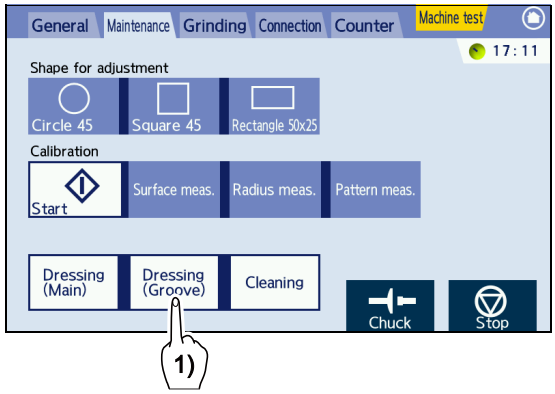
“Stop” button: Turns off the “Dressing (Groove)” button or “Cleaning” button.

4 Dress the wheel.

1) Press the “Dressing (Groove)” button to turn on the water from the cooling water nozzle.

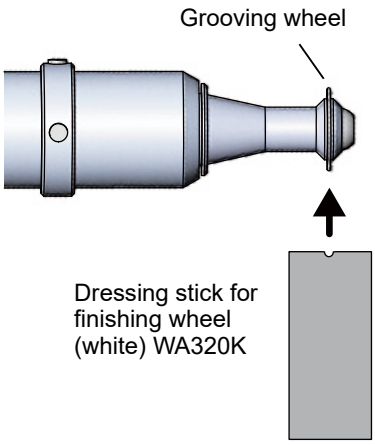
   The grooving wheel rotates at a low speed and water comes out of the cooling water nozzle.

2) Wet the dressing stick well with running water.



5

3) After water has stopped running, lightly apply the dressing stick to the wheel.



Note

- Apply the dressing stick to the wheel lightly.
  If the dressing stick is applied firmly, the grooving amount may be affected.
- Even though the dressing stick is applied to the wheel lightly, be sure to maintain a firm grip of the dressing stick.

4) When the water begins running again, release the dressing stick from the grooving wheel and wash the wheel surface and dressing stick with the running water.

5) Repeat Steps 3) to 4) two or three times.

6) Press Stop.
The water and wheels come to a stop.

5 Press to return to the home screen.

5.8 Processing Water and Filter Replacement

■ Replace the processing water and stocking filter in the tank periodically.

It is recommended to replace both for every 100 lenses processed.

Note

- Replace the processing water and stocking filter when a message urging the user to clean the pump tank or replace the filter is displayed.
- The pump tank consists of the cover, drain cover, receptacle, tank, and casters. All parts are detachable.

  A pump is attached to the cover. The side from which the pump cord extends is a heavier causing the cover to be unbalanced. Take care not to drop the cover or catch fingers when closing it.

1 Open the table and draw the tank toward you.

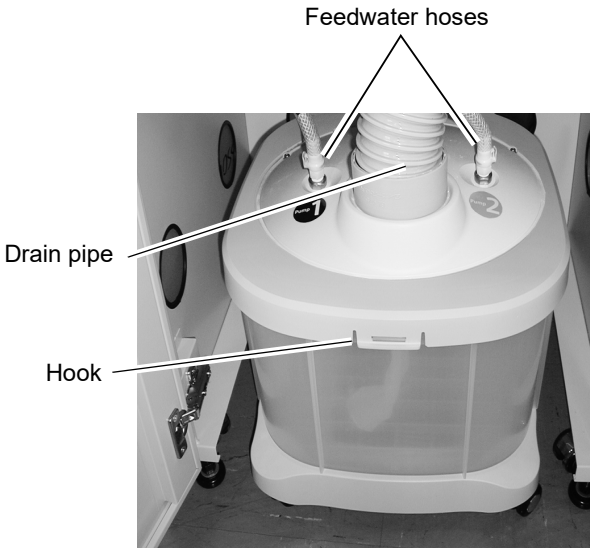
2 Press the gray button on each feedwater hose to disconnect.

3 Disconnect the drain pipe from the tank.

4 Pull the hooks on the front and rear sides of the cover to remove the cover.

5 Remove the drain cover and drop the stocking filter into the tank.

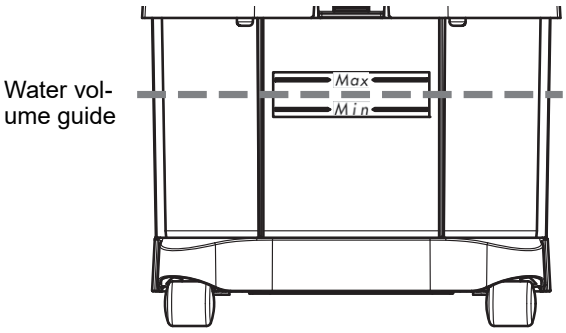
Tie off the stocking filter at the top so that processing waste does not escape from the filter before putting the filter into the tank.



6 Pour out only the supernatant fluid in the tank.

7 Dispose of the processing waste remaining in the tank as industrial waste. Dried processing waste can be disposed of as general industrial waste.

8 Wash away any bubbles or soiling on the inner tank, inner cover, receptacle, and drain cover.



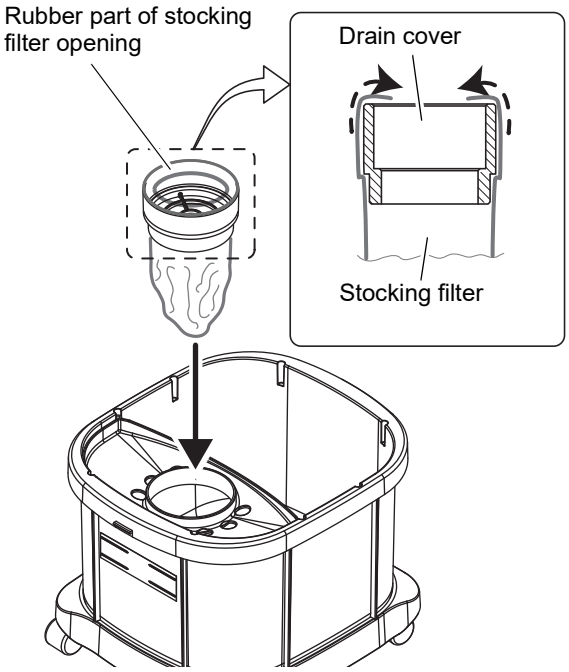
9 Fill the tank with water up to the volume guide as illustrated in the figure to the right.

- Do not put a plastic sheet in the tank.
  The pump supply aperture may be blocked and cause malfunction.
- As instrument malfunction or water spillover may result, do not allow the water level to rise over the maximum line.

10 Attach the stocking filter to the drain cover.

The stocking filter is not reusable. Use a new one.

Fold the rubber part of the stocking filter opening over the top of the drain cover towards its center.



11 Thread the stocking filter through the large hole on the receptacle and attach the drain cover in its original position.

12 Put the cover on the tank.

Press the cover until the hooks on the front and rear sides snap into place so that the cover is not left ajar.

13 Put the tank back into the table.

14 Connect the feedwater hoses and drain pipe.

Insert the feedwater hoses until a click is heard.

- There are two feedwater hoses on the bottom of the instrument. Be sure to connect the Pump 1 feedwater hose to the Pump 1 connector and connect the Pump 2 hose to the Pump 2 connector.
- There are two power cords on the cover of the pump tank. When disconnecting them from each outlet on the rear side of the instrument, connect the power cord with label “1” to the outlet for Pump 1 and connect that with label “2” to the outlet for Pump 2.

5.9 Cleaning

5.9.1 Cleaning the cover, display, or lens table

When the cover becomes dirty, clean it with a soft cloth. For stubborn stains, soak the cloth in a neutral detergent, wring well, and then wipe. Finally dry with a soft, dry cloth.

Periodically clean the display or lens table with a dry, soft cloth so that no dust or dirt remains.

⚠ CAUTION

- Never use a sponge or cloth soaked in water.
  Water seeping into the instrument may result in electric shock, malfunction, or fire.

- Never use an organic solvent such as paint thinner.
  It may ruin the surface of the instrument.

5.9.2 Cleaning the cooling fan filter

Remove the cooling fan filter on the lower rear side of the instrument periodically and vacuum up the dust. Should the filter become clogged, temperature inside the instrument will rise resulting in malfunction.

1 Turn off (○) the power switch.

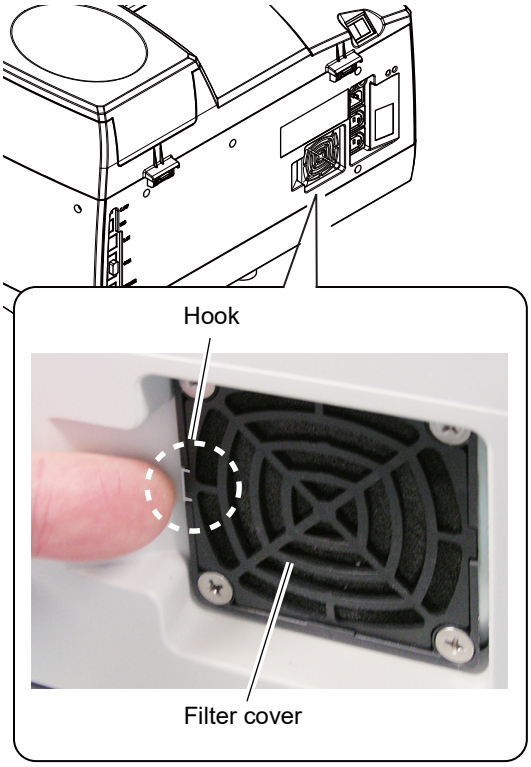
2 Remove the filter cover with the filter attached from the rear side of the instrument.

The filter cover is removed by pulling its hook forward.

3 Set a vacuum cleaner to a low setting and vacuum away any dust from the filter.

If the filter is torn, replace it with a new one.

4 Reattach the filter and filter cover.

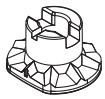
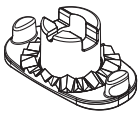
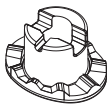


5.10 List of Consumables and Maintenance Parts

Part name	Part number	Remarks
Fuse (for AC 100 to 120 V regions)	804-02-02170	T 12 AL 250 V
Fuse (for AC 230 V regions)	804-02-02169	T 8 AL 250 V
Dressing stick for finishing wheel (white)	41002-M611	WA320K
Dressing stick for glass roughing wheel (orange)	41002-M612	WA80K
Dressing stick for polishing wheel (light blue)	40140-M610	WA4000 RH-20
Cushion for lens clamp	45301-M003	
Stocking filter	40377-M061	
Cooling fan filter	40350-M132	

○ Lens cup

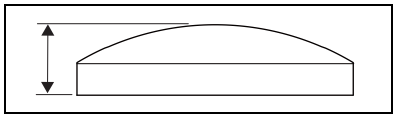
The following lens cups can be used for the LE-800.

Part name		Part number	Remarks
 	Half-eye lens cup (red)	40370-M062	For left lenses
	Half-eye lens cup (green)	40370-M063	For right lenses
	Double-coated adhesive pad for half-eye lens cup	40370-M071	For half-eye lens cup 100 units per pack
 	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
	Mini cup (red)	40370-M077	For left lenses
	Mini cup (green)	40370-M078	For right lenses
	Double-coated adhesive pad	–	Use by trimming the double-coated adhesive pad for half-eye lens cup.

6 SPECIFICATIONS

6.1 Specifications

○ Processing unit

• processing function	Beveling (auto/guide) Flat edging Grooving (auto/guide) Polishing Soft processing Grooving and polishing cannot be performed for glass lenses.	
• Processable lens	CR-39 / High index plastic / Polycarbonate / Trivex / Polyurethane / Acrylic resin / Glass * Plastic lenses with a refractive index 1.60 or higher are referred to as high index plastic lenses. * Only spectacle lenses can be processed.	
• Processing range	Periphery processing Maximum lens size ø85 mm or less (within ø100 mm) Maximum lens thickness (see the figure to the right): Minus lens: 19 mm Plus lens: 14 mm Maximum edge thickness: Beveling 11.8 mm Flat edging 10.5 mm Maximum central thickness: 11 mm * The maximum lens thickness, edge thickness, and maximum central thickness are only a guide. Processing may not be possible depending on the lens shape or layout. Minimum lens size (horizontal width x vertical width)	
• Grooving	Maximum lens diameter	Same as periphery processing
	Minimum lens diameter	Same as flat edging of periphery processing

	Flat edging	Beveling
Half-eye lens cup	φ22.0×19.0	φ23.0×20.0
Pliable cup (optional)	φ32.0×19.5	φ33.0×21.0
Mini cup (optional)	φ22.0×17.4	φ23.0×18.4

• Adjustable range	FPD	30.0 to 99.5 mm (0.01 increments)
	PD	30.0 to 99.5 mm (0.01 increments)
	1/2PD	15.0 to 49.75 mm (0.01 increments)
	Optical center height	±15.0 mm (0.1 increments)
	Size adjustment	±9.95 mm (0.01 increments)
	Bevel position	±10.0 mm (0.1 increments)
• Wheel configurations	PLB-2R	Plastic roughing wheel 100 mm in diameter 17 mm in width Glass roughing wheel 100 mm in diameter 18 mm in width Finishing wheel 100 mm in diameter 17.5 mm in width Polishing wheel 100 mm in diameter 17.5 mm in width Total 70 mm
• Lens chucking	Chucking method	Electric system
	Chuck pressure	45 kgf ±5 kgf * Can be set for plastic / high index plastic, glass, and other lenses. Pressing the “Chuck” button first lightly chucks the lens temporarily and then chucks the lens more firmly for processing.
• Feedwater system	Circulation system / Direct system	
• Sound pressure level	85 db or less at a point 1 m distant from the instrument	

○ Blocking performance

• Blocking position accuracy	±0.5 mm (The specified blocking position and cup center are in the same position.)
• Axis angle accuracy	±1.0° (parallel to the horizontal line of the screen)

○ Pattern or demo lens tracing performance

• Tracing method	Shape measurement using feeler unit
• Measurement range	1,000 points
• Measurement range	22 to 76 mm in diameter and 19 to 66 mm in height * When using an optional mini cup, 17.4 to 66 mm in height Central thickness: 4 mm or less

○ Other functions

• Layout	Optical center, frame center
• Layout entry items	FPD (DBL), PD (1/2PD), optical center height (vertical optical center, PD ▲▼, BT ▲▼)
• Retouching	Available
• Frame changing	Available

• External communication	RS-232C Ethernet USB port	One port (for connection of the barcode scanner or tracer) One port (for connection of a server) One port (for USB flash drive only)
• Control outlet	For Pump 1 For Pump 2	•Output voltage (for 100 V regions) AC 100 to 120 V (for 230 V regions) AC 230 V •Current capacity Up to 1 A •Leakage current 1.5 mA or less •Withstand voltage AC 1 kV 50/60 Hz 1 s between power terminal and protective ground * The connected cables must be double insulated.

○ Dimensions and mass

• Dimensions	543 (W) × 490 (D) × 345 (H) mm * when the optional built-in tracer unit is attached: 480 (H) mm
• Mass	33 kg or less (main body only) * when the optional built-in tracer unit is attached: 35.5 kg or less
• Power supply voltage	•AC 100 to 120 V (for 100 V regions) •AC 230 V (for 230 V regions)
• Frequency	50/60 Hz
• Power consumption	•1.0 kVA (AC 100 to 120 V) •1.3 kVA (AC 230 V)

○ Environmental conditions (during use)

• Temperature	5 to 40°C (41 to 104°F)
• Humidity	5 to 31°C: 30 to 80% 31 to 40°C (The minimum acceptable relative humidity is 30%. The maximum acceptable relative humidity is 80% for temperatures up to 31°C (87.8°F) which decreases linearly to 50% at 40°C (104°F).)
• Altitude	Up to 2,000 m
• Installation location	Interior (no harmful dust or smoke)
• Overvoltage	Category II (IEC60664-1)
• Pollution degree	2 (IEC60664-1)

○ Environmental conditions during transport and storage (packed condition)

• Temperature	-20 to 60°C (-13 to 140°F)
• Humidity	20 to 85% (non-condensing)

○ Accessories

• Standard accessories	Spare fuse (2 units), Hexagonal wrench (2.0 mm, 2.5 mm, 4.0 mm), Half-eye lens cup (green/red 5 units each), Double-coated adhesive pad for half-eye lens cup, Cushion for lens clamp (2 units), Dressing stick for glass roughing wheel, Dressing stick for finishing wheel, Dressing stick for polishing wheel, Cup remover, Pattern holder, Calibration jig, Adapter set, Power cord, OPERATOR'S MANUAL (CD), Quick Start Manual - "Read Before Use"	
• Optional accessories	Compound kit	40380-1700
	Pliable cup set	40370-8300
	Mini cup kit	45330-1100
	USB flash drive	43501-E032
	Barcode scanner	41266-E010
	Built-in tracer unit	40602-0010
	Safety beveling / grooving wheel	45330-M609
	Circulation pump and tank (for 100 to 120 V regions)	44030-0020
	Circulation pump and tank (for 230 V regions)	44030-0030

7 INDEX