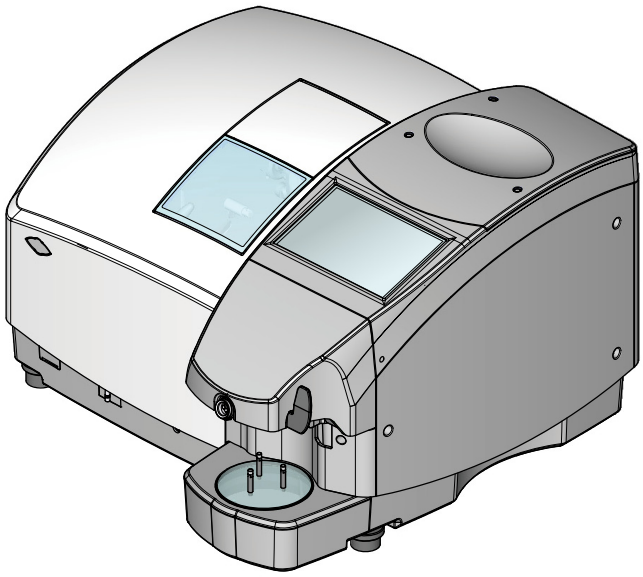
NIDEK

Patternless Edger

LEXCE

Trend / Trend8

OPERATOR'S MANUAL



Easy Search by Purpose *(page 6)*

Troubleshooting *(page 263)*

Original instructions

NIDEK CO., LTD.

NIDEK CO., LTD.
(Manufacturer) : 34-14 Maehama, Hiroishi-cho, Gamagori, Aichi 443-0038, JAPAN
Telephone: +81-533-67-6611
URL: https://www.nidek.com/

NIDEK INC.
(United States Agent) : 2040 Corporate Court, San Jose, CA 95131, U.S.A.
Telephone: +1-800-223-9044 (USA Only)
URL: https://usa.nidek.com/

NIDEK S.A.
(EU Authorized Representative) : Ecoparc, rue Benjamin Franklin, 94370 Sucy En Brie, FRANCE

2024-07-19
LE021-P902-B9
Printed in Japan

Before Use

Be sure to read the SOFTWARE LICENSE AGREEMENT (page 2) before using this product.

This operator's manual includes information such as the operating procedure, safety precautions, maintenance, and specifications.

Be sure to read this operator's manual before using this product.

Keep this manual handy for reference.

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

LE021-P902-B9

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.

Indications in this manual

For this instrument, various system configurations and models can be used. The operation mode is selectable between Wizard and Professional. The conditions and rules used in this manual are as follows.

- The descriptions of sections or items with the Trend8 indication apply only to the Trend8 model. The descriptions of sections or items with other indication or no indication apply to both the Trend and Trend8 models.
- The operations are explained using the DB model equipped with the tracer (optional).

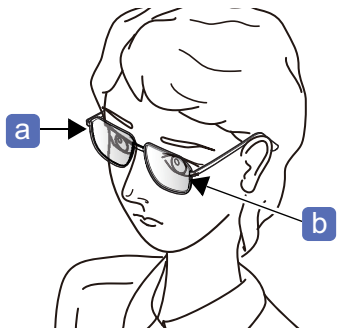
  "2.1 (Instrument) Outline" (page 25)
- The operations are mainly explained in Wizard mode.
- Details on descriptions of the tracer and such

Description	Details
Tracer	Built-in tracer (optional)
External tracer	Tracer such as the LT-980 connected by RS-232C cable
Blocker	Built-in blocker (DB and B models only)
External blocker	CE-9, ICE-1, and ICE-1500 blockers
Shape imager	Scanning function (DB, DI, B, and I models)

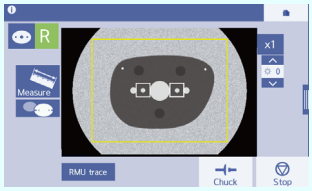
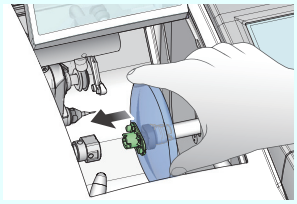
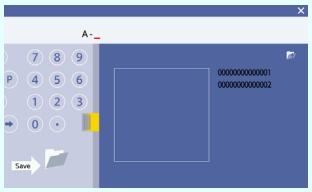
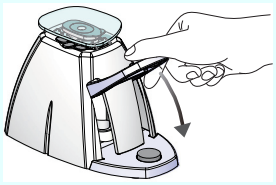
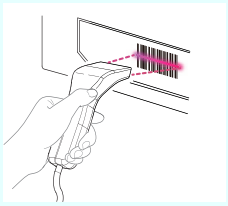
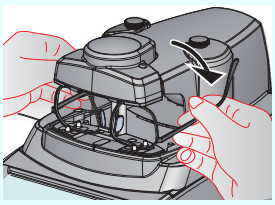
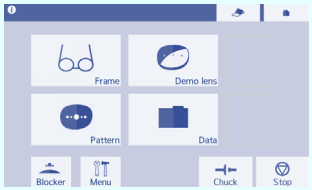
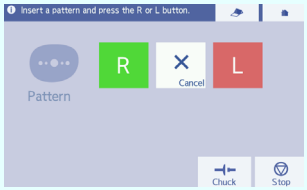
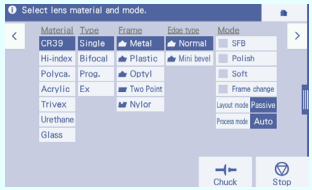
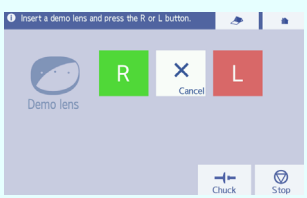
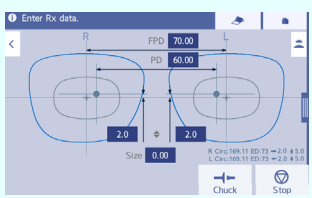
- As an example, the abbreviated description of "→ Home screen" that follows "Press  " indicates "the Home screen is displayed".
- Definition of right (R) and left (L)

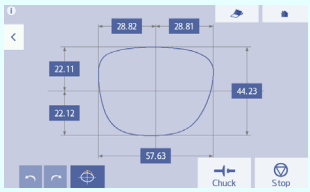
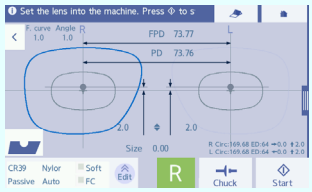
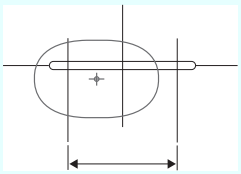
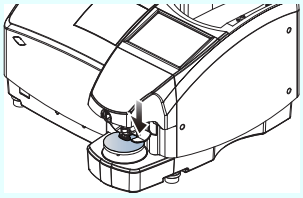
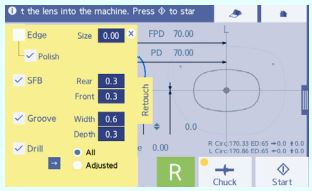
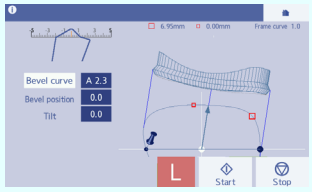
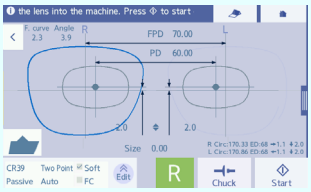
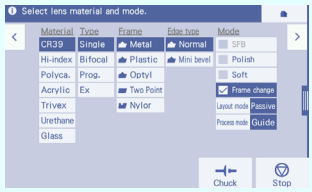
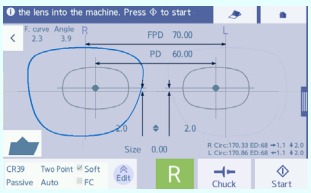
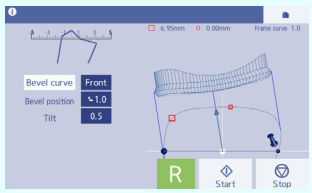
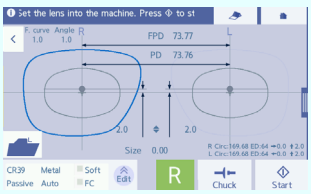
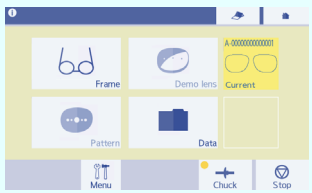
The right and left indication of the glasses or lenses in this operator's manual are as viewed by the person wearing the glasses as shown in the figure to the right.

In the figure to the right, the right lens (R) a is on the right and the left lens (L) b is on the left as viewed by the person wearing the glasses.



Easy Search by Purpose

<table>
<tr>
<td> 
</td>
<td>“3.1 Startup and Shut-down” (page 57)</td>
<td> 
</td>
<td>“3.9 Scanning (Shape imager)” (page 96)</td>
</tr>
<tr>
<td> 
</td>
<td>“3.2 Loading, Saving, Receiving, and Sending Shape Data” (page 62)</td>
<td>  </td>
<td>“3.10 Setting and Removing Lenses” (page 103)</td>
</tr>
<tr>
<td> 
</td>
<td>“3.3 Managing Shape Data” (page 69)</td>
<td>  </td>
<td>“3.11 Removing Lens Cups” (page 105)</td>
</tr>
<tr>
<td>  </td>
<td>“3.4 Loading, Saving, Receiving, and Sending with Barcode Scanners” (page 75)</td>
<td colspan="2">“4 WIZARD MODE” (page 109)</td>
</tr>
<tr>
<td>  </td>
<td>“3.6 Handling Tracer” (page 81)
“3.7 Tracing Frames” (page 87)</td>
<td> 
</td>
<td>“4.2 Loading Shape Data” (page 113)</td>
</tr>
<tr>
<td> 
</td>
<td>“3.8.1 To trace patterns” (page 92)</td>
<td> 
</td>
<td>“4.3.2 To specify processing conditions” (page 117)</td>
</tr>
<tr>
<td> 
</td>
<td>“3.8.2 To trace demo lenses” (page 94)</td>
<td> 
</td>
<td>“4.3.3 To input layouts according to lens types” (page 122)</td>
</tr>
</table>

	*“4.4 Changing the Shape” (page 132)*		*“4.15 Flat Edging” (page 171)* *“4.16 Grooving” (page 172)* *“4.17 Processing (Groove) EX Lenses” (page 181)*
	*“4.5 Inputing WD and EP” (page 134)*		*“4.18 Drilling” (page 183)*
	*“4.6 Blocking” (page 136)*		*“4.19 Checking and Retouching Lens Sizes” (page 193)*
	*“4.7 Blocking Lenses with CE-9” (page 146)*		*“4.20 Processing Opposite Lenses” (page 197)*
	*“4.9 Beveling” (page 153)* *“4.10 Mini Beveling” (page 161)* *“4.14 Processing (Bevel) EX Lenses” (page 169)*		*“4.21.1 To change frames” (page 198)*
	Trend8 *“4.11 High Base Curve Beveling for Trend8” (page 162)* *“4.12 Custom Beveling for Trend8” (page 165)*		*“4.21.2 To perform tilt processing” (page 199)*
	Trend8 *“4.13 Step Beveling for Trend8” (page 166)*		*“4.22 Editing Next Shape during Processing” (page 203)*

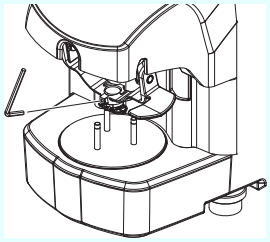
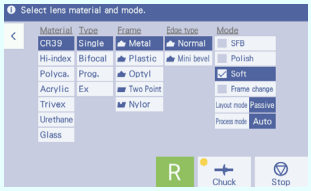
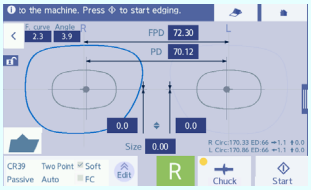
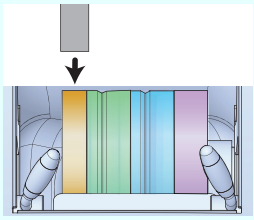
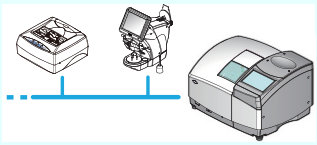
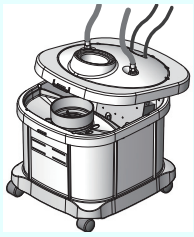
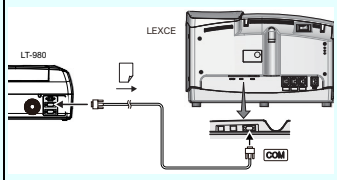
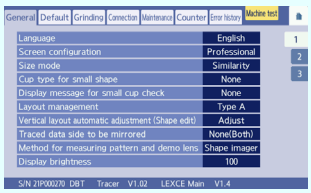
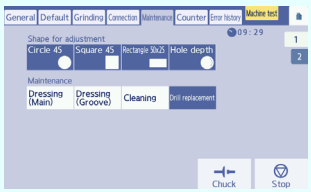
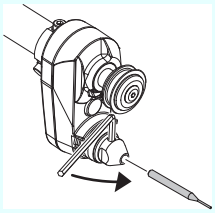
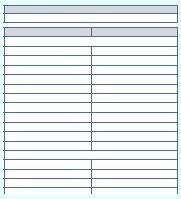
<table>
<tr><td colspan="2">“5 PROFESSIONAL MODE” (page 205)</td><td rowspan="2">  </td><td rowspan="2">“6.4.8 To adjust cup holders” (page 261)</td></tr>
<tr><td>  </td><td>“5.3 Editing Shape Data” (page 212)</td></tr>
<tr><td>  </td><td>“5.4 Processing” (page 215)
“5.5 Editing Next Shape during Processing” (page 217)</td><td>  </td><td>“7.5 Dressing of Wheels” (page 271)</td></tr>
<tr><td>  </td><td>“5.6 The Blocker/Lex System” (page 219)
“5.8 The Mini Lab System” (page 224)</td><td>  </td><td>“7.6 Exchanging Water in the Pump Tank and Filter” (page 277)</td></tr>
<tr><td colspan="2">“6 PARAMETER SETTING AND ADJUSTMENT” (page 227)</td><td rowspan="2">  </td><td rowspan="2">“8.1 Instrument Connection” (page 287)</td></tr>
<tr><td>  </td><td>“6.1 Operation on the Menu Screen” (page 227)</td></tr>
<tr><td>  </td><td>“6.3 Calibration” (page 251)
“6.4 Adjustment” (page 253)</td><td>  </td><td>“7 MAINTENANCE” (page 263)
“7.1 Troubleshooting” (page 263)</td></tr>
<tr><td>  </td><td>“7.4 Drill Replacement” (page 269)</td><td>  </td><td>“8.3 Checklist” (page 295)</td></tr>
</table>

Table of Contents

1 SAFETY PRECAUTIONS

1.1 Introduction

⚠ Before use of this instrument, be sure to read this manual.
The operating procedures and cautions for safety must be thoroughly understood prior to use of the instrument. Keep this manual handy for reference.

About signal words

" ⚠ WARNING" indicates a potentially hazardous situation which, if not avoided, may result in death or serious injury. Warnings for safety must be strictly followed at all times.

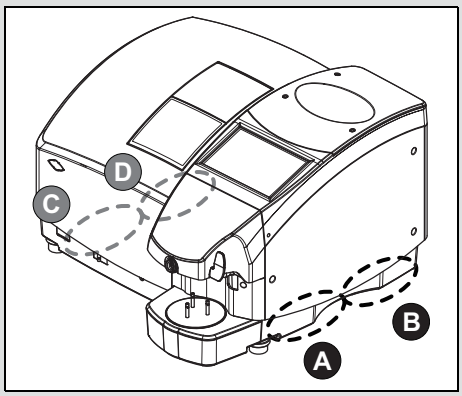
" ⚠ CAUTION" indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or property damage accident. Cautions for safety must be strictly followed at all times.

1.2 Usage Precautions

Before use

⚠ WARNING

- Use a hand cart when moving the instrument. At least two persons are necessary to lift it.
  Otherwise the instrument may be dropped, resulting in injury or stumbling.
- To lift the instrument, be sure to hold it by the bottom parts, Ⓐ Ⓑ and Ⓒ Ⓓ, on both sides.
  Lifting the instrument by holding the cover may cause the instrument to fall, resulting in injury or malfunction.
- Be careful not to get fingers caught when setting the instrument down.
  Otherwise fingers may get caught between the table and instrument, resulting in injury.



- Do not modify the instrument. Never touch the interior of the instrument in any manner other than the procedures specified.
  Otherwise, electric shock, injury, or malfunction may result.

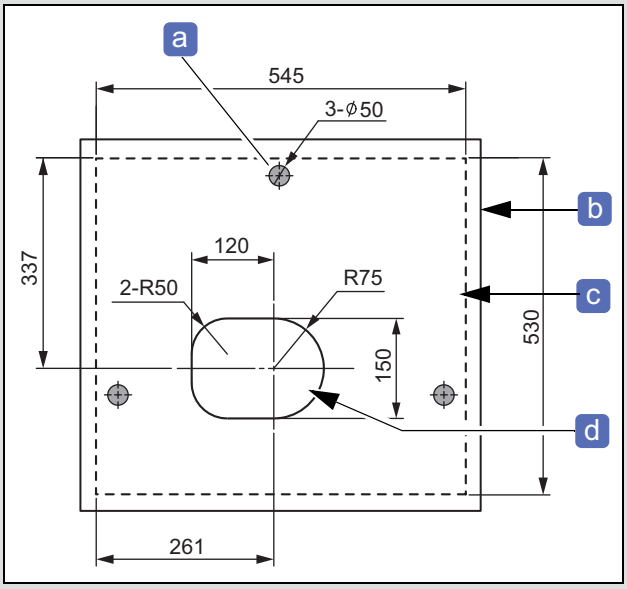
⚠ CAUTION

- Do not use this instrument for other than its intended purpose. NIDEK is not responsible for accidents or malfunctions caused by misuse.
  For the intended purpose of this instrument, see *"2.1 (Instrument) Outline" (page 25)*.
- Operate the instrument under the specified conditions.
  " Environmental conditions (during use)" (page 300)
- Install the instrument in a location with an adequate operating area as shown in *" Operating area and maintenance work area (unit: mm)" (page 20)*.
- For the installation location and use environment for the instrument, satisfy the following conditions. Failure to do so may result in malfunction, electric shock, or fire.
  - a location not exposed to moisture
  - a stable and level location free from vibration or shock
  - a location not exposed to air-conditioning directly
  - a location where the cooling fan on the left side of the instrument is not blocked and there is a clearance of 10 cm or more in the left side of the instrument
- When handling the power supply or electrical components, satisfy the conditions described below. Failure to do so may result in malfunction, electric shock, or fire.
  - Use a power outlet that meets the power specification requirements.
  - Be sure to connect the power plug to an power outlet equipped with a grounding terminal;
  - Fully insert the power plug into the power outlet;
  - Install the instrument in an area where the power plug is easily disconnected from the power outlet without any tools;
  - Do not crush or pinch the power cord with heavy objects;

⚠ CAUTION

- Do not use a multi tap or extension cord for power supplying;
- Be sure to use the provided power cord; Also do not connect the provided power cord to any other instrument.
- Before connecting cables to the instrument, turn off the power switch and disconnect the power plug from the power outlet;
- Do not turn on the power switch with a frame for glasses (hereafter referred to as “frame”) set on the tracer.

- Do not put any object on the processing chamber door.
  An object placed on the door may fall into the processing chamber when the door is opened, resulting in malfunction.
- Protect the display from splashing water. Also, do not operate the display or buttons with wet hands.
  Water seeping into the instrument may result in electric shock, malfunction, or fire.
- When a pump other than that of the circular pump tank (optional) is used, it must run on a maximum electric current of 1 A or less including inrush current.
  If the electric current exceeds 1 A, the instrument may be damaged.
- When a pump other than that of the circular pump tank (optional) is used, keep the water pressure 30 kPa or less.
  If the water pressure exceeds 30 kPa, water leakage may occur resulting in instrument damage.
- 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, bubbles or instrument malfunction.
- If the water in the pump tank spills and the floor becomes wet, wipe it off with a clean dry cloth.
  A slippery wet floor may cause injury.
- Set the instrument on a table of which area is larger (50 mm or more) than the outer dimensions of the instrument in the figure to the right (unit: mm).
- A table height of approximately 650 to 700 mm is necessary to allow space for the pump tank unit to be installed under the table. Additionally, the table must be sturdy enough to bear the weight of the instrument (40 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.



It is necessary to provide openings in the table top for the pipes and cords.

a Positions of the instrument rubber feet (three positions)

b Outline of the table

c Outline dimensions of the instrument

d The hole for the drain, cooling water, and cleaning water pipe

During use

⚠ WARNING

- Only personnel authorized by NIDEK are allowed to remove the cover or set screws. Do not disassemble, repair, or modify the instrument.
  Electric shock, injury, or malfunction may result.
- Before processing, be sure to visually check that the wheels or drill is not broken or cracked. If abnormality is found in the wheels, immediately stop the instrument and contact NIDEK or your authorized distributor.
  If chipped or cracked wheels or drill is used, they may break or shatter, resulting in injury.
- When setting a lens or the lens clamp, do not touch the drill.
  The drill has a sharp edge. Touching the drill may result in injury.
- Do not use flammable sprays around the instrument.
  If any flammable gas stays inside the instrument, sparks from switching the internal motor commutator or the power switch, or static electricity may cause fire or explosion.

⚠ CAUTION

- Every time before using the instrument, perform pre-use check.
  "3.1.1 To perform pre-use check" (page 57)
- In the event of smoke or strange odors from the instrument, immediately turn off the instrument and disconnect the power plug from the power outlet. Once it is sure that the smoke has stopped, contact NIDEK or your authorized distributor.
  Use of the instrument under such abnormal conditions may cause fire or electric shock. If fire occurs, extinguish it with a dry chemical (ABC) extinguisher.
- Immediately replace the power cord with new one if its internal wires are exposed, power is intermittent when the cord is moved, or the cord and/or plug are too hot to touch.
  Electric shock or fire may result.
- Be careful not to get fingers caught when chucking a lens.
  Injury may result.
- Do not open the processing chamber door during processing.
  Water containing processing waste may splash causing eye injury.
- When using the instrument for extended periods of time, wear hearing protection such as earplugs.
  Processing noise may impair the ears.
- The processed lens may have sharp edge. If necessary, wear gloves to handle it.
  The lens edge may cause finger injury.
- Safety bevel the front and rear edges of a glass lens after processing.
  Failure to do so may result in injury due to burrs.
- For handling the tracer, follow the conditions below. Failure to do so may result in injury or instrument malfunction.
  - When setting a frame on the tracer, do not pinch your fingers on the rim clips or the upper and lower sliders.
  - Do not touch or apply excessive pressure on the stylus during tracing.
  - Do not operate the tracer with no frame set.
  - Do not turn off the power switch of the instrument during tracing.

After use

⚠ CAUTION

- After using the instrument, perform after-use check.
  "3.1.3 To shut down" (page 61)
- When connecting or disconnecting the power plug from the power outlet, make sure that the power switch is off. Also, hold the power plug by the head when removing it from the power outlet.
  Connecting or disconnecting the power plug in the power status may result in instrument malfunction.
- If the instrument is not to be used for a long time, disconnect the power cord from the power outlet.
- When changing the installation location of the instrument, consult NIDEK or your authorized distributor.
  Tracing cannot be performed normally unless the instrument is installed horizontally.
- Do not store the instrument in an area that is exposed to rain or moisture, or that contains poisonous gas or liquids.
- When transporting the instrument, use the specified packaging material.
  Excessive vibration or impact to the instrument may cause malfunction.
  Keep the packaging material to be used for transportation.
- Maintain the surrounding temperature and humidity at the following ranges during transport and storage of the instrument.
  " Environmental conditions (during transport and storage)" (page 300)

Maintenance

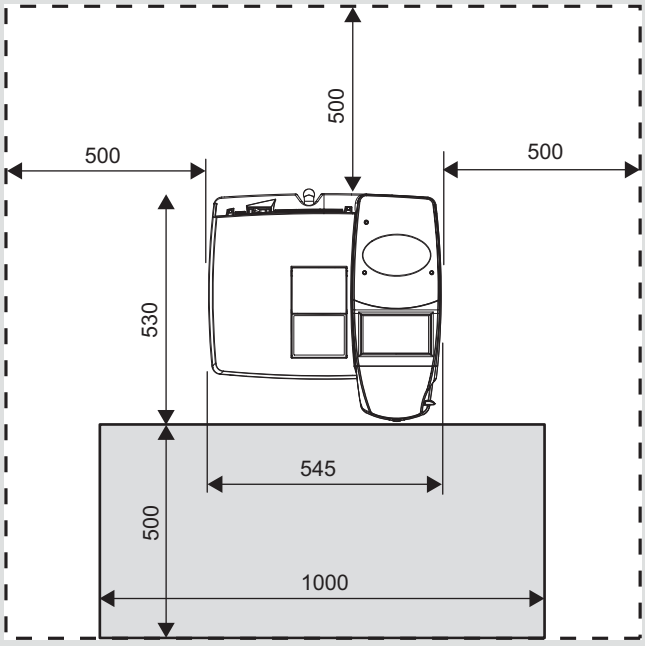
⚠ WARNING

- To replace the wheels or safety beveling or grooving wheels, ask NIDEK or your authorized distributor.
  Replacing those wheels by someone other than personnel authorized by NIDEK may result in injury or malfunction.
- During dressing, the wheel rotates while the processing chamber door is open. Follow the precautions below. Failure to do so may result in injury or malfunction.
  - Never touch the wheel while it is rotating.
  - If necessary, wear a protective mask and glasses.
  - When dressing the wheel, hold the dressing stick with both hands with a minimum of 2 or 3 mm protruding.
  - When the dressing stick is worn to the length of 4 cm, replace it with a new one.
- To replace the drill, observe the following precautions. Failure to do to may result in injury or burns.
  - Use the drill specified by NIDEK.
  - Before replacing the drill, enter Drill replacement mode, turn off the instrument, then disconnect the power plug from the power outlet.
  - Immediately after drilling, wait approximately for 1 minute or more, then replace the drill with gloves on because it is at a high temperature.

⚠ CAUTION

- It is recommended to have periodic inspection on the instrument every two years.
  Do not repair or disassemble the instrument. Do not replace parts other than the cup holder, lens adapter, drill, cooling fan filter, water in the pump tank, or stocking filter.
  Failure to do so may result in malfunction or injury.
- Occasionally clean the metal parts of the power plug with a dry cloth.
  If dust settles between the metal parts, short circuit may occur, resulting in fire.
- When cleaning the instrument, observe the following items. Failure to do so may result in poor processing accuracy or malfunction.
  - Wear protective masks to avoid inhaling processing waste.
  - It is recommended to clean the instrument for every 100 lenses processed.
  - If left for several days, processing waste becomes settled and hard to be removed. Clean the instrument at the end of that day processing has been performed.
- When the instrument is moved while installed on the table, remove the pump tank and other components from the table.
  Failure to do so may cause the components under the table to topple over, resulting in injury or malfunction.
- When performing maintenance, secure a sufficient maintenance space.
  Maintenance in an insufficient space may result in accident or injury.

Operating area and maintenance work area (unit: mm)



* As the maintenance work area, a space approximately 750 mm above the table surface on which the instrument is placed is required.

Disposal

⚠ CAUTION

- When disposing of packaging materials, waste and water generated during lens processing, or any other waste, dispose of or recycle them in accordance with the laws and local ordinances of your country. It is recommended to entrust the disposal to a designated industrial waste disposal contractor.

  Inappropriate disposal may be subject to punishment or contaminate the environment.

Other cautions

- When connecting the cable to the interface connector, confirm the orientation of the cable connector and connect it securely.
- Never touch the display with any object other than fingers although the instrument employs a touch screen type.

  Touching the display with a hard or sharp object such as a ballpoint pen may scratch it.
- There may be a few defective (black dot) or constantly-lit (red, blue, or green) pixels on the display. This does not represent a failure of the display since this is caused by manufacture limitations of liquid crystal displays.
- Be sure to select the correct lens material for the material of the lens to be 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 in the following operations. In this case, after interrupting the tracing or processing, press 

and turn off and on the power switch with nothing chucked.
- Turn off the power switch before connecting/disconnecting the USB flash drive.
- Do not use organic solvents such as paint thinner to clean the exterior of the instrument.

  This could damage the surface of the instrument.
- The stocking filter is disposable. Do not reuse it.
- Use only the specified stocking filter.

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

Safety function

❖ For safe use, this instrument is equipped with the following functions.

Self-diagnostic function

This instrument is equipped with a self-diagnostic function that monitors the instrument during operation.
If any malfunction occurs, the instrument stops automatically and an error code is displayed on the screen.
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.

“8.3 Checklist” (page 295)

1.3 Labels and Symbols

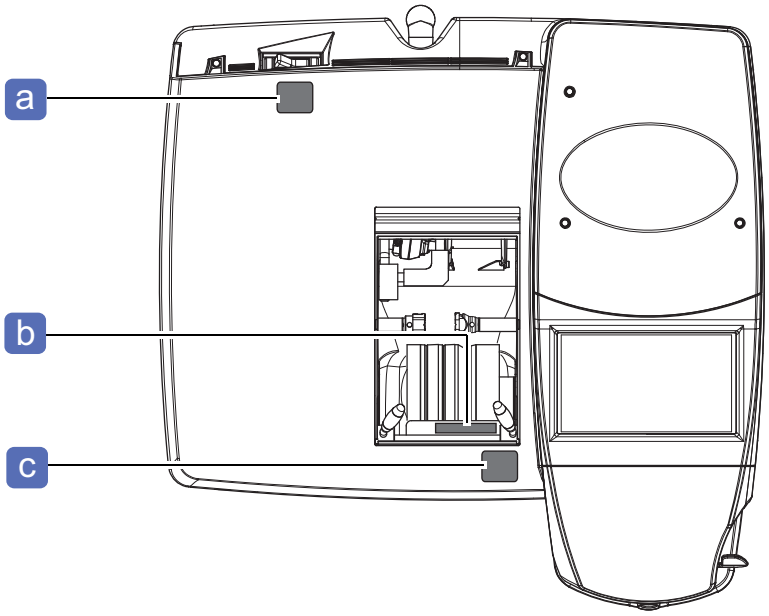
To call attention to operators, labels and symbols are provided for the instrument.

If labels become illegible as the labels are peeled off label or the characters on it are faded, 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.
	Indicates that dangerous voltage may be present. Provided on the identification label.
	Indicates that caution must be taken. Indicates that caution must be taken to avoid fingers getting caught by the lens chuck shaft.
	Indicates the state of the power switch. When the part where this symbol is displayed is pressed down, power is not supplied to the instrument.
	Indicates the state of the power switch. When the part where this symbol is displayed is pressed down, power is supplied to the instrument.
	Indicates smooth stepless adjustment.
	Indicates that the instrument must be supplied only with alternating current. Provided on the identification label.
	Indicates the year of manufacture. Provided on the identification label.
	Indicates a manufacturer. Provided on the identification label.
	Indicates that this product shall be disposed of in a separate collection of electrical and electronic equipment in EU. Provided on the identification label.

◆ Labels and symbols on instrument

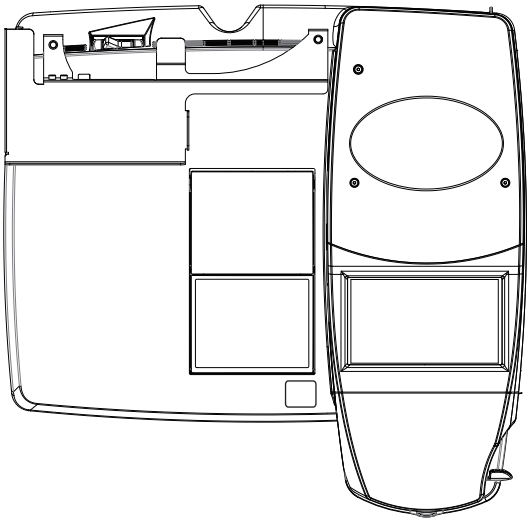
(Top view)



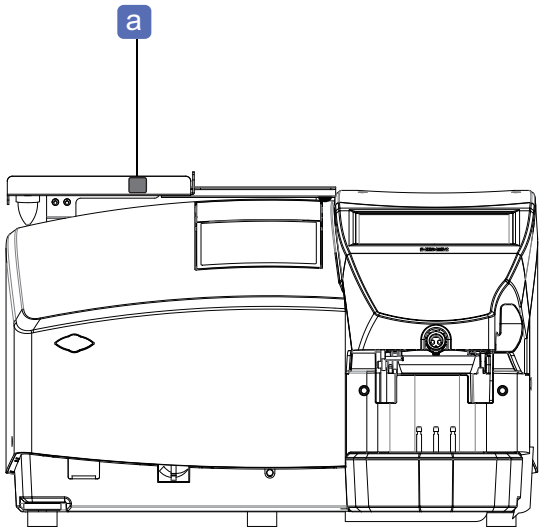
Indication	Label and symbol	Related section
a		*“ Before use” (page 16)*
b		*“ During use” (page 18)* *“7.5 Dressing of Wheels” (page 271)*
c		*“ During use” (page 18)* *“3.10.1 To set lenses” (page 103)*

◆ When tray holder (optional) is attached

(Top view)



(Front view)



Indication	Label and symbol	Related section
a		• *" Before use" (page 16)* • Operator's manual provided with tray holder (optional)

2 INTRODUCTION

2.1 (Instrument) Outline

■ NIDEK Patternless Edger LEXCE is an edger for eyeglass lenses that performs shape editing, blocking, periphery processing, and drilling based on data from the tracer, scanning, or server computer.

■ This instrument is provided with the following two operation modes.

- Wizard mode: This mode is recommended for operators who are not familiar with the operations.
- Professional mode: This mode is recommended for operators who are accustomed to the operation.

● Model list of this instrument

LEXCE Trend

Model name	Safety beveling Grooving	Drilling	Scanning	Blocking
DB	○	○	○	○
DI	○	○	○	×
D	○	○	×	×
B	○	×	○	○
I	○	×	○	×
N	○	×	×	×

LEXCE Trend8

Model name	Safety beveling Grooving	Drilling	Scanning	Blocking	Custom / high base curve beveling Step beveling
DB	○	○	○	○	○
DI	○	○	○	×	○
D	○	○	×	×	○
B	○	×	○	○	○
I	○	×	○	×	○
N	○	×	×	×	○

Tracer is available as an option. It can be installed on all models.

● Processable lens types

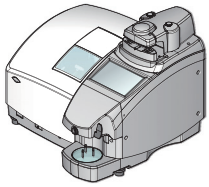
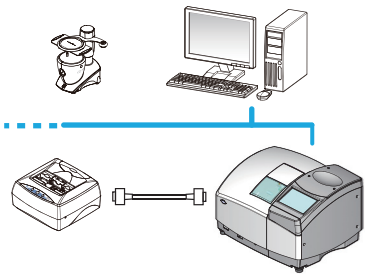
Lens type						
Plastic lens (CR-39)	Hi-index*a	Polycarbon-ate	Acrylic	Trivex	Poly urethane	Glass

*a. Plastic lens with a refractive index of 1.60 or higher

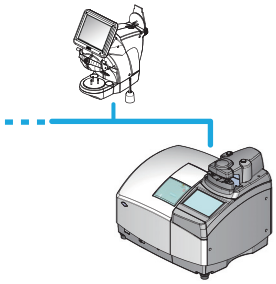
◆ System configuration

The following system configurations are examples with this instrument.

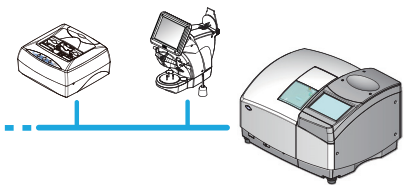
● Configuration example of standard system

Configuration-1	Details
	• LEXCE • Tracer (optional) • Blocker
Configuration-2	**Details**
	• LEXCE • External tracer • Blocker (CE-9) • Server computer

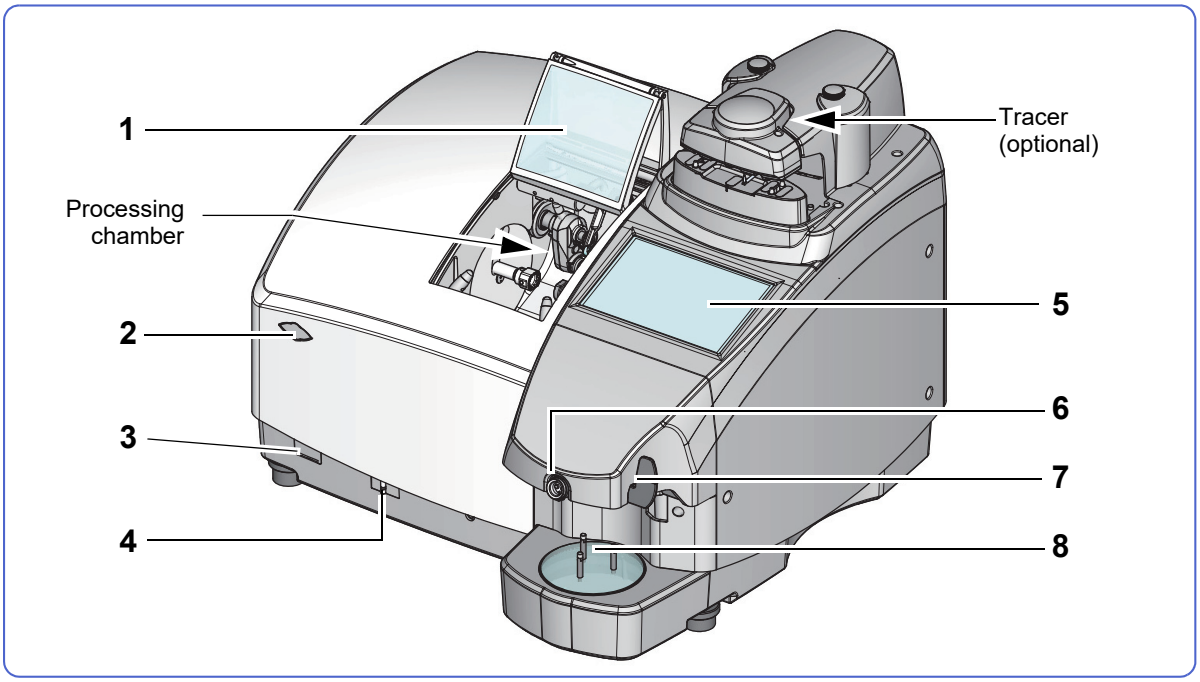
● Blocker/Lex system configuration example

Composition	Details
	• LEXCE • Tracer (optional) • External blocker *“5.6 The Blocker/Lex System” (page 219)*

● Configuration example of Mini Lab system

Composition	Details
	• LEXCE • Server computer • External blocker • External tracer *“5.8 The Mini Lab System” (page 224)*

2.2 Configurations and Functions



1 Processing chamber door

This door closes automatically when processing starts and opens automatically when the processing is complete.

2 Window for built-in 2D barcode scanner (optional)

3 USB port

A USB flash drive is inserted into here to back up, restore, or add shape data.

4 Cooling water control knob

This knob is used to control the amount of cooling water for the wheels.

5 Display

Operation, settings, and such are performed. This instrument employs a touch screen type.

6 Cup holder

A lens cup is attached to this holder for blocking.

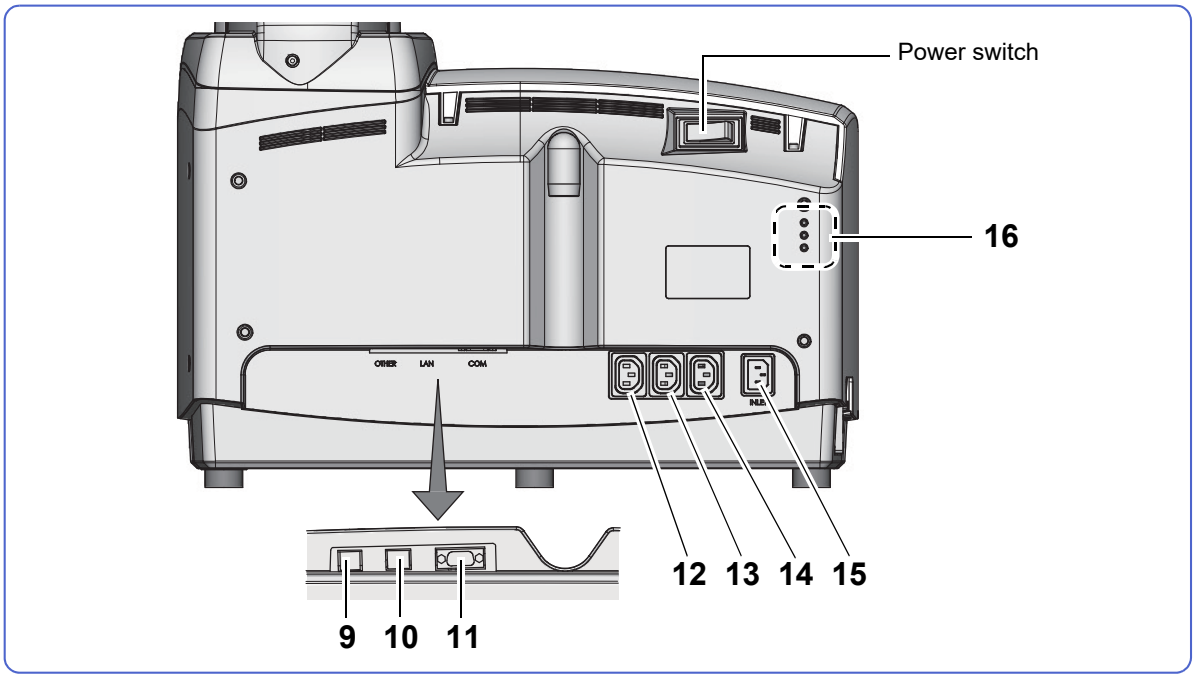
"4.6 Blocking" (page 136)

7 Blocking lever

By lowering this lever, a lens is blocked.

8 Lens stage

A lens is placed on this stage for blocking.



9 Expansion port

10 LAN port (LAN)

The Ethernet LAN cable[*1] is inserted into here.

"7.1 Troubleshooting" (page 263)

11 RS-232C port (COM)

The tracer or barcode scanner is connected to this port.

12 Outlet for optional accessories

Connect a deodorizer or centrifugal separation filtration unit to this outlet.

13 Outlet for Pump 2 (for cleaning water)

The power cord of Pump 2 (for cleaning water) is connected to this outlet.

"♦ Connection diagram for power cord" (page 282)

14 Outlet for Pump 1 (for cooling water)

The power cord of Pump 1 (for cooling water) is connected to this outlet.

15 Power inlet

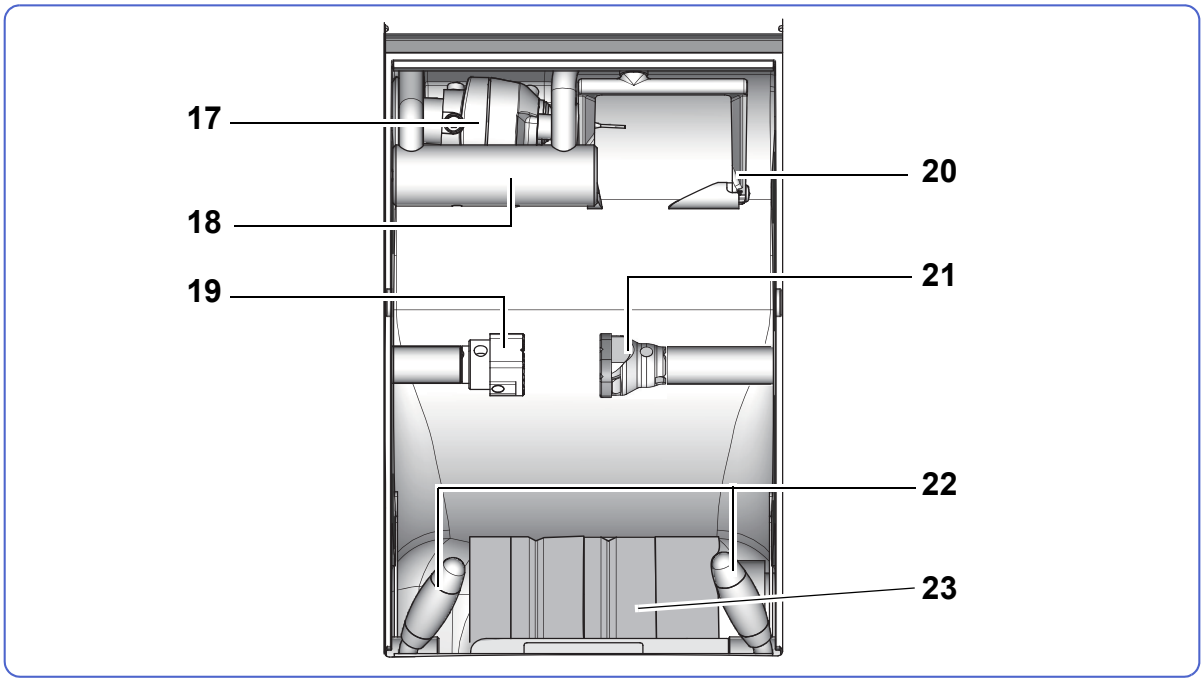
The power cord is connected to this inlet.

16 Breaker buttons of pump tank

Service personnel use these buttons for maintenance. Do not use them.

*1. Ethernet: This is a standard of wired LAN. This instrument is communicated by 10 BASE-T or 100 BASE-TX.

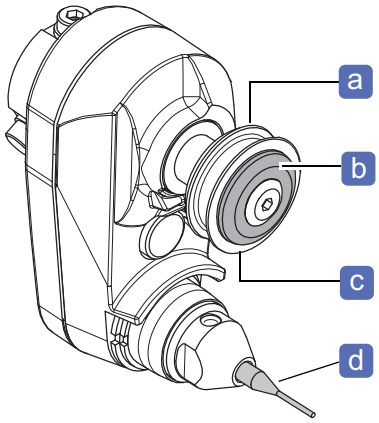
◆ Processing chamber



17 Sub spindle unit

This unit is used for safety beveling, grooving, and drilling.

- a Safety beveling wheel for rear edge
- b Safety beveling wheel for front edge
- c Grooving wheel
- d Drill



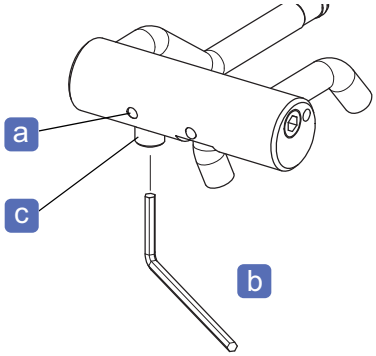
18 Cleaning water unit

This unit is used to cool the drill, safety beveling wheel, and grooving wheel. Adhesion of processing waste is suppressed by this unit.

To adjust the amount of water, loosen the set screw a with a flathead screwdriver, then rotate the needle c to the right or left by using a hexagonal wrench b (2.0 mm).

When adjustment is completed, tighten the set screws.

Only when the water amount is inappropriate, adjust it.



19 Lens adapter

A lens with a lens cup is attached to here.

20 Feeler unit

This unit measures demo lens and lens outline, surface, and pattern.

21 Lens clamp

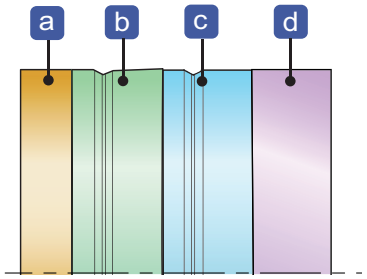
This clamp secures a lens.

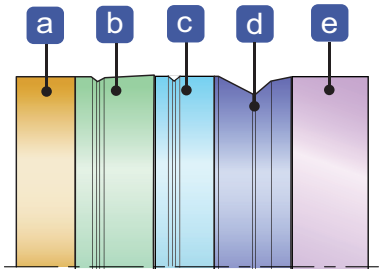
22 Cooling water unit

This unit cools the wheels. Adhesion of processing waste is suppressed by this unit.

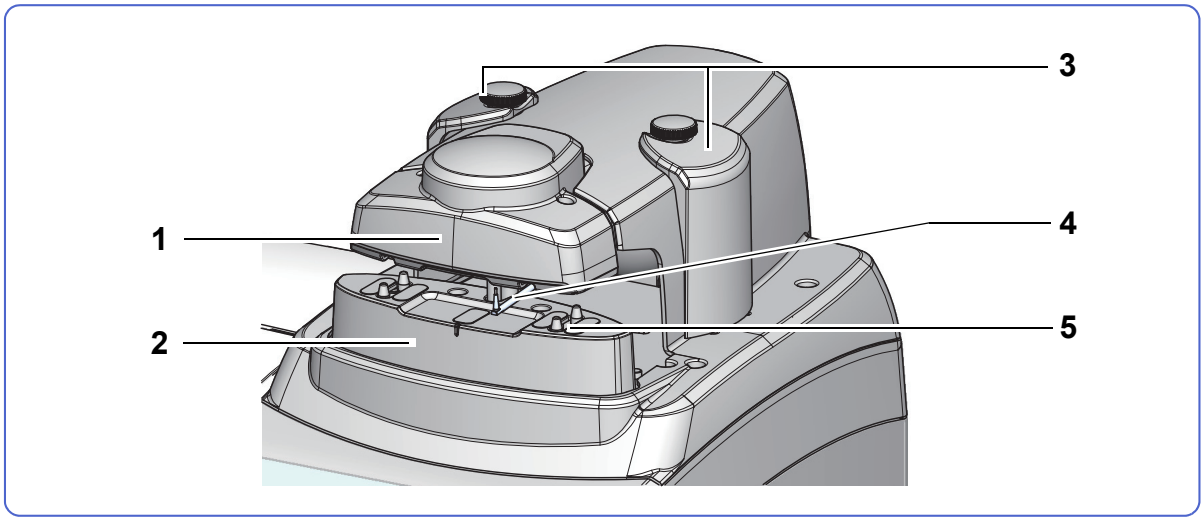
"6.4.9 To adjust cooling water for wheels" (page 262)

23 Wheels

Trend (PLB-2R)	Composition
a : Roughing wheel for glass lenses b : Finishing wheel c : Polishing wheel d : Roughing wheel for plastic lenses	

Trend8 (PLB-2R8)	Composition
a : Roughing wheel for glass lenses b : Finishing wheel c : Polishing wheel d : High base curve finishing wheel e : Roughing wheel for plastic lenses	

◆ Tracer (optional)



1 Upper slider

A frame is held by the upper and lower sliders.

2 Lower slider

3 Frame holder

It is an adjustment part for improving the measurement accuracy by getting the width of a frame closer to the width of adult's face.

To measure a frame for children, remove the frame holder.

"3.7 Tracing Frames" (page 87)

4 Stylus

This part reads frame shape.

5 Rim clip

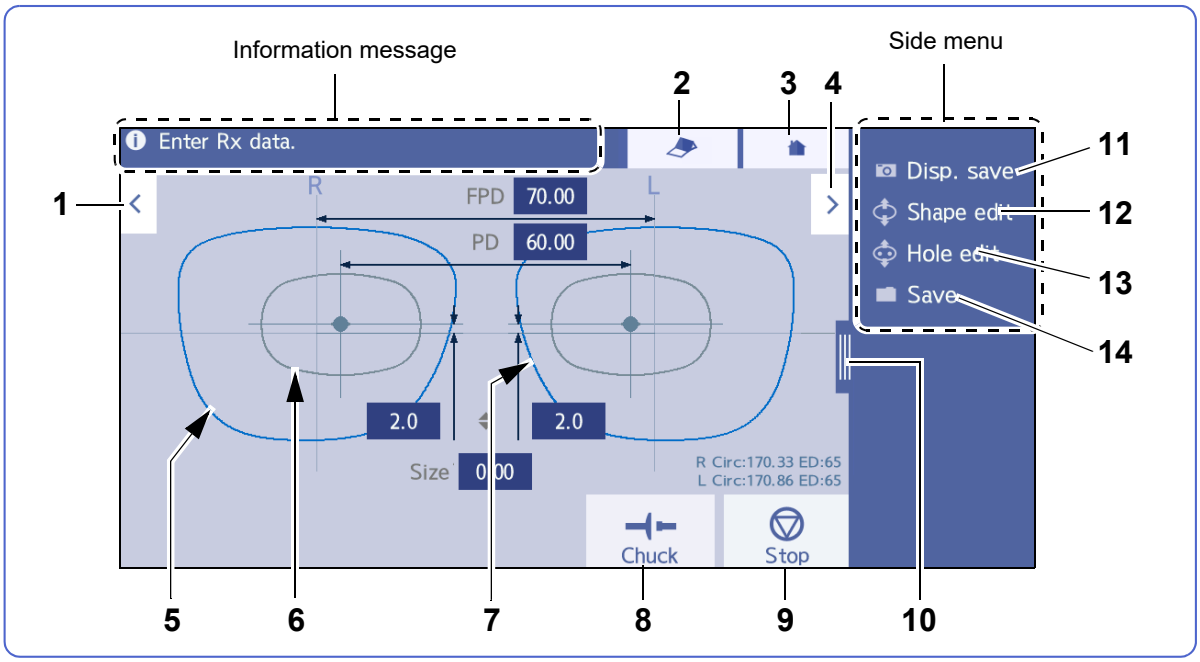
This part holds and secures the rim of a frame. Rim clips are equipped at upper and lower positions on both the right and left.

2.3 Screen Configurations

This section describes the names and functions of each screen in Wizard mode. For Professional mode, see *"5 PROFESSIONAL MODE" (page 205)*.

2.3.1 Buttons and functions common to each screen

The buttons and functions common to each screen are described.



1 **Back button**

→ Previous screen

2 **Door button**

This button opens and closes the processing chamber door.

3 **Home button**

→ Home screen

→ Menu screen (in Mini Lab mode)

4 **Next button**

→ Next screen

5 **Lens shape display of right side (R)**

6 **Shape image of lens cup set by parameters**

7 **Lens shape display of left side (L)**

8 **[Chuck] button**

This button secures or releases a lens. When a lens is held, the yellow circle on the top left of this button lights up.

9 Start **[Start] /** Stop **[Stop] button**

Pressing Start starts lens processing. When processing starts, this button toggles to Stop. Pressing this button again stops the processing.

10 **Side menu tab**

Pressing this tab displays the side menu hidden to the right of the screen. Pressing this tab again hides the side menu.

◆ Side menu

11 Disp. save **[Disp. save] button**

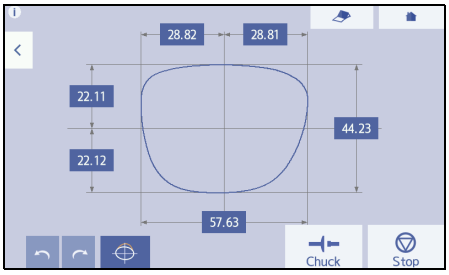
Saves the currently displayed screen settings as the initial settings.

"4.8 Initial Screen Customize Functions" (page 151)

12 Shape edit **[Shape edit] button**

→ Shape editor screen

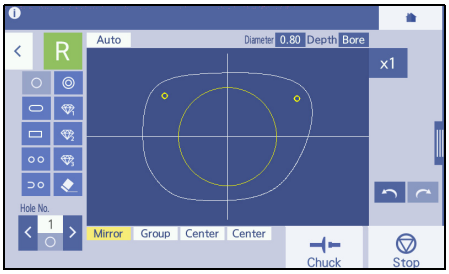
"4.4 Changing the Shape" (page 132)



13 Hole edit **[Hole edit] button**

→ Hole editor screen

"4.18 Drilling" (page 183)

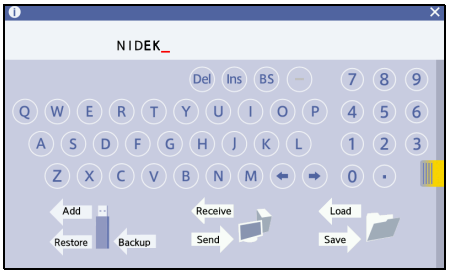


14 Save **[Save] button**

→ Data management screen

"3.2 Loading, Saving, Receiving, and Sending Shape Data" (page 62)

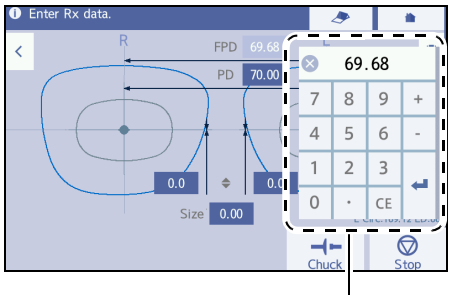
"3.2.4 To receive data from the server computer" (page 67)



15 **Numeric keypad**

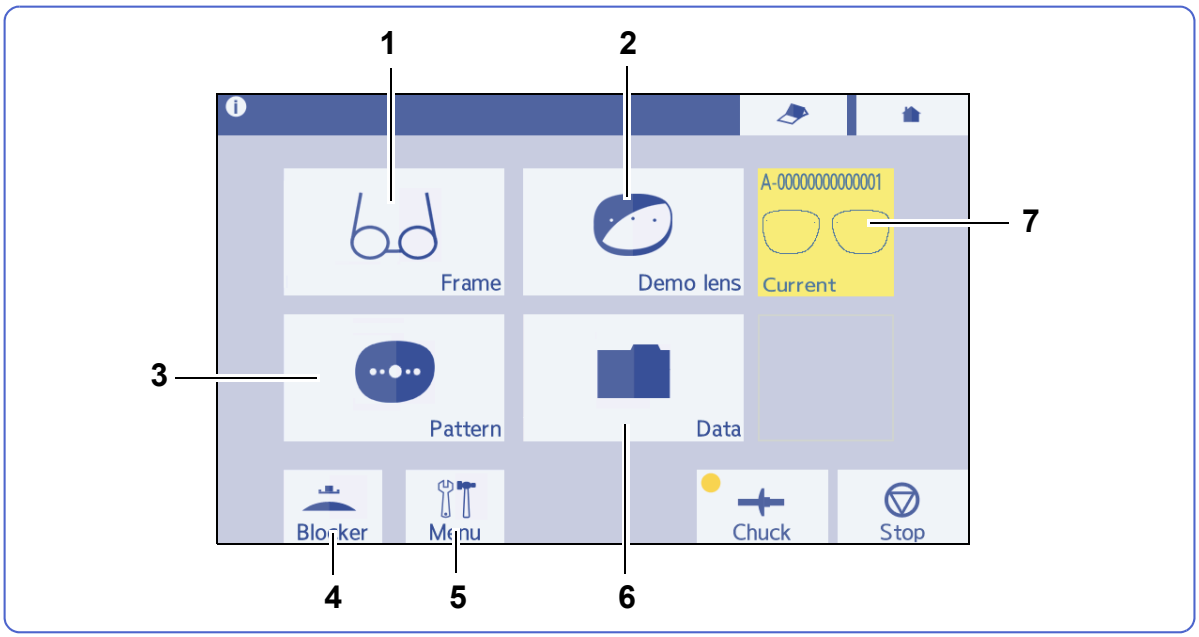
Pressing the numeric field displays the numeric keypad, then numbers or symbols can be entered.

- Numerical value / . / + / - : Enters numbers or symbols.
- CE: Cancels entry.
- ↵ : Confirms entry.
- ⊗ : Closes the numeric keypad without changing the numeric value.

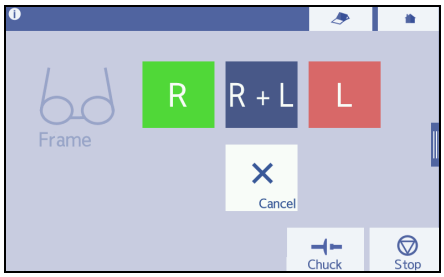


2.3.2 The home screen

The home screen displays basic selection buttons to be used first.



1 [Frame] / [Tracer] button



- For the tracer, Frame is displayed.

  → Trace screen

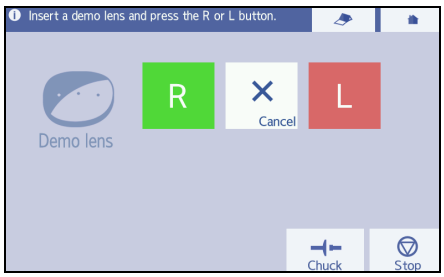
  "3.7 Tracing Frames" (page 87)

- For the external tracer, Tracer is displayed. Trace data is received.

  → Data management screen

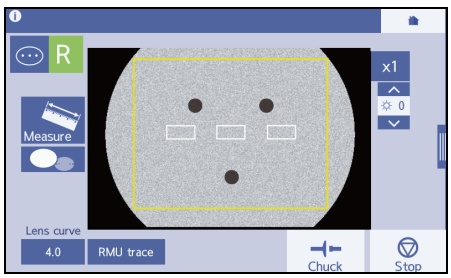
  "3.2.4 To receive data from the server computer" (page 67)

2 [Demo lens] button



- When the parameter *" Method for measuring pattern and demo lens" (page 229)* is set to "RMU", the demo lens trace screen is displayed.

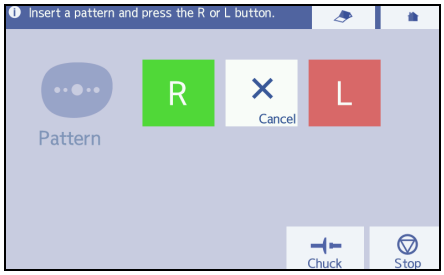
  "3.8.2 To trace demo lenses" (page 94)



- When the parameter is set to "Shape imager", the demo lens scan screen is displayed.

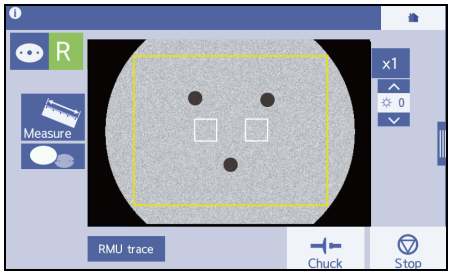
  "3.9.2 To scan demo lenses" (page 98)

3 [Pattern] button



- When *" Method for measuring pattern and demo lens" (page 229)* is set to "RMU", the pattern trace screen is displayed.

  "3.8.1 To trace patterns" (page 92)



- When the parameter is set to "Shape imager", the pattern scan screen is displayed.

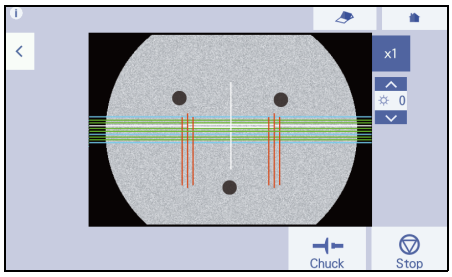
  "3.9.1 To scan patterns" (page 96)

4 [Blocker] button

→ Simple blocking screen

The blocker is used simply.

"4.6.2 To block lenses simply" (page 140)

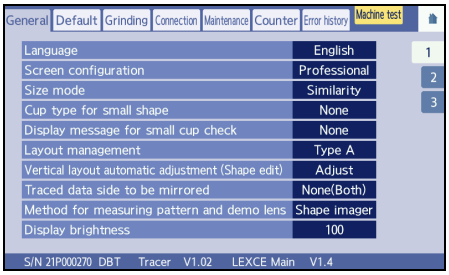


5 [Menu] button

→ Menu screen

Parameter setting and maintenance are performed.

"6.1 Operation on the Menu Screen" (page 227)



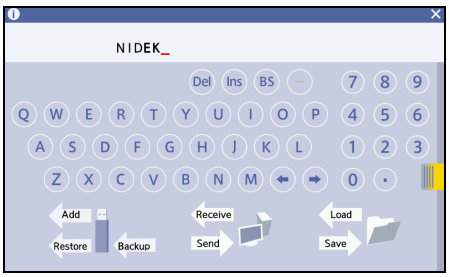
6 [Data] button

→ Data management screen

Shape data is received, sent, loaded, saved, and controlled.

"3.2 Loading, Saving, Receiving, and Sending Shape Data" (page 62)

"3.2.4 To receive data from the server computer" (page 67)



7 [Current] button

This button is displayed when the screen returns to the home screen during editing of shape or processing of a lens. Pressing this button returns to the screen for editing or processing.

2.3.3 The data management screen

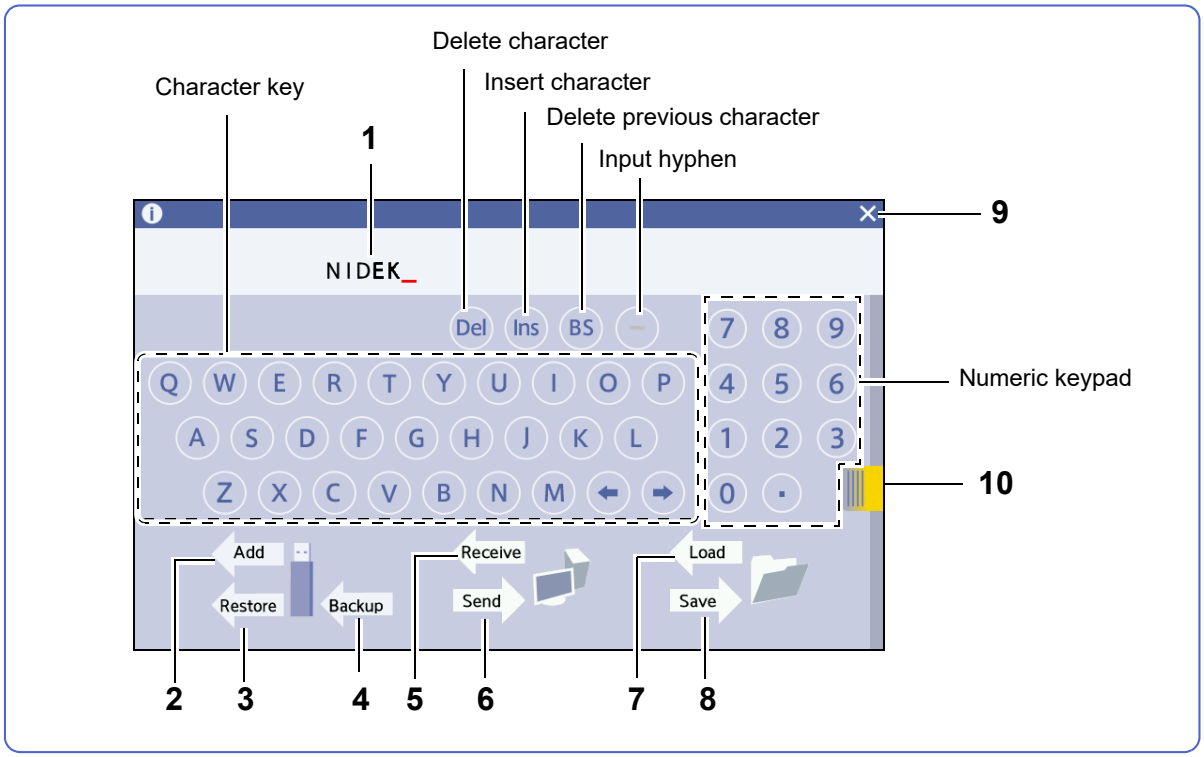
To display the data management screen, press Data on the home screen or press Save in the side menu. This screen allows shape data to be received, sent, loaded, and controlled.

"3.2 Loading, Saving, Receiving, and Sending Shape Data" (page 62)

"3.2.4 To receive data from the server computer" (page 67)

Note

- In the Blocker/Lex system, the data management screen is not displayed.
- In the Mini Lab system, the internal memory cannot be used.



1 Data name field

Displays the entered brand name or shape data name.

2 [Add] button

Adds backup data from a USB flash drive to the internal memory (while a USB flash drive is inserted).

3 [Restore] button

Restores backup data from a USB flash drive (while a USB flash drive is inserted).

4 [Backup] button

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

5 [Receive] button

Receives shape data from the server or blocker by specifying the shape data name.

When the parameter "Ethernet port" is set to "None", this button is not displayed.

6 **[Send] button**

Sends shape data with the specified name to the server or blocker.

When the parameter “Ethernet port” is set to “None”, this button is not displayed.

7 **[Load] button**

Loads the specified shape data from the internal memory.

8 **[Save] button**

Saves shape data displayed on the screen to the internal memory.

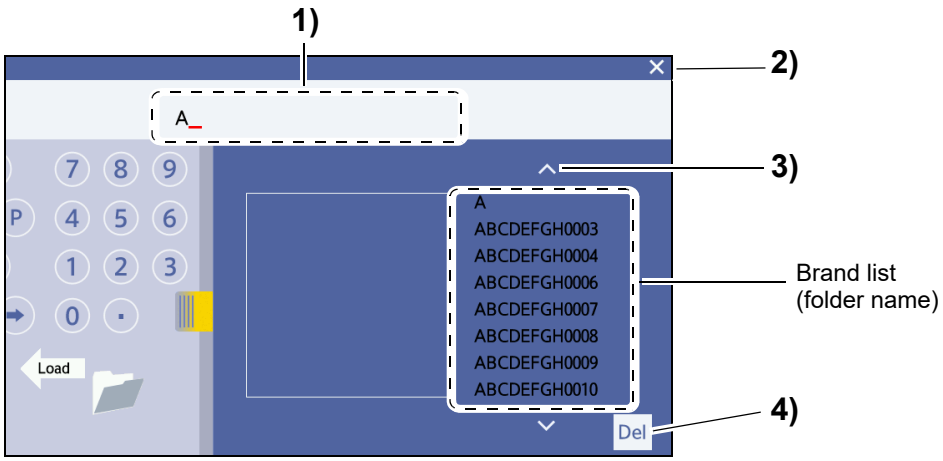
9 **Close button**

Interrupts operation and returns to the original screen.

10 **Entry list tab**

Displays the brand list hidden in the right side of the screen. Pressing this tab again hides the side menu.

- Brand list display



1) Data name field

Pressing the entry list displays the brand list (of the folder names) that are saved in the internal memory.

- Display of brand name and shape data name

Entry example	Displayed content
(Blank)	All brand names and names of all shape data without the brand name
A	Brand names starting with the letter A
NIDEK-	Shape data names of which the brand name is NIDEK
Plastic lens (NIDEK-0)	The shape data names of which the brand name is NIDEK and that includes 0

2) Close button

Interrupts operation and returns to the original screen.

3) , Scroll buttons

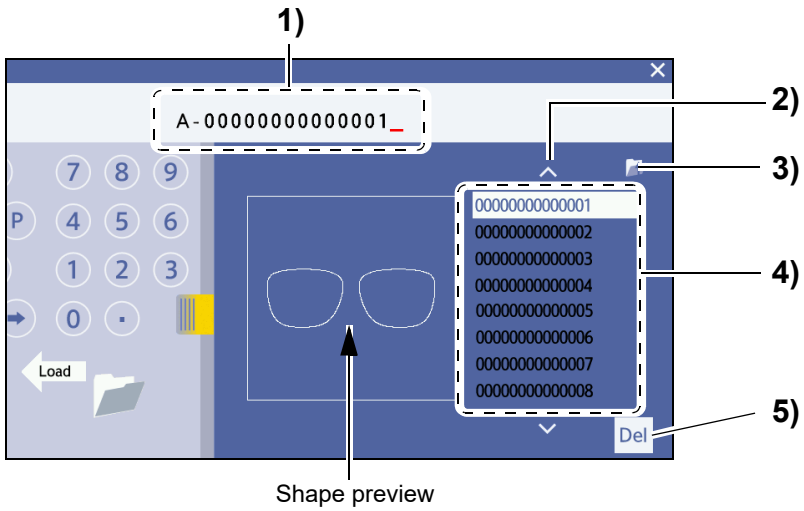
Scrolls up and down the brand name list. These buttons are displayed when the list of names exceeds its limit.

4) Del [Del] (delete) button

Pressing and holding a brand name selects the brand name, and Del is displayed. Pressing Del deletes the selected brand name.

- Display of entry list

Selecting (the folder from) the brand list displays the entry list that is saved in the folder.



1) Data name field

The selected shape data name is displayed.

Also, entering the initial part of the shape data name displays brand names and shape data names including the entered characters in the entry list.

2) , Scroll buttons

Scrolls up and down the entry list when the list of names exceeds its limit.

3) Previous data display button

Displays the screen where brands are listed.

4) Entry list

The entry list is displayed.

By selecting a shape data name from the entry list, the number of the selected shape data is displayed in the data name field, and the image is displayed on the shape preview area.

5) Del [Del] button

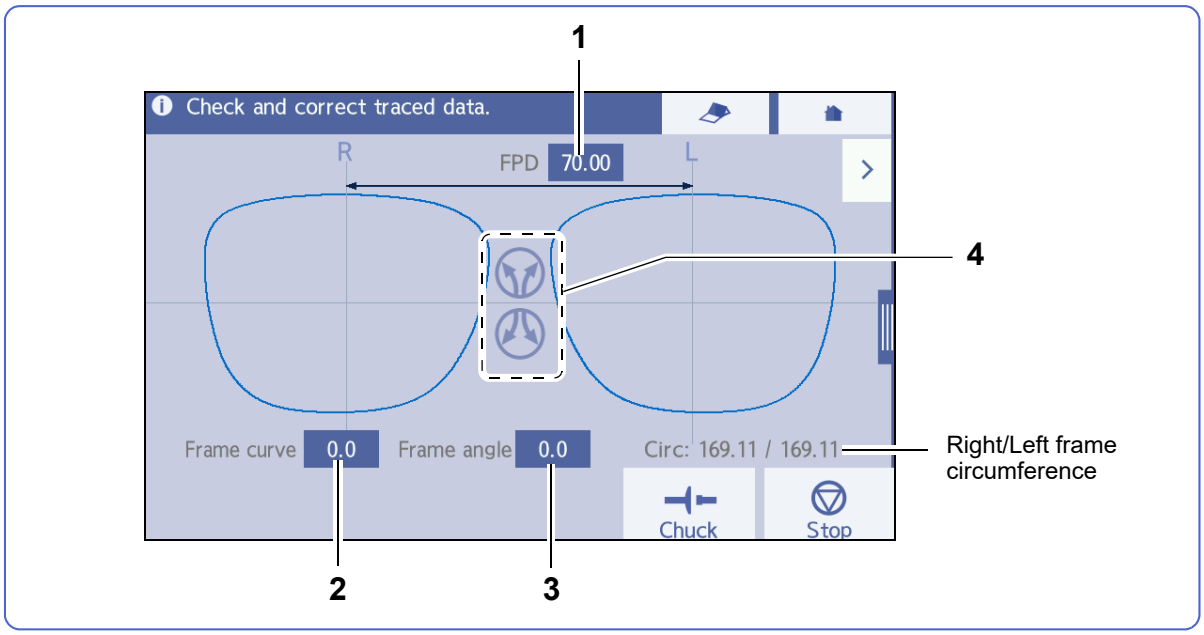
After selecting a shape data name, pressing Del deletes the selected shape data.

2.3.4 The frame data confirmation screen

After tracing, the frame data confirmation screen appears, and the following input and adjustment can be performed.

- Input of the FPD (frame pupillary distance) value and frame curve value (for single-eye tracing)
- Fine adjustment of shape axis (when tracing a pattern or demo lens by this instrument)

"4.3.1 To confirm frame data" (page 115)



1 [FPD] field

When the FPD has not been measured, the numeric field is displayed in yellow.

Press the numeric field and input a value with the displayed numeric keypad.

2 [Frame curve] field

Press the input field and input a value with the numeric keypad.

3 [Frame angle] field

Press the input field and input a value with the numeric keypad.

4 , Shape rotation buttons

Pressing or rotates the shape in the direction of the arrow indicated on the pressed button If the lens cup axis shifts when a demo lens is blocked, adjust the inclination of the frame data.

These buttons are displayed when a pattern or demo lens is traced by this instrument. Note that they are not displayed when drilling data has been set.

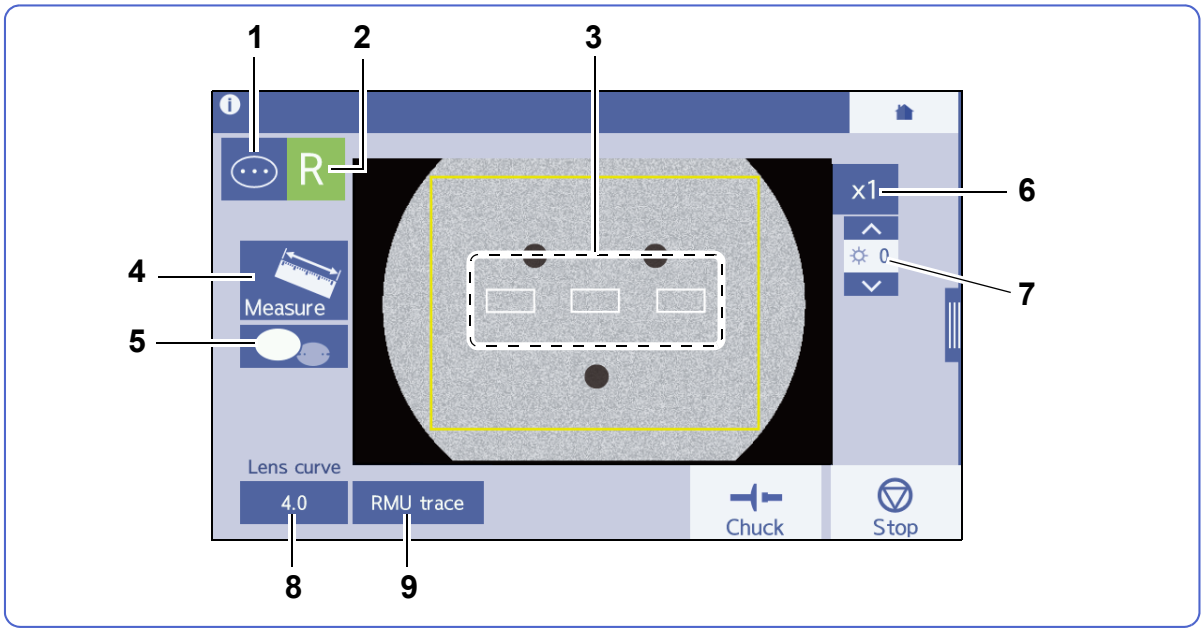
2.3.5 The scan (Shape imager) screen

This screen reads shape or hole position of a pattern or demo lens.

This screen is displayed when *" Method for measuring pattern and demo lens" (page 229)* is set to "Shape imager" and 

(in the figure below) or 

is pressed on the home screen.



1 Scan selection button

- In pattern measurement, pressing this button switches  (pattern automatic measurement mode) and  (manual measurement mode) alternately.
- In demo lens measurement, pressing this button switches mode between  (demo lens automatic measurement mode) and  (manual measurement mode) alternately.

2 [R]/[L] button

Selects 

(right eye) or 

(left eye) according to the pattern or demo lens to be processed.

3 Alignment scale

Used for aligning a pattern or demo lens position.

4  Scan selection button

Starts scanning.

5  Hole detection button

Pressing this button turns on the hole detection function  and detects a hole position for drilling.

6 x1 , x2 Magnification buttons

Toggles the magnification of shape displayed between1 time and 2 times.

7  Brightness adjustment button

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

8 Lens curve field

Used to input the lens curve value. Scanning a demo lens displays this field.

9 [RMU trace] button

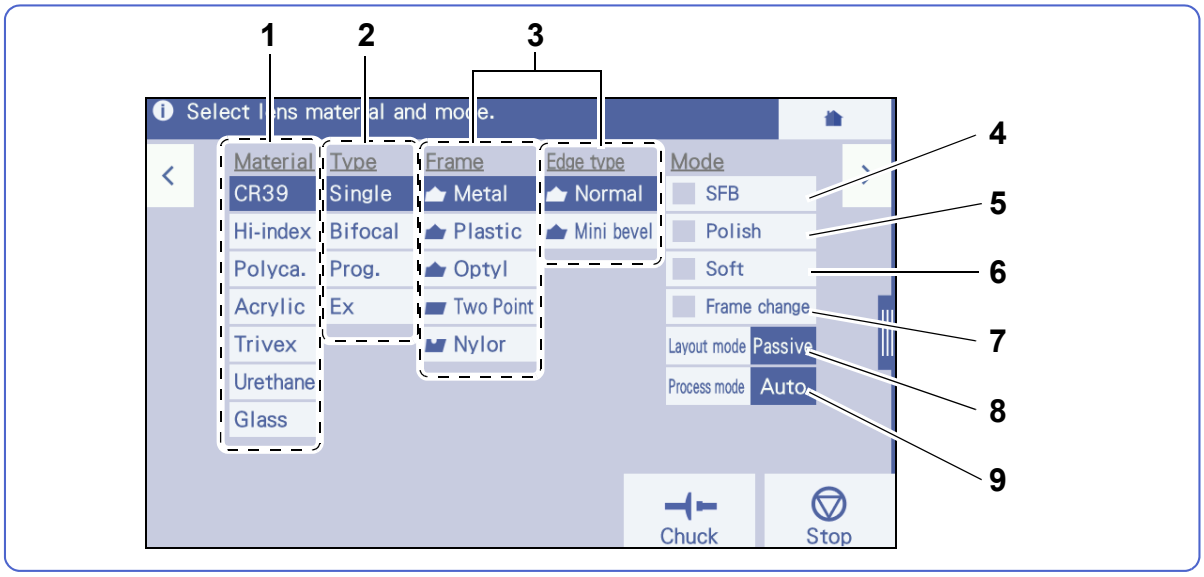
Switches from scanning to pattern tracing or demo lens tracing. If the outline of a pattern or demo lens cannot be scanned correctly, press this button to trace it.

“3.8.1 To trace patterns” (page 92)

“3.8.2 To trace demo lenses” (page 94)

2.3.6 The processing condition input screen

Pressing ❯ on the frame data confirmation screen displays the processing condition input screen. This screen allows processing conditions to be input for shape data.



- All buttons for processing conditions are displayed in white characters when selected.

Not selected	Selected
Metal	Metal

1 Material field

Selects the lens material.

When [Glass] is selected, [Polish] in the Mode field is deactivated.

2 Type field

Selects the lens type.

When [Ex] is selected, Process mode is set to [Guide].

3 Frame and Edge type fields

Select a frame type. The following table indicates the selectable combination of frame types and the corresponding edge types.

For all lens materials, the combination of Mini bevel and Polish cannot be set.

Frame type	Edge type	Processing
Metal/Plastic/Optyl	Normal	Beveling in the standard size
	Mini bevel	Beveling in smaller size than the standard
Two Point	Flat	Flat edging
Nylor	Flat	Flat edging
	Groove	Flat edging and grooving

4 [SFB] button

Toggles safety beveling between active and inactive.

5 [Polish] button

Toggles polishing between active and inactive.

6 [Soft] button

Toggles soft processing between active and inactive.

For a slippery lens due to the coating or a glass lens with possibility of breaking, activate this processing.

7 [Frame change] button

Toggles processing for frame changing between active and inactive.

8 [Layout mode] button

When the lens type is set to “Single”, “Prog.”, or “Ex”, the layout mode can be toggled between “Active” and “Passive”.

When the lens type is set to “Bifocal”, the layout mode can be toggled between “Bifocal” and “Passive”. However, for the N, D, I, and DI models, when the lens type is set to “Bifocal”, the layout mode cannot be selected.

Selected	Details
Layout mode Active	Blocks a lens with a lens cup at the optical center.
Layout mode Passive	Blocks a lens with a lens cup at the boxing center*a.
Layout mode Bifocal	Blocks a lens at the position specified by the parameter with reference to the segment position.

*a. The center of the rectangle (box) that circumscribes a shape when viewed from the front

9 [Process mode] button

Selects a processing mode. Also, toggles between Auto and Guide.

Selected mode	Details
Process mode Auto	Processes a lens with the bevel, groove position, and curve calculated by computer.
Process mode Guide	Processes a lens with the bevel, groove, position, curve, tilt, and such changed manually.

This button is deactivated when the edge type is flat.

Note

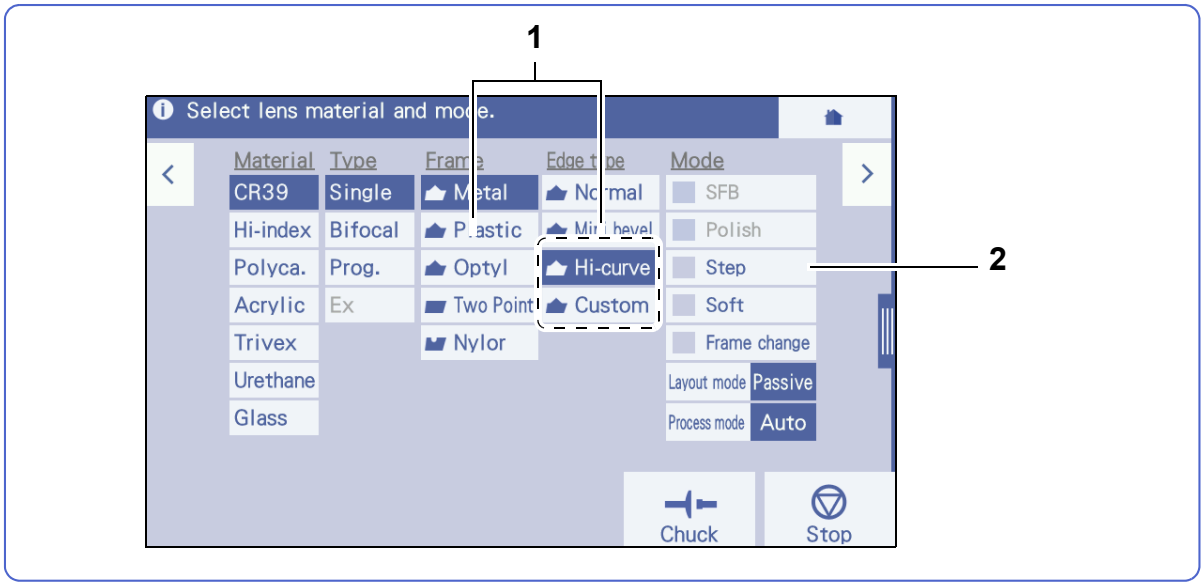
- When the bevel and groove position have already been set to the shape data sent from the server or a blocker, a lens is processed according to the set bevel and groove position even when [Process mode] is set to “Auto”.

2.3.7 The processing condition input screen for Trend8

This screen is the processing condition input screen for the Trend8 type.

Pressing ❯ on the frame data confirmation screen displays the processing condition input screen. This screen allows processing conditions to be input for shape data.

❖ Items not explained in this section are the same as those for the Trend type.



1 Frame and Edge type fields

Select a frame type. The following table indicates the selectable combination of frame types and the corresponding edge types.

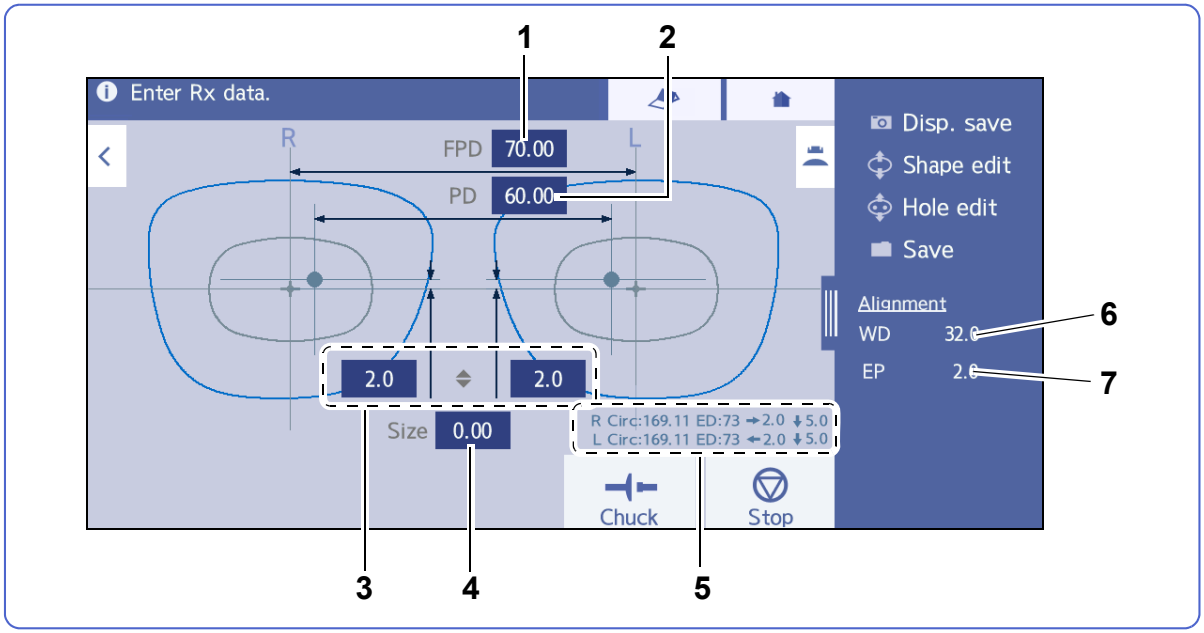
Frame type	Edge type	Processing
Metal/Plastic/Optyl	Hi-curve	Beveling to fit frames with a high curve value
	Custom	Processing the bevel height or such according to the set desired value

2 [Step] button

Select this button to perform step beveling. This button is enabled when the bevel type is set to [Hi-curve] or [Custom].

2.3.8 The layout input screen

Pressing ❯ on the processing condition input screen displays the layout input screen. This screen allows the layout values such as FPD, PD, and optical center height to be input.

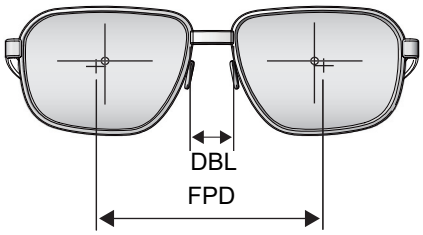


1 [FPD] / [DBL] field

Input the frame pupillary distance.

Pressing [FPD] toggles between “FPD” and “DBL”.

“4.3.3 To input layouts according to lens types” (page 122)

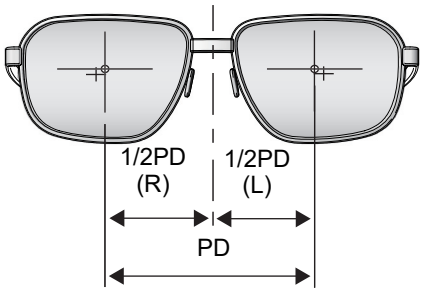


2 [PD] / [1/2PD] field

Input the prescribed pupillary distance.

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

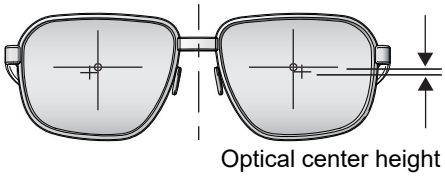
Pressing [PD] toggles between “PD” and “1/2PD”.



3 Optical center height field

Input the height from the frame center (boxing center) to the optical center.

Select from among ▲▼, PD▲▼, and BT▲▼.



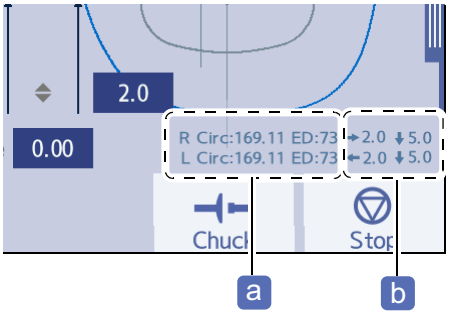
4 [Size] field

As the standard frame diameter is 0.00, a compensation value for the lens finish size is input in this field as necessary.

5 Circumference, required lens diameter, and decentering amount

Represents the left and right shape circumferences and required lens diameters a.

When Layout mode is set to “Passive”, vertical and horizontal decentering amounts b are displayed.



“4.7.2 To block lenses at frame centers” (page 148)

6 [WD] field

Adjusts the width of the alignment scale on the blocking screen.

The alignment scale differs depending on the lens type.

“4.5 Inputing WD and EP” (page 134)

7 [EP] field

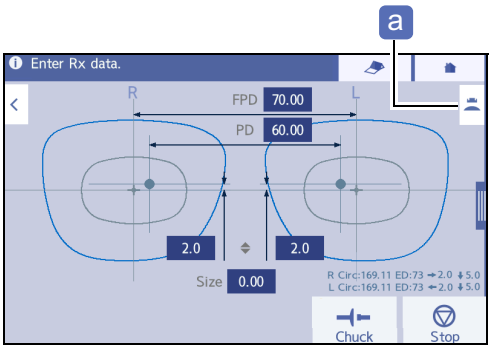
Adjusts the height of the distance eyepoint.

This is displayed when [Prog.] is selected in the Type field.

“4.5 Inputing WD and EP” (page 134)

Note

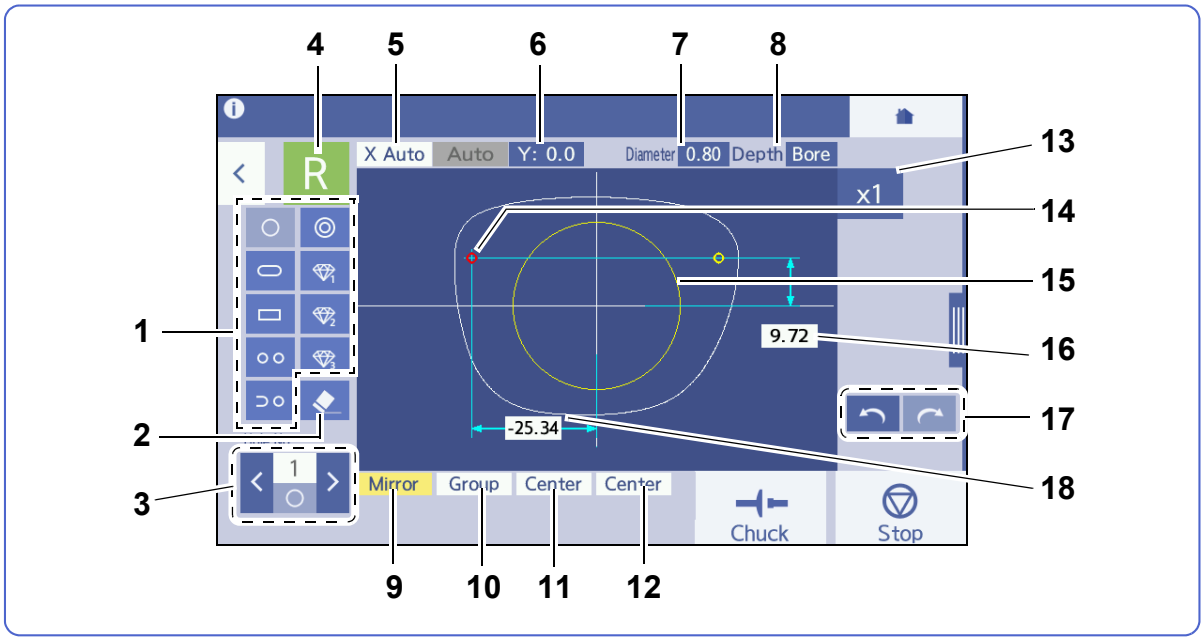
- For the DI/D/I/N model without a blocker, instead of the next button, the layout confirmation button a is displayed. Pressing this button displays the processing start screen and lens processing becomes enabled.



2.3.9 The hole editor screen

In the side menu on the processing condition input screen, layout input screen, or blocking screen, pressing Hole edit displays the hole editor screen. The hole editor screen is also displayed when the hole detection function is turned on the scan screen.

"4.18 Drilling" (page 183)



1 Hole addition buttons

Selects the hole type and adds it. After selecting a hole type, touching the desired position in the shape adds the selected hole to the specified position.

2 Hole deletion button

Deletes the currently selected hole. If there is any mirrored hole, deletes it at the same time.

3 Hole selection button

Pressing < or > selects one of the holes displayed in the shape, enabling the hole position, diameter, and such to be edited. Pressing a hole selection button switches the hole selection in the order. Also, the number and type of the currently selected hole are displayed between the hole selection buttons.

4 R / L [R]/[L] button

Toggles between R and L of the shape.

5 Hole angle button

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

6 Hole angle input field

Displays the hole angle field for the mode specified with the hole angle button. For other than "Auto", the hole angle can be changed with the numeric keypad that is displayed when the hole angle input field is pressed.

7 [Diameter] field

Displays the diameter of the selected hole.

The hole diameter can be changed with the numeric keypad that is displayed when the [Diameter] field is pressed.

The diameters for Jewel 1 to 3 are not displayed.

8 [Depth] field

Displays the selected hole depth.

The hole depth can be changed with the numeric keypad that is displayed when the [Depth] field is pressed. 0.0 indicates a through hole. The diameters for Jewel 1 to 3 are not displayed.

9 [Mirror] button

Toggles the mirror function on and off, which processes the selected hole in reverse on the opposite lens

10 [Group] button

Groups the selected hole and other holes.

11 Horizontal hole coordinate button

Selects the horizontal standard position for the hole from among “Center”, “B-Edge”, and “H-Edge”.

12 Vertical hole coordinate button

Selects the vertical standard position for the hole from “Center” and “B-Edge”.

13 x1 , x2 , x4 , x6 **Magnification buttons**

Switches the magnification of the shape display from among 1 time, 2 times, 4 times, and 6 times.

14 Hole position indication

Indicates the hole position and type. The selected hole is displayed in red.

15 Hole setting invalid range

A hole position cannot be set inside this yellow circle.

16 Hole vertical coordinate (Y) field

Displays the vertical coordinate value of the selected hole.

The vertical hole position can be changed by pressing this field and inputting the desired value.

17 Undo and Redo buttons

cancels the last change. restores the canceled change. These can be performed a maximum of five times.

18 Hole horizontal coordinate (X) field

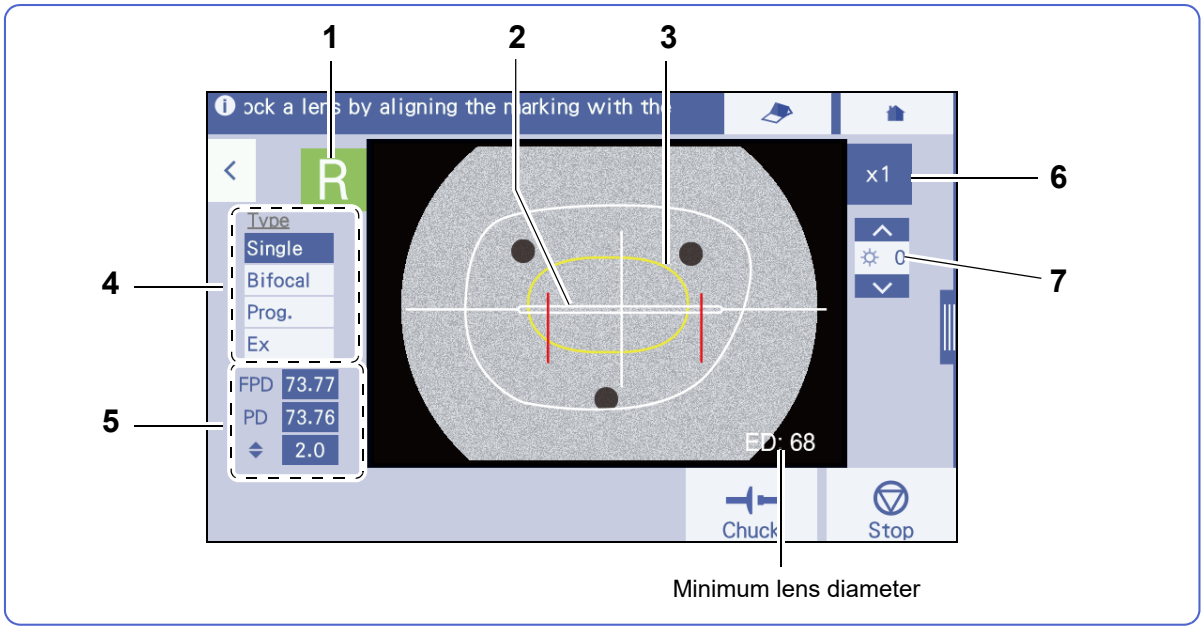
Displays the horizontal coordinate value of the selected hole.

The horizontal hole position can be changed by pressing this field and inputting the desired value.

❖ In the side menu, Disp. save , the button to save the items to be displayed on the initial screen, is displayed.

2.3.10 The blocking screen

Pressing > on the layout input screen displays the blocking screen.



1 R / L **[R]/[L] button**

Toggles between R and L of the shape.

2 Alignment scale

Used as a guide for adjustment of the marking position of the lens.

3 Cup mark

Represents the outline of the lens cup to be blocked.

4 [Type] field

The same lens type is selected as that selected on the processing condition input screen. The type can be changed.

5 Layout value field

Displays the layout values of FPD, PD, and optical center height. These values can be changed.

6 x1 , x2 **Magnification buttons**

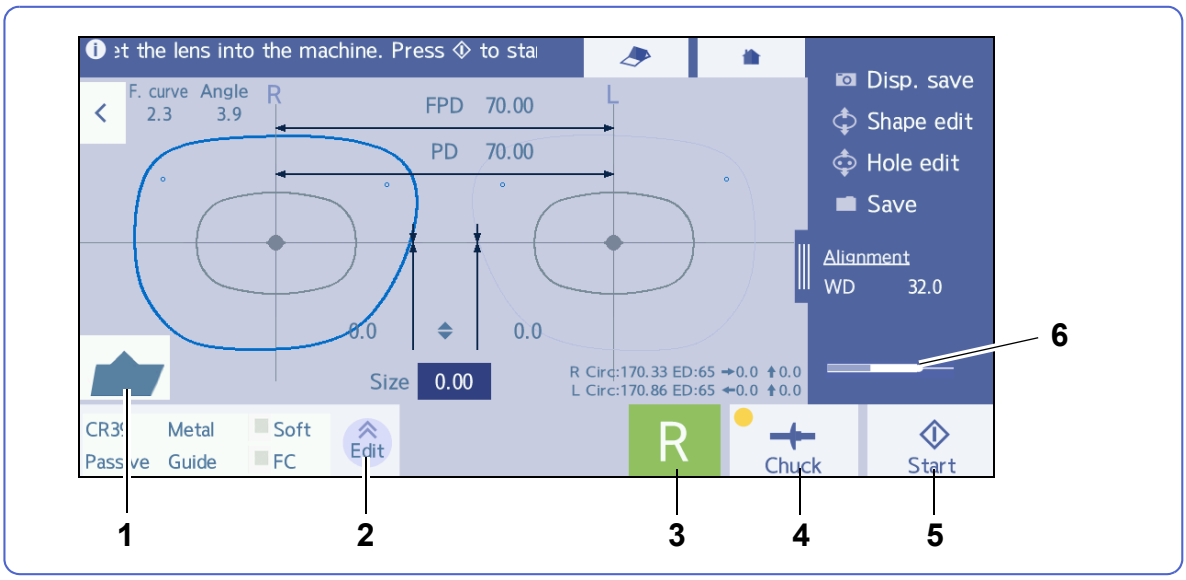
Toggles the magnification of shape between1 time and 2 times.

7 **Brightness adjustment button**

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

2.3.11 The processing start screen

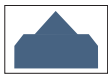
When blocking is completed, the processing start screen appears.



1 Edge type icon

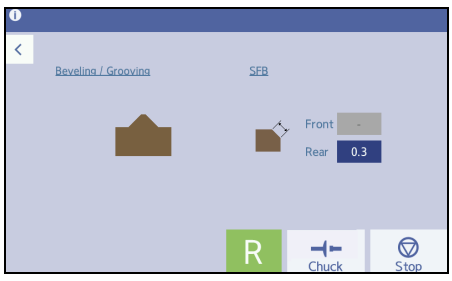
Represents the edge type corresponding to the processing mode specified on the processing condition input screen.

Examples of edge type icons

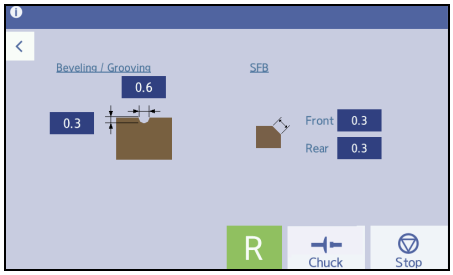
Flat		Bevel		Bevel and safety bevel	
Flat, safety bevel, and polish		Mini bevel		Groove, safety bevel, and polish	
Trend8					
High base curve bevel		High base curve bevel and step bevel		Custom bevel	
Custom bevel and step bevel					

Pressing the edge type icon displays the edge type confirmation screen for the settings specified on the processing condition input screen. The following edge type settings can be changed.

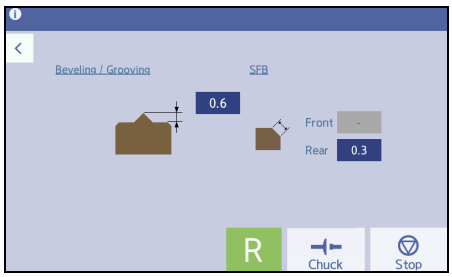
- Change of safety bevel width for beveling



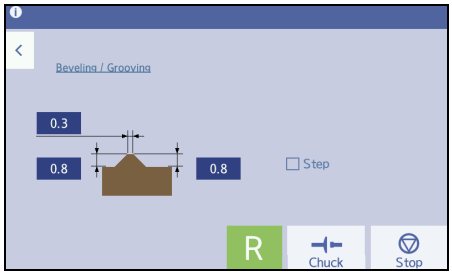
- Change of groove width, groove depth, and safety bevel width for grooving



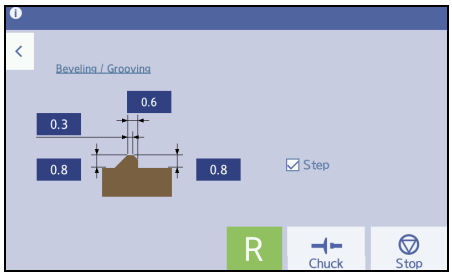
- Change of safety bevel width and bevel height for mini beveling



- Change of high base curve bevel Trend8
- Change of custom bevel Trend8

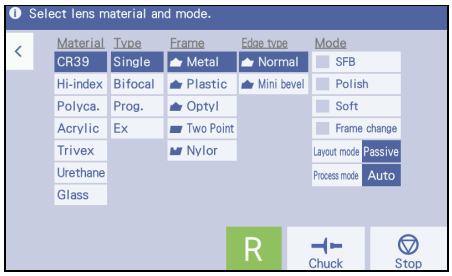


- Change of high base curve bevel and step bevel Trend8
- Change of custom bevel and step bevel Trend8



2 Edit [Edit] button

Displays the processing condition confirmation screen to change the processing conditions.



3 R / L [R]/[L] button

Specifies [R] (right) or [L] (left) of the shape to be processed.

4 Chuck [Chuck] button

Secures or releases a lens. When a lens is secured, the yellow circle Chuck at top left of the button lights up.

5  [Start] /  [Stop] button

 starts processing a lens. When processing starts, this button is switched to  that stops the processing when pressed.

6 Drilling bar graph

The bar graph in the side menu indicates the amount of time remaining in the drill life before drill replacement is necessary.

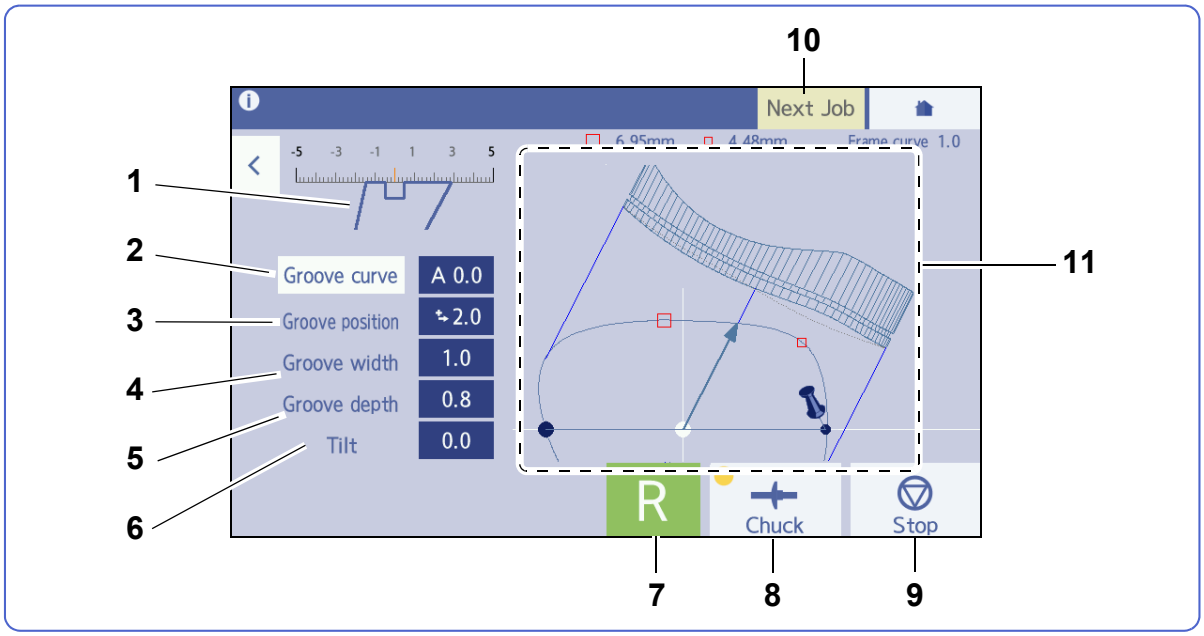
The whole width of the bar graph represents the number of processing times specified in *“ Message count (Drill)” (page 230)*.

Guide for timing of drill replacement

- For less than 80%, the bar is displayed in dark blue.
- For 80% or more, the bar is displayed in yellow.
- When the number of drilling times exceeds the specified number, the graph is displayed in red.
- When the drill is replaced, the bar graph is restored.

2.3.12 The simulation screen (grooving)

When [Process mode] is set to [Guide] on the processing condition input screen, the simulation screen is displayed after lens shape measurement. Grooving position or such can be checked or changed manually.



1 Sectional view simulation

Displays the sectional view simulation at the selected edge position.

2 [Groove curve] field

Select from among [Auto], [Curve], [Ratio], [Front] and, [Rear].

3 [Groove position] field

Input the grooving position with the numeric keypad.

4 [Groove width] field

Input the groove width for grooving with the numeric keypad.

5 [Groove depth] field

Input the groove depth for grooving with the numeric keypad.

6 [Tilt] field

Input a tilt amount of grooving with the numeric keypad.

7 R / L [R]/[L] button

Indicates the [R] (right) or [L] (left) of the lens to be processed.

8 Start [Start] button

Starts processing.

9 Stop **[Stop] button**

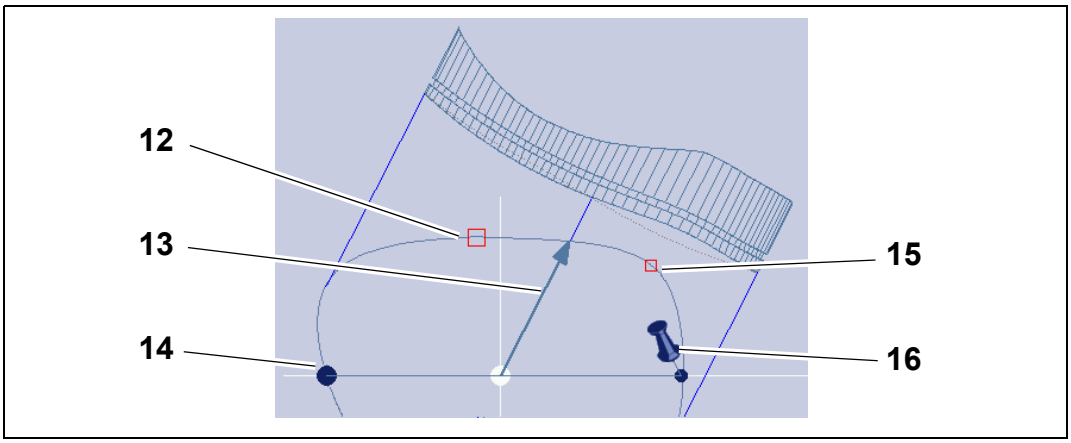
Stops processing.

10 Next Job **[Next Job] button**

Edits the next shape during processing. However, functions such as tracing shape or demo lens are deactivated.

11 Shape display

Displays a simulation as viewed from the front and side of shape.



12 Point mark of thickest lens edge (□)

Indicates the position where the edge is the thickest.

13 Sectional view position line

Indicates the position where the simulation is displayed.

14 Tilt point mark

Indicates the position that is diagonally opposite the tilt base point, which also the position where the tilt is most pronounced.

15 Point mark of thinnest lens edge (□)

Indicates the position where the edge is the thinnest.

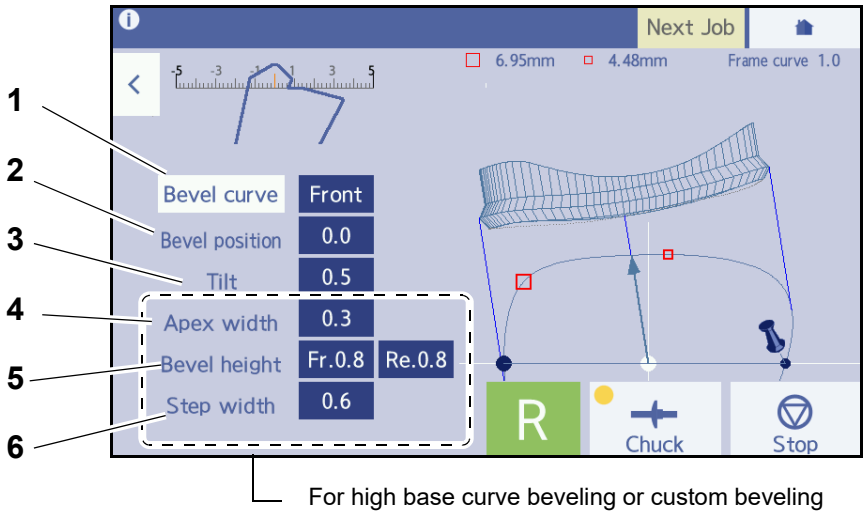
16 Tilt base point mark

The position of the pin mark indicates the base point for tilting.

2.3.13 The simulation screen (beveling)

When [Process mode] is set to [Guide] on the processing condition input screen, the simulation screen is displayed after lens shape measurement. Bevel position or such can be checked or changed manually.

❖ Items not explained in this section are the same as those for the simulation screen (grooving).



1 [Bevel curve] field

Select from among [Auto], [Curve], [Ratio], [Front] and, [Rear].

Select from among [Curve], [Front] and, [Rear]. (Only when [Hi-curve] is selected.) Trend8

2 [Bevel position] field

Input the beveling position with the numeric keypad.

3 [Tilt] field

Input the tilt amount of beveling with the numeric keypad.

4 [Apex width] field Trend8

Adjust the bevel apex width for high base curve beveling or custom beveling with the numeric keypad.

5 [Bevel height (Fr.)] and [Bevel height (Re.)] field Trend8

Adjust the front bevel height or rear bevel height for high base curve beveling or custom beveling with the numeric keypad.

6 [Step width] field (only when [Step] is selected) Trend8

Input the step width for step beveling with the numeric keypad.

3 BASIC OPERATION

This chapter describes the following basic operations.

3.1 Startup and Shutdown

3.1.1 To perform pre-use check

⚠ CAUTION

- Perform the pre-use check with the pre-use checklist every time. Writing down the check results is recommended.

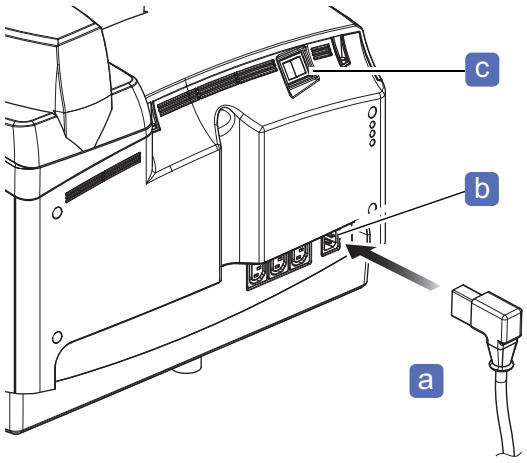
  Failure to do so may result in injury or instrument malfunction.

  "♦ Pre-use Checklist" (page 295)

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

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

3 When any devices are connected to the instrument, turn on (|) the device.

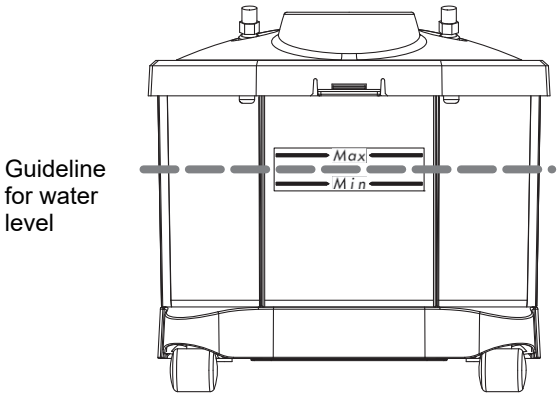


4 Check the tank water level.

It is appropriate when the water level is between Max and Min labeled on the tank.

If the water in the tank is dirty, replace it. Failure to do so may decrease the accuracy of polishing.

"7.6 Exchanging Water in the Pump Tank and Filter" (page 277)



5 Confirm that power cords and hoses for Pump 1 and Pump 2 are connected properly.

6 Check visually that the wheels are not chipped, cracked, or scratched.

⚠ WARNING

- If abnormalities such as chipping, cracking, or a scratch are found in the wheels, stop the instrument and contact NIDEK or your authorized distributor.
  Failure to do so may result in breaking and shattering of the wheels, which may cause injury.

7 Confirm that there are no abnormalities such as breaking of the drill.

If there is abnormality in the drill, replace it.

"7.4 Drill Replacement" (page 269)

8 Confirm that no processing waste attached to the stylus of the feeler unit.

If any processing waste is attached to the stylus, wipe with a soft cloth.

"7.7.1 To clean the processing chamber" (page 283)

9 Confirm that no frame is set to the tracer.

10 Confirm that the stylus and the clamp of the tracer are clean.

If it is dirty, wipe with a soft cloth.

3.1.2 To start up

- If an abnormality or error message appears on the instrument, see *"7.1 Troubleshooting" (page 263)* and *"8.3 Checklist" (page 295)*. If the abnormality is not resolved, contact NIDEK or your authorized distributor.

1 Turn on (|) the power switch.

The processing chamber door opens automatically.

Initialization starts.

Confirm that no error message appears.

→ Home screen

2 If necessary, check the tracer horizontality.

"6.2 Tracer Horizontality Check" (page 249)

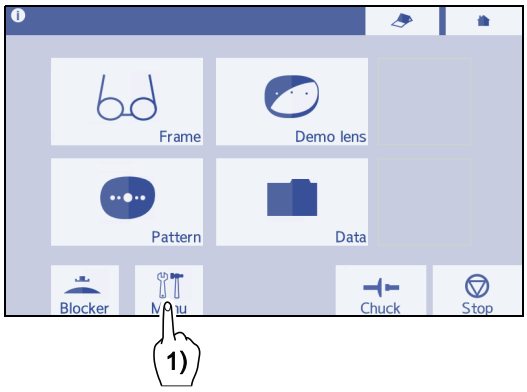
3 If necessary, calibrate the tracer.

"3.6.2 To calibrate the tracer" (page 81)

4 Confirm that cooling water (for the wheels) and cleaning water (for the inside wall of the processing chamber) flow properly.

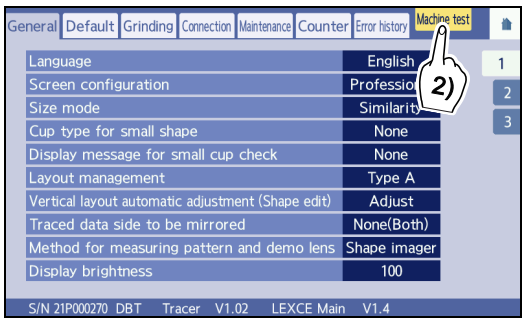
1) Press Menu on the home screen.

→ Menu screen



2) Press the [Machine test] tab.

→ Hardware test screen



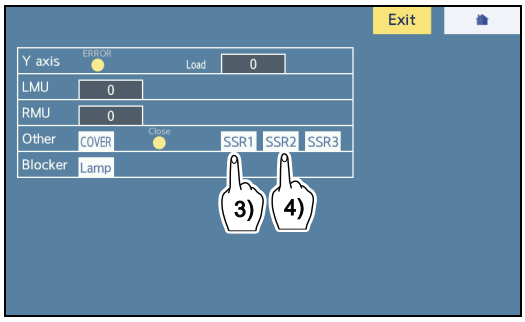
3) Press the [SSR1] button to confirm that the cooling water flows.

4) Press the [SSR2] button to confirm that the cleaning water flows.

5) When cooling and washing water flow properly, press  .

→ Home screen

If cooling or washing water does not flow, check that the power cords or hoses for PUMP 1 and PUMP 2 are connected properly.



3.1.3 To shut down

⚠ CAUTION

- At the end of the day, close the processing chamber door after the inside of the chamber has dried.
  If the processing chamber door is closed before the inside of the chamber dries, the wheels may rust.
- Perform the after-use check with the after-use checklist every time. Writing down the check results is recommended.
  Failure to do so may result in injury or instrument malfunction.
  "♦ After-use checklist" (page 296)

1 Clean the instrument.

When the cover or display of the instrument becomes dirty, wipe it with a soft cloth moistened with a neutral detergent diluted with water.

"7.7.1 To clean the processing chamber" (page 283)

"7.7.2 To clean the cover, display, and lens stages" (page 284)

2 When processing is not performed, turn off (◯) the power.

- Do not turn off the power during processing. Doing so may result in malfunction.
- After the power has been turned off, wait at least 10 seconds before turning on the power again. The instrument may not operate properly.

3 With the after-use check, clean and check the instrument.

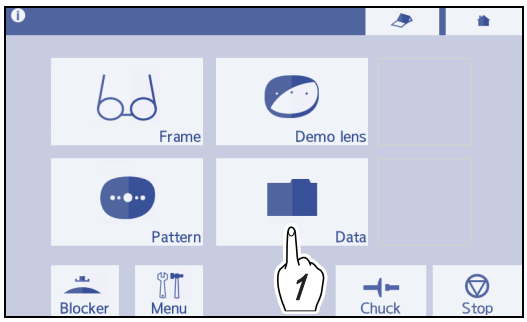
3.2 Loading, Saving, Receiving, and Sending Shape Data

This section describes the methods of loading, saving, receiving, sending, and controlling shape data with the external tracer, internal memory, or server computer.

3.2.1 To load shape data from the internal memory

1 Press Data on the home screen.

→ Data management screen



2 Specify the brand.

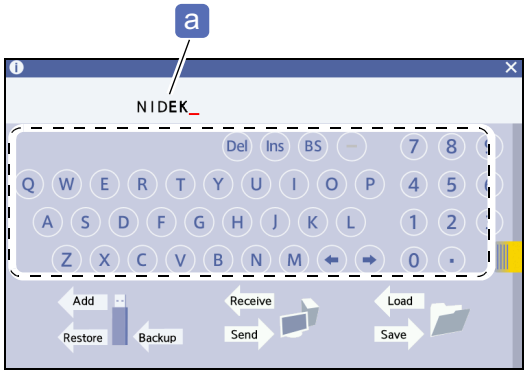
- When specifying a brand with the keyboard

Enter a brand name in the data name field a with the keyboard.

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

Ex.— NIDEK0000001

"• *How to name brand and shape data*" *(page 65)*

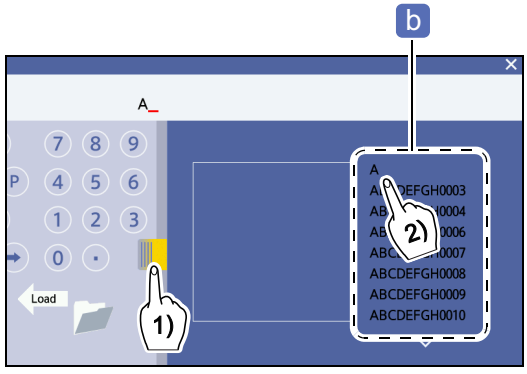


- When specifying a brand name from the brand list b

1) Press .

→ Brand list

- When the brand list is displayed with the data name field blank, all brand names and all shape data without a brand name are listed.
- When the number of brand names to be displayed is large, it can be refined by entering a partial name with the keyboard.



2) Press the desired brand name in the brand list to display the specified brand name in the data name field.

3 Specify the shape data.

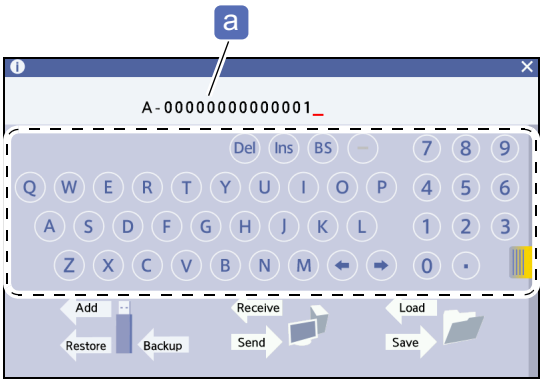
- When specifying shape data with the keyboard

Enter the shape data name in the data name field a.

The length of shape data name is 16 characters including a hyphen. If the number of entered characters is less than 16, 0 is automatically added to the beginning of the name by the missing characters.

Ex.— NIDEK-0000001234

"• *How to name brand and shape data*" *(page 65)*



- When specifying shape data from the entry list

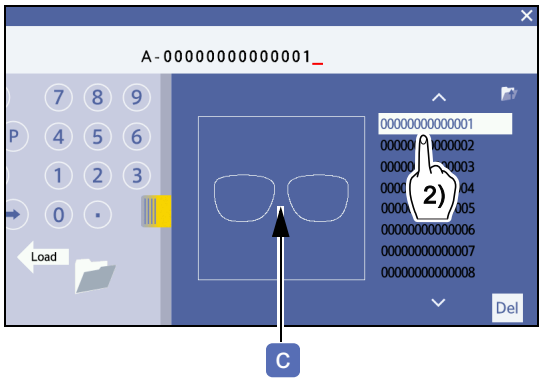
1) Specify a brand according to Step 2.

→ Entry list

2) Press a shape data name.

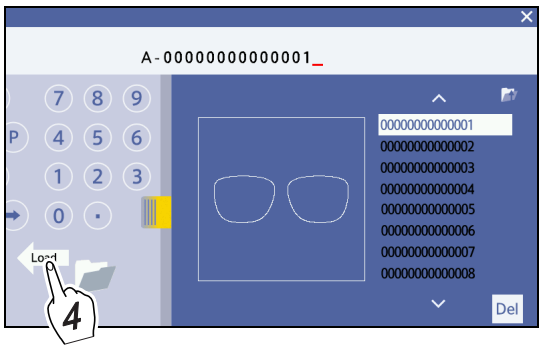
By pressing a shape data name, the shape name is displayed in the data name field and the shape image c is displayed in the shape preview area.

Pressing , if necessary, returns to the brand list.



4 Press Load .

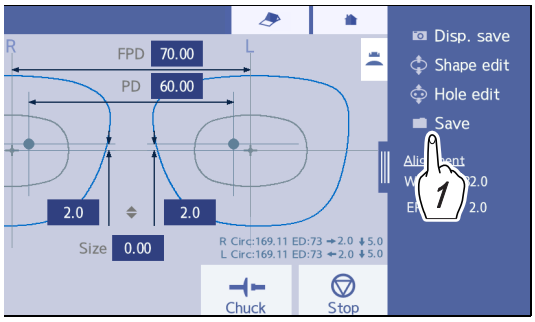
The shape is displayed on the frame data confirmation screen.



3.2.2 To save shape data to the internal memory

1 Press Save in the side menu when the shape to be saved to the internal memory is displayed on the layout input screen or such.

→ Data management screen



Note

- If there are any items that are not filled for the shape data to be saved, the initial layout values are saved as input.

2 Specify the brand name (folder name).

"2 Specify the brand." (page 62)

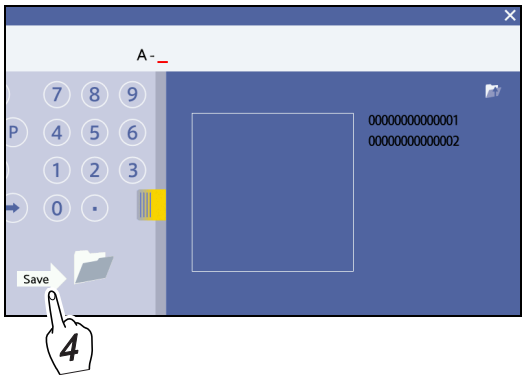
3 Enter the shape data name.

"3 Specify the shape data." (page 63)

4 Press Save to save the data.

If shape data with the same name as that of shape data to be saved exists in the save destination, a message asking whether to overwrite the existing data appears.

- To overwrite the data, press Continue.
- To stop saving, press Abort.



● Display of brand name and shape data name

Entry example	Displayed content
(Blank)	All brand names and names of all shape data without the brand name
A	Brand names starting with the letter A
NIDEK-	Shape data names of which the brand name is NIDEK
Plastic lens (NIDEK-0)	The shape data names of which the brand name is NIDEK and that includes 0

Note

- How to name brand and shape data

  For the name of shape data to be saved in the internal memory, a character string in which the brand name and number are connected by a hyphen or a character string that includes only numbers without a brand name can be specified.

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

    Ex.— NIDEK0000001
  - A brand name becomes the folder name. When a folder with the specified brand name does not exist, the folder is automatically created.

  Shape data

  The length of shape data name is 16 characters including a hyphen. If the number of entered characters is less than 16, 0 is automatically added to the beginning of the name by the missing characters.

  Ex.— If “NIDEK-1234” is entered, it is saved as “NIDEK-00000000001234”.

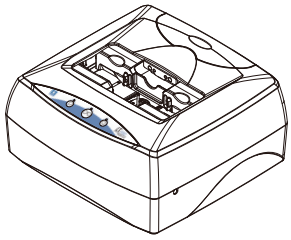
  When not to include a brand name

  When not to include a brand name, a 16-character number that does not include alphabets or hyphens can be specified.
- Storage amount of shape data
  - A maximum of 500 brand names can be registered.
  - The maximum number of shape data that can be saved in the internal memory is approximately 20,000, which is cumulative number of shape data in all brand folders. Note that the maximum number of data that can be saved depends on the data size.
- Contents to be 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, processing mode (“Auto”/”Guide”), soft processing active/inactive, polishing active/inactive, layout mode (“Passive”/”Active”), safety beveling, drilling, edge type

3.2.3 To receive data from the external tracer

Receive trace data from the LT-980 (external tracer) connected to this instrument.



Parameter settings	Set *" Communication interface" (page 240)* to "Tracer".
Related item	*"8.1.2 To communicate with the LT-980 and perform communication settings" (page 287)*

1 Trace a frame with the LT-980.

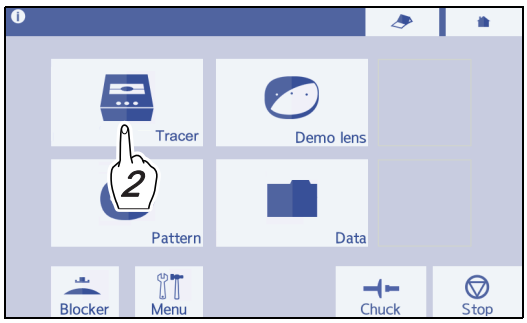
❖ For the operating procedure, refer to the operator's manual for the LT-980.

2 Receive trace data from the LT-980.

Press 

on the home screen of this instrument.

The shape data is displayed on the frame data confirmation screen.

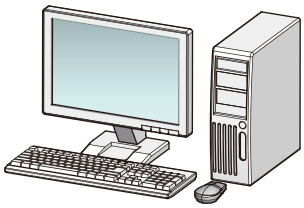


3 If necessary, save the shape data to the internal memory.

"3.2.2 To save shape data to the internal memory" (page 64)

3.2.4 To receive data from the server computer

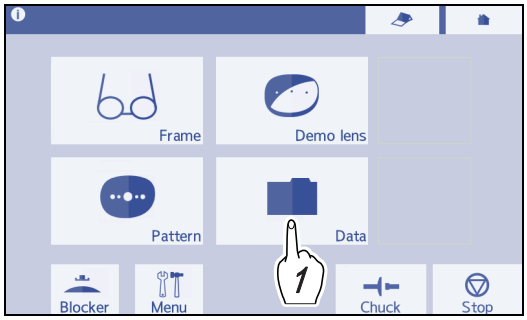
Receive shape data from the server computer connected with this instrument through Ethernet.



Parameter settings	See *" Communication interface" (page 240)*.
Operation method	Wizard mode or Professional mode
Related item	*"8.1.3 To communicate through NIDEK LAN" (page 290)*

1 Press Data on the home screen.

→ Data management screen



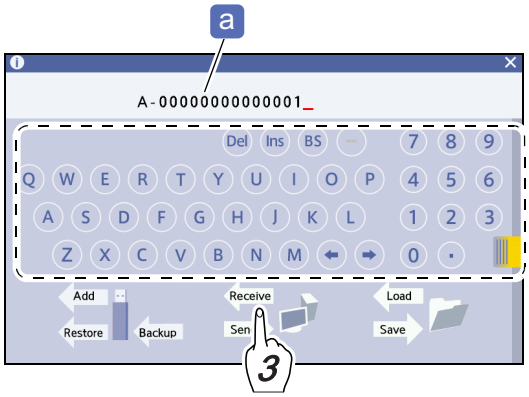
2 Enter a shape data name with the keyboard.

Enter the shape data name in the data name field a.

The length of shape data name is 16 characters including a hyphen.

3 Press Receive to load the shape data.

The shape data is displayed on the frame data confirmation screen.



3.2.5 To send shape data to the server computer

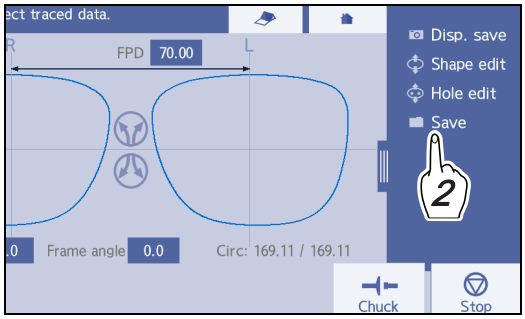
This is a procedure for sending shape data to the server computer when this instrument is connected with the server computer.

Related item	*"8.1.3 To communicate through NIDEK LAN" (page 290)*

1 Display the shape data to be sent to the computer.

2 Press Save in the side menu.

→ Data management screen

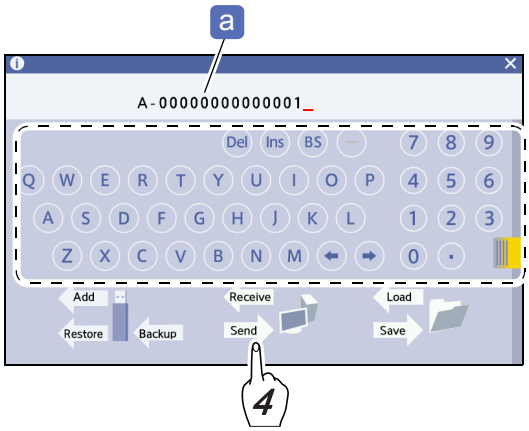


3 Enter a shape data name with the keyboard.

Enter the shape data name in the data name field a.

The length of shape data name is 16 characters including a hyphen.

4 Press Send to send the shape data to the server computer.



3.3 Managing Shape Data

Handling of USB flash drive

⚠ CAUTION

- Use the USB flash drive specified by NIDEK.
- Turn off the power switch before connecting or disconnecting the USB flash drive.
- To prevent data loss or such due to damage to the USB flash drive, back up data to other media periodically.
  NIDEK is not responsible for data loss caused by not backing up.
- Only data backed up from the instrument can be restored or added. Data from other instruments or data changed by the operator may cause malfunction. Do not restore or add such data.
- Never disconnect the USB flash drive during data backup. Do not change the write-protection switch setting of the USB flash drive.
  It may cause instrument malfunction or data damage in the USB flash drive.
- During backup to the USB flash drive, other operations cannot be performed.

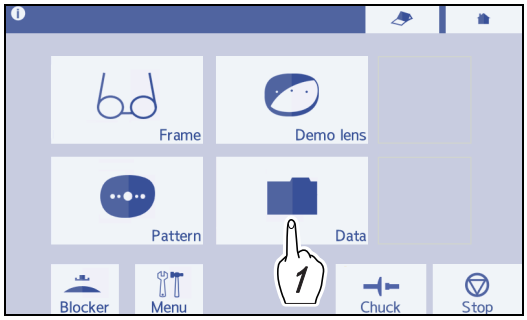
3.3.1 To delete shape data

- Data that exceeds the internal memory cannot be saved. Delete unnecessary data as much as possible. Also, as the amount of data increases, saving and recalling time become longer.

1 Press 

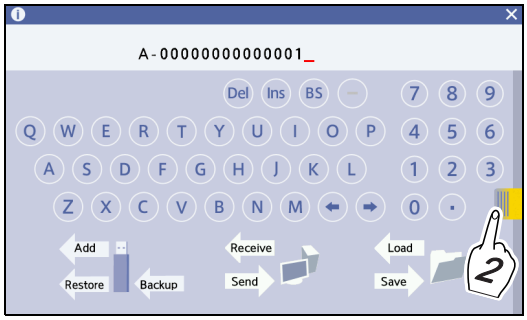
on the home screen.

→ Data management screen

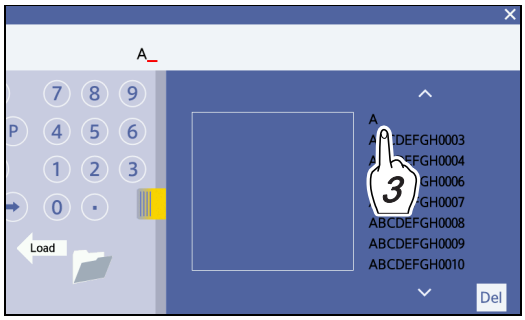


2 Press  .

→ Brand list



3 Select the brand that includes shape data to be deleted.

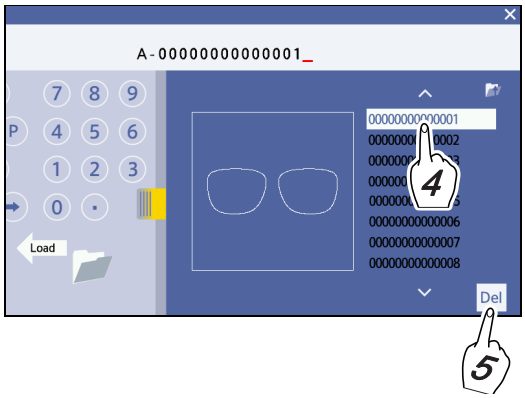


4 Specify shape data to be deleted.

5 Press Del.

The deletion confirmation message appears.

- To delete the specified data, press OK.
- To stop deleting, press Cancel.



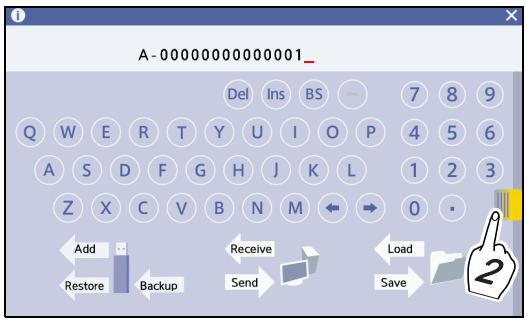
3.3.2 To delete brands (folders)

1 Press Data on the home screen.

→ Data management screen

2 Press .

→ Brand list

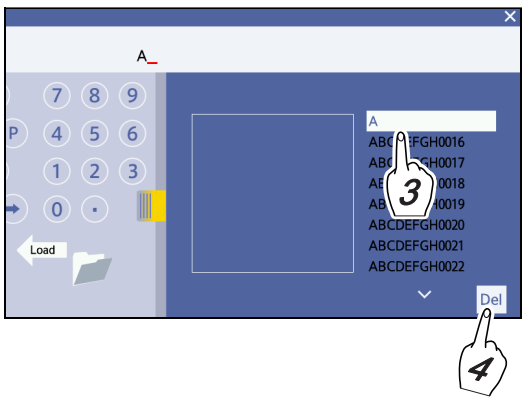


3 Press and hold the brand to be deleted for 2 seconds or longer.

4 Press Del.

The deletion confirmation message appears.

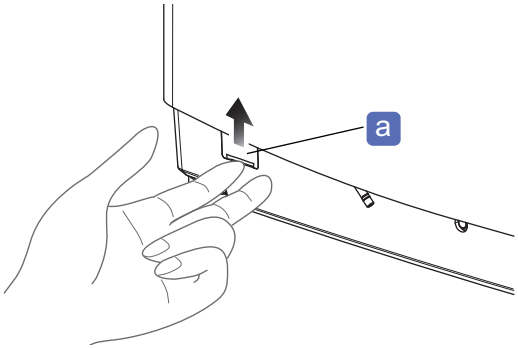
- To delete the specified data, press OK.
- To stop deleting, press Cancel.



3.3.3 To back up shape data

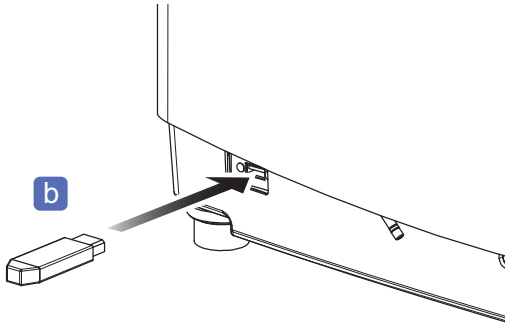
- All shape data in the internal memory is backed up to the USB flash drive. Data cannot be backed up separately.

1 With the instrument power switch off, lift the cover a with a finger tip to open the USB port.



2 Insert the USB flash drive b for backup into the USB port.

3 Turn on the power switch of the instrument.



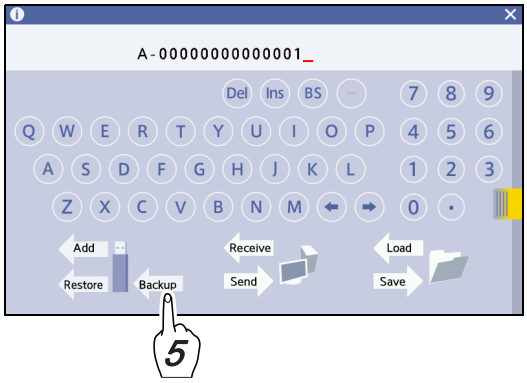
4 Press Data on the home screen.

→ Data management screen

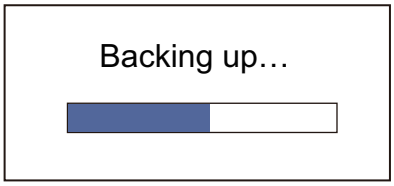
5 Press Backup.

The confirmation message appears.

- To back up data, press OK.
- To stop backing up., press Cancel.



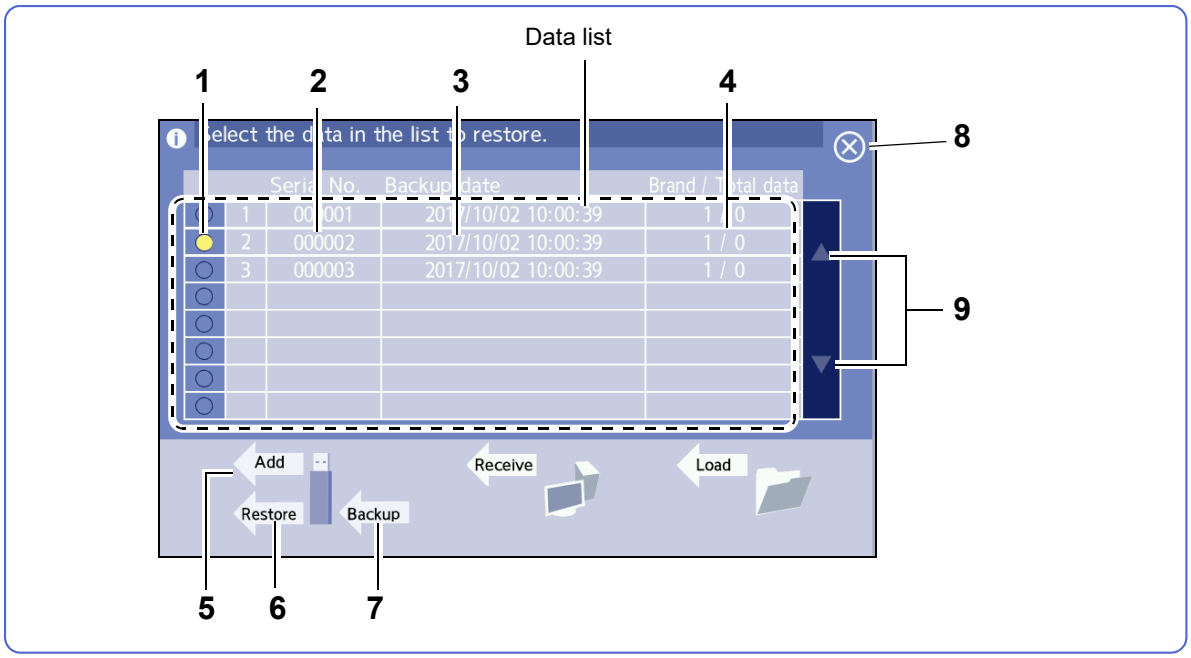
All shape data in the internal memory is backed up to the USB flash drive.



6 When the backup is completed, turn off the power switch of the instrument.

7 Remove the USB flash drive and close the cover of the USB port.

◆ Restoration/addition data list



1 Selection indicator

Lights in yellow when the corresponding data is selected for restoration.

Data can be restored by time group in the restoration data list.

2 Serial number

Represents the serial number of the instrument backed up.

3 Backup date and time

Represents date and time when data is backed up.

4 Number of brands / total number of data

Represents the number of brands and the cumulative number of shape data.

5 

[Add] button

Adds backup data from a USB flash drive to the internal memory.

6 

[Restore] button

Restores backup data from the USB flash drive to the internal memory.

7 

[Backup] button

Backs up shape data in the internal memory to the USB flash drive.

8 **Close button**

→ Data management screen

9 Scroll buttons

Scrolls the restoration data list when the number of data is 9 or more.

3.3.4 To restore shape data from a USB flash drive

⚠ CAUTION

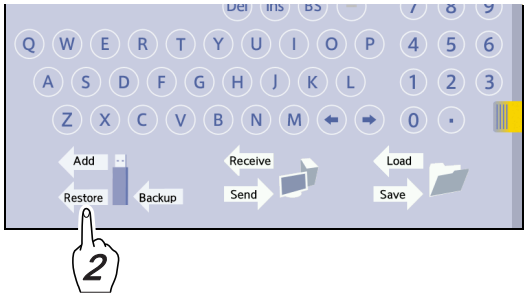
- If shape data is restored, all the shape data stored in the instrument is deleted and overwritten by the data in the USB flash drive. Before restoration, be sure to back up all data in the instrument to the USB flash drive.
  If data is deleted, NIDEK will not be responsible.

1 Insert the USB flash drive into the USB port.

❖ This is the same as Steps 1 to 4 in *"3.3.3 To back up shape data" (page 71)*.

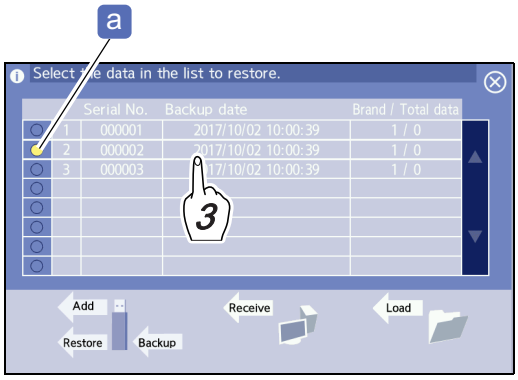
2 Press [Restore] on the data management screen.

→ Restoration data list



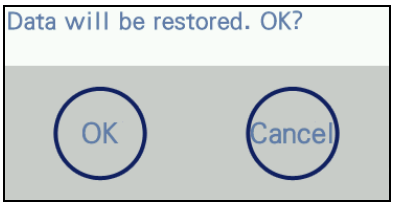
3 Select data to be restored from the restoration data list.

When data to be restored is selected, the selection indicator a lights in yellow



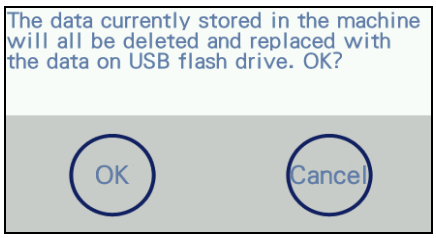
The restoration confirmation message appears.

- To restore the data, press OK.
- To cancel restoration, press Cancel.



The overwriting confirmation message appears.

- To restore the data, press OK.
- To cancel restoration, press Cancel.



4 When data restoration is complete, turn off the power switch of the instrument.

5 Remove the USB flash drive and close the cover of the USB port.

3.3.5 To add shape data from a USB flash drive

⚠ CAUTION

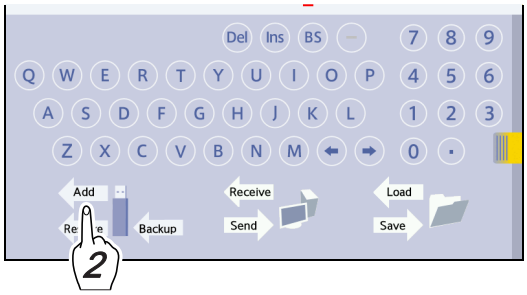
- If shape data is added, the data is overwritten by the data in the USB flash drive when shape data with the same name already exists in the internal memory.

1 Insert the USB flash drive into the USB port.

❖ This is the same as Steps 1 to 4 in *"3.3.3 To back up shape data" (page 71)*.

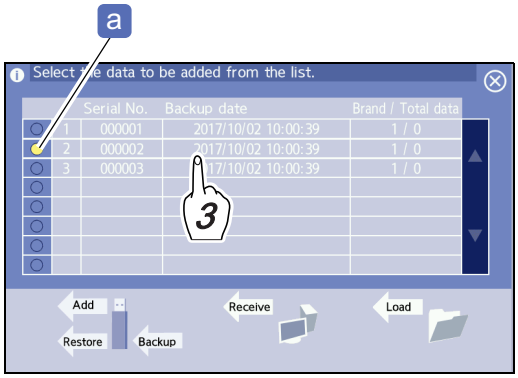
2 Press Add on the management screen.

→ Addition data list



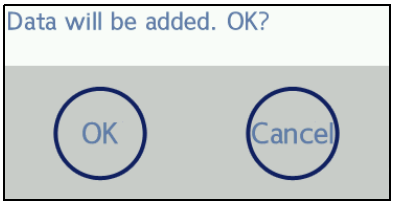
3 Select data to be added from the addition data list.

When data to be added is selected, the selected indicator a lights in yellow.



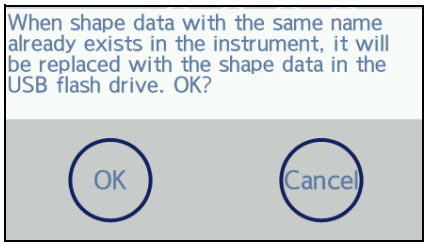
The addition confirmation message appears.

- To add the data, press OK.
- To cancel addition, press Cancel.



The overwriting confirmation message appears.

- To add the data, press OK.
- To cancel addition, press Cancel.



4 When data addition is complete, turn off the power switch of the instrument.

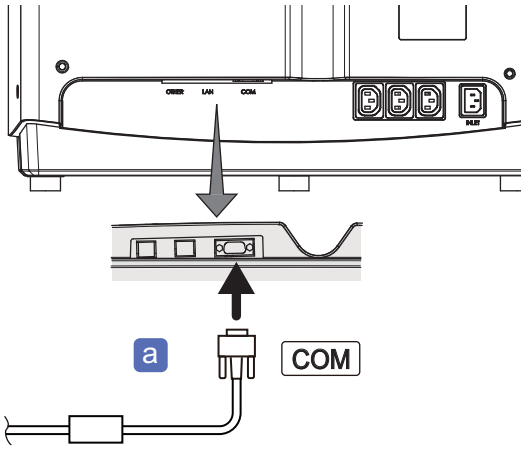
5 Remove the USB flash drive and close the cover of the USB port.

3.4 Loading, Saving, Receiving, and Sending with Barcode Scanners

3.4.1 To read and save shape data with the barcode scanner

Parameter settings	Set *" Communication interface" (page 240)* to "Barcode".
Operation method	Wizard mode or Professional mode

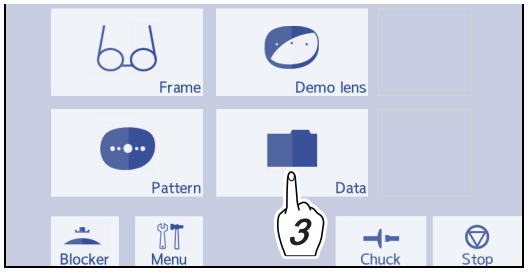
1 With the power switch of this instrument off, connect the cable a for the barcode scanner to the RS-232C (COM) port.



2 Turn on the power switch of the instrument.

3 Press Data on the home screen.

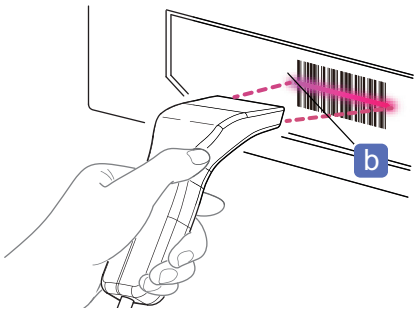
→ Data management screen



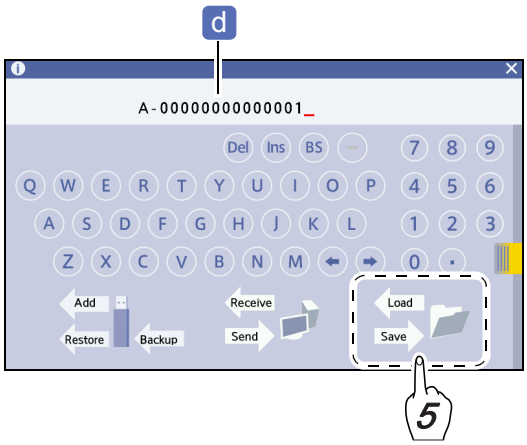
4 Place the barcode scanner b over the barcode.

When reading is complete, a beep sounds.

The shape data name d read from the barcode (in Step 5) is displayed.



5 Read or save the shape data.



- To read it, press Load.

  The shape data is displayed on the frame data confirmation screen.

- To save it, press Save.

  If shape data with the same name as that of shape data to be saved exists in the save destination, a message asking whether to overwrite the existing data appears.

  - To overwrite it, press Continue.
  - To stop saving, press Abort.

3.4.2 To receive and send shape data with the barcode scanner

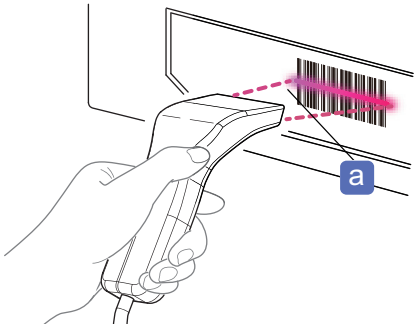
1 Press Data on the home screen.

→ Data management screen

2 Place the barcode scanner a over the barcode.

When reading is complete, a beep sounds.

The shape data name b read from the barcode (in Step 3) is displayed.

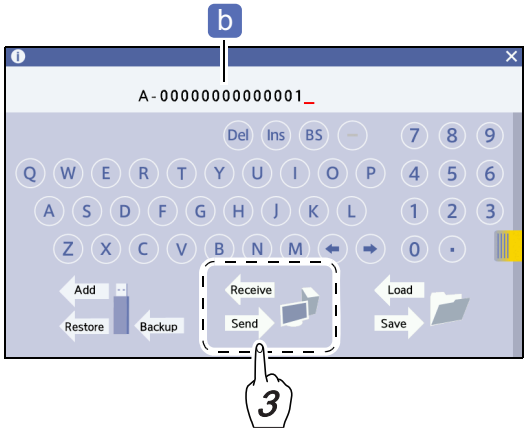


3 Receive or send shape data.

- To receive it, press Receive.

  The shape data is displayed on the frame data confirmation screen.

- To send it, while the shape data to be sent is displayed, press Send.



3.4.3 To read and save shape data with the 2D barcode scanner

Operation method	Wizard mode or Professional mode

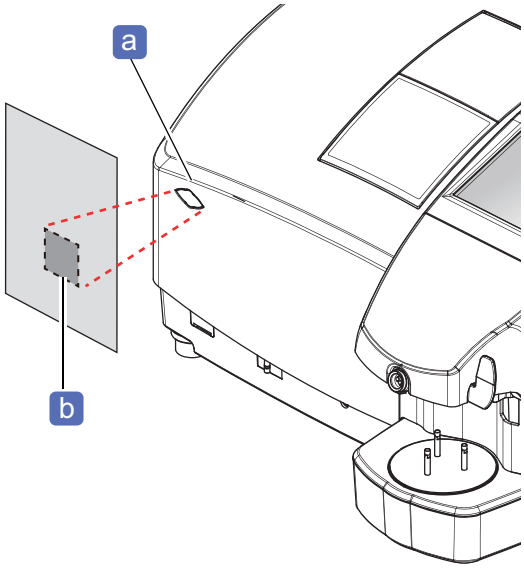
1 Turn on the power switch of the instrument.

2 Press Data on the home screen.

→ Data management screen

3 Place the QR code b (or the barcode) over the scanner window a of the 2D barcode scanner.

When reading is complete, a beep sounds. On the data management screen, the shape data name read from the QR code (or the barcode) is displayed.



4 Read or save the shape data.

❖ This is the same as Step 5 in *"3.4.1 To read and save shape data with the barcode scanner" (page 75)*.

3.4.4 To receive and send shape data with the 2D barcode scanner

1 Press Data on the home screen.

→ Data management screen

2 Place the QR code (or the barcode) over the scanner window of the 2D barcode scanner.

When reading is complete, a beep sounds. On the data management screen, the shape data name read from the QR code (or the barcode) is displayed.

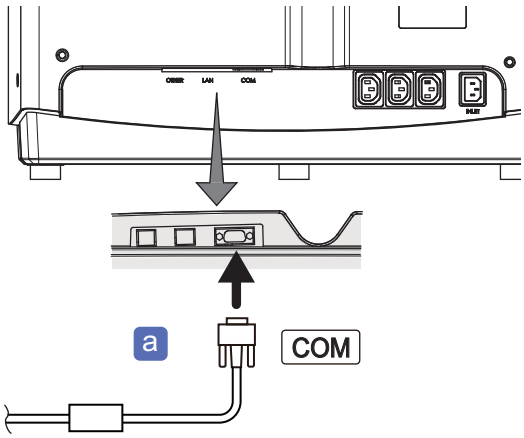
3 Receive or send shape data.

❖ This is the same as Step 3 in *"3.4.2 To receive and send shape data with the barcode scanner" (page 76)*.

3.4.5 To read and save shape data with the external 2D barcode scanner

Parameter settings	Set *" Communication interface" (page 240)* to "Barcode".
Operation method	Wizard mode or Professional mode

1 With the power switch of this instrument off, connect the cable a for the external 2D barcode scanner to the RS-232C (COM) port.



2 Turn on the power switch of the instrument.

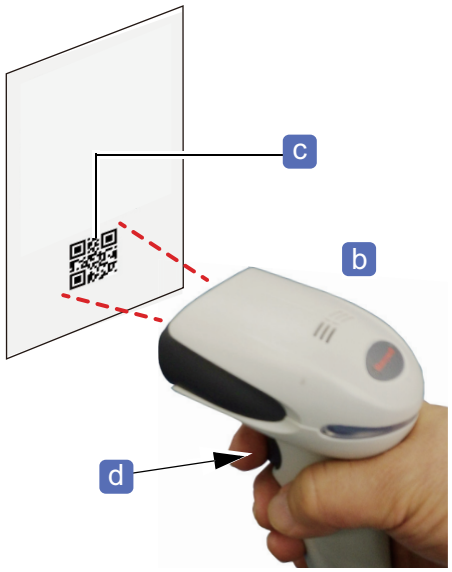
3 Press Data on the home screen.

→ Data management screen

4 Place the scanner window of the external 2D barcode scanner b over the QR code c (or the barcode).

5 Press the trigger button d.

When reading is complete, a beep sounds. On the data management screen, the shape data name read from the QR code (or the barcode) is displayed.



6 Read or save the shape data.

❖ This is the same as Step 5 in *"3.4.1 To read and save shape data with the barcode scanner" (page 75)*.

3.4.6 To receive and send shape data with the external 2D barcode scanner

1 Press Data on the home screen.

→ Data management screen

2 Place the scanner window of the external 2D barcode scanner over the QR code (or the barcode).

3 Press the trigger button.

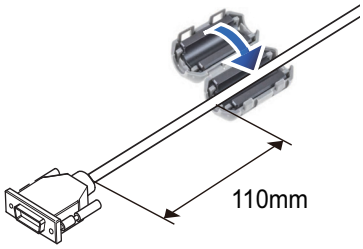
When reading is complete, a beep sounds. On the data management screen, the shape data name read from the QR code (or the barcode) is displayed.

4 Receive or send shape data.

❖ This is the same as Step 3 in *"3.4.2 To receive and send shape data with the barcode scanner" (page 76)*.

Note

- To connect the barcode scanner (optional), the settings need to be changed by personnel authorized by NIDEK. Contact NIDEK or your authorized distributor.
- To connect the external barcode scanner or external 2D barcode scanner, set the ferrite core (small) to the RS-232C cable as shown to the right.

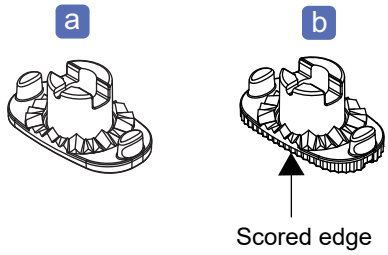


3.5 Handling Double-coated Adhesive Pad

Using the double-coated adhesive pad and pliable cup can reduce axis shift occurrences.

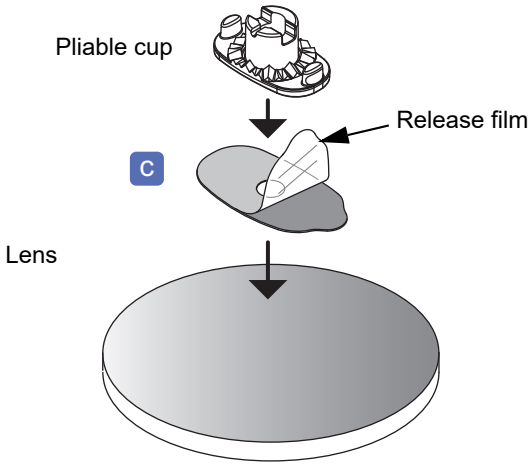
- Be sure to use the pliable cup for high base curve lenses b when processing a lens that has a front surface with a base curve of 6 or greater.

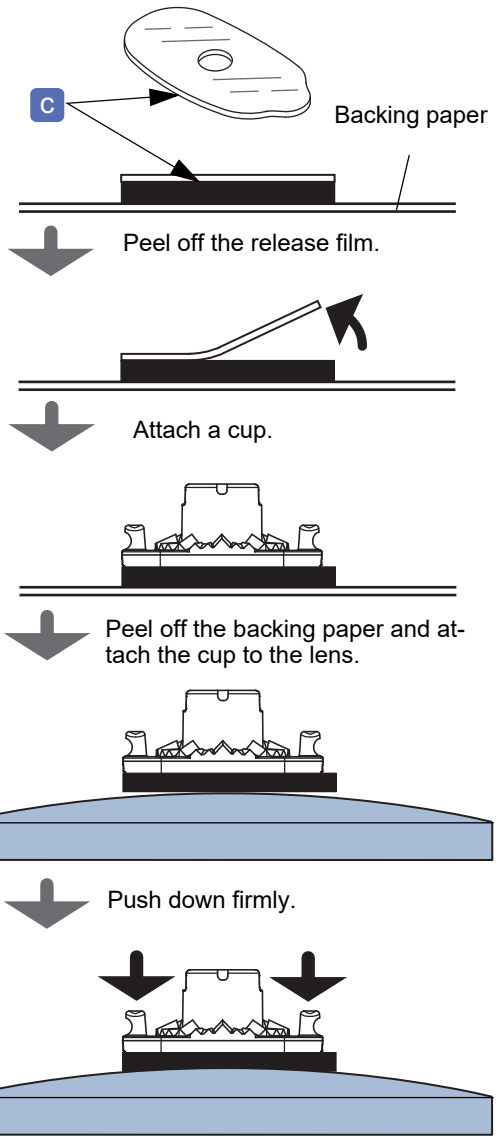
  The pliable cup for high base curve lenses has scored edge to distinguish it from the normal pliable cup a.



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

- The double-coated adhesive pad c has 2 sides. Attach the release film side to the pliable cup and the backing paper side to the lens surface.





- Do not reuse the pad.

- The double-coated adhesive pad has the expiration date. Do not use a pad that has expired because its adhesive strength has decreased.

  The expiration date is described on the bag for double-coated adhesive pads.

3.6 Handling Tracer

■ This section describes calibration of the tracer (optional) and tracing of a frame.

■ For handling of the external tracer, refer to the operator's manual provided with the device.

Operation method	Wizard mode or Professional mode

⚠ CAUTION

- Do not turn on power to the instrument with a frame set on the tracer. Do not turn off the power switch of the instrument during tracing.
  Doing so may result in malfunction.

3.6.1 To check the tracer horizontality

Check the horizontality of the tracer before its calibration. If the tracer is not in a horizontal state, the stylus may come off during calibration.

"6.2 Tracer Horizontality Check" (page 249)

3.6.2 To calibrate the tracer

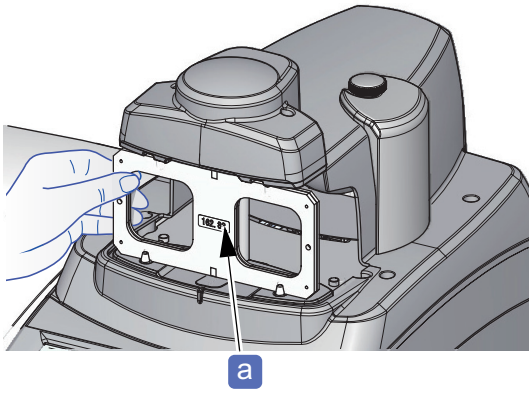
- As necessary, calibrate the tracer to ensure high tracing accuracy. During processing, calibration cannot be performed.

1 Turn on the power switch of the instrument.

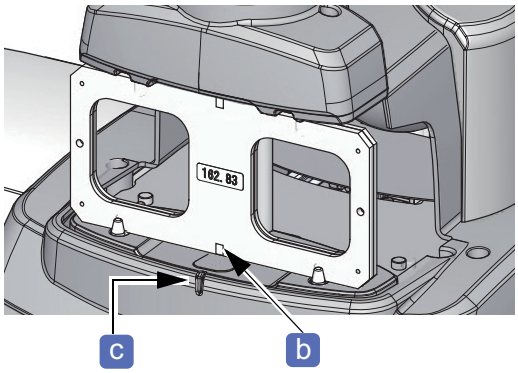
The instrument power supply also controls that of the tracer.

2 Set the standard frame to the tracer.

1) Place the standard frame between the rim clips of the lower slider. As shown to the right, set the standard frame so that "162.83" a on the standard frame label can be read correctly.
2) Lower the upper slider so that the standard frame is set between the rim clips of the upper slider.

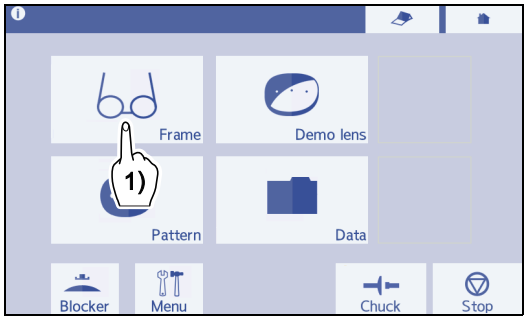


3) Align the notch b of the standard frame with the center line c of the lower slider.



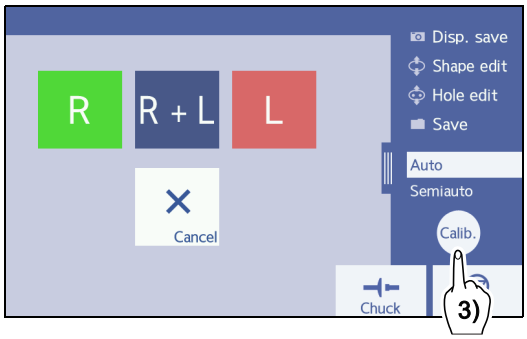
3 Perform calibration.

1) Press Frame on the home screen.
→ Frame trace screen



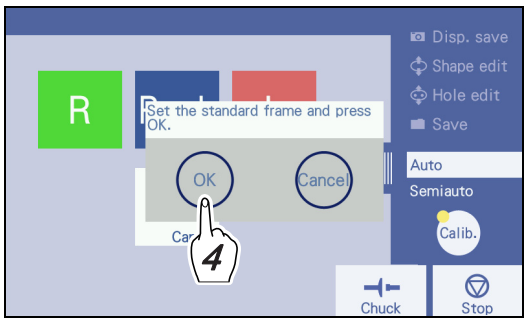
2) Press on the frame trace screen.
→ Side menu

3) Press Calib..



4 When the message is displayed, press OK.

- When calibration is complete, the instrument automatically starts tracing the standard frame.
- To skip calibration, press Cancel.



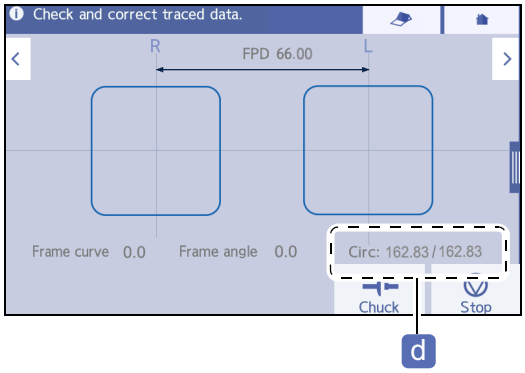
5 When tracing is complete, the message “Open the clamp. If the jig is set, hold it by hand.” appears. While holding the standard frame by hand to prevent it from dropping from the tracer, press OK.

The rim clips release the standard frame.

6 Check the trace data circumference d at the lower right of the screen.

If the circumference is not within the standard range, perform calibration again.

Standard range of circumference
162.83 ±0.1 mm



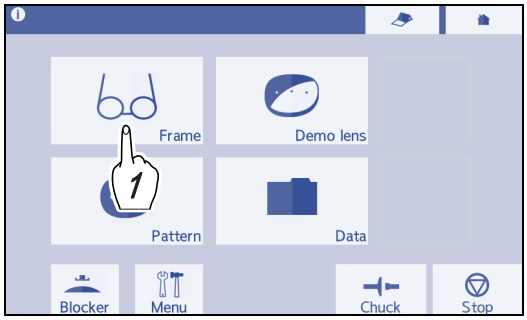
7 Remove the standard frame and store it (in the storage place).

3.6.3 To set and remove frames

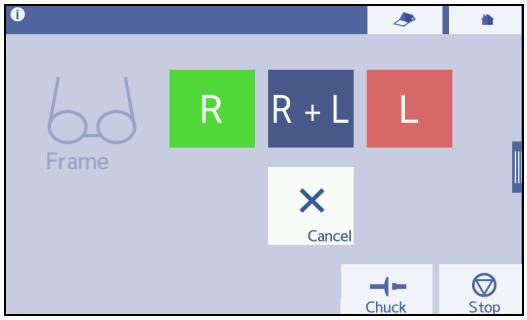
- If a lens is set in the frame to be traced, remove the lens.
- Forcibly setting a narrow frame or the temples enter inside may result in scratches on the temples. In this case, remove the temple to set the frame.

◆ To set frames

1 Press Frame on the home screen.



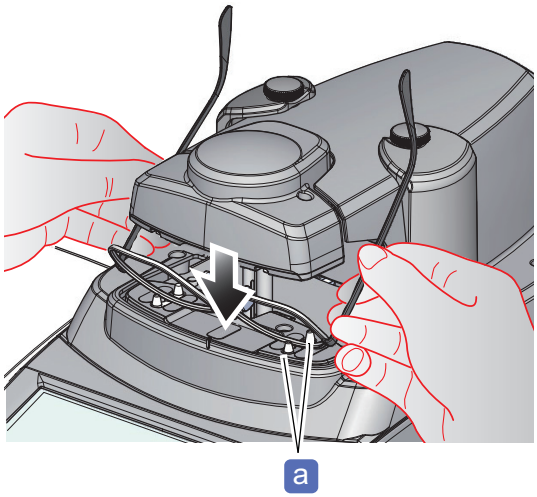
→ Frame trace screen



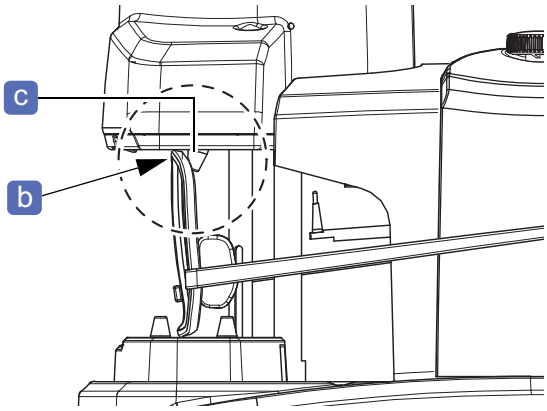
2 Open the temple of the frame, and then set the upper rim of the frame between the rim clips a of the lower slider.

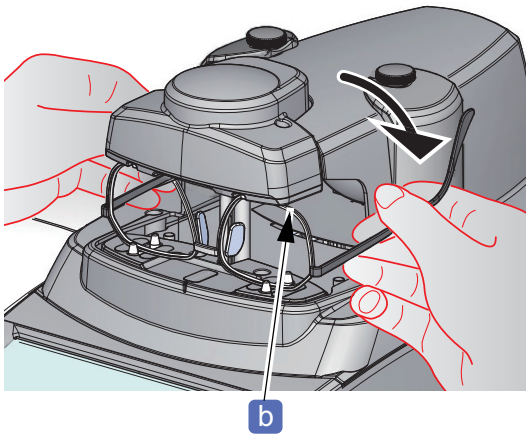
3 Push down the frame lightly.

The lower slider goes down and the upper slider goes up.

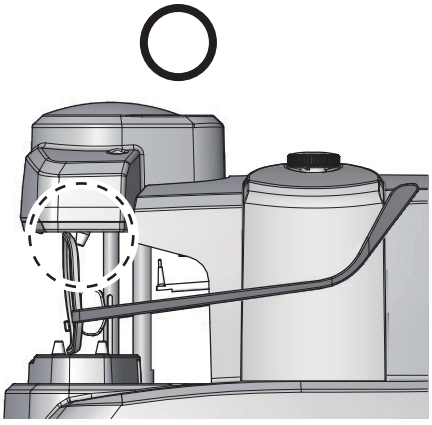


4 Tilt the lower frame b in the direction of the arrow to the right to lightly contact it to the rim clips c of the upper slider.

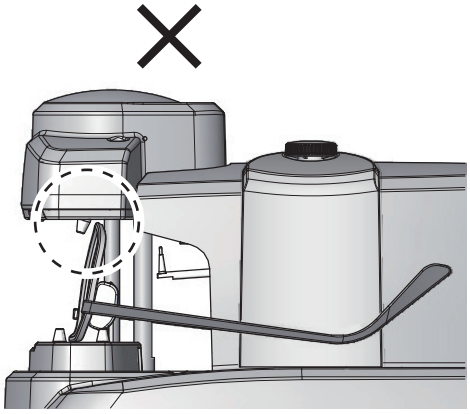




- Be sure to set the frame between the rim clips.
  If the frame that is not fitted correctly between the rim clips is traced, tracing cannot be performed properly.

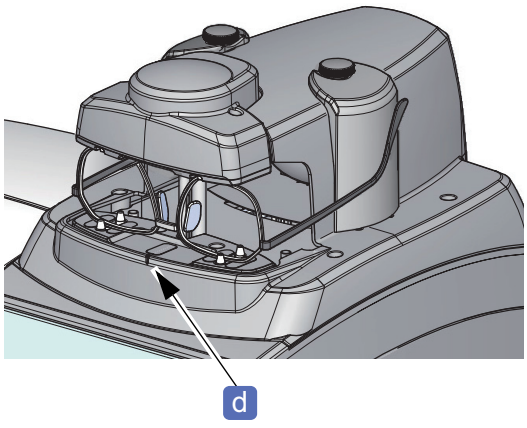


Fitted between rim clips



Come off upper rim clips

5 Align the bridge center with the center line of the lower slider d.

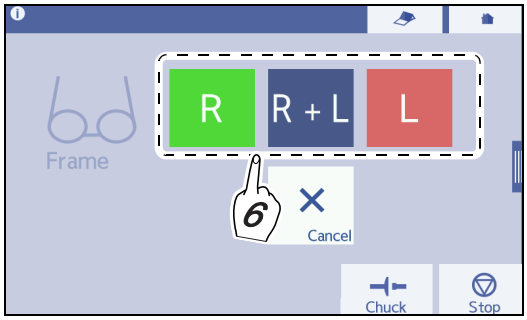


6 On the frame trace screen, select between both-eye frame tracing or single-eye frame tracing.

The rim clips hold the frame, and tracing starts.

"3.7 Tracing Frames" (page 87)

The figure to the right is an example of Wizard mode.

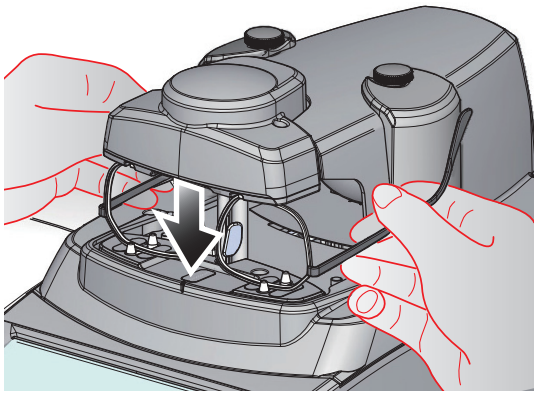


◆ To remove frames

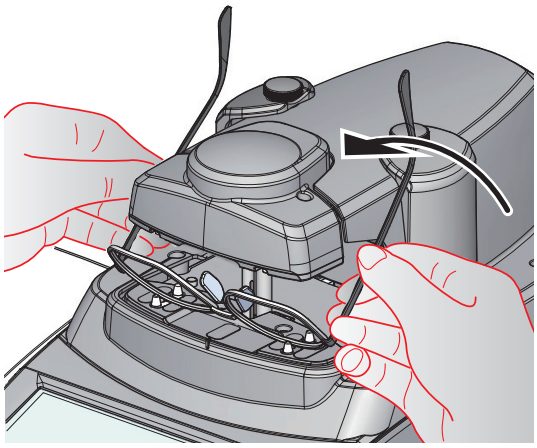
1 Confirm that, after tracing is complete, the rim clips release the frame.

2 Push down the frame lightly.

The lower slider goes down and the upper slider goes up.



3 Raise both temples of the frame toward the operator and remove it.



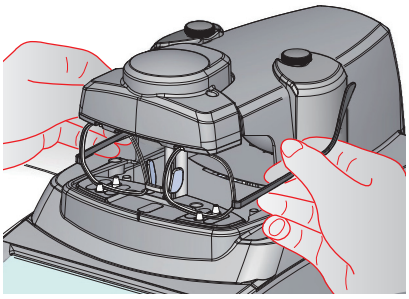
3.7 Tracing Frames

This section described the procedure for auto tracing or semiauto tracing.

- Highly flexible frames with a thin rim may become distorted, resulting in inaccurate measurement. In this case, trace a demo lens.

  "3.8.2 To trace demo lenses" (page 94)

- If any unevenness exists in the inner circumference of the rim, the stylus tip may get caught in the uneven point, and the frame may be shifted. In this case, trace the frame while lightly holding the left and right temples by hands.

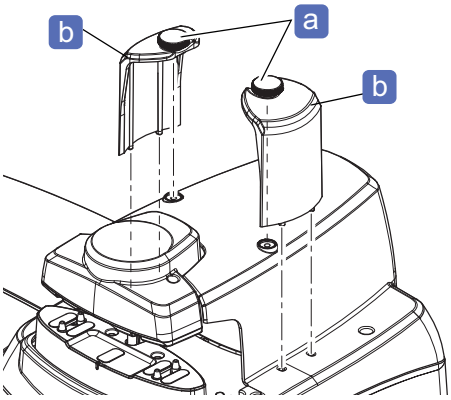


◆ To trace frames for children

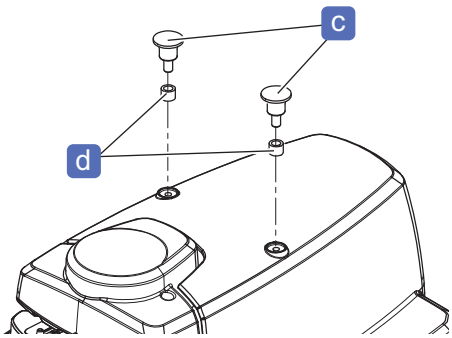
The frame holder is an adjustment part for improving the measurement accuracy by getting the frame width closer to the width of adult's face.

To measure a frame for children, remove the frame holders and attach the stoppers.

1 Loosen the fastening screws a, then remove the frame holders b.



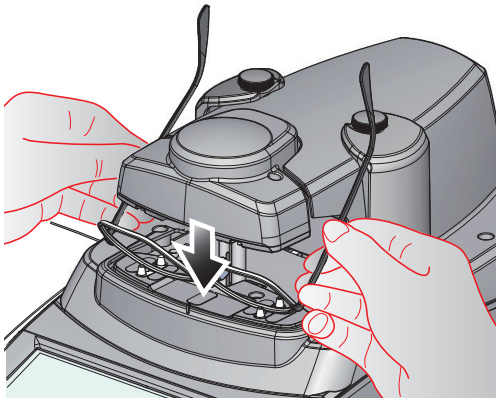
2 Attach the stoppers c and the spacers for stoppers d to the tracer.



3.7.1 To auto trace

1 Set the frame to the tracer.

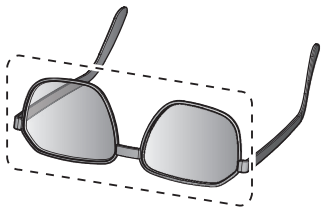
"♦ *To set frames" (page 84)*



- When auto tracing both eyes

  Measure the right and left lens shapes and the FPD.

  Press R+L to start both-eye frame tracing.

R+L tracing


To stop tracing, press Cancel.

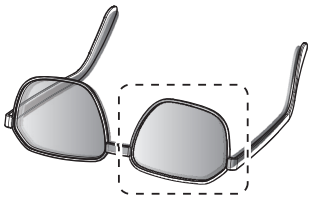
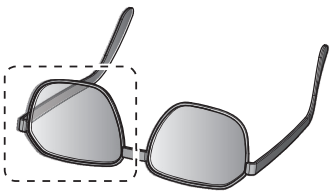
When tracing is complete, the screen switches to the frame data confirmation screen automatically and displays the shape. The rim clips release the frame.

- When auto tracing single eye

  Measure the shape for the left or right frame. The FPD is not measured.

  R : Traces the frame for the right eye.

  L : Traces the frame for the left eye.

R tracing	L tracing
	

To stop tracing, press Cancel.

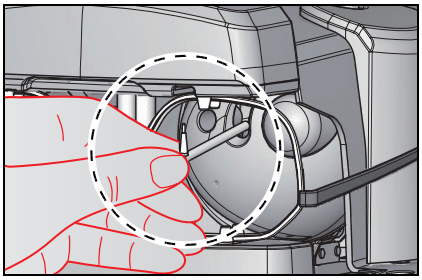
When tracing is complete, the screen switches to the frame data confirmation screen automatically and displays the tracing result. The rim clips release the frame.

2 Remove the frame.

"♦ *To remove frames" (page 86)*

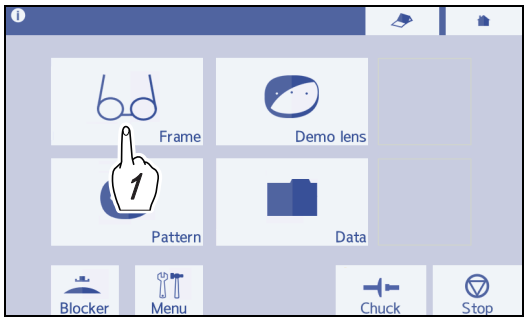
3.7.2 To semiauto trace

If the stylus does not automatically fit in the frame groove because the groove is not at along the center of the rim, specify semiauto tracing. Semiauto tracing is performed by fitting the stylus into the groove on the frame by hand before tracing the frame.



1 Press Frame on the home screen.

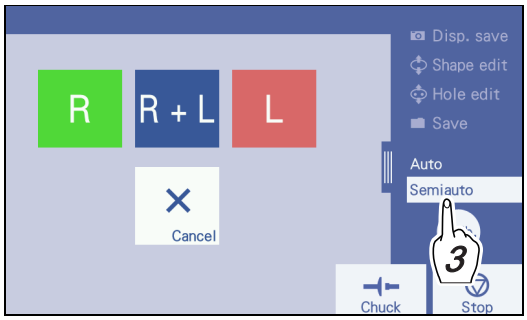
→ Frame trace screen



2 Press on the frame trace screen.

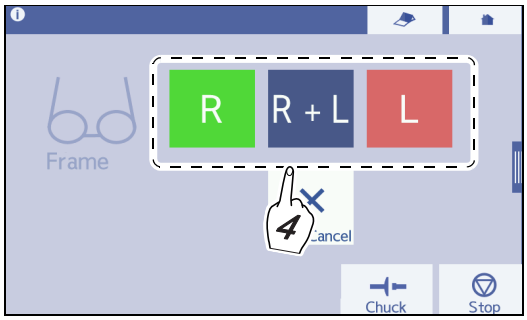
→ Side menu

3 Press the [Semiauto] button to enter Semiauto tracing mode.



4 Select between both-eye frame tracing and single-eye frame tracing.

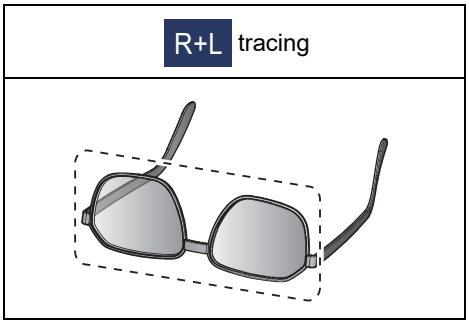
A message for prompting to set a frame appears.



- When semiauto tracing a frame for both eyes

  Measure the right and left lens shapes and the FPD.

  Press R+L to start both-eye frame tracing.



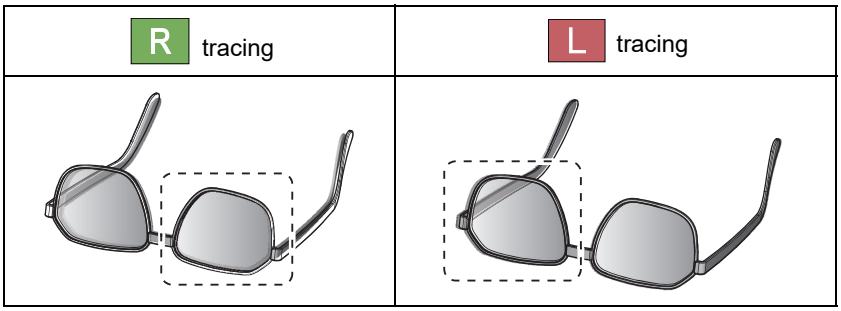
  To stop tracing, press Cancel.

- When semiauto tracing a frame for single eye

  Measure the shape of the left or right frame. The FPD is not measured.

  R : Traces the frame for the right eye.

  L : Traces the frame for the left eye.



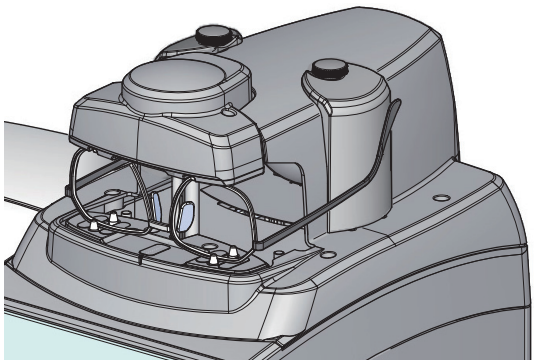
  To stop tracing, press Cancel.

5 Set the frame to the tracer, and press OK.

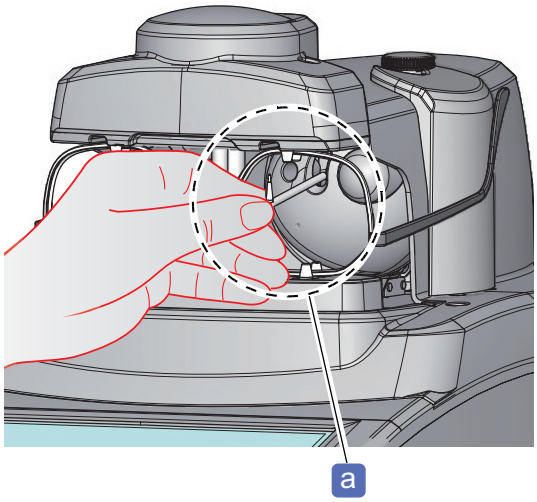
“♦ *To set frames” (page 84)*

The rim clips hold the frame.

The message “Fit the stylus into the groove and press OK.” is displayed.



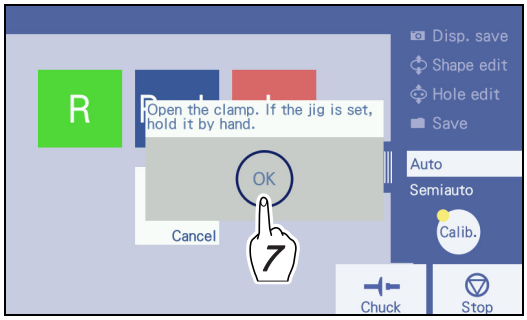
6 Fit the stylus a into the groove of the frame by hand.



7 Press OK to start tracing.

When R+L is pressed for both-eye tracing, after tracing one side is complete, the stylus moves to the other side and stops at the tracing start point. Fit the stylus a into the groove of the frame by hand, then press OK.

When tracing is completed, the rim clips release the frame, then the message “Remove the frame.” is displayed.



8 Remove the frame and press OK.

The frame data confirmation screen appears and the tracing results are displayed.

9 Remove the frame.

“♦ *To remove frames” (page 86)*

3.8 Tracing Patterns and Demo Lenses

- This section describes the procedure for tracing a pattern or demo lens to read the data (an example of the instrument equipped with the DB-model tracer and blocker).
- FPD cannot be measured by pattern or demo lens tracing. Before processing, it is necessary to input the value of FPD or DBL.

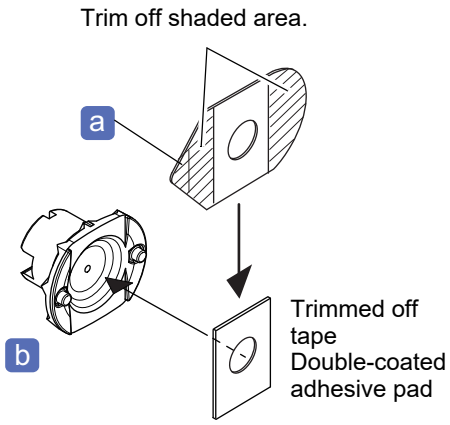
Parameter settings	Set *" Method for measuring pattern and demo lens" (page 229)* to "RMU"
Operation method	Wizard mode or Professional mode

3.8.1 To trace patterns

Trace a pattern for two-point frames and such.

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

Trim off the shaded area with scissors as shown to the right and attach the pad to the pattern holder.

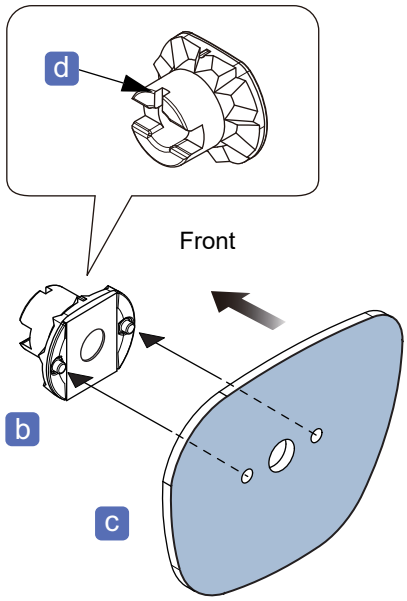


2 Attach the pattern b to the provided pattern holder c.

As shown to the right, attach the pattern to the pattern holder so that the top mark d of the pattern holder and the upper edge of the pattern face up.

The figure to the right is viewed from the person wearing glasses (rear view).

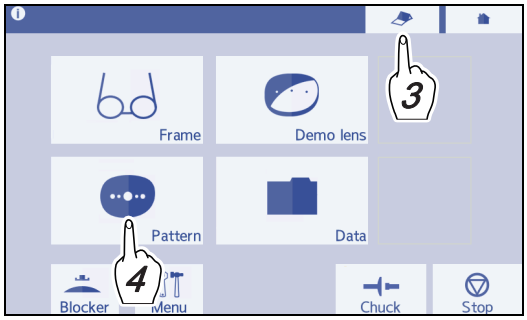
- The thickness of patterns is limited. If the thickness of the part to which the pattern holder is attached exceeds 4 mm, the pattern cannot be measured.



3 Press  to open the processing chamber door.

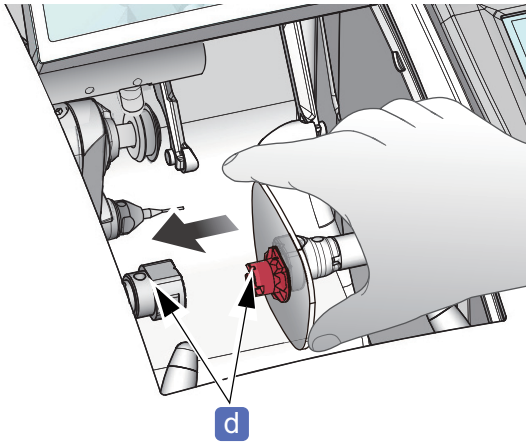
4 Press  on the home screen.

→ Pattern trace screen



5 Set the pattern to the lens adapter.

Securely insert the pattern holder into the lens adapter with the top marks d aligned.



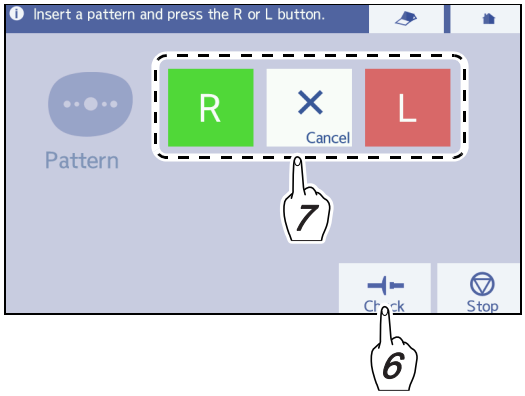
6 Secure the pattern.

Press  to secure the pattern.

"3.10.1 To set lenses" (page 103)

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

The processing chamber door closes automatically and tracing starts.



- To stop tracing, press  .
- To restart tracing after interrupting, press R or L.

After tracing is complete, the processing chamber door opens automatically. The frame data confirmation screen appears, and the tracing results are displayed.

8 Remove the pattern.

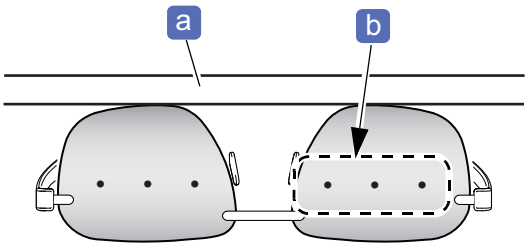
"3.10.2 To remove lenses" (page 104)

3.8.2 To trace demo lenses

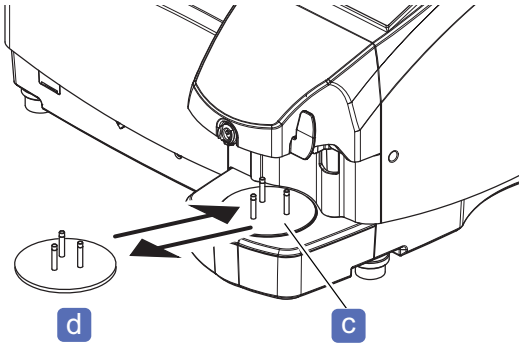
Trace a processed lens in the frame as a demo lens. (This section uses the DB or B model in the explanation.)

- The thickness of demo lenses is limited. If the thickness of the part to which a lens cup is attached exceeds 4 mm, the lens cannot be measured.
- If necessary, perform calibration for pattern measurement before tracing a demo lens.

1 Mark the center of a demo lens b with the lensmeter a.



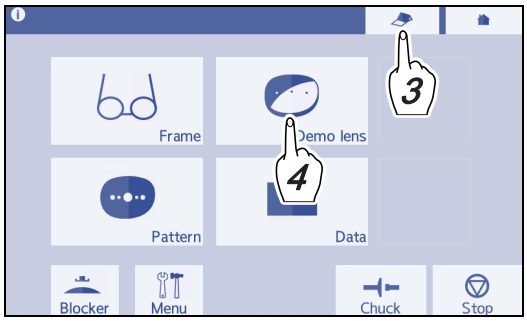
2 When marking is complete, remove the frame. Depending on the size of the demo lens, replace the lens stage c with the provided stage for small diameter lenses d (the pins are positioned closer together) as necessary.



3 Press  to open the processing chamber door.

4 Press  on the home screen.

→ Demo lens blocking screen

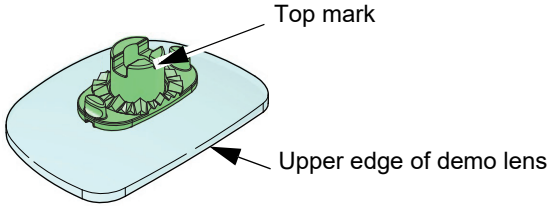


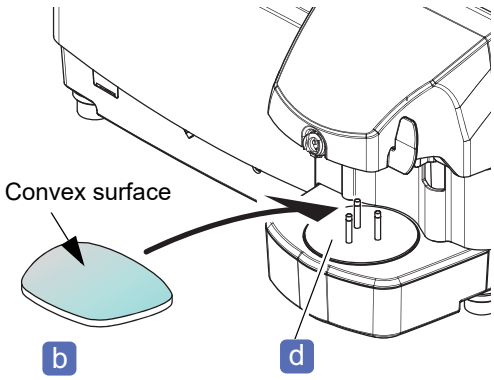
- For the DI, D, I, or N model, the demo lens trace screen is displayed. After blocking the demo lens with an external blocker, perform Steps 8 to 11.

5 Place the demo lens b on the stage for small diameter lenses d as shown to the right.

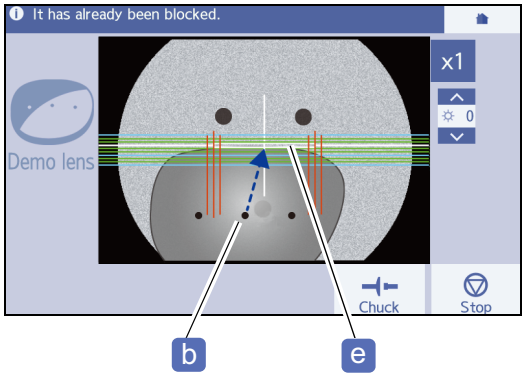
- The convex surface of the demo lens faces up.
- The upper edge of the demo lens faces into the instrument.

By doing so, the top mark of the lens cup and upper edge of the demo lens face in the same orientation.





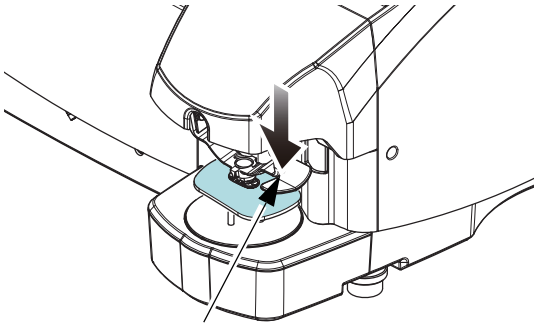
6 Align the markings of the demo lens b with the center line of the alignment scale e.



7 Block the lens.

"4.6 Blocking" (page 136)

After blocking, the demo lens trace screen appears automatically.

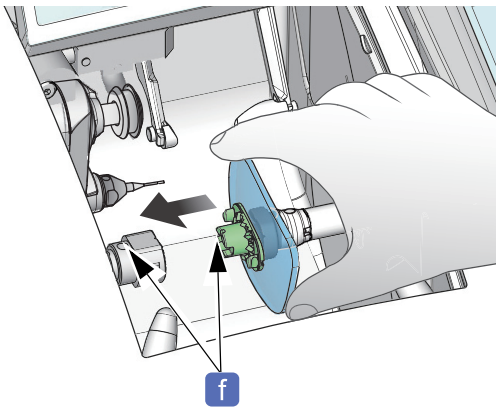


Push firmly.

8 Set the demo lens to the lens adapter.

Securely insert the lens cup into the lens adapter so that the top marks f are aligned.

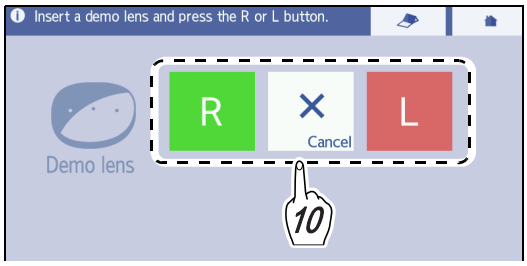
"3.10.1 To set lenses" (page 103)



9 Press Chuck to secure the demo lens.

→ Trace screen

10 Trace the demo lens.



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

The processing chamber door closes automatically and tracing starts.

- To stop tracing, press Cancel.
- To restart tracing after interrupting it, press R or L.

When tracing is complete, the frame data confirmation screen appears automatically and the trace result is displayed.

11 Remove the demo lens.

"3.10.2 To remove lenses" (page 104)

3.9 Scanning (Shape imager)

■ For measurement modes for scanning, there are pattern mode, demo lens mode, and manual mode.

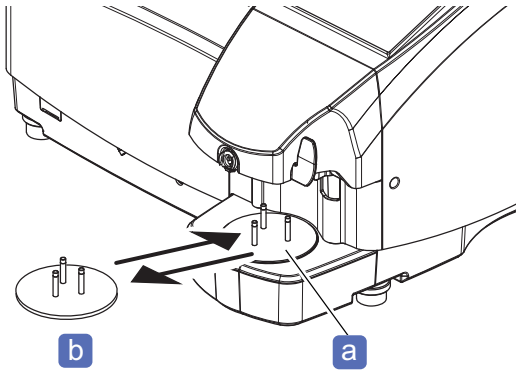
■ Scanning reads a pattern shape, demo lens shape, and their hole positions. If they cannot be traced correctly, trace them with a tracer or perform pattern or demo lens tracing.

- Switching from pattern scan screen to pattern trace screen
  Press [RMU trace] button on the pattern scan screen. The pattern trace screen is displayed.
  "3.8.1 To trace patterns" (page 92)
- Switching from demo lens scan screen to demo lens trace screen
  Press [RMU trace] button on the demo lens scan screen.
  - For the DB or B model, the demo lens blocking screen is displayed.
    "3.8.2 To trace demo lenses" (page 94)
  - For the DI, D, I, or N model, the demo lens trace screen is displayed.
    After blocking the demo lens with an external blocker, perform Steps 8 to 11 in *"3.8.2 To trace demo lenses" (page 94)*.
- Do not place a pattern or demo lens on the stage for small diameter lenses before selecting the scan selection button or such. Accurate measurement may not be possible.

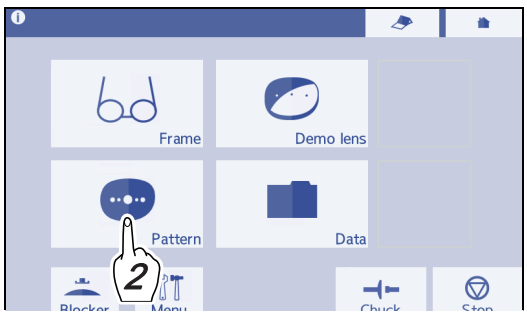
Parameter setting	For the DB or B model, set *" Method for measuring pattern and demo lens" (page 229)* to "Shape imager".

3.9.1 To scan patterns

1 When the normal lens stage a is set, replace it with the provided stage for small diameter lenses b (the pins are positioned closer together).



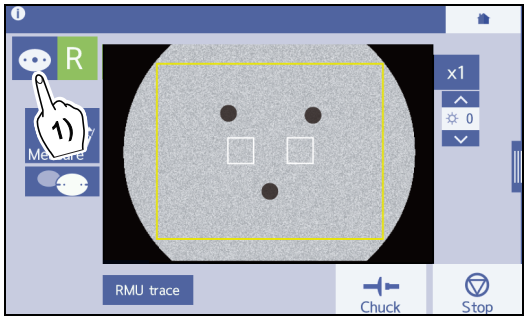
2 Press Pattern on the home screen.
→ Pattern scan screen



3 Select the pattern scan screen.

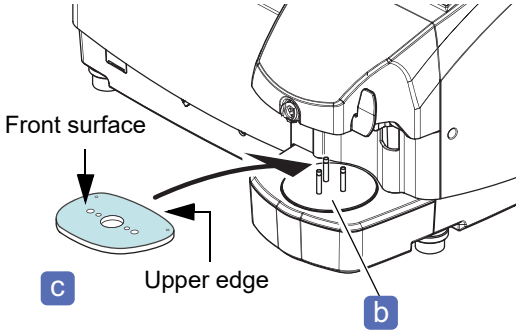
1) Select  if not selected.

2) Select R (right eye) or L (left eye) according to the pattern to be scanned.



4 Place the pattern c onto the stage for small diameter lenses b as shown to the right.

- With the upper edge facing into the instrument, set the pattern.
- If there is any burr inside the holes of the pattern, tilt correction may not be possible. Remove any burrs completely.

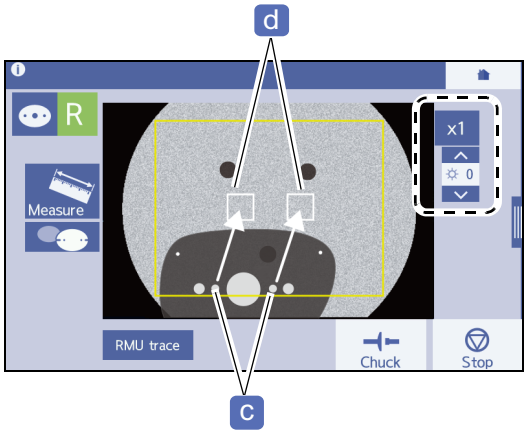


5 Center the holes of the pattern c to the alignment scale for a pattern d and align them horizontally as precisely as possible.

Place the pattern so that the outline of the pattern is not overlapped with the pins on the stage.

As the tilt is automatically corrected, the holes are not necessary to be exactly horizontal.

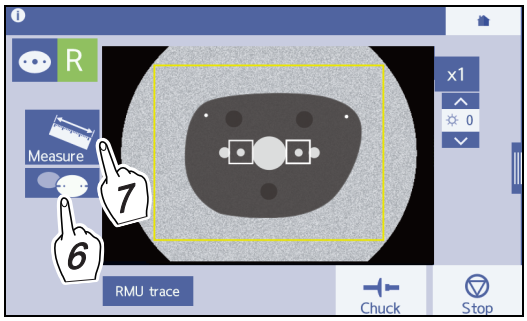
If necessary, press the magnification button x1 and the brightness adjustment button  for easy hole alignment.



6 If necessary, turn on the hole detection function  .

7 Press Measure.

- When the hole detection function  is turned on
  → Hole editor screen
- When the hole detection function  is turned off
  → Frame data confirmation screen



Note

- If the markings of the demo lens or the reference hole of the pattern cannot be detected automatically, an error message is displayed. Press [OK] deletes the message and proceeds to the next screen.

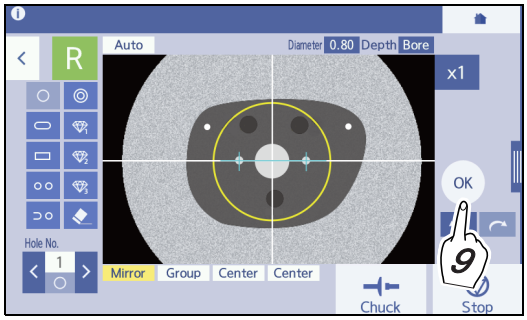
  However, the axis is not adjusted automatically. Press ‹ on the hole editor screen or frame confirmation screen to display the scan screen, then perform the measurement from Step 3.

8 When the hole detection function  is turned on in Step 6, edit the displayed hole on the hole editor screen as necessary.

"4.18 Drilling" (page 183)

9 When hole editing is complete, press [OK] to confirm the edited data.

→ Frame data confirmation screen



Note

- When  is pressed after the hole editor screen is displayed, the scan screen appears, and measurement can be performed again.
- When  is pressed in Step 9, not [OK], a confirmation message appears.
  - [OK]: Discards measurement data and returns to the home screen.
  - [Cancel]: Resumes the operation on the hole editor screen.

3.9.2 To scan demo lenses

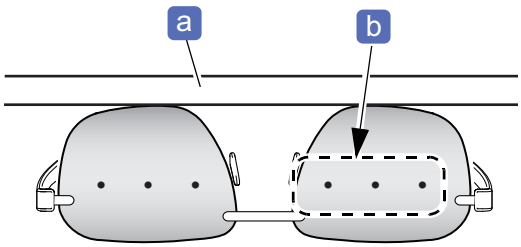
◆ To prepare demo lenses

- Before scanning, clean the lens stage, the protective plate, and the surface and edge of the demo lens by using a dry soft cloth. If there is smudge or dust, scanning may not be performed correctly.
- A hole that is detectable on the scan screen needs to meet the following conditions:
  The shadow of the hole is clearly visible;
  The hole is bored;
  The lens outline shadow and other hole shadows are separated from the hole to be scanned. If they are not met, scanning may not be performed correctly.
- A demo lens with safety-beveled and polished edge may not be scanned correctly. Lightly rub the polished edge of the demo lens with a hand edger or sandpaper until the edge has no shine.
- Holes or markings on a tint lens or dual-tone colored lens may not be detected.

1 Clean the lens stage, the protective plate, and the surface and edge of the demo lens by using a dry, soft cloth.

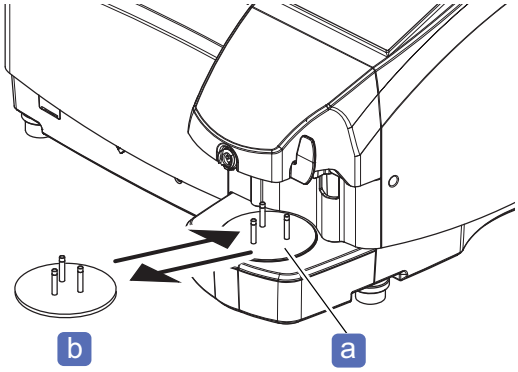
2 To indicate a horizontal reference line of the demo lens marks b the demo lens at the center by using with the lensmeter a.

When marking is complete, remove the frame.



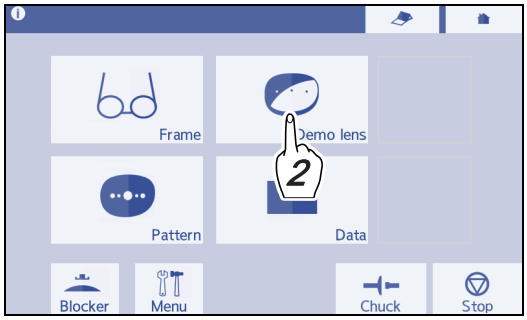
◆ To measure demo lenses (with markings)

1 When the normal lens stage a is set, replace it with the provided stage for small diameter lenses b (the pins are positioned closer together).



2 Press Demo lens on the home screen.

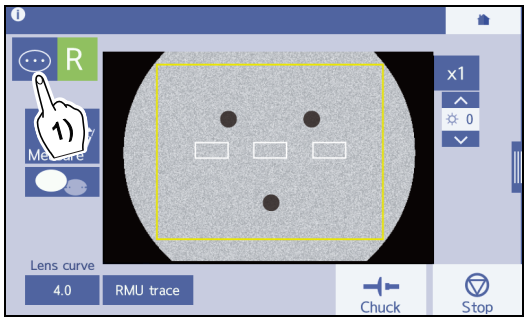
→ Demo lens scan screen



3 Select the demo lens scan screen.

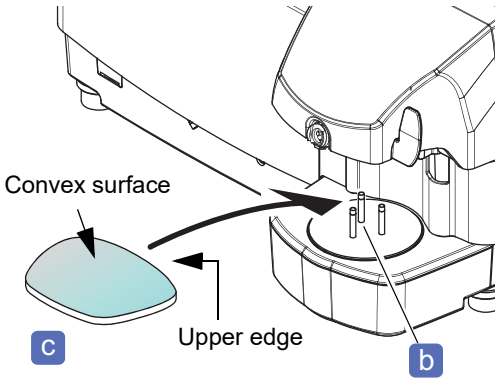
1) Select if not selected.

2) Press R (right eye) or L (left eye) according to the demo lens to be scanned.



4 Place the demo lens c on the stage for small diameter lenses b as shown to the right.

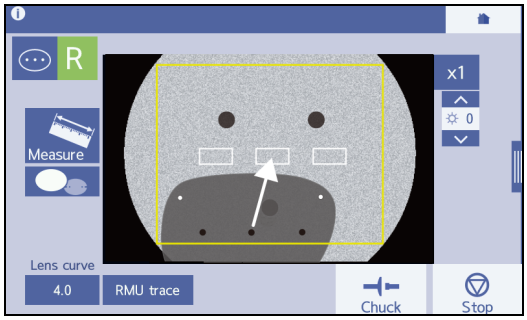
Set the demo lens so that the convex surface faces up and the upper edge faces into the instrument.



5 Center the markings of the demo lens to the alignment scale and align them horizontal as precisely as possible.

Place the demo lens so that the outline of the demo lens is not overlapped with the pins on the stage.

As the tilt of the demo lens is automatically corrected, they are not necessary to be exactly horizontal.

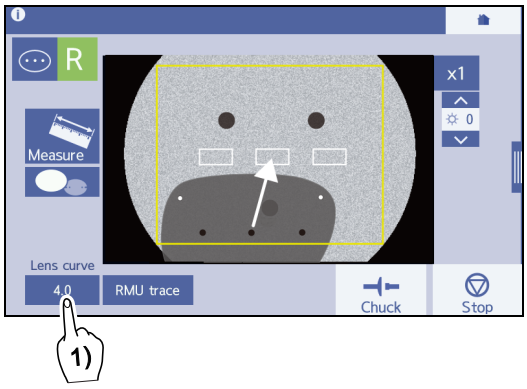


6 Input the demo lens curve value.

1) Press the [Lens curve] field.

2) Input a value with the numeric keypad.

"4.0" is displayed as the [Lens curve] initial value. Scanning can be performed with this initial value. However, inputting a more accurate value improves the accuracy of scanning.

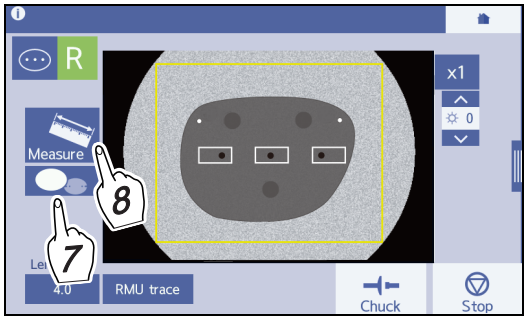


7 If necessary, turn on the hole detection function  .

8 Press 

.

- When the hole detection function  is turned on
  → Hole editor screen
- When the hole detection function  is turned off
  → Frame data confirmation screen



Note

- If the markings of the demo lens or the reference hole of the pattern cannot be detected automatically, an error message is displayed. Press [OK] deletes the message and proceeds to the next screen.

  However, the axis is not adjusted automatically. Press ❮ on the hole editor screen or frame confirmation screen to display the scan screen, then perform the measurement from Step 3.

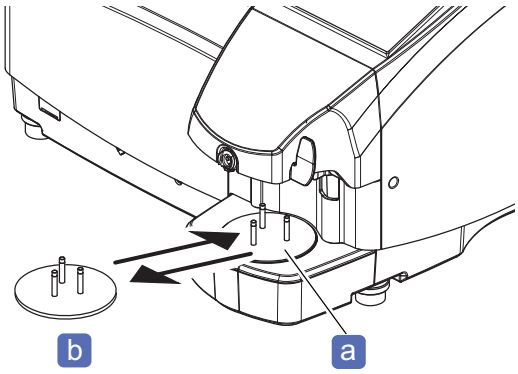
❖ The following procedure is the same as Steps 8 and 9 in *"3.9.1 To scan patterns" (page 96)*.

3.9.3 To scan (Manual measurement mode)

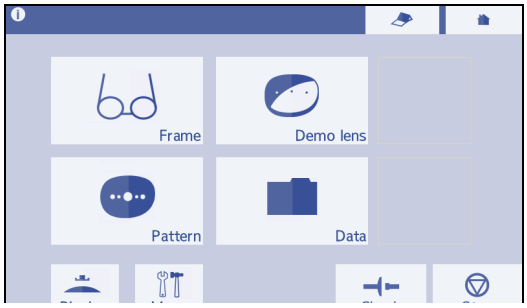
In Manual measurement mode, only the outline and hole position of a pattern or demo lens are measured, omitting automatic detection of the reference hole or markings. Therefore, center the reference hole or marking to the alignment scale and align them horizontally as precisely as possible by hand.

❖ This section describes measurement of a pattern as an example.

1 When the normal lens stage a is set, replace it with the provided stage for small diameter lenses b (the pins are positioned closer together).



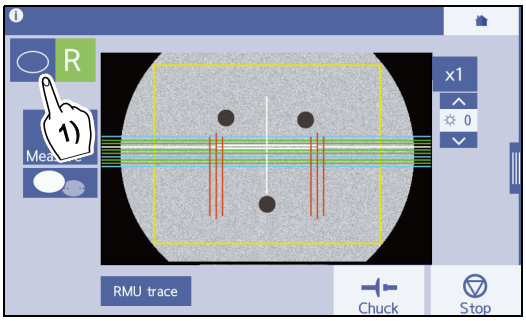
2 On the home screen, press Pattern.



3 Select the scan screen (Manual measurement mode).

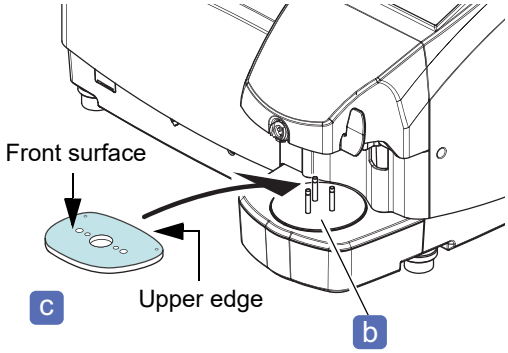
1) Select .

2) Select R (right eye) or L (left eye) according to the pattern to be scanned.



4 Place the pattern c onto the stage for small diameter lenses b as shown to the right.

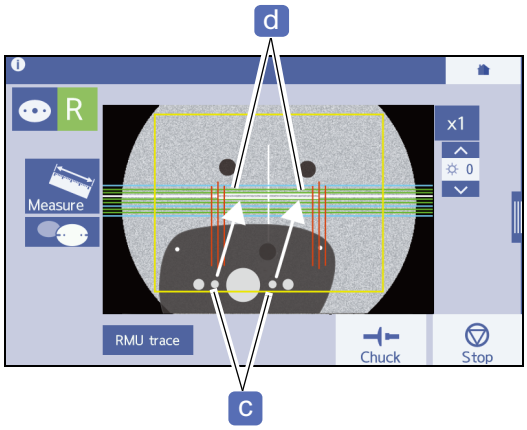
Set the pattern so that the front surface faces up and the upper edge faces into the instrument.



5 Center the holes of the pattern c to the alignment scale d and align them horizontally as precisely as possible.

Place the pattern so that the outline of the pattern is not overlapped with the pins on the stage.

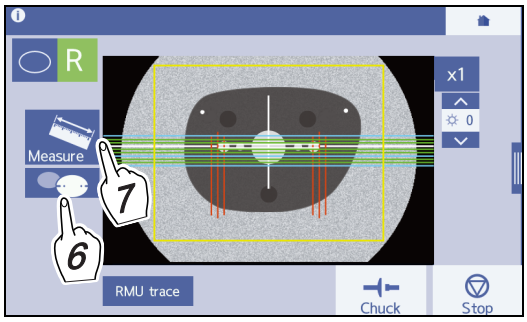
As the tilt of the pattern is not automatically corrected, they are necessary to be exactly horizontal.



6 If necessary, turn on the hole detection function  .

7 Press Measure.

- When the hole detection function  is turned on
  → Hole editor screen
- When the hole detection function  is turned off
  → Frame data confirmation screen

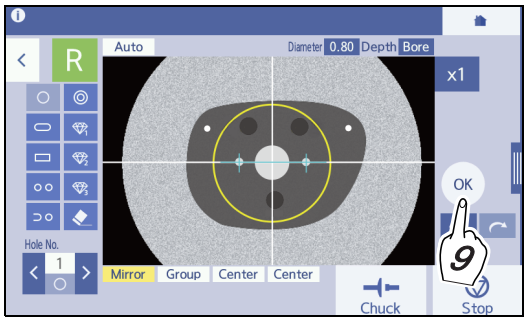


8 When the hole detection function  is turned on in Step 6, edit the displayed hole on the hole editor screen as necessary.

"4.18 Drilling" (page 183)

9 When hole editing is complete, press [OK] to confirm the edited data.

→Frame data confirmation screen



Note

- When < is pressed after the hole editor screen is displayed, the scan screen appears, and measurement can be performed again.
- When  is pressed in Step 9, not [OK], a confirmation message appears.
  - [OK]: Discards measurement data and returns to the home screen.
  - [Cancel]: Resumes the operation on the hole editor screen.

3.10 Setting and Removing Lenses

3.10.1 To set lenses

⚠ CAUTION

- Be careful not to get fingers caught when chucking a lens.
  Fingers may get hurt.
- Use the green pliable cup for the right-eye lens and the red one for the left-eye lens.
  Before setting a pliable cup, confirm that the color of the pliable cup is the same as that of the R/L indication on the processing start screen.
- Pressing Start to start processing closes the processing chamber door automatically. After processing, the processing chamber door opens automatically.
  Do not put any object on the processing chamber door. Be sure to keep hands away from the door to prevent them from being caught.

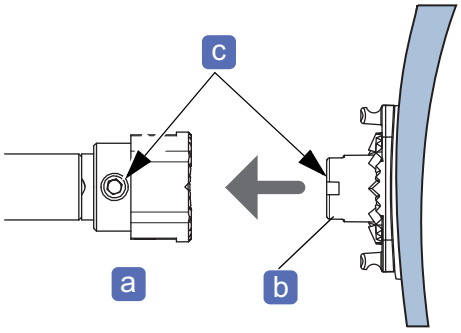
1 Press on the home screen to open the processing chamber door.

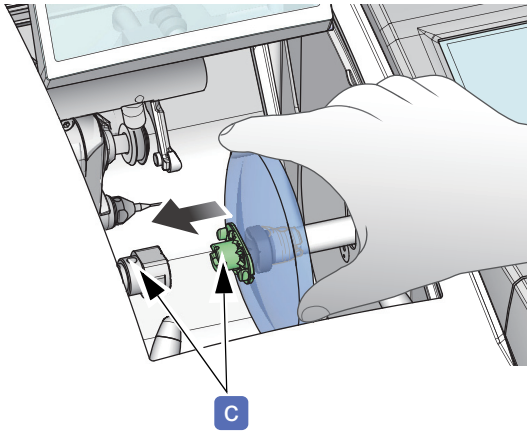
2 Block the lens on the convex surface with the pliable cup.

"4.6 Blocking" (page 136)

3 Set the lens to the lens adapter.

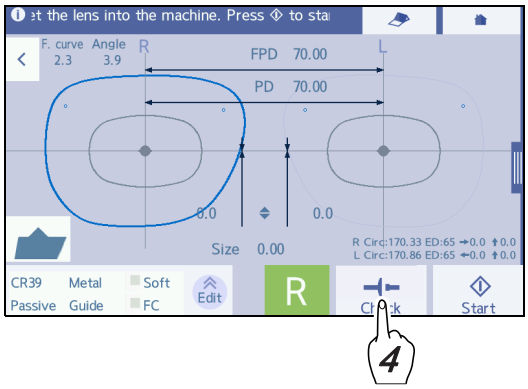
Securely insert the pliable cup b into the lens adapter a with the top marks c aligned.





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

When a lens is secured, the yellow circle Chuck at top left of the button lights up.



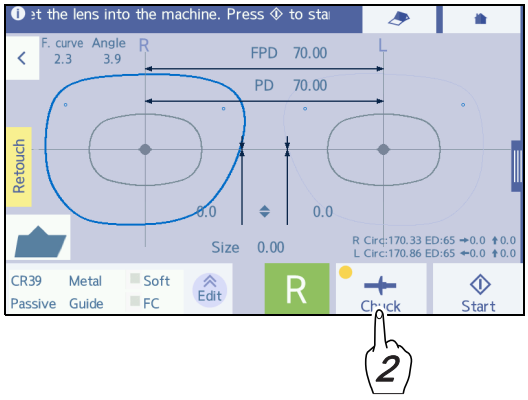
3.10.2 To remove lenses

⚠ CAUTION

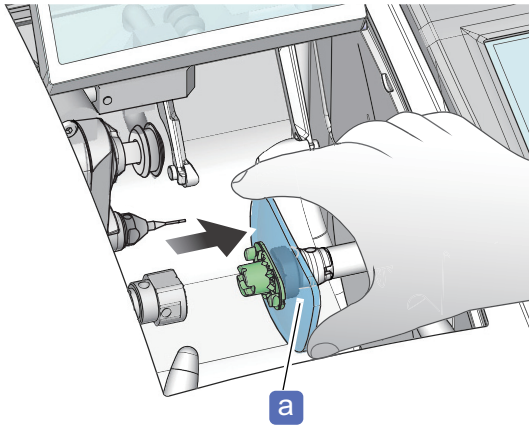
- After the processing, the processing chamber door opens automatically.
  Do not put any object on the processing chamber door. Be sure to keep face and hands away from the door to prevent them from being hit.
- Hold the lens by one hand when releasing the lens chuck. In rare cases, the lens may adhere to the lens clamp and fall into the processing chamber.

1 After the processing, the processing chamber door opens automatically, and the screen returns to the processing start screen.

2 While holding the lens by one hand, press Chuck.



3 Remove the processed lens a.



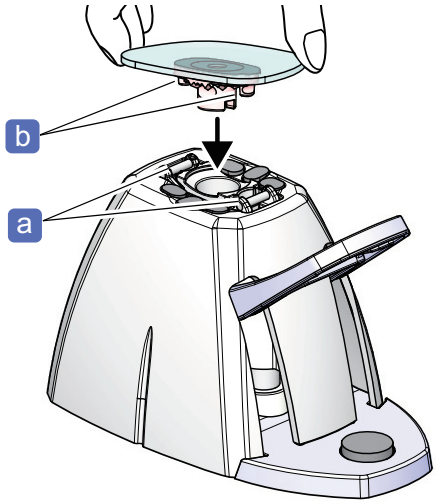
3.11 Removing Lens Cups

3.11.1 To remove pliable cups and pliable cups for high base curve lenses

Use the pliable cup remover to remove the pliable cup or pliable cup for high base curve lenses (hereafter referred to as “pliable cup”) from a lens.

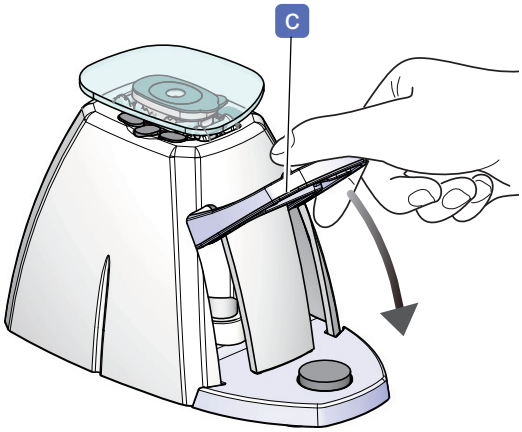
1 Set a lens with a pliable cup to the pliable cup remover.

Fit the claws b on both sides of the pliable cup into the grooves a at the top of the pliable cup remover.



2 Lower the lever c to pull down and remove the pliable cup from the lens.

Depending on the lens curve or coating, the pliable cup may not be removed even when the lever is lowered to the limit. In this case, pull the lens by hand with the lever lowered to remove the pliable cup.



Note

- Pliable cups are consumables. Replace the pliable cup with a new one when it becomes difficult to remove the double-coated adhesive pad from the cup.
- Lightly wipe any processing waste or moisture off the lens before setting it on the pliable cup remover.
  Processing waste or moisture getting into the pliable cup remover may cause a malfunction of the instrument.

3.11.2 To remove nano cup supporter (optional)

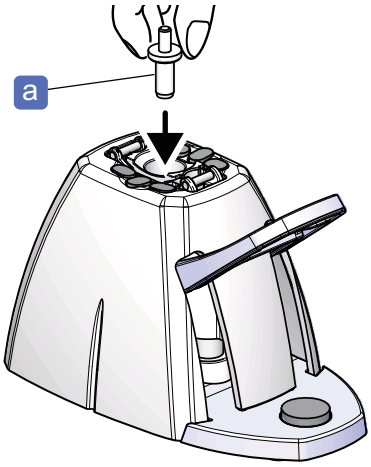
This section describes the procedure to remove the nano cup supporter after roughing.

The nano cup set (optional) contains the nano cup along with its supporter and pin.

- Lightly wipe any processing waste or moisture off the lens before setting it on the pliable cup remover. Processing waste or moisture getting into the pliable cup remover may cause a malfunction of the instrument.

1 Set the pin a included in the nano cup set to the pliable cup remover.

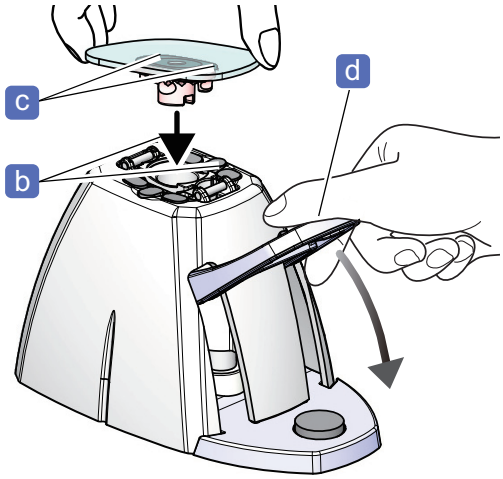
Insert the pin with its thicker side down.



2 Set a lens with the nano cup and its supporter attached to the pliable cup remover.

Fit the claws c on both sides of the supporter into the grooves b at the top of the pliable cup remover.

3 Lower the lever d to pull down and remove the supporter from the lens.



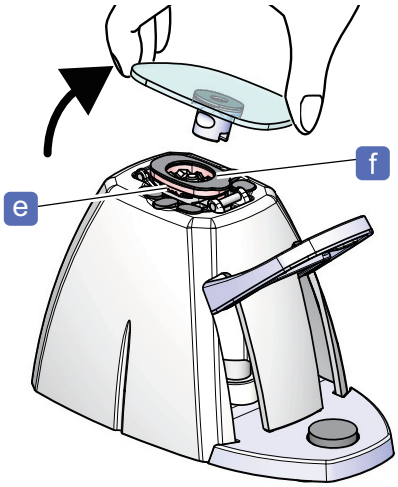
4 Pull up the lens.

The supporter e comes off the lens. Only the nano cup is attached to the lens now.

If the double-coated adhesive pad of the supporter f is attached to the lens, remove it.

5 Tilt the lever to its original position and remove the supporter from the pliable cup remover.

6 Remove the pin from the pliable cup remover.



3.11.3 To remove mini cups or nano cups (optional)

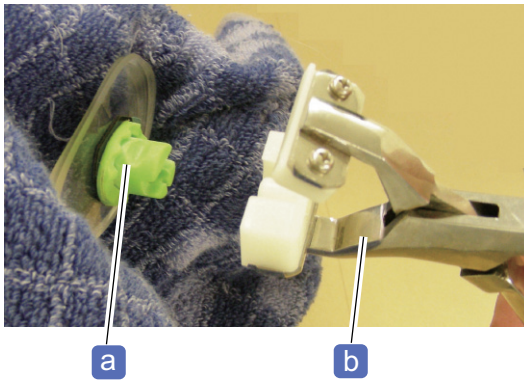
Use the mini cup remover to remove a mini cup or nano cup from a lens.

⚠ CAUTION

- Always hold a lens with a soft cloth.
  Hands may be injured by lens edges if a lens is held directly.
- Do not pry the mini cup remover horizontally or vertically when removing the cup.
  Doing so could cause damage to the coated lens surface.

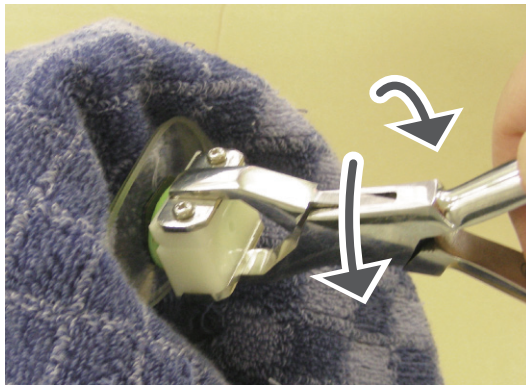
1 Set a lens with a mini cup or a nano cup to the mini cup remover.

Pinch the mini cup or nano cup with the mini cup remover b so that the groove a of the mini cup or nano cup faces up.



2 Grip the handles, then hold the mini cup or nano cup securely.

3 Gently twist (rotate) the mini cup remover to remove the mini cup or nano cup.



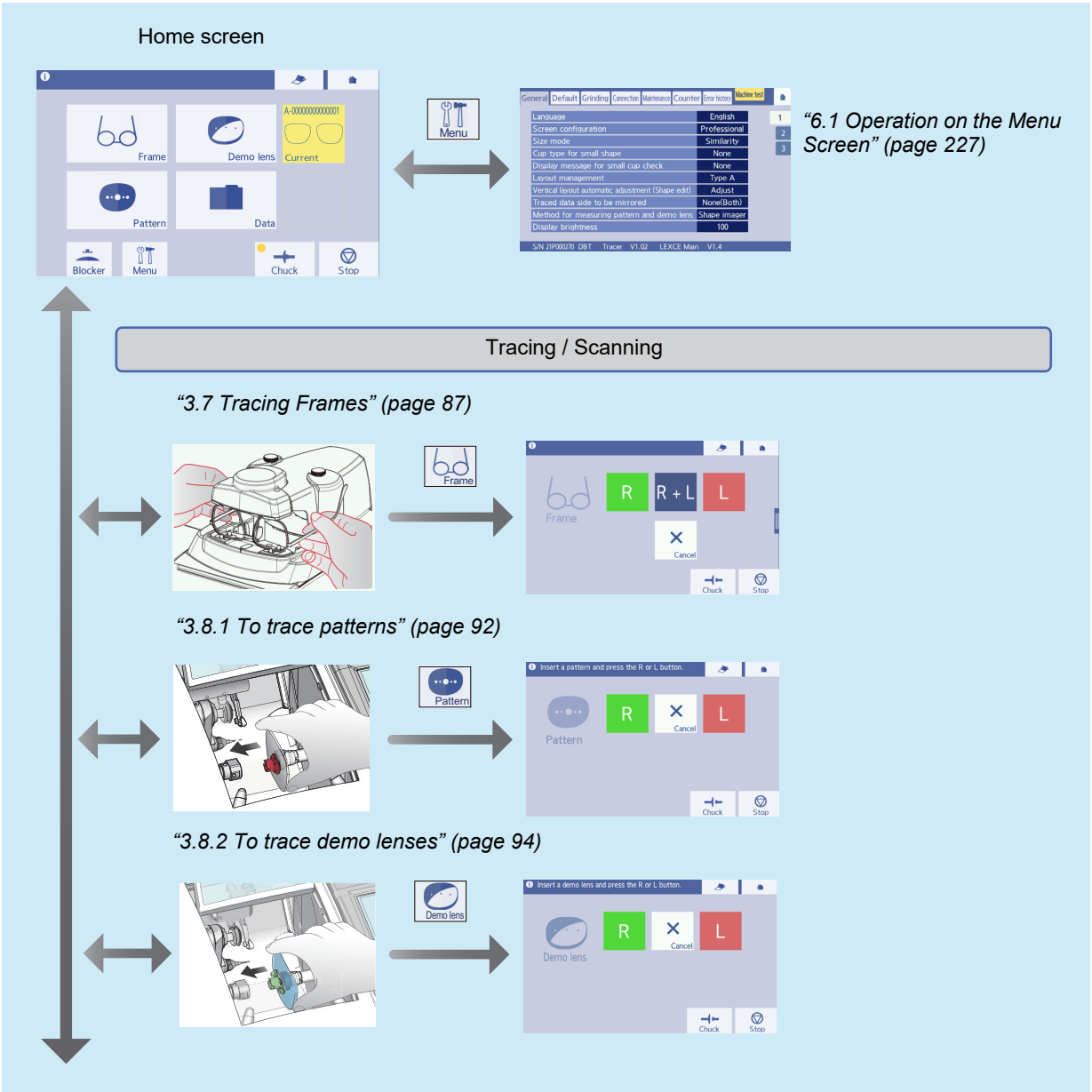
4 WIZARD MODE

Wizard mode is an operation method for executing the desired processing by following the guide on the screen. Compared to Professional mode in Chapter 5, it is a recommended method for operators who are not familiar with operations.

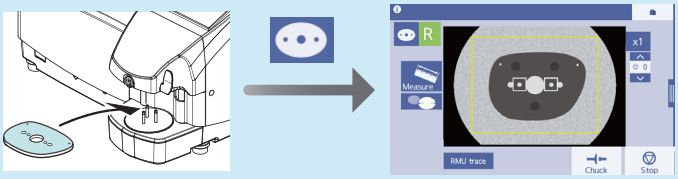
4.1 Operation Flow in Wizard Mode

This “Operation Flow in Wizard Mode” flowchart is an example of a standard system and its operations. Special operations and detailed steps are omitted from this flowchart.

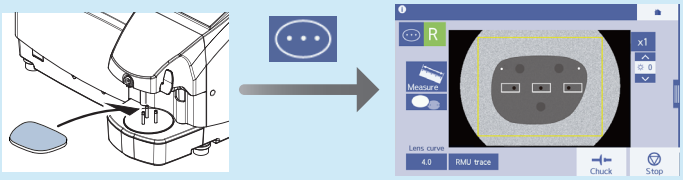
- Example of standard system configuration



"3.9.1 To scan patterns" (page 96)



"3.9.2 To scan demo lenses" (page 98)

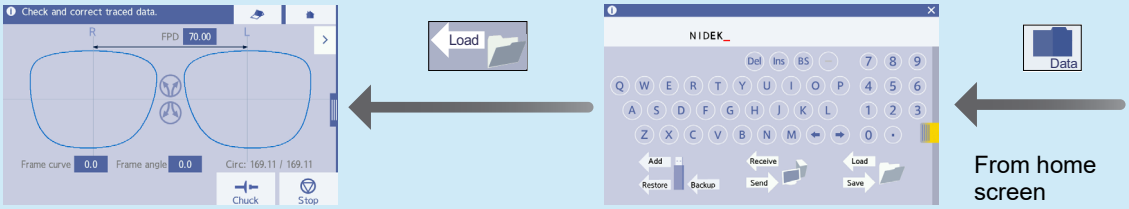


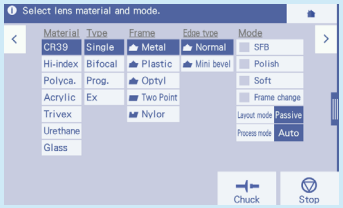
Shape editing

Loading shape data

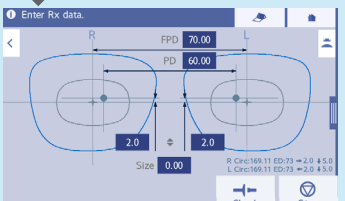
"4.3.1 To confirm frame data" (page 115)

"3.2 Loading, Saving, Receiving, and Sending Shape Data" (page 62)

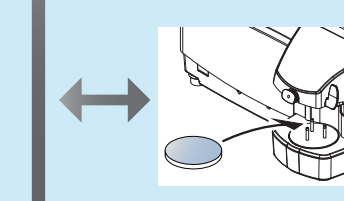




"4.3.2 To specify processing conditions" (page 117)

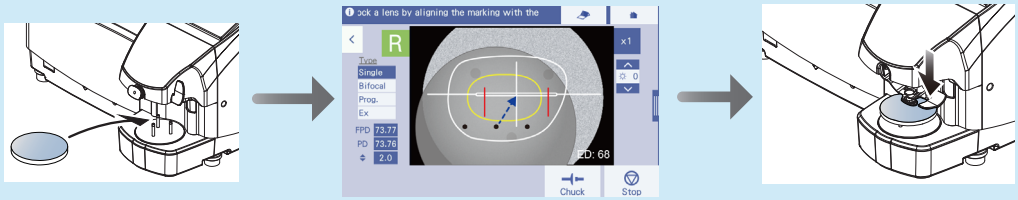


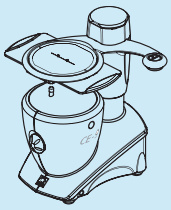
"4.3.3 To input layouts according to lens types" (page 122)



Blocking

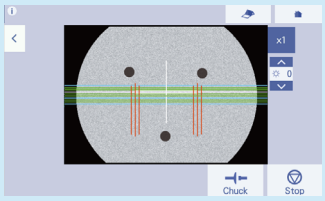
"4.6 Blocking" (page 136)





Blocking (with CE-9)
"4.7 Blocking Lenses with CE-9" (page 146)

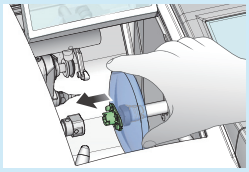
Blocker



When blocking simply
"4.6.2 To block lenses simply" (page 140)

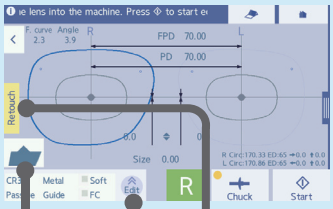
Processing

Chuck

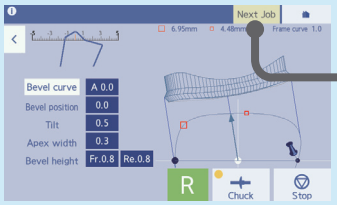


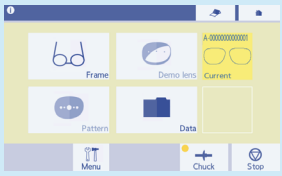
"3.10.1 To set lenses" (page 103)

"4.9 Beveling" (page 153)
"4.15 Flat Edging" (page 171)
"4.16 Grooving" (page 172)

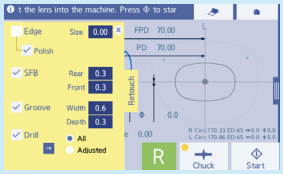


Start



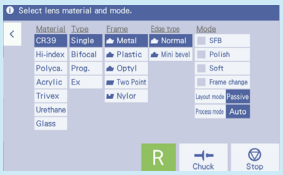


"4.22 Editing Next Shape during Processing" (page 203)



Edit

"♦ To retouch" (page 193)

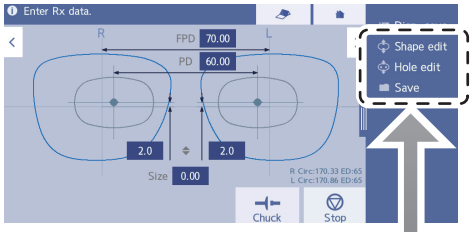


"8 If necessary, confirm or change the settings on the processing condition confirmation screen." (page 154)

"9 If necessary, change the bevel shape on the edge type confirmation screen." (page 154)

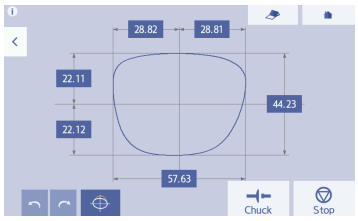
Detailed steps are omitted from this flowchart.

The Operation flow of the side menu



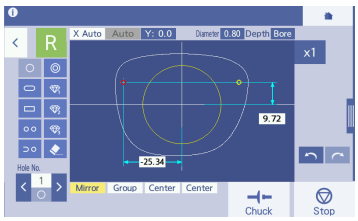
Side menu

Shape edit



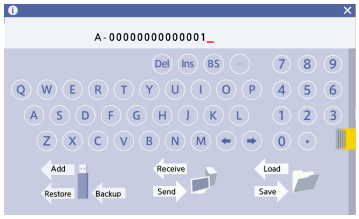
"4.4 Changing the Shape" (page 132)

Hole edit



"4.18 Drilling" (page 183)

Save



"3.2 Loading, Saving, Receiving, and Sending Shape Data" (page 62)

4.2 Loading Shape Data

The trace function of shape / demo lens and the scan function cannot be used together. In advance, set the parameter to either of them. However, frame tracing can be used even if the parameter is set to the scan function.

1 Start up the instrument.

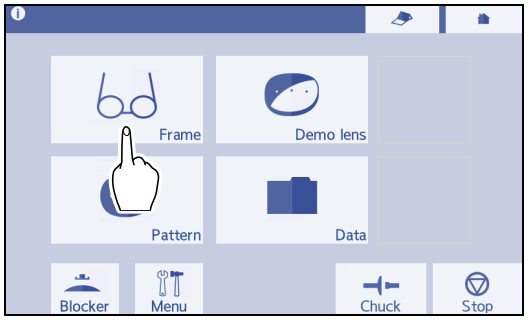
"3.1.2 To start up" (page 59)

2 Load shape data by tracing, scanning, or using the sever.

◆ To trace frames

Press Frame.

"3.6 Handling Tracer" (page 81)



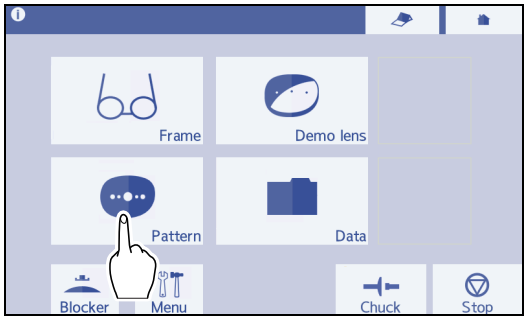
◆ To trace patterns and demo lenses

Parameter settings	Set *" Method for measuring pattern and demo lens" (page 229)* to "RMU".

- Trace a pattern

Press Pattern.

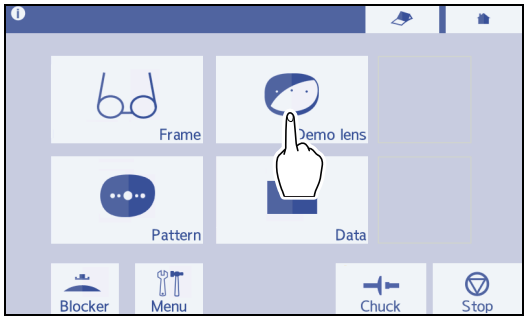
"3.8.1 To trace patterns" (page 92)



- Tracing demo lenses

Press Demo lens.

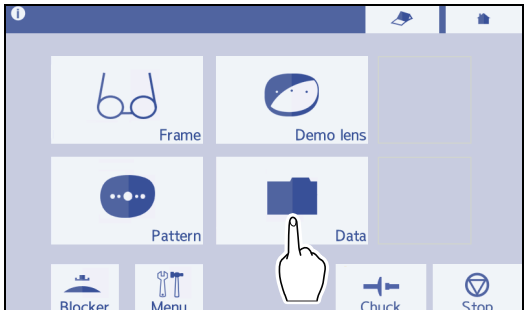
"3.8.2 To trace demo lenses" (page 94)



To load shape from the internal memory

Press Data.

"3.2.1 To load shape data from the internal memory" (page 62)



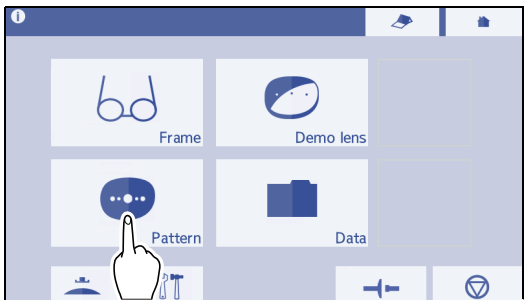
To scan

Parameter settings	Set *" Method for measuring pattern and demo lens" (page 229)* to "Shape imager".

- Scan a pattern.

Press Pattern.

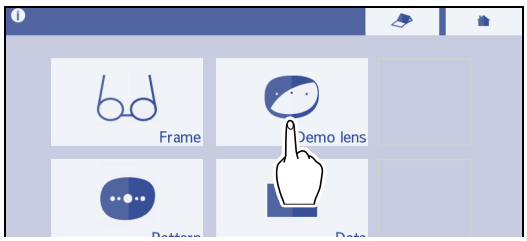
"3.9.1 To scan patterns" (page 96)



- Scan a demo lens.

Press Demo lens.

"3.9.2 To scan demo lenses" (page 98)



To receive data from the external tracer

Parameter settings	See *" Communication interface" (page 240)*.
Related item	*"8.1.2 To communicate with the LT-980 and perform communication settings" (page 287)*

Press Tracer.

"3.2.3 To receive data from the external tracer" (page 66)

To receive shape data from the server

Parameter settings	See *" Communication interface" (page 240)*.
Related item	*"8.1.3 To communicate through NIDEK LAN" (page 290)* *"8.1.4 To communicate in VCA" (page 292)*

Press Data.

"3.2.4 To receive data from the server computer" (page 67)

4.3 Editing Shape Data

This section explains editing shape data in the order of frame data confirmation → Processing condition setting → layout input.

4.3.1 To confirm frame data

First, check the frame data FPD, frame curve, and frame warping angle.

Depending on the measurement method, measurement values such as FPD by single-eye tracing or frame curve value by pattern tracing may not be obtained. These numeric fields are displayed in yellow, and values can be input with the numeric keypad.

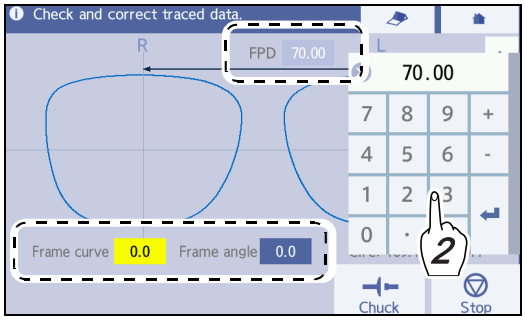
- If the difference between the right and left frame circumferences in shape data loaded from the built-in or external tracer is more than 1 mm, a message prompting the user to check the frame appears. In this case, check whether the frame is distorted. When the frame has no problem, calibrate the tracer.

  "3.6.2 To calibrate the tracer" (page 81)

- When tracing a demo lens with this instrument, the initial value in the Frame curve field is used as the curve value on the front surface of the demo lens. In necessary, input the value.
- When tracing a pattern with this instrument, or tracing a pattern or demo lens with the external tracer, the frame curve value is the value that is set in the "Frame curve" parameter on the Default screen. In necessary, input the value.

1 On the frame data confirmation screen, press a numeric field to be changed.

→ Numeric keypad



2 Input a value with the numeric keypad and press ↵ to confirm the input.

- FPD/DBL

When no FPD has been measured, the numeric field is displayed in yellow. Pressing [FPD] toggles between "FPD" and "DBL".

Range: 30.00 to 99.50

Increments: 0.01

- Frame curve

Range: 0.0 to 12.0

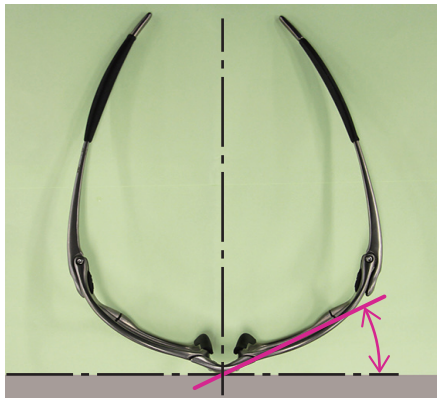
Increments: 0.1

● Frame angle

Use a protractor to roughly measure and input the frame warping angle.

Range: 0.0 to 45.0 degrees

Increments: 0.1 degree



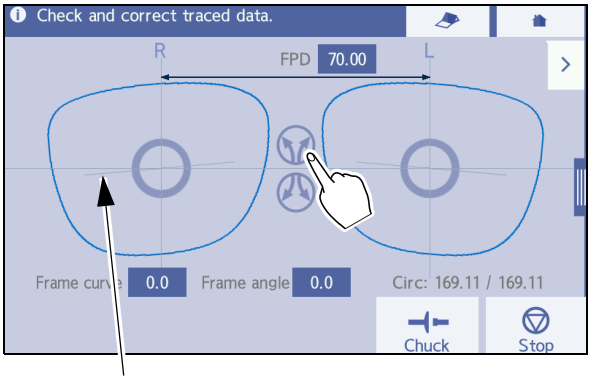
Frame warping angle

3 Adjust the inclination as necessary.

and are displayed when a pattern or demo lens is traced by this instrument. If the inclination of a lens cup is shifted when a demo lens is blocked, correct it on the traced data.

1) Pressing or rotates the shape in the direction of the arrow indicated on the pressed button.

2) When the shape is rotated, the FPD/DBL field becomes blank. After confirming the rotated shape, input the value in the field again.



When the shape is rotated, the original horizontal line is displayed as a guide.
If this line or the circle in the center of the shape disappears, it indicates that the axis is the same as the original one.
When the FPD/DBL field is input or the screen is switched, this display is restored to the state before rotating shape.

4 Press › to display the processing condition input screen.

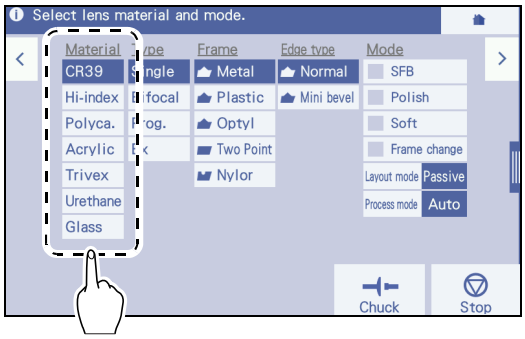
4.3.2 To specify processing conditions

On the processing condition input screen, specify the lens material, lens type, frame, edge type, and processing mode.

❖ For the operations of the Trend8 type, see *"4.11 High Base Curve Beveling for Trend8" (page 162)*, *"4.12 Custom Beveling for Trend8" (page 165)*, and *"4.13 Step Beveling for Trend8" (page 166)*.

- Selection of lens material

Select a lens material from the Material field.

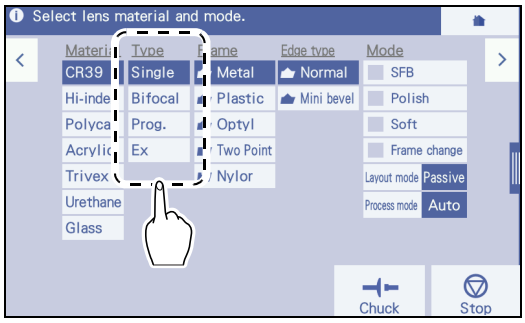


Lens materials
CR39 (general plastic)
Hi-index (plastic lens with a refractive index of 1.60 or greater)
Polyca. (polycarbonate)
Acrylic
Trivex
Urethane (polyurethane)
Glass

- Select the lens material correctly.
  If incorrect lens material is selected, processing may not be performed properly. The wheel life time is also reduced.
- To process a lens made of a material that is susceptible to heat such as Trivex lenses, select [Trivex].
- To process a plastic lens that is easily burred or chipped, select [Hi-index].

- Selection of lens type

Select a lens type from the Type field.



Lens type
Single
Bifocal
Prog.
Ex

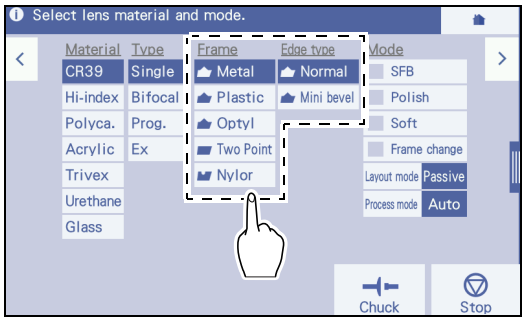
⚠ CAUTION

- To process an EX lens or cataract lens, be sure to select [Ex].
  Failure to do so may damage the stylus of the feeler unit during lens shape measurement.

- Selection of frame type and edge type

Select a frame type. The following table indicates the selectable combination of frame types and the corresponding edge types.

For all lens materials, the combination of Mini bevel and Polish cannot be set.



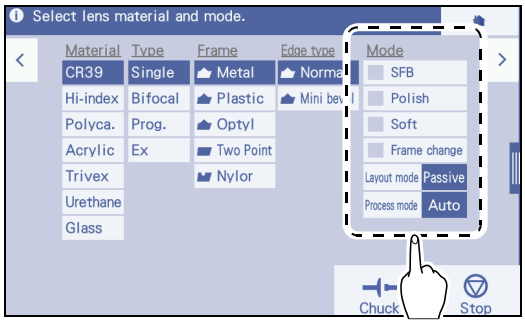
Frame type	Edge type	Processing
Metal/Plastic/Optyl	Normal	Beveling in the standard size
	Mini bevel	Beveling in smaller size than the standard
Two Point	Flat	Flat edging
Nylor	Flat	Flat edging
	Groove	Flat edging and grooving

◆ Specifying processing mode

- Selection of safety beveling

Select whether or not to perform safety beveling.

Safety beveling and frame changing cannot be selected at the same time.



Do not perform safety beveling.	☐ SFB
Perform safety beveling.	☑ SFB

- Selection of polishing

Select whether to perform polishing.

Do not perform polishing.	☐ Polish
Perform polishing.	☑ Polish

According to the lens material and processing mode, this setting may change automatically.

- Selection of soft processing

Select whether or not to perform soft processing.

Do not perform soft processing.	Soft
Perform soft processing.	Soft

To prevent the axis from shifting due to slippery lens coating or prevent glass lenses from breaking, select Soft .

- Selection of processing for frame changing

Select whether or not to perform processing for frame changing.

This function is used to insert a reprocessed lens into another frame.

Safety beveling and frame changing cannot be selected at the same time.

Do not perform processing for frame changing.	Frame change
Perform processing for frame changing.	Frame change

- Selection of layout mode

When the lens type is set to “Single”, “Prog.”, or “Ex”, the layout mode can be toggled between “Active” and “Passive”.

When the lens type is set to “Bifocal”, the layout mode can be toggled between “Bifocal” and “Passive”. However, for the N, D, I, and DI models, when the lens type is set to “Bifocal”, the layout mode cannot be selected.

Selected mode	Details
Layout mode Active	Block a lens at the optical center.
Layout mode Passive	Block a lens at the boxing center.
Layout mode Bifocal	Blocks a lens at the position specified by the parameter with reference to the segment position.

Note

- For the N, D, I, and DI models, when the lens type is set to “Bifocal”, the layout mode cannot be selected. Always block the lens at the position specified by the parameter with reference to the segment position.

- Selection of processing mode

Select whether to automatically calculate the position or curve of the bevel or groove with the setting of “Auto” or input them manually with the setting of “Guide”.

Auto	Process mode Auto	The bevel/groove position and curve are automatically calculated by computer.
Guide	Process mode Guide	The bevel/groove position and curve are manually input.

Note

- When [Ex] is selected in the Type field, “Guide” is automatically set. When [Two Point] (flat edging) is selected in the Frame field, Process mode is deactivated.
- When settings about bevel or groove position have already been set to the shape data sent from the server or blocker, a lens is processed according to the settings even when Process mode is set to Auto .

The processing mode is selected by a combination of the frame setting and mode setting as shown below.

Frame setting	Mode setting	Processing mode
Metal/Plastic/Optyl	Auto	Auto beveling
	Guide	Guide beveling
		Ex lens beveling (when the lens type is “Ex”)
Nylor	Auto	Auto grooving
	Guide	Guide grooving
		Ex lens grooving (when the lens type is “Ex”)

◆ Optimum processing mode for beveling and grooving

Select the optimum mode for beveling and grooving according to the lens type as shown below.

Processing mode / Lens type	Auto	Guide				Ex
		Curve	Front	Rear	Ratio	
Single	◎	◎			○*a	
Prog.	◎	◎				
Bifocal	◎	◎				
Ex						◎
Cataract				◎		○

◎: Optimum mode (recommended mode)

○: Processable mode

*a: To select the ratio, refer to the following.

Select 5:5 for a plus single vision lens with low power.

Select 4:6 or 5:5 for a plus single vision lens with medium or high power, and for a minus single vision lens with low power.

Select 3:7 or 4:6 for a minus single vision lens with medium power.

Select 3:7 for a minus single vision lens with high power.

- EX lenses cannot be processed in Auto or Guide processing mode. The feelers may be damaged in Auto or Guide processing mode. Be sure to select “Ex” in the Type field and confirm the bevel and groove positions on the simulation screen before processing.
- Cataract lenses cannot be processed in Auto processing mode. Be sure to confirm the bevel and groove positions on the simulation screen with the rear setting in Guide mode. Note that a lens measurement error may occur when a cataract lens has a large protrusion on its front convex surface. In this case, process a lens with the lens type setting of “Ex”.

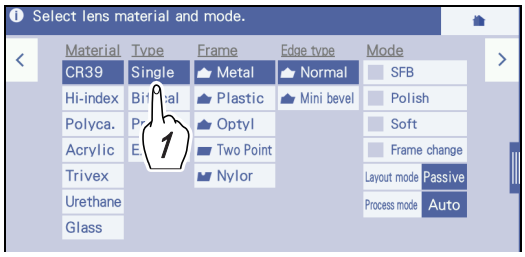
4.3.3 To input layouts according to lens types

The following describes the layout input for single vision lenses, bifocal lenses, progressive lenses, and Ex lenses.

The fields in yellow on the layout input screen indicate that they have not been selected and need to be selected. After confirming all necessary fields are selected, proceed to the next screen.

◆ To input layouts for single vision lenses

1 Press Single in the Type field on the processing condition input screen.



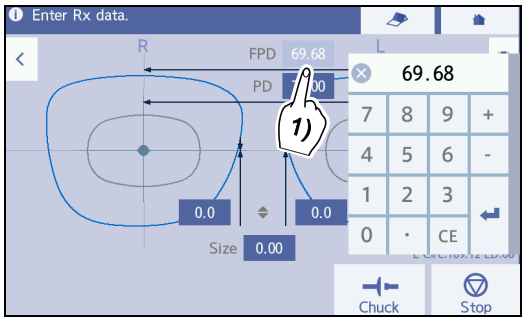
2 Specify other processing conditions.

“4.3.2 To specify processing conditions” (page 117)

3 Press ›.

→ Layout input screen

4 Specify FPD (or DBL).



- When specifying FPD

The FPD is calculated by the boxing system*1.

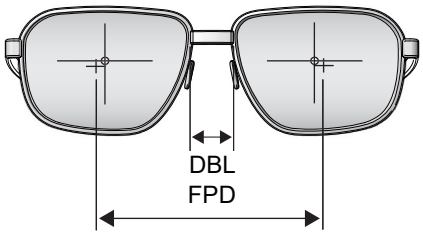
1) Press the [FPD] field.

→ Numeric keypad

2) Input a value and press ↵ to confirm the input.

- Range:30.00 to 99.50 mm and 5.00 mm or more by DBL conversion
- Increments: 0.01 mm

- When specifying DBL



1) Press [FPD] to switch to “DBL”.

2) Press the [DBL] field.

→ Numeric keypad

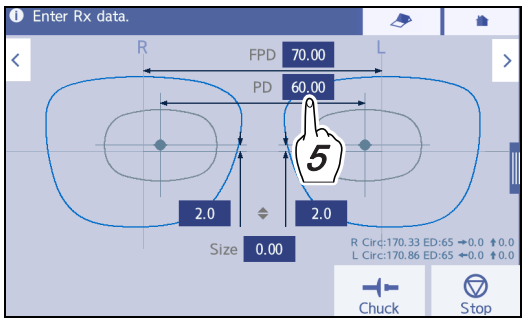
3) The following procedure is the same as that for FPD input.

*1. A method of calculating the center of the rectangle (box) that circumscribes a shape when viewed from the front.

❖ For the DBL input, pay attention to the following point:

- DBL should be regarded as a reference value.
  When DBL is entered, as the lens width and frame warping angle become larger, the accuracy of PD will be increasingly off. This deviation is caused by conversion from DBL to FPD.
  Thus, take DBL as a reference value and it is recommended to enter FPD that does not cause such a deviation.
  When measuring DBL with a vernier caliper or such, use the following calculation formula to determine and enter FPD.
  DBL + shape width x cos (frame warping angle) = FPD

5 Input PD (or 1/2PD).



● When specifying the PD

Press the [PD] field.

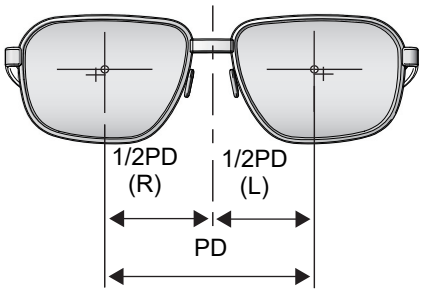
→ Numeric keypad

Input a value and press ↵ to confirm the input.

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

● When specifying 1/2PD

This is a method to input the distance from the bridge center to the optical center for each eye.



1) Press [PD] to toggles to “1/2PD”.

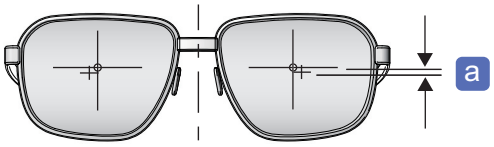
   The other procedure is the same as that in “When specifying the PD”.

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

2) If no value for the opposite lens is input, the same value is automatically copied to the opposite lens. As necessary, input a value for the left lens.

6 Specify the optical center height.

1) Select the optical center height a from among “▲▼”, “PD ▲▼”, and “BT ▲▼”.

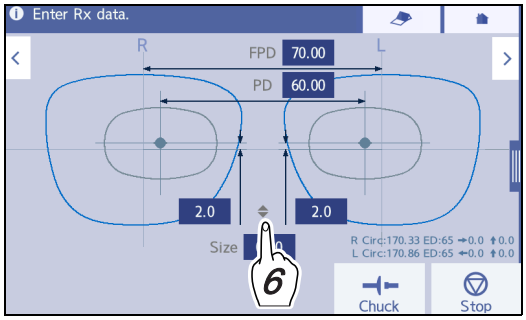


2) Press the numeric field for the right eye.

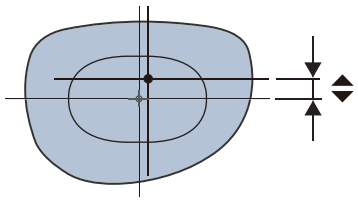
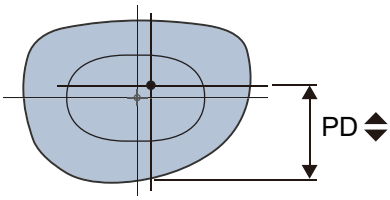
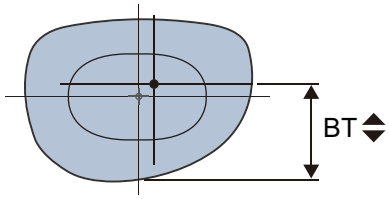
   → Numeric keypad

3) Input a value and press ↵ to confirm the input.

   - Input range: –15.0 to 15.0 mm when converted vertically from the boxing center
   - Increments: 0.1 mm



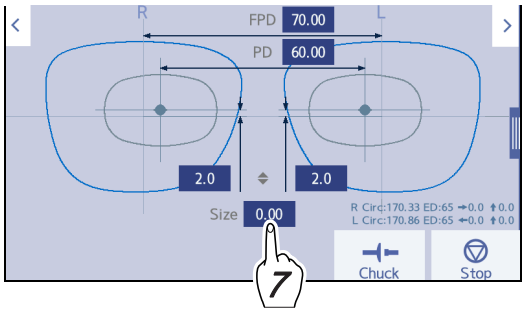
4) If no value for the opposite lens is input, the same value is automatically copied to the opposite lens. As necessary, input a value for the left lens.

▲▼	Input the optical center height from the frame center. Inputting a positive value moves the optical center upward. Inputting a minus value moves the optical center downward.	
PD ▲▼	Input the distance between the optical center and the point at the bottom of the lens shape straight down from the optical center.	
BT ▲▼	Input the distance between the optical center and the lowest point of the lens shape.	

Note

- The initial value displayed in the optical center height field can be set in the “Optical center height” field on the Default screen.
- The initial values of FPD and such can be set in the same manner.“♦ *Default setting” (page 232)*

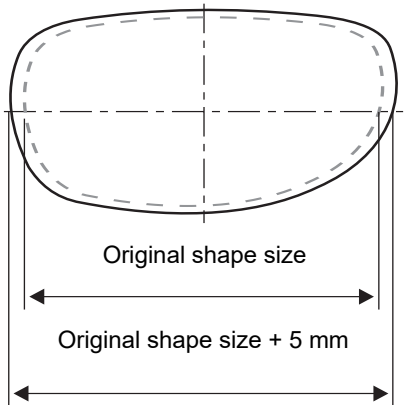
7 Input the lens size (enlarging/reducing the shape) if necessary.



1) Press the [Size] field.
   → Numeric keypad
2) Input a value and press ↵ to confirm the input.
   - Range: -9.95 to +9.95 mm
   - Increments: 0.01 mm

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

Input example: When 5.00 is input, the finish size becomes larger by 5 mm.

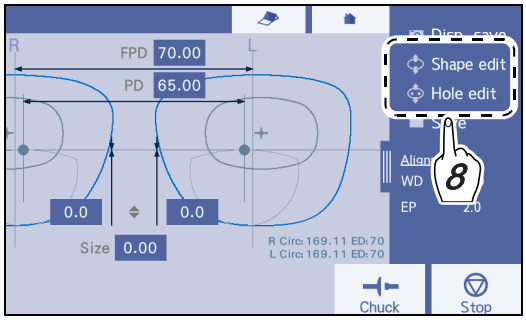


Note

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

“♦ *General settings” (page 228)*

8 If necessary, display the shape editor screen or hole editor screen from the side menu to edit the shape.



- To edit shape

  Press Shape edit .

  "4.4 Changing the Shape" (page 132)

- To edit a hole

  Press Hole edit .

  "4.18 Drilling" (page 183)

9 Press .

→ Blocking screen

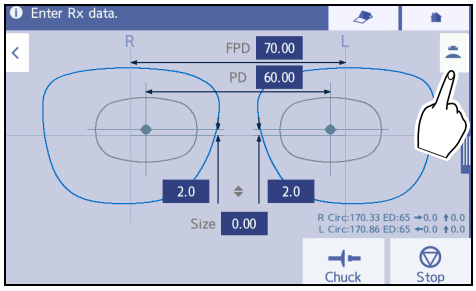
"4.6 Blocking" (page 136)

"♦ To block single vision lenses or EX lenses" (page 138)

- Blocking with the CE-9 (for DI/D/I/N model)

  Pressing on the layout input screen switches editing shape to the processing start screen. Block with the CE-9 and proceed to the procedure for starting processing.

  * For details, refer to the operator's manual for the CE-9.

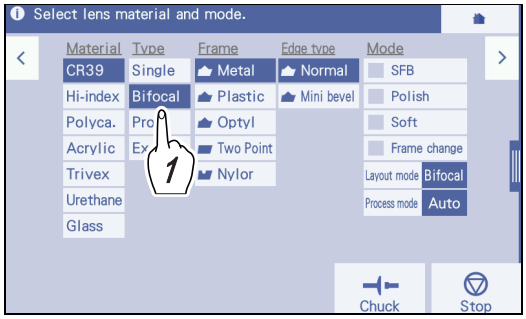


◆ To input layouts for bifocal lenses

Input lens layout data (FPD, near PD, and optical center height) according to the prescription.

To block a bifocal lens, adjust the lens position based on the base point (top line center of segment) of the segment shape.

1 Press Bifocal on the processing condition input screen.



Bifocal lens	Bifocal	Blocks a lens at the position specified by the parameter with reference to the segment position.

2 Specify other processing conditions.

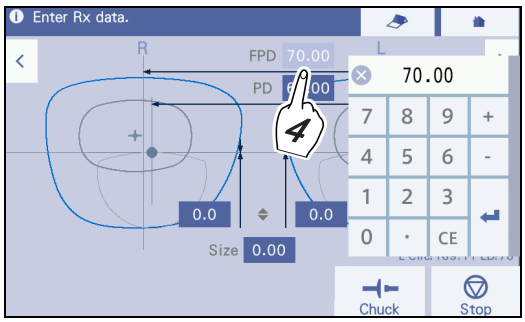
❖ For the B/DB model only, the Layout mode can be selected between “Bifocal” and “Passive”. The initial value of Layout mode can be set in [Layout mode (Bifocal)] on the Default tab.

3 Press ›.

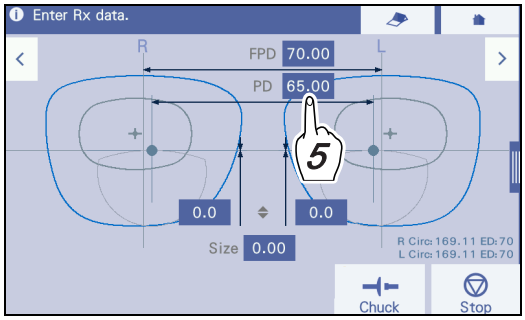
→ Layout input screen

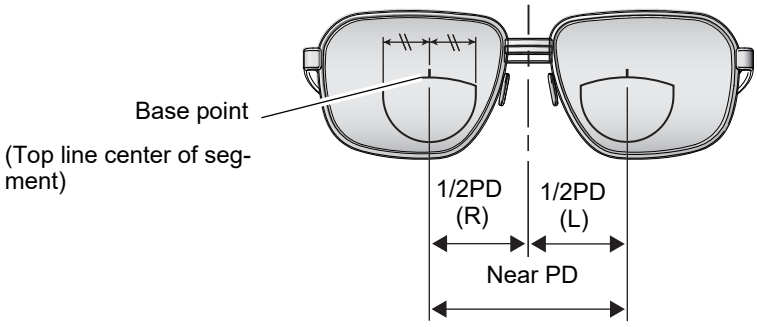
4 Specify FPD (or DBL).

“4.3.3 To input layouts according to lens types” (page 122)



5 Input the prescribed near PD value (PD for segment) in the PD (or 1/2PD) field.

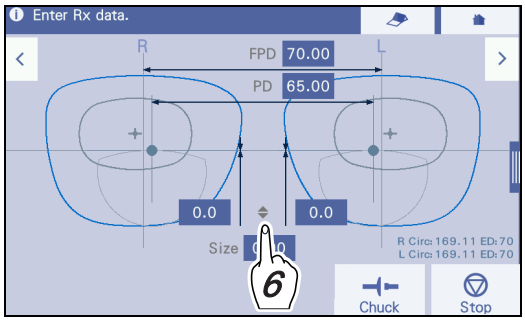




6 Specify the optical center height.

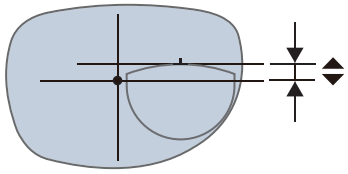
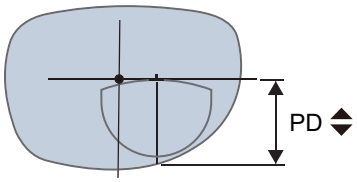
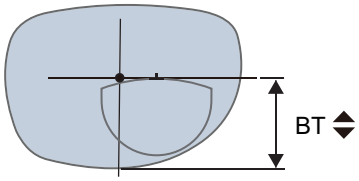
1) Select from among “▲▼”, “PD ▲▼”, and “BT ▲▼”.
2) Press the numeric field for the right eye.

→ Numeric keypad



3) Input a value and press ↵ to confirm the input.
- Input range: –15.0 to 15.0 mm when converted vertically from the boxing center
- Increments: 0.1 mm

4) If no value for the opposite lens is input, the same value is automatically copied to the opposite lens. As necessary, input a value for the left lens.

▲▼	Input the height from the frame center to the top line center of segment. Inputting a positive value moves the segment upward. Inputting a minus value moves the segment downward.	
PD▲▼	Input the distance between the top line center of segment and the point at the bottom of the lens shape straight down from the optical center.	
BT▲▼	Input the distance between the top line center of segment and the lowest point of the lens shape.	

7 If necessary, edit the Size field (enlarging/reducing the shape size) and the shape data on the shape editor screen or hole editor screen that is displayed from the side menu.

"7 Input the lens size (enlarging/reducing the shape) if necessary." (page 124)

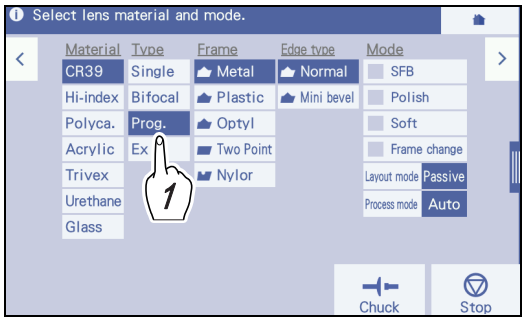
"8 If necessary, display the shape editor screen or hole editor screen from the side menu to edit the shape." (page 125)

8 Press ›.

→ Blocking screen

◆ To input layouts for progressive lenses

1 Press Prog. in the Type field on the processing condition input screen.



Progressive lens	Prog.	Block a lens by adjusting the lens position based on the distance eyepoint printed on the lens.

2 Specify other processing conditions.

"4.3.2 To specify processing conditions" (page 117)

3 Press ›.

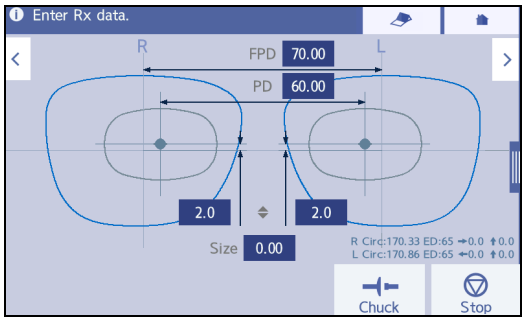
→ Layout input screen

4 Specify FPD (or DBL).

"4.3.3 To input layouts according to lens types" (page 122)

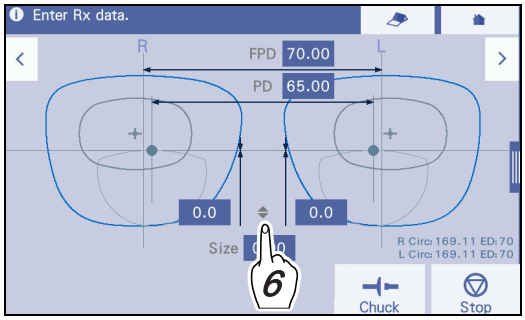
5 Input the prescribed PD value in the PD (or 1/2PD) field.

"5 Input PD (or 1/2PD)." (page 123)

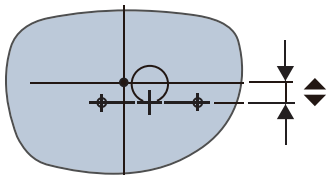
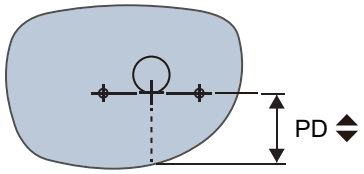
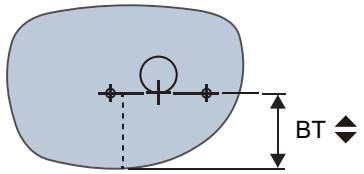


6 Specify the optical center height.

1) Select from among "▲▼", "PD ▲▼", and "BT ▲▼".
2) Press the numeric field for the right eye.
   → Numeric keypad
3) Input a value and press ↵ to confirm the input.
   - Input range: –15.0 to 15.0 mm when converted vertically from the boxing center
   - Increments: 0.1 mm



4) If no value for the opposite lens is input, the same value is automatically copied to the opposite lens. As necessary, input a value for the left lens.

▲▼	Input the height from the frame center to the distance eyepoint. Inputting a positive value moves the distance eyepoint upward. Inputting a minus value moves the distance eyepoint downward.	
PD▲▼	Input the distance between the distance eyepoint and the point at the bottom of the lens shape straight down from the distance eyepoint.	
BT▲▼	Input the distance between the distance eyepoint and the lowest point of the lens shape.	

7 If necessary, edit the Size field (enlarging/reducing the shape size) and the shape data on the shape editor screen or hole editor screen that is displayed from the side menu.

"7 Input the lens size (enlarging/reducing the shape) if necessary." (page 124)

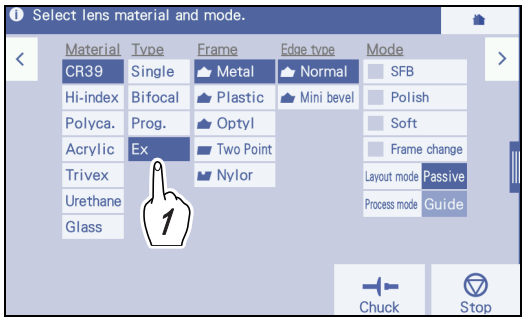
"8 If necessary, display the shape editor screen or hole editor screen from the side menu to edit the shape." (page 125)

8 Press ›.

→ Blocking screen

◆ To input layouts for EX lenses

1 Press Ex in the Type field on the processing condition input screen.



Ex	Ex	Block the lens with the lens cup so that the middle lens marking is at the center of the alignment scale and all lens markings are aligned with the alignment scale.

2 Specify other processing conditions.

Process mode is displayed as Process mode Guide and deactivated.

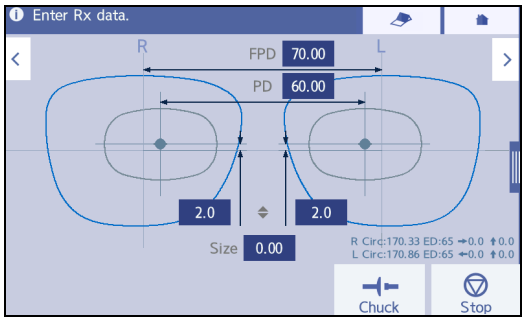
"4.3.2 To specify processing conditions" (page 117)

3 Press ›.

→ Layout input screen

4 Specify FPD (or DBL).

"4.3.3 To input layouts according to lens types" (page 122)



5 Input the prescribed PD value in the PD (or 1/2PD) field.

"5 Input PD (or 1/2PD)." (page 123)

6 Specify the optical center height.

"6 Specify the optical center height." (page 123)

7 If necessary, edit the Size field (enlarging/reducing the shape size) and the shape data on the shape editor screen or hole editor screen that is displayed from the side menu.

Steps 7 and 8 in *"♦ To input layouts for single vision lenses" (page 122)*

8 Press ›.

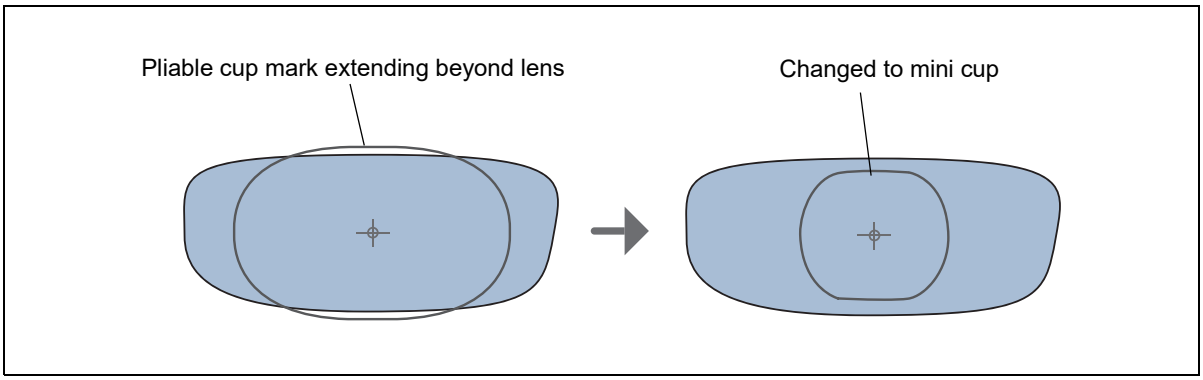
→ Blocking screen

◆ Changing layouts and cup marks

If the pliable cup extends beyond the lens shape on the layout input, setting *“ Cup type for small shape” (page 228)* to “Mini”, “Nano”, or “Nano + Supporter” changes the cup mark display as shown in the table below.

If the lens adapter or lens clamp may come into contact with the wheels when the lens is processed with the pliable cup, this cup mark is displayed as attention. Block the lens with the mini cup (optional).

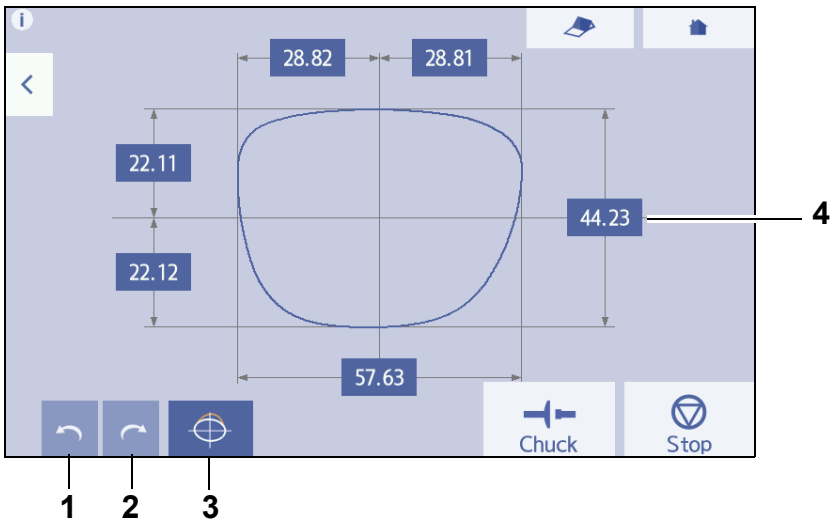
Normal setting	Setting of mini cup
None (for pliable cups)	Mini (optional) (for pliable cups or mini cups)



- The cup mark is a guide. Processing may not be possible with the displayed lens cup depending on the layout or such.
- When the “Cup type for small shape” field is set to “None” on the General screen, the size of the displayed cup mark does not change. However, if processing is attempted to start with a cup mark extending beyond the shape, an information message appears and processing does not start.
- Even if the cup mark for small shape is displayed, do not block the lens if the cup mark extends beyond the shape.

4.4 Changing the Shape

The shape editor screen is displayed by pressing Shape edit in the side menu. On this screen, the entire width and height can be changed from the displayed shape. Also, the widths and heights from the center position of the displayed shape can be changed.



1 **Undo button**

Cancels the last change (a maximum of five times).

2 **Redo button**

Restores the change canceled by (undo) (a maximum of five times).

3 **Fixed area edit button**

→ Fixed area edit screen

4 **Numeral input fields (six fields)**

Specifies the shape part to be changed. Change the values in these fields by using the numeric key-pad to be displayed by pressing these fields.

◆ To change shape

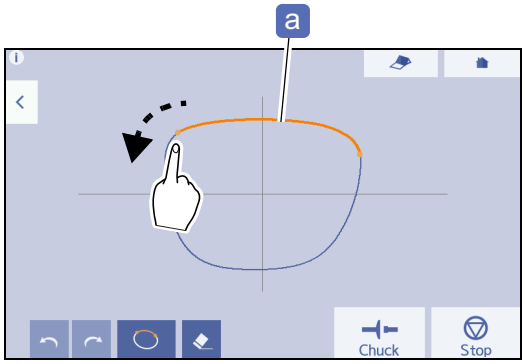
1 With shape displayed, press Shape edit in the side menu on the layout input screen.

→ Shape editor screen

2 If necessary, specify the fixed area.

1) Press to switch to the fixed area edit screen.

2) If necessary, drag a with a finger to specify the fixed area (red line).



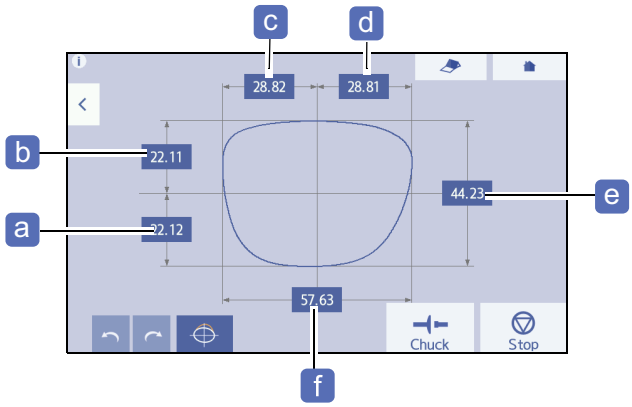
3) Press  to confirm the fixed area.  is a cancel button. This button cancels the fixed area in red.

Note

- When the fixed area is specified, the shape can be changed only once. Attempting to change the shape again restores it to the initial shape automatically, then the change is reflected on the initial shape.
- When the fixed area is specified, the change range is limited, and the numeric fields (for the dimensions indicated by line in the figure) that can be changed are limited. The characters in the fields that cannot be changed are displayed in gray. Even when the characters are in white, if the change range is small, the field may not be changed.
- The changed shape calculation method differs depending on whether the fixed area is specified or not. Therefore, even when the shape is change in the same manner, the same results may not be obtained.

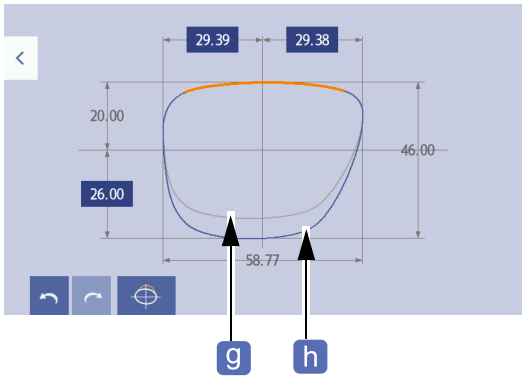
3 Change the whole width/height, or widths/heights from the center position to change the shape.

Press the numeric field to be changed and input the desired value with the numeric keypad.



a	Changes the height of the lower half from the center
b	Changes the height of the upper half from the center
c	Changes the width of the left half from the center
d	Changes the width of the right half from the center
e	Changes the whole height
f	Changes the whole width

When the shape is changed, the changed shape is displayed in blue h and the prior shape is displayed in gray g.



4 When shape change is complete, press < to return to the original screen.

Note

- Once the screen returns to the original one, shape change is confirmed and cannot be canceled. To restore it to the shape before change, load the data again.

4.5 Inputing WD and EP

■ The width of the alignment scale and the height of the distance eyepoint mark can be changed to facilitate the lens position adjustment for blocking.

WD adjusts the width of the alignment scale. EP adjusts the height of the distance eyepoint mark. (EP is displayed only when [Prog.] is selected in the Type field.)

◆ Example of inputting WD and EP on the blocking screen

Adjust the alignment scale size so that the lens position can be easily adjusted on the blocking screen.

1 Press the side menu tab to display the side menu on the blocking screen.

2 Specify WD and EP.

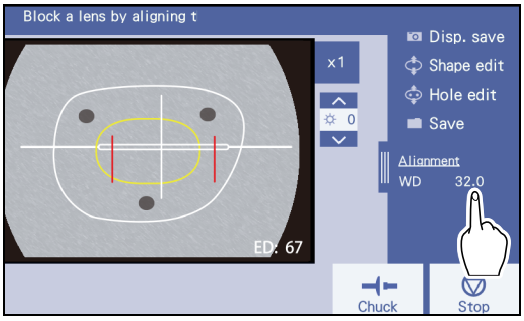
● When specifying WD of single vision lens or EX lens

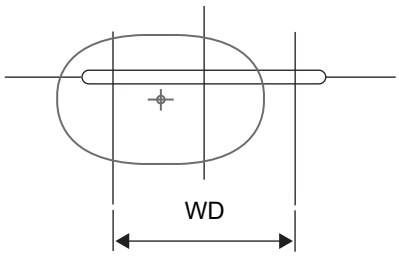
Press the [WD] field to adjust the alignment scale width.

→ Numeric keypad

Input a value and press ↵ to confirm the input.

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





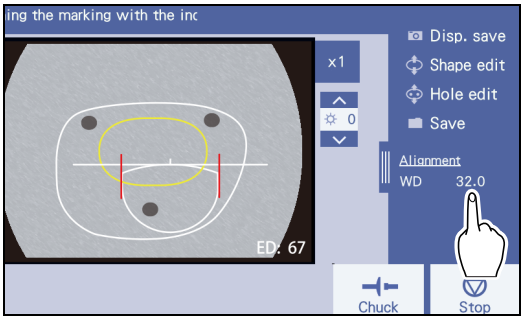
● When specifying WD of bifocal lens

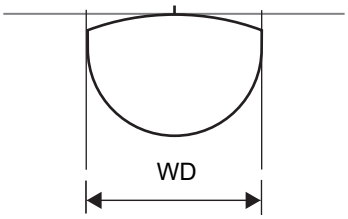
Press the [WD] field to adjust the alignment scale width.

→ Numeric keypad

Input a value and press ↵ to confirm the input.

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





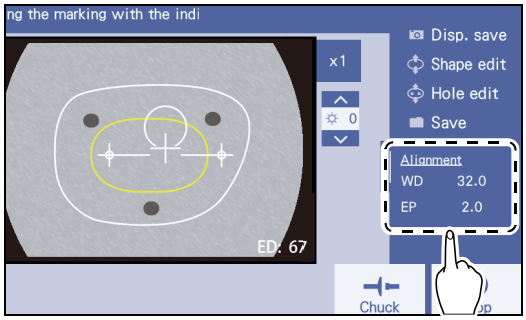
- When specifying WD of a progressive lens

  Press the [WD] field to adjust the alignment scale width.

  → Numeric keypad

  Input a value and press ↵ to confirm the input.

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



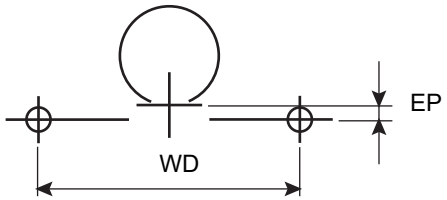
- When specifying EP of a progressive lens

  Press the [EP] field to adjust the distance eyepoint height.

  → Numeric keypad

  Input a value and press ↵ to confirm the input.

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



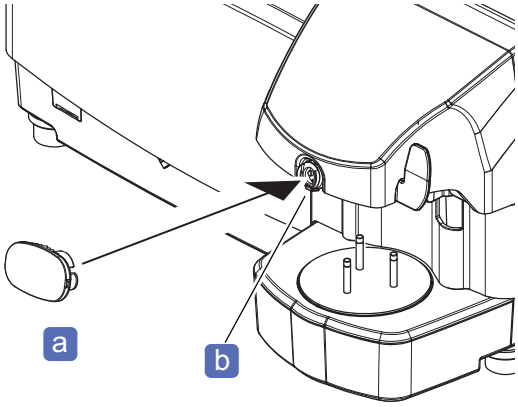
4.6 Blocking

■ This section describes the blocking operation with the built-in blocker. For the external blocker, refer to the operator's manual provided with the device.

4.6.1 To block

1 Attach a double-coated adhesive pad to a lens cup.

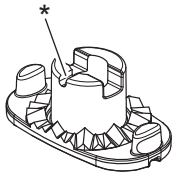
2 Insert the lens cup a into the cup holder b so that the top mark of the lens cup faces down.

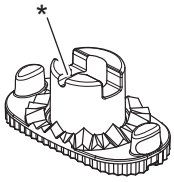


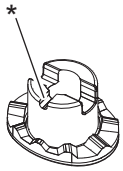
Use the lens cup in the following color:

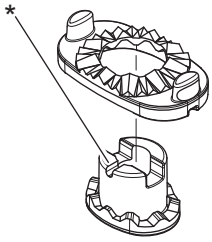
Lens	Lens cup color
Right lens	Green
Left lens	Red

*The lens cup groove is the top mark.


Pliable cup


Pliable cup for high base curve lenses

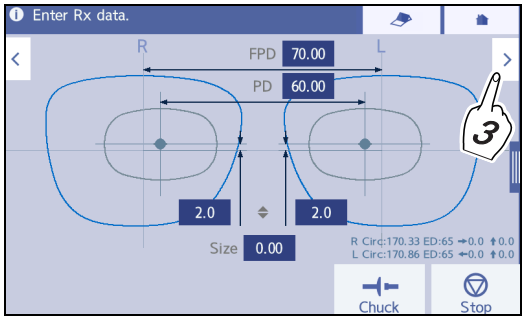

Mini cup (optional)


Nano cup (optional)

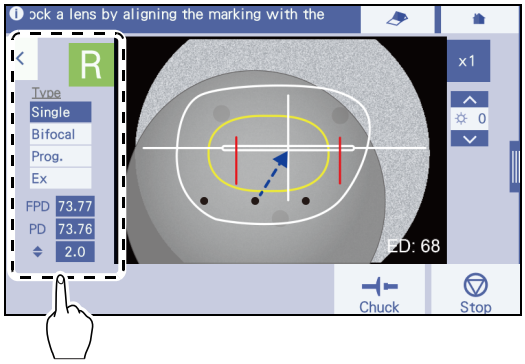
Suction cups and full-eye lens cups cannot be used.

3 Press ❯ on the layout input screen.

→ Blocking screen



4 Press R or L according to the lens.

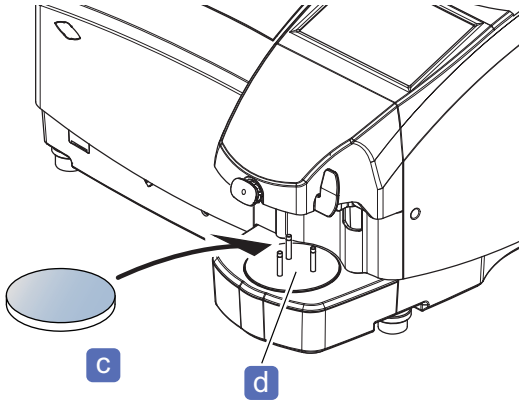


5 Confirm and change, if necessary, the selection in the Type field and the value in the FPD filed.

- Make sure that the color of the lens cup is the same as that of R (green) or L (red) displayed on the blocking screen. Use the green lens cup for the right-eye lens and the red one for the left-eye lens.

6 Place the lens c on the lens stage d with the convex surface up.

While viewing the lens on the blocking screen, place the lens approximately at the center on the screen.

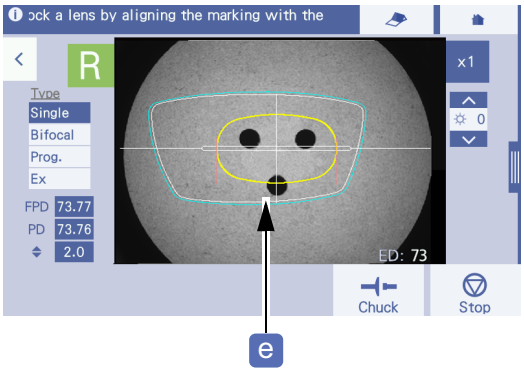


7 Adjust the lens position to the alignment scale while checking on the blocking screen.

If necessary, press x1 to double x2 the magnification of the shape display.

This makes the adjustment easier.

- Make sure that the outer diameter of the lens is larger than the displayed shape. Depending on the layout or processing conditions, a larger shape may be displayed by a light blue line e around the actual shape. This is a guide for a lens size when it is required to be larger than the finish size.
- Use a lens that is at least as large as the shape displayed by the light blue line.



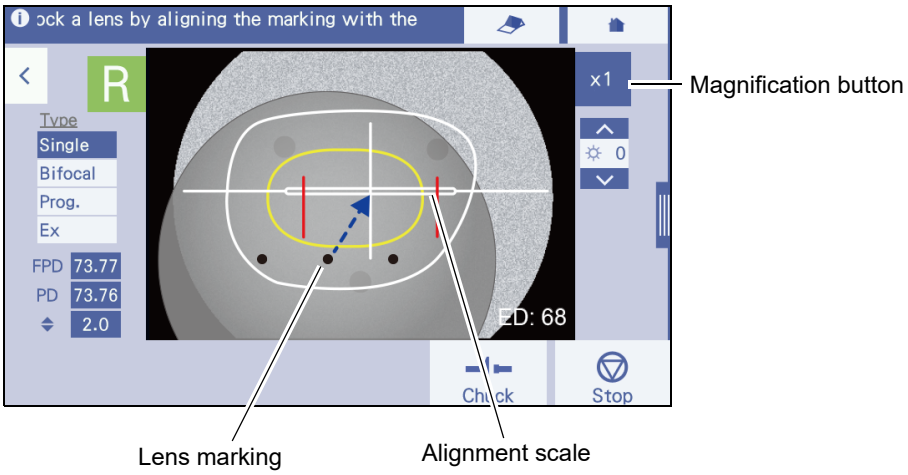
To block single vision lenses or EX lenses

For a single vision lens, center the lens markings to the alignment scale and align them as precisely as possible.

If necessary, press the [WD] field in the side menu to adjust the size of the alignment scale.

"4.5 Inputing WD and EP" (page 134)

Example of single vision lens in "Passive" layout mode



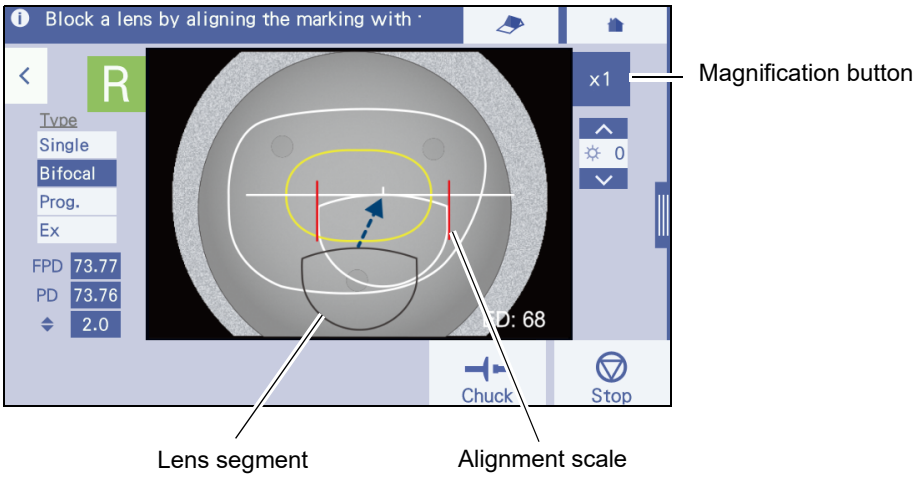
To block bifocal lenses

For a bifocal lens, adjust the lens segment to the alignment scale on the blocking screen.

If necessary, press the [WD] field in the side menu to adjust the size of the alignment scale.

"4.5 Inputing WD and EP" (page 134)

Example of bifocal lens in "Passive" layout mode



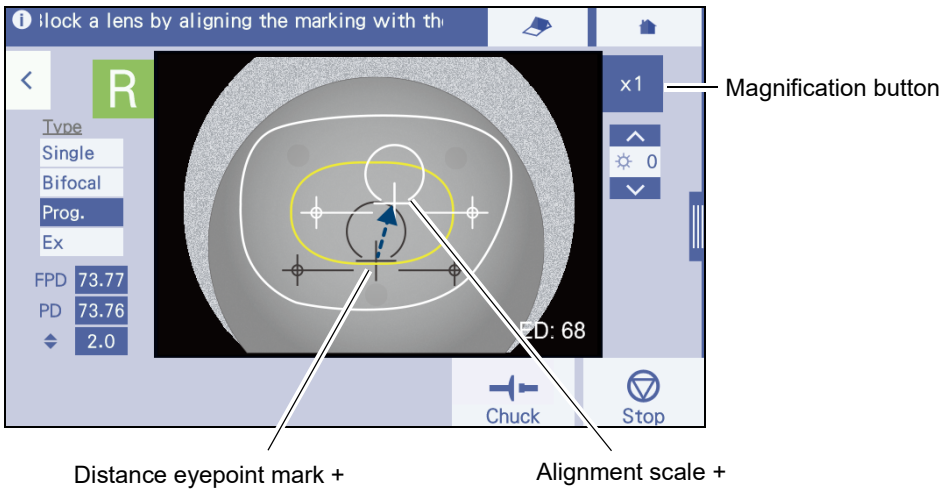
◆ To block progressive lenses

For a progressive lens, align the distance eyepoint mark + on the lens with the alignment scale + on the blocking screen. Place the lens so that the horizontal reference lines (or hidden markings) on the screen is approximately aligned with the lens.

If necessary, press the [WD] and [EP] fields in the side menu to adjust the size or such of the alignment scale.

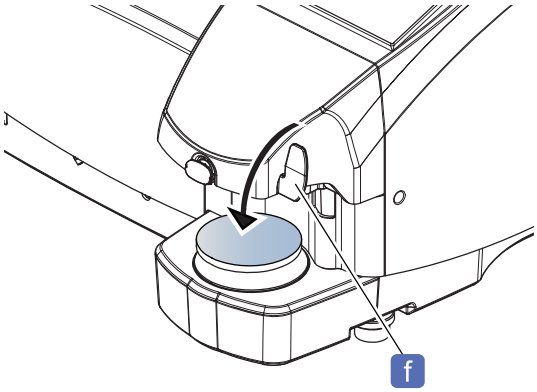
"4.5 Inputing WD and EP" (page 134)

Example of progressive lens in "Passive" layout mode



8 Block the lens.

1) Lower the blocking lever f by hand approximately 90 degrees in the direction of the arrow in the figure to the right.



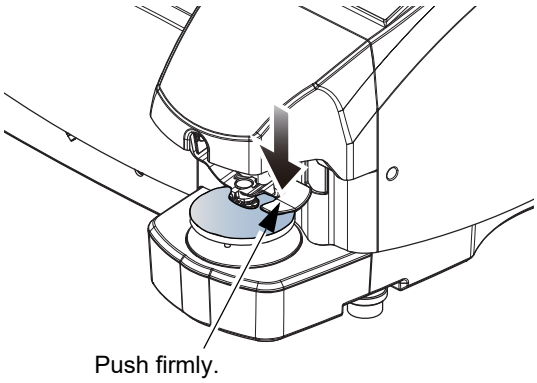
- When blocking the lens, hold the lens by hand so that the lens is not shifted.

2) Push the blocking lever down to block the lens.

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

3) Tilt the blocking lever to the original position.

   After blocking, the processing start screen appears.



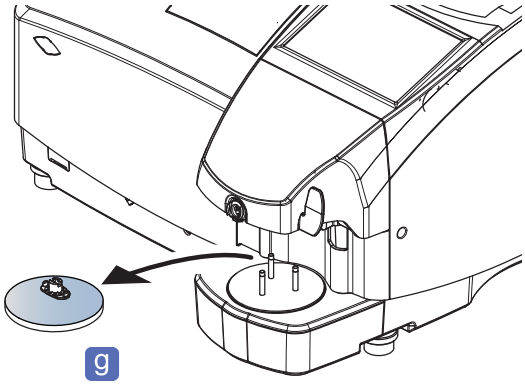
Note

- When *" Block both lenses before processing" (page 231)* is set to "Perform", the screen does not change to the processing start screen automatically, and the displayed R/L indication is toggled. Confirm the indication and block the lens for the other side. To proceed to the processing start screen without blocking the opposite lens, press ❯.

9 Remove the lens from the lens stage.

10 Store the blocked lens g in a tray on which the shape name is provided or such.

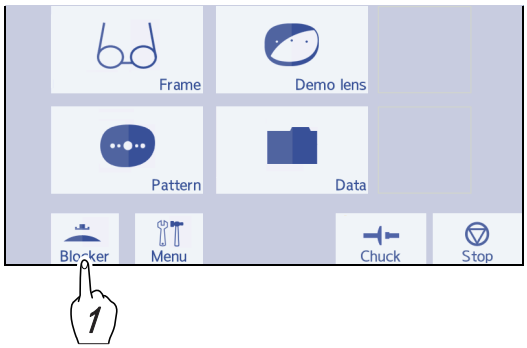
Store it so that L or R of the lens can be identified.



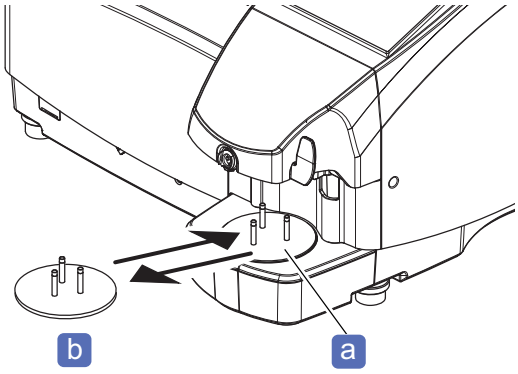
4.6.2 To block lenses simply

1 Press Blocker on the home screen.

→ Simple blocking screen



2 When the normal lens stage a is set, replace it with the provided stage for small diameter lens (with narrow intervals between the pins) b if necessary.

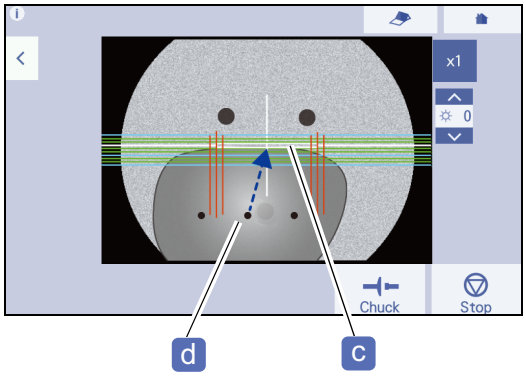


3 Align the lens with the alignment scale.

On the simple blocking screen, align the markings d on the lens with the alignment scale c and align them as precisely as possible.

If necessary, press x1 to double x2 the magnification of the shape display.

This makes the adjustment easier.



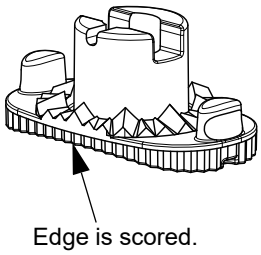
❖ Subsequent operations are the same as for normal operation.

4.6.3 To block with pliable cups for high base curve lenses

When processing a plus lens that has the front surface with a base curve of 6 or greater, be sure to use the pliable cup for high base curve lenses.

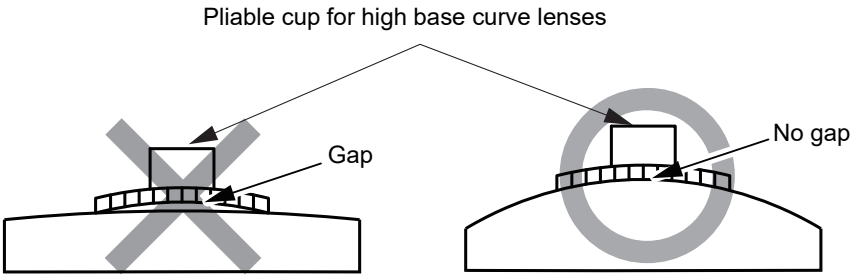
Using the normal pliable cup for a plus lens that has the front surface with a base curve of 6 or greater may cause the axis shift or cracks on the coating.

The pliable cup for high base curve lenses is distinguished from the normal one, by scoring on its edge.



Do not use a pliable cup for high base curve lenses when processing a lens that has the front surface with a base curve of less than 6. Doing so may cause a gap between the lens cup and lens, which may cause the following:

- The cup becomes detached;
- Axis shift occurs;
- Roughing cannot be performed properly;
- Cracks on the coated surface occurs.



Lens that has front surface with base curve of less than 6

Lens that has front surface with base curve of 6 or greater

4.6.4 To use mini cups

To process a lens with the mini cup (optional), replace the lens adapter and lens clamp with those for mini cup.

When processing a lens in short height with *" Display message for small cup check" (page 228)* set to "Exec", a confirmation message may appear.

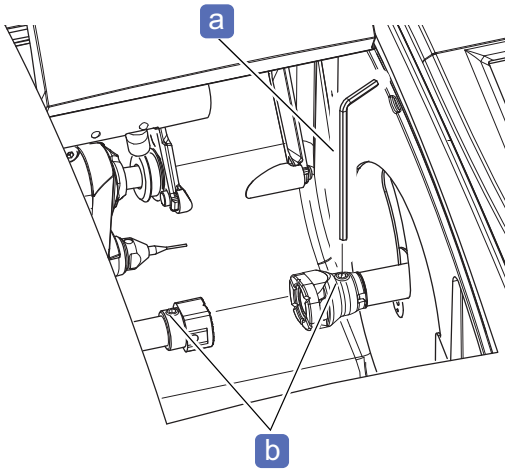
After the confirmation message is displayed, pressing [Abort] interrupts the processing. Replace the lens adapter and lens clamp with those for mini cup and set the lens. After that, pressing [Start] to restart processing.

If the lens adapter and lens clamp have been replaced with those for mini cup, pressing [Continue] restarts the processing.

◆ To replace lens adapters and lens clamps with those for mini cups

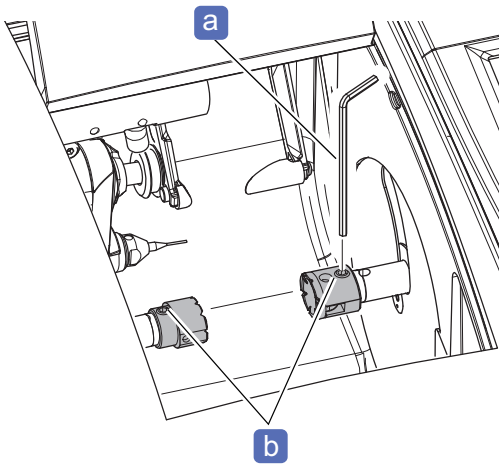
1 Remove the normal lens adapter and lens clamp.

1) Loosen the set screws b with a hexagonal wrench (2.5 mm) a and remove the normal lens adapter.
2) Loosen the set screws with a hexagonal wrench (2.5 mm) and remove the normal lens clamp.



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

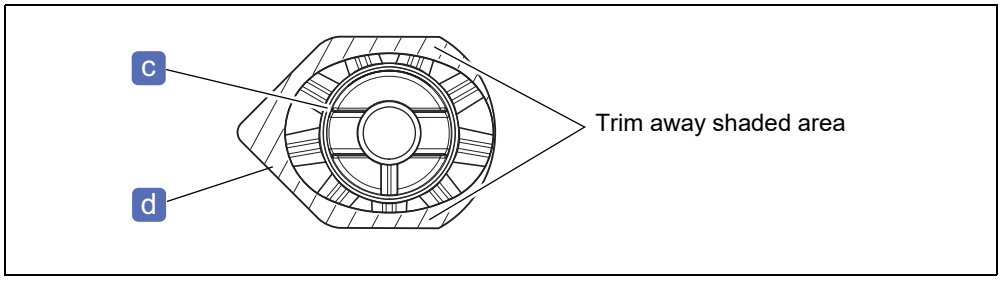
1) Align the bottoms of the set screws for the lens adapters for mini cup with the grooves of the shafts, then insert the set screws firmly.
   Secure the set screws b with the hexagonal wrench (2.5 mm) a.
2) Align the bottoms of the set screws for the lens clamps for mini cup with the grooves of the shafts, then insert the set screws firmly.
   Secure the set screws with the hexagonal wrench (2.5 mm).



3 Adhere the double-coated adhesive pad for half-eye lens cup d to the mini cup c.

When using a mini cup, use a 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.

❖ For handling of the mini cup, refer to the operator's manual for the mini cup set.



4 Block the lens with the mini cup.

"4.6.1 To block" (page 136)

Note

- To remove the mini cup, use the mini cup remover (optional).

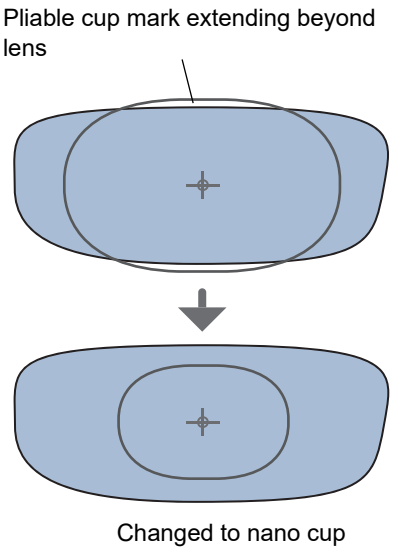
"3.11.3 To remove mini cups or nano cups (optional)" (page 107)

4.6.5 To use nano cups (optional)

- The nano cup set is available as an option. Parameter settings are required for use of the nano cup. Contact your authorized distributor for the parameter setting.
- Right and left nano cups are distinguished by the colors, green and red. Be sure to use the green nano cup for right-eye lenses and the red one for the left-eye lenses. Using the cup of the same color as that of the right or left indication on the layout input screen helps processing the correct lens.
- When using a nano cup, be sure to use the double-coated adhesive pad for the nano cup. Since the pliable cup double-coated adhesive pad has no cut line, the supporter cannot be removed when it is used for the nano cup.

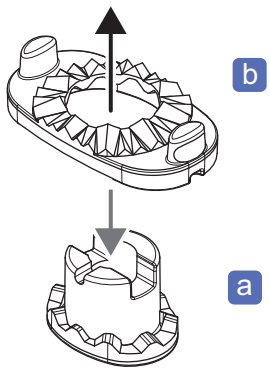
If parameters to use the nano cup have been set and the cup mark changed from that of the pliable cup to that of the nano cup as shown to the right, block the lens using a nano cup.

The cup mark may extend beyond the lens when a pliable cup is used for processing a half-eye lens whose vertical height is narrow. The cup mark illustration changes so that the lens is not processed under this condition to prevent the lens adapter or lens clamp from coming into contact with the wheel. In addition, to use the nano cup, the lens adapter and the lens clamp need to be replaced with those for nano cup.



Nano cup a is a cup used to accommodate lens processing for small frames. It is used in combination with the supporter b. The nano cup and the supporter are detachable. For roughing, use the nano cup with the supporter attached. Remove the supporter before finishing, and perform finishing only with the nano cup.

❖ For handling of the nano cup, refer to the operator's manual provided with nano cup set.



4.6.6 To replace lens adapter and lens clamp with those for nano cups

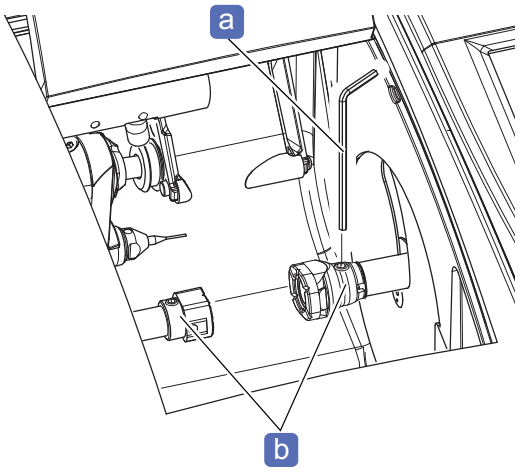
1 Remove the normal lens adapter and lens clamp.

1) Remove the normal lens clamp.

   Loosen the set screws b with a hexagonal wrench a and remove the normal lens clamp.

2) Remove the normal lens adapter.

   Loosen the set screws with the hexagonal wrench and remove the normal lens adapter.



2 Attach the lens adapter c for nano cup.

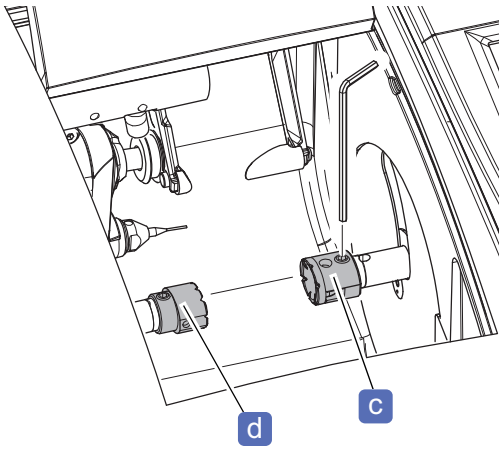
1) Align the groove and the shaft pin of the lens adapter, then insert the set screw firmly so that it faces upward.

2) Secure the set screw with the hexagonal wrench.

3 Attach the lens clamp d for nano cup.

1) Align the groove and the shaft pin of the lens clamp, then insert the set screw firmly so that it faces upward.

2) Secure the set screw with the hexagonal wrench.



4 Attach a double-coated adhesive pad for the nano cup to the nano cup.

5 After processing is complete, replace the lens adapter and the lens clamp with the normal ones if necessary.

Note

- To remove the nano cup, use the mini cup remover (optional).

"3.11.2 To remove nano cup supporter (optional)" (page 106)

"3.11.3 To remove mini cups or nano cups (optional)" (page 107)

4.7 Blocking Lenses with CE-9

❖ For detailed handling of the CE-9, refer to the operator's manual for the CE-9.

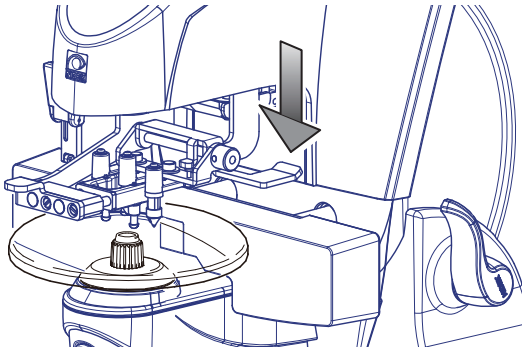
- The pliable cup comes in two colors: green and red. Use a green pliable cup for a right-eye lens and a red one for a left-eye lens.

  Using the lens cup with the same color as that of the Right or Left indication on the processing start screen helps the operator to distinguish the right and left lenses and to prevent confusing them.

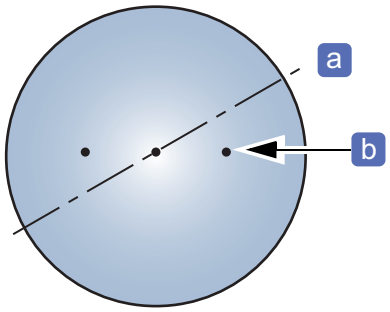
4.7.1 To block lenses at optical centers

1 Mark the lens at the optical center with the lensmeter.

For details of marking, refer to the provided operator's manual for the lensmeter.



For the astigmatic lenses, set the cylinder axis a according to the prescription before marking b.



2 Prepare a pliable cup.

For details of blocking, refer to the operator's manual for the CE-9.

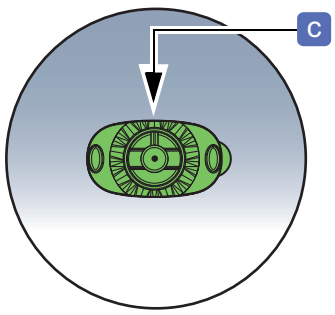
1) Adhere a double-sided adhesive pad for the pliable cup to the pliable cup.

   Use the lens cup of the color according to the right or left lens (to prevent confusing R and L) as shown below.

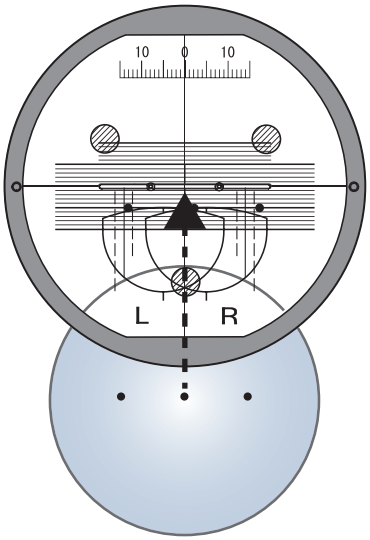
Right (R) lens	Green pliable cup
Left (L) lens	Red pliable cup

2) When attaching the pliable cup, orient the top mark (notch) c toward the lens top edge

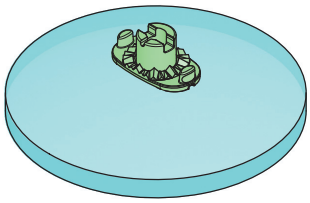
   - For dual tone colored lenses, confirm the upper and lower sides, then orient it so that the dye line is horizontal.
   - Suction cups and full-eye lens cups cannot be used.



3 Center the markings on the lens while aligning them horizontally within the vertical reference frame on the CE-9 screen.



4 Block the convex surface of the lens with the pliable cup.



Note

- To remove the pliable cup or the pliable cup for high base curve lenses from the lens, use the pliable cup remover.

"3.11.1 To remove pliable cups and pliable cups for high base curve lenses" (page 105)

4.7.2 To block lenses at frame centers

When the layout data is entered with [Passive] selected, the decentration direction and amount of the optical center are displayed at the bottom of the screen. According to the values, decenter the optical center with the CE-9 slide scale, and block the lens at the frame center.

1 Mark the lens at the optical center with the lensmeter.

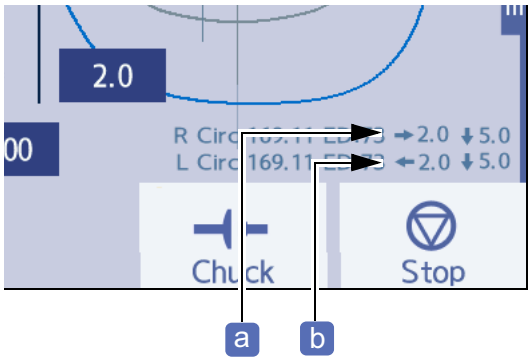
Step 1 in *"4.7.1 To block lenses at optical centers" (page 146)*

2 Set Layout mode to "Passive".

The decentration direction and amount of the optical center are displayed at the bottom right of the screen.

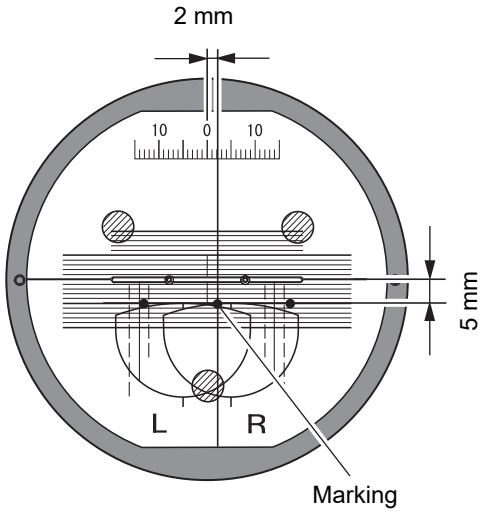
- a : Decentration direction and amount of the lens optical center for the right eye lens (R)
- b : Decentration direction and amount of the lens optical center for the left eye lens (L)

Ex.— (R side) → 2.0 ↓ 5.0



3 Shift the slide scale of the CE-9 to decenter the optical center.

According to the indication of →2.0 ↓5.0, decenter the optical center by 2.0 mm to the right and 5.0 mm downward using the centering device.



4 Block the lens on the convex surface with the pliable cup.

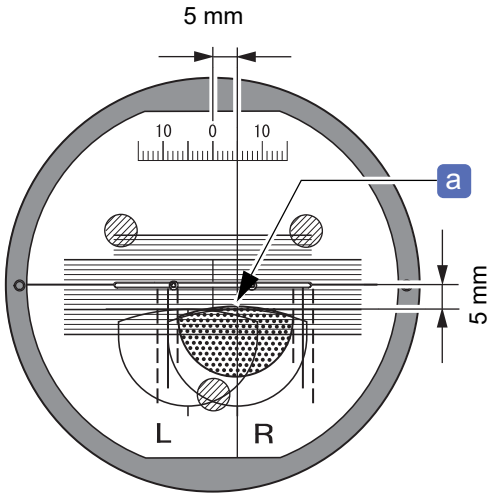
4.7.3 To block bifocal lenses

◆ To block with default parameter settings

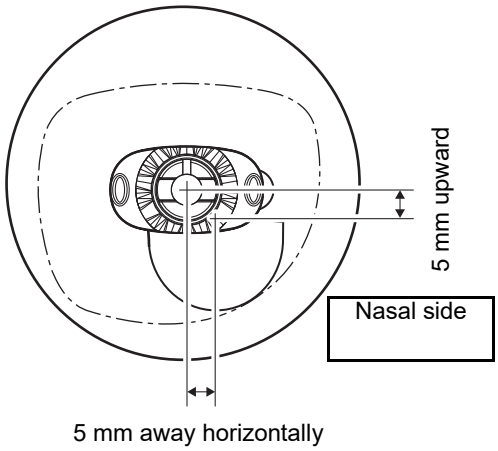
In the CE-9, the segment layout mark is indicated at the position of 5 mm outward and 5 mm upward from the top line center of segment on the screen. Block that position of the lens when blocking a bifocal lens with the default settings.

1 Align the segment of the bifocal lens to the segment layout mark of the CE-9.

The alignment position is 5 mm outward and 5 mm upward from the top line center of segment a .

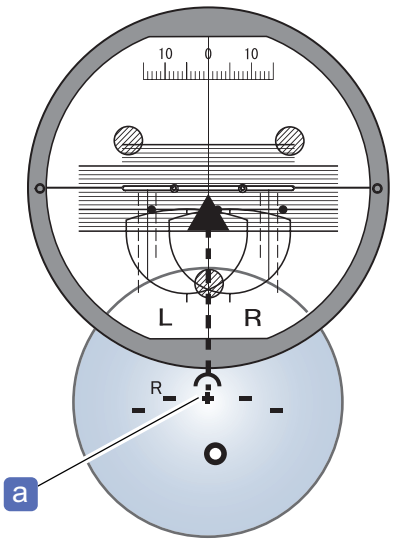


2 Block the lens on the convex surface with the pliable cup.

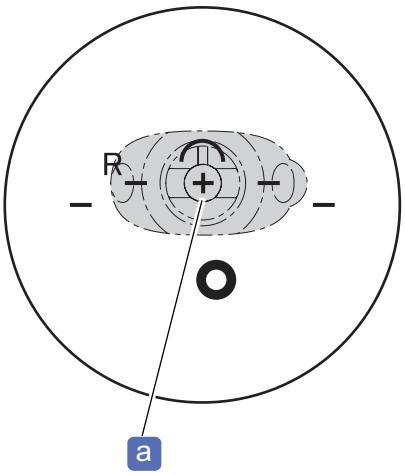


4.7.4 To block progressive lenses

1 Center the distance eyepoint mark a on the progressive lens while aligning it horizontally within the vertical reference frame on the CE-9 screen.



2 Block the lens on the convex surface with the pliable cup.



4.8 Initial Screen Customize Functions

This function sets the initial state of the setting items such as processing conditions that are displayed when the instrument is turned on.

◆ To memorize the screen

This initial screen customize function saves the settings that are currently displayed on the screen and replaces the previous settings with the new ones.

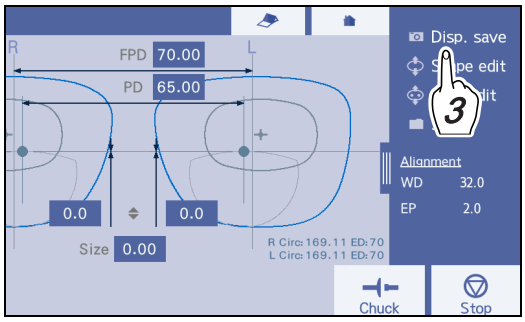
1 Display the screen to be saved as the initial screen.

2 Set each item as desired.

3 Save the settings on the screen.

Press Disp. save in the side menu.

The processing condition input screen and such can be saved in the same manner.



◆ Items that can be saved

Screen	Items
Frame data confirmation	FPD mode (FPD/DBL)
Processing condition input	Material (CR39/Hi-index/Polyca./Acrylic/Urethane/Glass)
	Type (Single/Bifocal/Prog./Ex)
	Frame (Metal / Plastic / Optyl / Two Point / Nylor)
	SFB (active/inactive)
	Polish (active/inactive)
	Layout mode (Passive/Active)
	Process mode (Auto/Guide)
	Edge type (bevel / mini bevel / flat / groove)
	Edge type (Hi-curve/Custom): For Trend8 only
	Step (selectable): For Trend8
Layout input	FPD mode (FPD/DBL)
	PD mode (PD/1/2PD)
	Optical center height mode (⬍/PD ⬍/BT ⬍)
	WD value
	EP value
Hole editor	Horizontal hole coordinate mode (Center/B-Edge/H-Edge)
	Vertical hole coordinate mode (Center/B-Edge)

Screen	Items
Scanning (Shape imager)	R/L
Blocking	FPD mode (FPD/DBL)
	PD mode (PD/1/2PD)
	Optical center height mode (⇕/PD ⇕/BT ⇕)
	R/L
	WD value
	EP value
Processing start	Material (CR39/Hi-index/Polyca./Acrylic/Urethane/Glass)
	Type (Single/Bifocal/Prog./Ex)
	Frame (Metal / Plastic / Optyl / Two Point / Nylor)
	SFB (active/inactive)
	Polish (active/inactive)
	Layout mode (Passive/Active)
	Process mode (Auto/Guide)
	FPD mode (FPD/DBL)
	PD mode (PD/1/2PD)
	Optical center height mode (⇕/PD ⇕/BT ⇕)
	Edge type (bevel / mini bevel / flat / groove)
	Edge type (Hi-curve/Custom): For Trend8 only
	Step (selectable): For Trend8

Note

- For the settings of R/L on the scan screen, those initially selected on the screen are saved.
- For the settings of R/L on the blocking screen, those initially displayed on the screen when both-eye tracing data is loaded are saved.
- When Type is set to Ex, the WD initial value is the same as that for Single. For opposite lens types, the WD value can be set separately. After selecting the desired lens type, input the WD value and save it.

4.9 Beveling

4.9.1 To auto bevel

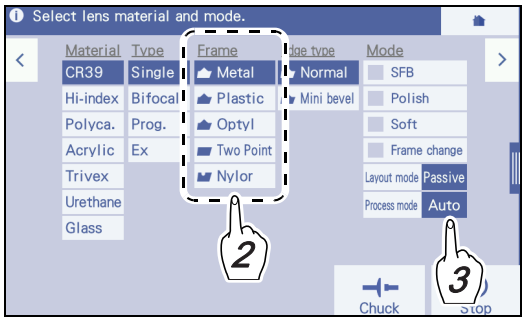
With auto beveling, the bevel curve and bevel position are automatically computer-calculated.

1 On the processing condition input screen, specify Material, Type, SFB, Polish, Soft, and Layout mode.

"4.3.2 To specify processing conditions" (page 117)

2 Select a frame type from the Frame field.

Frame type
Metal/Plastic/Optyl



3 In the Process mode field, select [Auto].

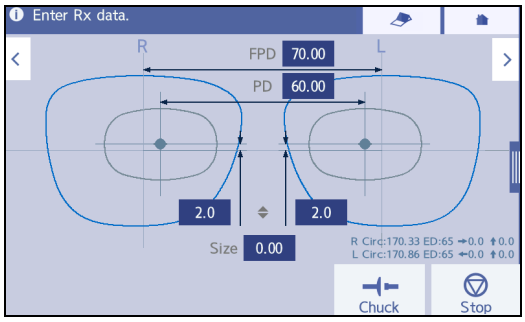
Processing mode
Auto

4 Press ❯.

→ Layout input screen

5 Input the layout values according to the prescription.

"4.3.3 To input layouts according to lens types" (page 122)



6 Press ❯.

→ Blocking screen

Block the lens. *"4.6.1 To block" (page 136)*

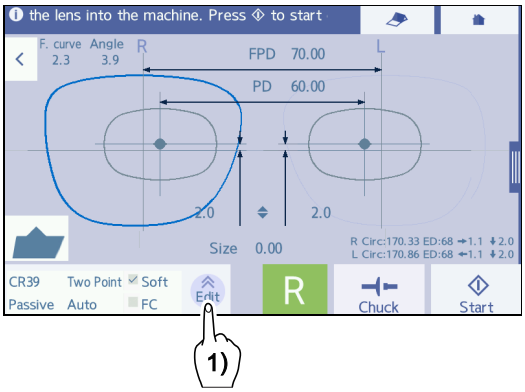
After blocking, the processing start screen appears.

7 Set the lens to the lens adapter.

"3.10.1 To set lenses" (page 103)

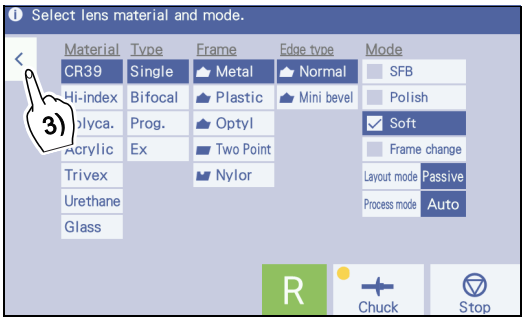
8 If necessary, confirm or change the settings on the processing condition confirmation screen.

1) On the processing start screen, press Edit.
→ Processing condition confirmation screen



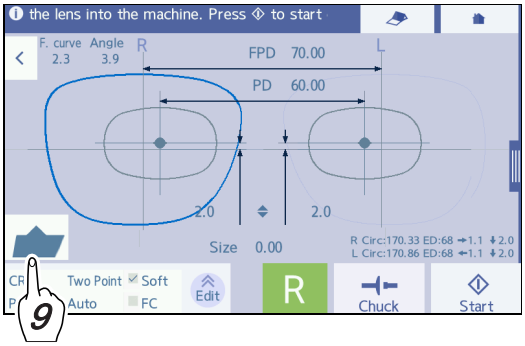
2) Confirm the set processing conditions. If necessary, change the settings in the same manner as the processing condition input screen. However, some items cannot be changed.

3) After confirming and changing the processing conditions, press ‹ to return to the layout input screen.



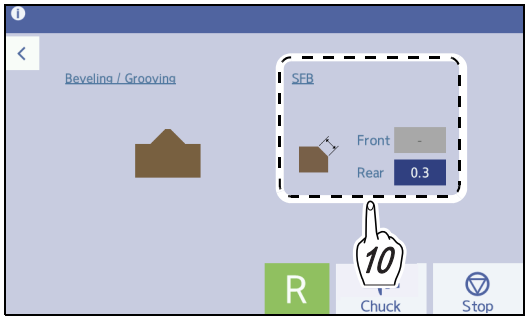
9 If necessary, change the bevel shape on the edge type confirmation screen.

On the processing start screen, press the edge type icon.
→ Edge type confirmation screen



10 Change the safety bevel width for beveling.

Press the [Front] or [Rear] field.
Input a value with the numeric keypad.



Note

- When “Performance of the front SFB in beveling” is set to “Not perform”, the front safety beveling width cannot be edited.
“ *Performance of the front SFB in beveling” (page 229)*

11 Press ‹ to return to the processing start screen.

12 Press Start to start processing.

The processing chamber door closes.

The processing starts, and the simulation screen is displayed during processing.

Note

- During lens measuring or roughing, the process mode can be changed from Auto processing to Guide processing on the processing condition confirmation screen. Press the Process mode field on the processing condition confirmation screen, to switch the field to Guide.
  In this case, when lens measuring or roughing is complete, the processing is interrupted and the simulation screen for guide beveling mode appears. After that, the bevel position and such can be input.

13 When processing is complete, remove the lens.

"3.10.2 To remove lenses" (page 104)

4.9.2 To guide bevel

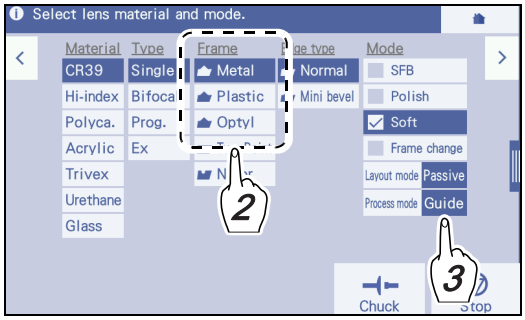
With guide beveling, a lens is beveled with the bevel curve and position input manually.

1 On the processing condition input screen, specify Material, Type, SFB, Polish, Soft, and Layout mode.

"4.3.2 To specify processing conditions" (page 117)

2 Select a frame type from the Frame field.

Frame type
Metal/Plastic/Optyl



3 Select [Guide] in the Process mode field.

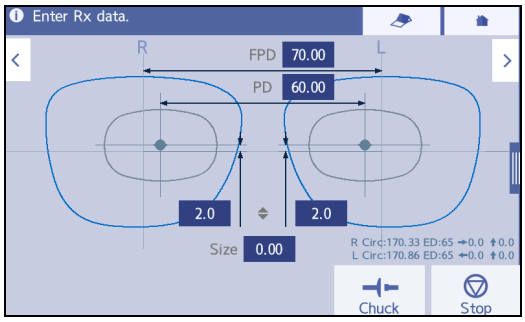
Processing mode
Guide

4 Press ❯.

→ Layout input screen

5 Input the layout values according to the prescription.

"4.3.3 To input layouts according to lens types" (page 122)



6 Press ❯.

→ Blocking screen

Block the lens.

"4.6.1 To block" (page 136)

After blocking, the processing start screen appears.

7 Set the lens to the lens adapter.

"3.10.1 To set lenses" (page 103)

8 As necessary, change the processing conditions and edge shape settings.

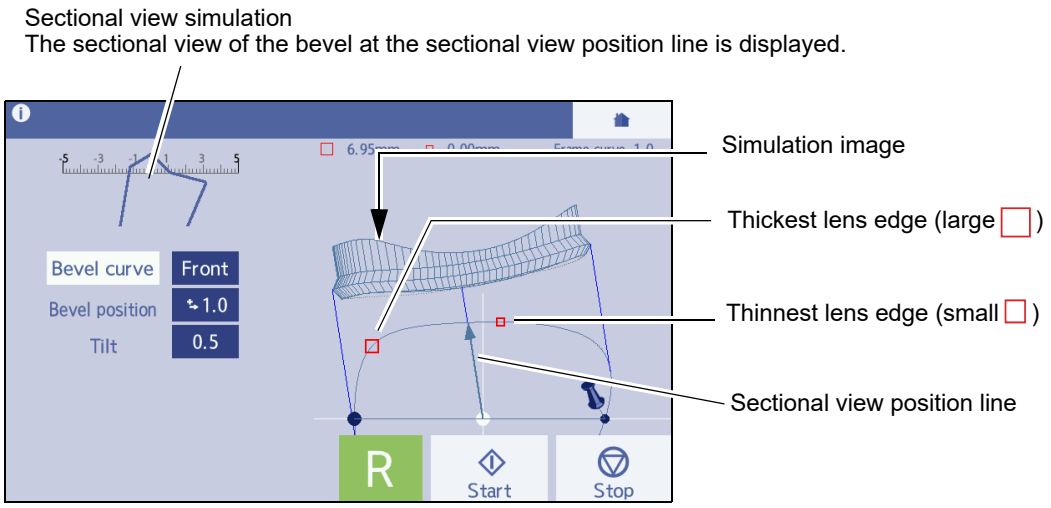
Steps 8 to 10 in *"4.9.1 To auto bevel" (page 153)*

9 Press Start to start processing.

The processing chamber door closes. For guide beveling, the simulation screen is displayed in a moment after processing starts, and then the processing stops temporarily.

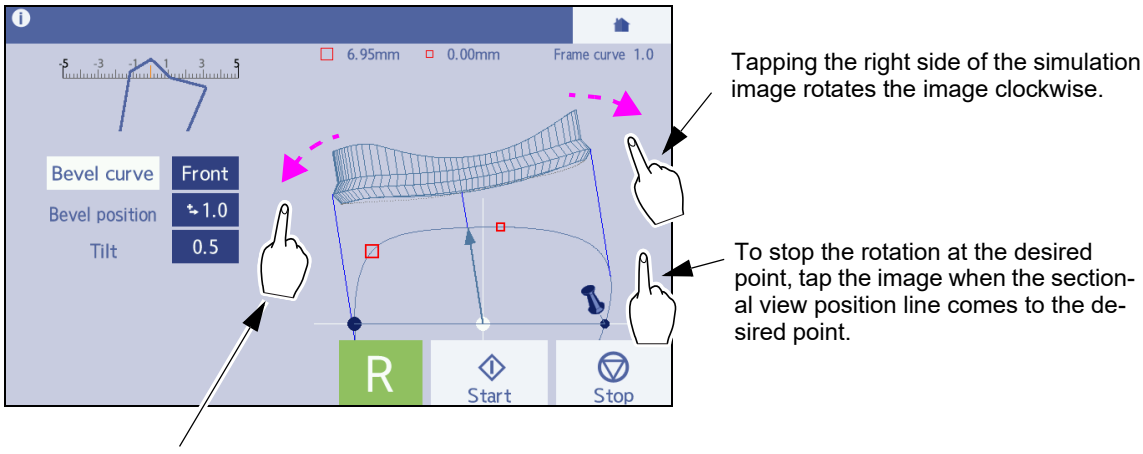
● Simulation screen for guide beveling

While checking the bevel sectional view on the simulation screen, perform guide beveling settings.



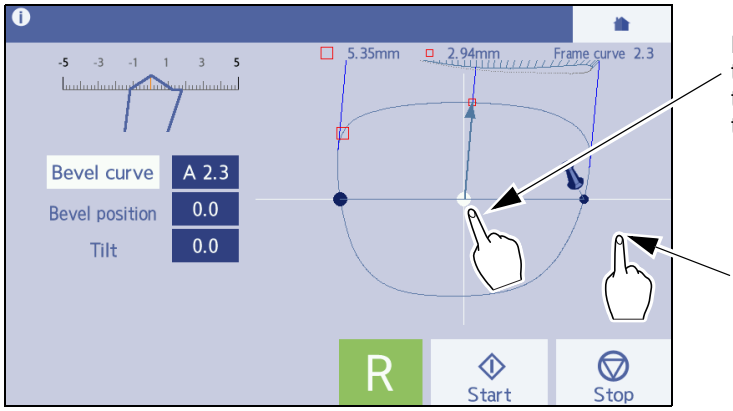
● Operation to display guide beveling simulation

Tapping on the screen rotates the simulation image, changes the rotation directions, or stops rotation.



- Checking the lens shape

  Tapping the center of the shape displays it in the center of the area as shown below. Further, tapping the shape repeatedly in this state moves the sectional view position line to a point mark such as that of the thickest lens edge.



Each time the shape is tapped, the sectional view position line moves to the thinnest lens edge, thickest lens edge, tilt base point, and tilt point in that order.

Tapping the outside of the shape returns the simulation image to the center.

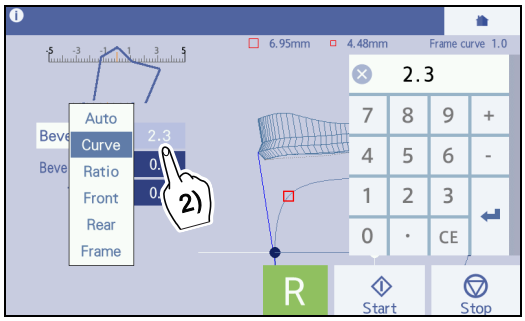
10 Move the sectional view position line to confirm the sectional view simulation of the bevel at some points.

11 Specify the bevel curve.

1) Tap the simulation image to move the sectional view position line and stop it at the thickest lens edge point (large □).

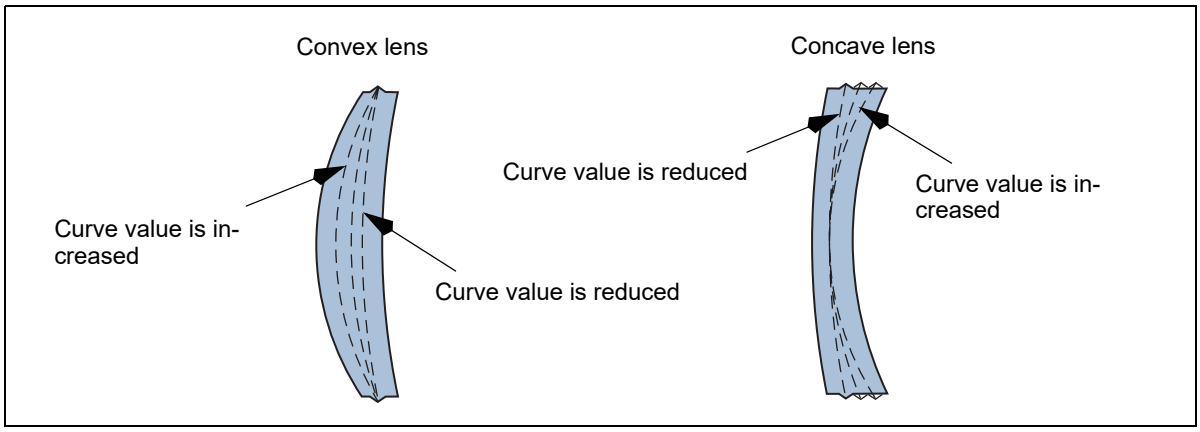
2) Press the Curve field.

   The pop-up menu for curve selection is displayed.



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

Auto	As the default value, the computer-calculated bevel curve (for which “A” is displayed before the numeric value) is displayed.
Curve	Pressing the numeric field displays the numeric keypad. Input the desired bevel curve value. Range: 0.1 to 12.0 (0.1 increments)
Ratio	Pressing the numeric field displays the pop-up menu. Select the desired ratio. Ratio: 7:3 / 6:4 / 5:5 / 4:6 / 3:7
Front	Bevel curve profiled along the front surface of a lens
Rear	Bevel curve profiled along the rear surface of a lens
Frame	Bevel curve profiled along the frame



Note

- The curve value preceded by “A” is the same as the computer-calculated value.
- When the frame curve is 0.0, “Frame” cannot be selected. When a frame with rounded lens shape is traced, the frame curve may become 0.0.
- When the front or rear curve value of the lens exceeds 12, “Front” or “Rear” cannot be selected in the Bevel curve field.

Optimum processing mode for lens types in beveling

Processing mode / Lens type	Auto	Guide			
		Curve	Front	Rear	Ratio
Single	◎	◎			○*a
Prog.	◎	◎			
Bifocal	◎	◎			
Ex				◎	

◎ : Optimum mode (recommended mode)

○ : Processable mode

*a: To select the ratio, refer to the following.

Select 5:5 for a plus single vision lens with low power.

Select 4:6 or 5:5 for a plus single vision lens with medium or high power, and for a minus single vision lens with low power.

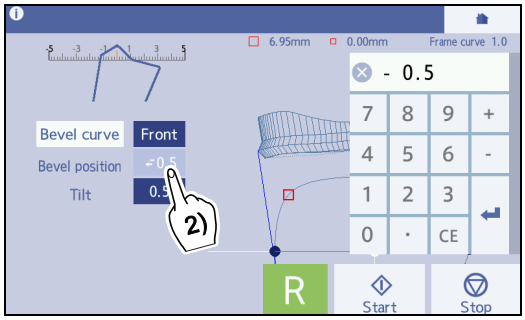
Select 3:7 or 4:6 for a minus single vision lens with medium power.

Select 3:7 for a minus single vision lens with high power.

- For Ex lenses, do not change the initial setting of “Rear”.
  With the setting of “Front” or such, beveling cannot be performed properly. To adjust the beveling position, use the tilt processing. When data for which the curve mode has been specified is loaded from the server or such, the settings according to the specified curve mode are displayed as the initial settings.

“4.21.2 To perform tilt processing” (page 199)

12 If necessary, change the entire bevel position.



1) Tap the simulation image to move the sectional view position line and stop it at the thinnest lens edge point (small □)

2) Press the [Bevel position] field.
→ Numeric keypad

3) Input the amount to move the bevel toward the front or rear surface with the numeric keypad. (Unit: mm)

Minus value	Bevel moves toward the front surface.
Positive value	The bevel moves toward the rear surface.

Ex.— Entering "-0.4" with the numeric keypad displays "←0.4" in the field, and moves the bevel toward the lens front surface by 0.4 mm.

The arrow ← before the value indicates that the bevel is moved toward the lens front surface. → indicates that the bevel is moved toward the rear surface.

Ex.— Curve: 5.0 position: ←0.4

It indicates the bevel with curve 5 is horizontally moved toward the lens front surface by 0.4 mm.

4) To prevent the bevel from coming off the lens edge, change the bevel position while confirming the bevel sectional view at the thinnest lens edge point (small □).

13 Confirm whether the bevel sectional view is obtained in the same manner as Step 9. If necessary, repeat Steps 10 to 12 until the desired bevel sectional view is obtained.

- When the settings for the bevel position or such are changed on the simulation screen, if the opposite lens has not been processed, the changed values are copied to the settings for the opposite lens as the initial values. However, if the settings related to the bevel or groove position are included in the shape data received from the server or blocker, the received settings are protected, and the changed values are not copied automatically.

14 Press Start to restart the processing.

15 When processing is complete, remove the lens.

"3.10.2 To remove lenses" (page 104)

4.10 Mini Beveling

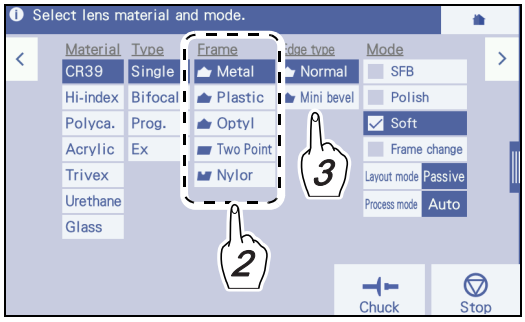
Mini bevel mode is a function to make the bevel height smaller than the standard when the frame type is metal, plastic, or optyl. This function is used when the frame groove is shallow.

Additionally, the lens appearance is improved with this function because the lens bevel does not extend off the frame groove. However, [Polish] cannot be selected.

1 On the processing condition input screen, specify Material, Type, and Mode.

2 Select a frame type according to the frame from the Frame field.

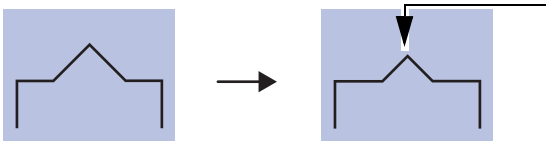
Frame type
Metal/Plastic/Optyl



3 Select [Mini bevel] in the Edge type field.

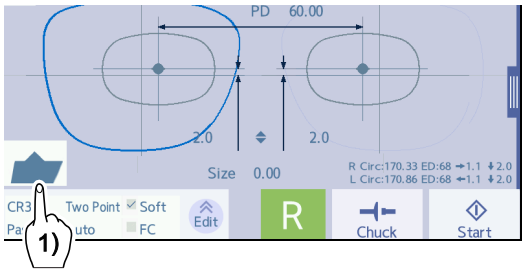
Edge type
Mini bevel

When [Mini bevel] is selected, the bevel is processed in slightly smaller size than the standard.



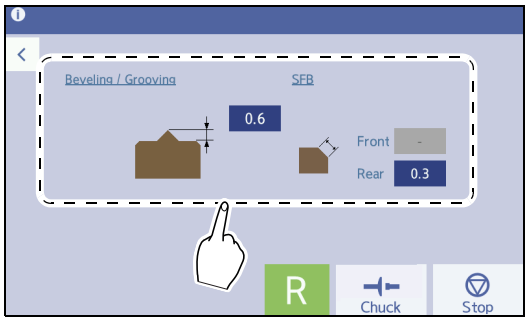
4 If necessary, change the height of the mini bevel on the edge shape confirmation screen.

1) On the processing start screen, press the edge type icon.
→ Edge type confirmation screen



2) Press the mini bevel height field. Input a value with the keyboard.

3) Press ❮ to return to the processing start screen.



❖ The subsequent operations are the same as *"4.9.1 To auto bevel" (page 153)*.
However, [Polish] cannot be selected.

4.11 High Base Curve Beveling for Trend8

When the frame curve is large, the lens insertion may be difficult with the normal bevel shape. In this case, the high base curve beveling can be used to process the lens with the desired bevel position, height, and width so that the lens can be inserted easily.

High base curve beveling conditions

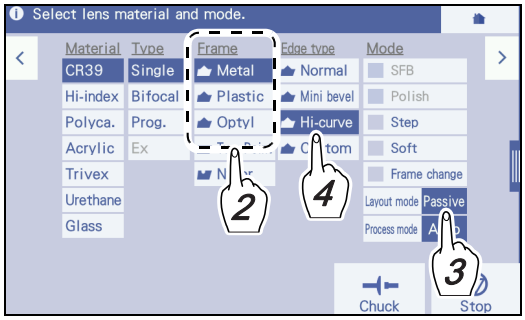
- High base curve beveling cannot be selected when [Groove], [SFB], [Polish], or the [Ex] lens is selected.
- Only [Passive] can be selected for Layout mode. [Active] and [Bifocal] cannot be selected.
- Since the front and rear edges of the bevel are processed separately, the high base curve beveling time takes longer than the normal beveling.
- For high base curve beveling, it is also possible to specify curves that may cause the bevel to come off the lens edge. In this case, select [Guide] for the processing mode and specify a curve while checking the bevel sectional view on the simulation screen

1 On the processing condition input screen, specify Material and Type.

"4.3.2 To specify processing conditions" (page 117)

2 Select a frame type according to the frame from the Frame field.

Frame type
Metal/Plastic/Optyl



3 Set Layout mode to [Passive].

Layout mode
Passive

4 Set Edge type to [Hi-curve].

Edge type
Hi-curve

5 Set Process mode to [Auto] or [Guide].

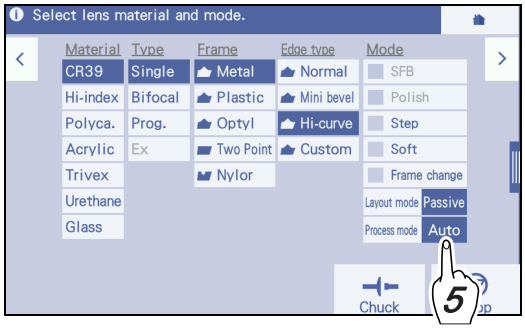
Processing mode
Auto, Guide

- [Auto] is performed according to the value set on the Default tab.

  "♦ Default setting" (page 232)

- [Guide] can be confirmed or edited on the simulation screen in the same manner as guide beveling.

  "4.9.2 To guide bevel" (page 156)



6 Input the layout data.

"4.3.3 To input layouts according to lens types" (page 122)

7 Block the lens.

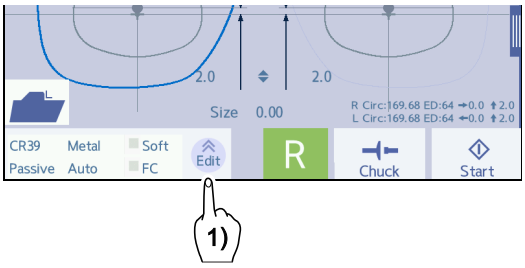
"4.6 Blocking" (page 136)

"4.6.3 To block with pliable cups for high base curve lenses" (page 141)

8 Set the lens to the lens adapter.

"3.10.1 To set lenses" (page 103)

9 If necessary, confirm or change the settings on the processing condition confirmation screen.

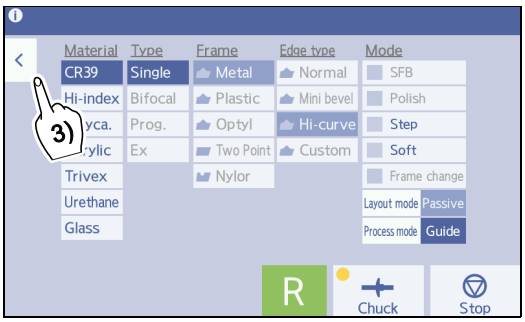


1) On the processing start screen, press Edit.

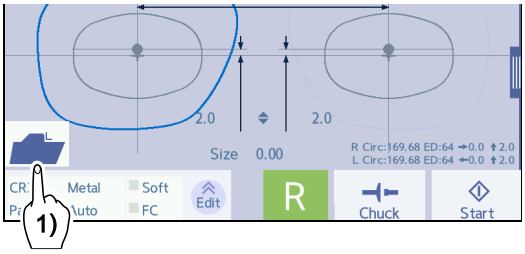
→ Processing condition confirmation screen

2) Change the settings in the same manner as the processing condition input screen.

3) Press ‹ to return to the layout input screen.



10 If necessary, change the bevel shape on the edge type confirmation screen.



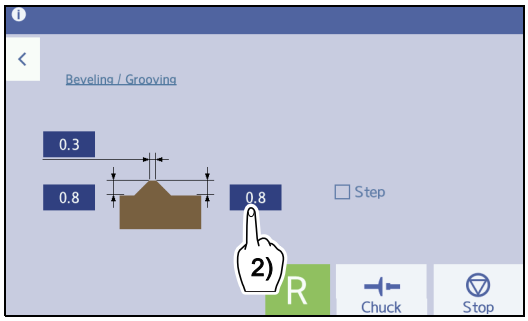
1) On the processing start screen, press the edge type icon.

→ Edge type confirmation screen

2) Press the desired item to change the bevel shape.

→ Numeric keypad

Input a value with the numeric keypad.



Setting items	Input range	Increments
Bevel apex width	0.0 to 2.0 mm	0.1 mm
Bevel front height	0.0 to 1.8 mm	
Bevel rear height		

3) Press ❮ to return to the layout input screen.

❖ When Process mode is set to [Auto]

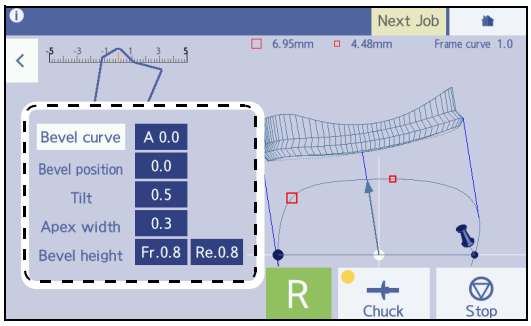
The subsequent operations are the same as *"4.9.1 To auto bevel" (page 153)*. However, [SFB] and [Polish] cannot be selected.

❖ When Process mode is set to [Guide]

The subsequent operations are the same as *"4.9.2 To guide bevel" (page 156)*. However, [SFB] and [Polish] cannot be selected.

◆ Settings in simulation screen

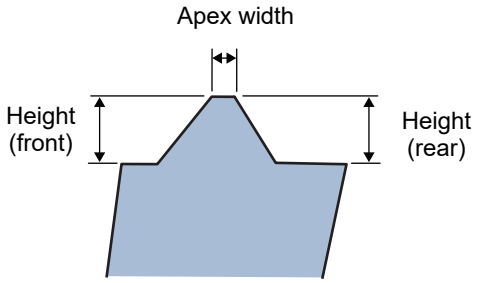
- Only [Curve], [Front], and [Rear] can be selected from the [Bevel curve] pop-up menu of the high base curve beveling. [Auto] or [Ratio] cannot be selected. The initial value is [Front].
- Change [Apex width], [Bevel height (Fr.)], or [Bevel height (Re.)] with the numeric keypad.
- For high base curve beveling, it is also possible to specify curves that may cause the bevel to come off the lens edge. Be sure to specify the curves while checking the bevel sectional view on the simulation screen.



4.12 Custom Beveling for Trend8

For some frame types, the bevel height does not match the frame, so the lens insertion may be difficult with the normal bevel shape.

Custom beveling allows processing a lens with the desired bevel height (front and rear) and bevel apex width so that it can be inserted into the frame easily.



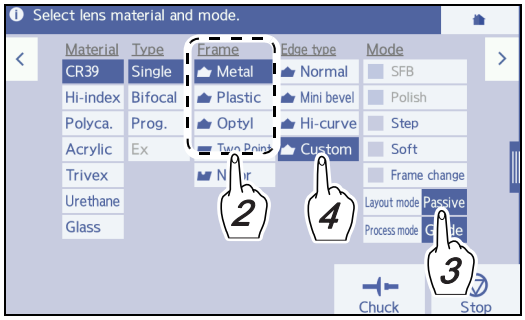
Custom beveling conditions

- Custom beveling cannot be selected when [Groove], [SFB], [Polish], or the [Ex] lens is selected.
- Only [Passive] can be selected for Layout mode. [Active] and [Bifocal] cannot be selected.
- Since the front and rear edges of the bevel are processed separately, the custom beveling time takes longer than the normal beveling.
- For custom beveling, it is also possible to specify curves that may cause the bevel to come off the lens edge. In this case, select [Guide] for the processing mode and specify a curve while checking the bevel sectional view on the simulation screen.

1 On the processing condition input screen, specify Material and Type.

"4.3.2 To specify processing conditions" (page 117)

2 Select a frame type according to the frame from the Frame field.



Frame type
Metal/Plastic/Optyl

3 Set Layout mode to [Passive].

Layout mode
Passive

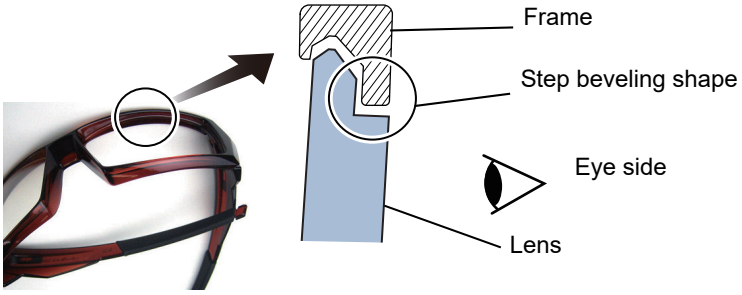
4 Set Edge type to [Custom].

Edge type
Custom

❖ The subsequent operations are the same as Steps 5 and later in *"4.11 High Base Curve Beveling for Trend8" (page 162)*.

4.13 Step Beveling for Trend8

Step beveling is a process to improve safety by cutting a step on the rear surface of lenses for high base curve frames such as sport sunglasses, to prevent the lens from detaching toward the eye side.



Step beveling conditions

- Step beveling is unavailable for glass lenses and EX lenses. Polishing and safety beveling cannot be selected.
- Only [Passive] can be selected for Layout mode. [Active] and [Bifocal] cannot be selected.
- The step width initial value can be set in [Step width] on the Default tab.

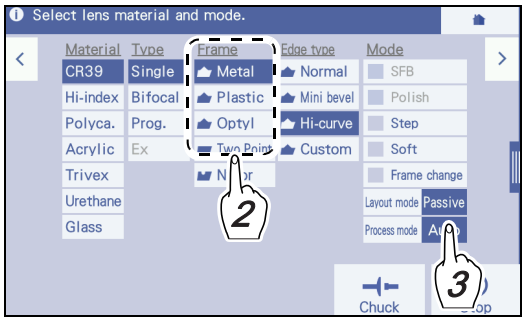
  "♦ Default setting" (page 232)
- The step width value is not saved to the internal memory.
- Selection of [Step] may not be possible depending on the processing conditions such as lens type, bevel height, bevel apex width, step width or such. In this case, the message indicating that step beveling cannot be performed is displayed after the lens measurement, then the processing is interrupted. Pressing [Edit] displays the simulation screen. Reducing the bevel apex width enables the step beveling. Depending on the processing conditions, step beveling can also be enabled by changing the bevel height or such.

1 On the processing condition input screen, specify Material and Type.

"4.3.2 To specify processing conditions" (page 117)

2 Select a frame type according to the frame from the Frame field.

Frame type
Metal/Plastic/Optyl



3 Set Layout mode to [Passive].

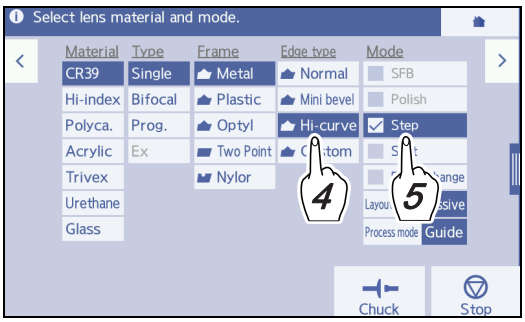
Layout mode
Passive

4 Set Edge type to [Hi-curve] or [Custom].

Edge type
Hi-curve, Custom

5 Check [Step].

Step beveling is not selected.	☐ Step
Step beveling is selected.	☑ Step



6 Set Process mode to [Auto] or [Guide].

Processing mode
Auto, Guide

- [Auto] is performed according to the value set on the Default tab.

"♦ *Default setting*" *(page 232)*

7 Input the layout data.

"*4.3.3 To input layouts according to lens types*" *(page 122)*

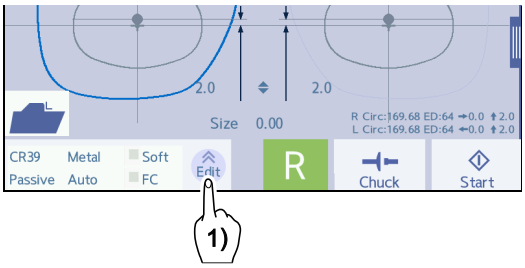
8 Block the lens.

"*4.6 Blocking*" *(page 136)*

9 Set the lens to the lens adapter.

"*3.10.1 To set lenses*" *(page 103)*

10 If necessary, confirm or change the settings on the processing condition confirmation screen.

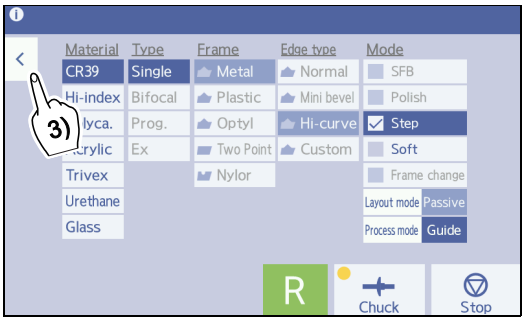


1) On the processing start screen, press Edit.

→ Processing condition confirmation screen

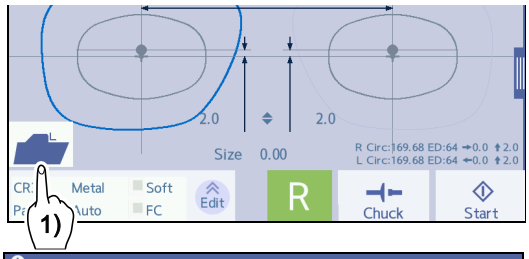
2) If necessary, change the settings in the same manner as the processing condition input screen.

3) Press ❮ to return to the layout input screen.

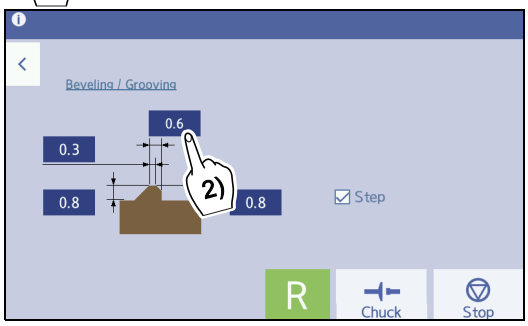


11 If necessary, change the bevel shape on the edge type confirmation screen.

1) On the processing start screen, press the edge type icon.
→Edge type confirmation screen



2) Press the field of the bevel apex width or such to change the bevel shape.
→ Numeric keypad
Input a value with the numeric keypad.



Setting items	Input range	Increments
Bevel apex width	0.0 to 2.0 mm	0.1 mm
Bevel front height	0.0 to 1.8 mm	
Bevel rear height		
Selection of step beveling	Step beveling is selected when [Step] is checked.	
Step width	0.0 to 3.8 mm	0.1 mm

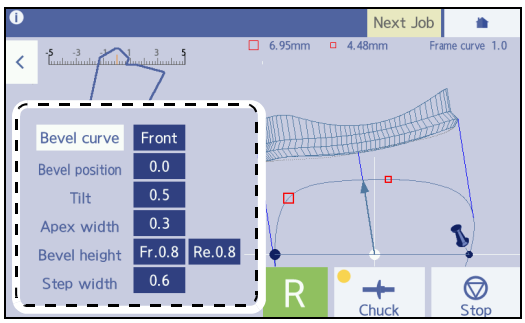
Input range conditions for bevel apex width, bevel rear height, and step width

- The step width value cannot be input less than the bevel apex width value.
- The step width value cannot be input greater than the sum of the bevel apex width and bevel rear height values.
  * The above condition also apply to the settings in the simulation screen.

◆ Settings in simulation screen

For high base curve beveling, it is also possible to specify curves that may cause the bevel to come off the lens edge. Be sure to specify the curves while checking the bevel sectional view on the simulation screen.

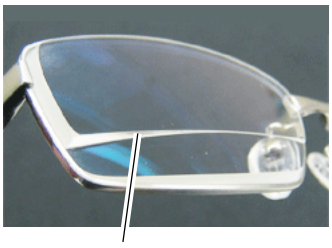
The following can be set on the simulation screen.



- Bevel curve
- Bevel position
- Tilt
- Apex width input range: 0.0 to 2.0 mm; Increments: 0.1 mm
- Bevel height (Fr.) input range: 0.0 to 1.8 mm; Increments: 0.1 mm
- Bevel height (Re.) input range: 0.0 to 1.8 mm; Increments: 0.1 mm
- Step width input range: 0.0 to 3.8 mm; Increments: 0.1 mm

4.14 Processing (Bevel) EX Lenses

For EX lens processing, be sure to select [Ex] in the Type field. With other settings, a lens cannot be measured because the feeler of the feeler unit gets caught on the level difference on the front surface.



Level difference of EX lens

- For EX lens processing mode, in the same manner as guide processing mode, enter the bevel position, curve, tilt, and such manually.
- If cataract lenses with a large protruding part on the front surface or prism lenses cannot be processed due to a lens measurement error, use EX lens processing mode.

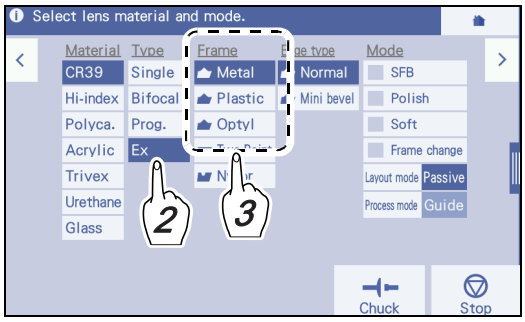
1 On the processing condition input screen, specify Material, SFB, Polish, Soft, and Layout mode.

Process mode is displayed as Process mode Guide and deactivated.

"4.3.2 To specify processing conditions" (page 117)

2 Select [Ex] in the Type field.

Lens type
Ex



3 Select a frame type from the Frame field.

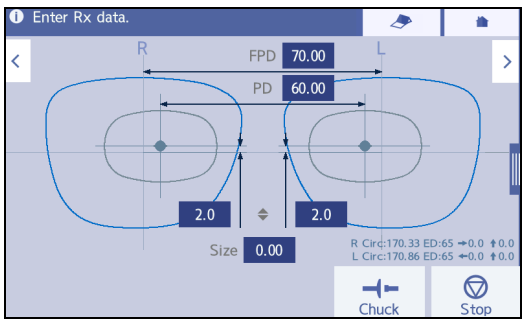
Frame type
Metal/Plastic/Optyl

4 Press ›.

→ Layout input screen

5 Input the layout values according to the prescription.

"4.3.3 To input layouts according to lens types" (page 122)



6 Press ›.

→ Blocking screen

Block the lens. *“4.6.1 To block” (page 136)*

After blocking, the processing start screen appears.

7 Set the lens to the lens adapter.

“3.10.1 To set lenses” (page 103)

8 As necessary, change the processing conditions and edge shape settings.

Steps 8 and 9 in *“4.9.1 To auto bevel” (page 153)*

9 Press Start to start processing.

The processing chamber door closes.

Shortly after beveling an Ex lens starts, the processing temporarily stops on the simulation screen. Perform the same operation as Steps 8 and later for guide beveling.

“4.9.2 To guide bevel” (page 156)

4.15 Flat Edging

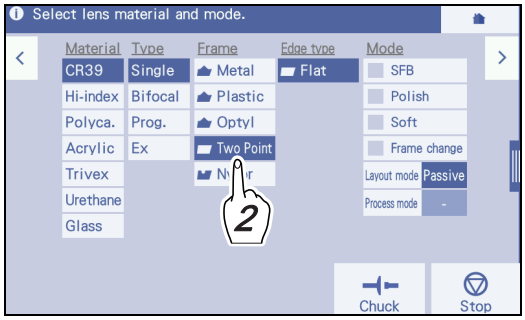
Frame processing for a two-point frame

1 On the processing condition input screen, specify Material, Type, SFB, Polish, Soft, and Layout mode.

"4.3.2 To specify processing conditions" (page 117)

2 Select [Two Point] in the Frame field.

Frame type
Two Point

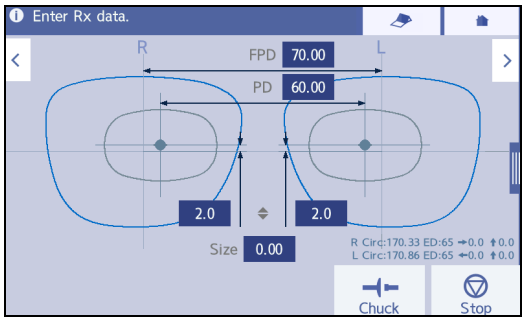


3 Press ❯.

→ Layout input screen

4 Input the processing conditions according to the prescription.

"4.3.3 To input layouts according to lens types" (page 122)



Note

- When Size is input with [Two Point] selected, FPD is automatically changed so that DBL remains the same.

5 Press ❯.

→ Blocking screen

Block the lens. *"4.6.1 To block" (page 136)*

After blocking, the processing start screen appears.

6 Set the lens to the lens adapter.

"3.10.1 To set lenses" (page 103)

7 As necessary, change the processing conditions and edge shape settings.

Steps 8 and 9 in *"4.9.1 To auto bevel" (page 153)*

8 Press Start to start processing.

The processing chamber door closes.

The processing starts, and the simulation screen is displayed.

9 When processing is complete, remove the lens.

"3.10.2 To remove lenses" (page 104)

4.16 Grooving

In addition to the flat edging, grooving is performed.

4.16.1 To auto groove

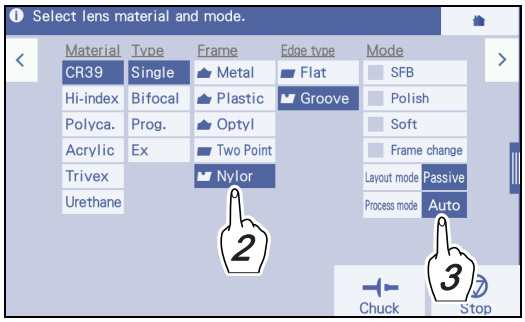
A lens is processed after the groove position and curve for a nylor frame are automatically calculated.

1 On the processing condition input screen, specify Material, Type, SFB, Polish, Soft, and Layout mode.

"4.3.2 To specify processing conditions" (page 117)

2 Select [Nylor] in the Frame field.

Frame type
Nylor (grooving)



3 In the Process mode field, select [Auto].

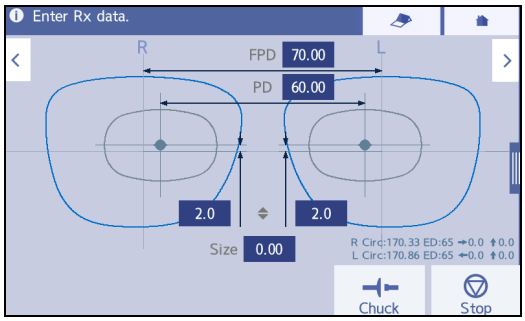
Processing mode
Auto

4 Press ❯.

→ Layout input screen

5 Input the layout values according to the prescription.

"4.3.3 To input layouts according to lens types" (page 122)



Note

- When the size is input with [Nylor] selected, correction to remain DBL unchanged is not performed.
- To input the groove width and depth, check the simulation image after measurement is complete, then perform guide grooving.

6 Press ›.

→ Blocking screen

Block the lens. *"4.6.1 To block" (page 136)*

After blocking, the processing start screen appears.

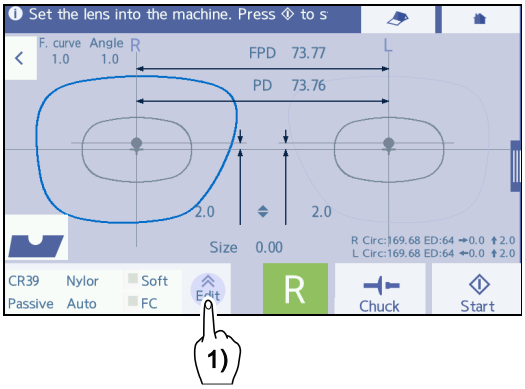
7 Set the lens to the lens adapter.

"3.10.1 To set lenses" (page 103)

8 If necessary, confirm or change the settings on the processing condition confirmation screen.

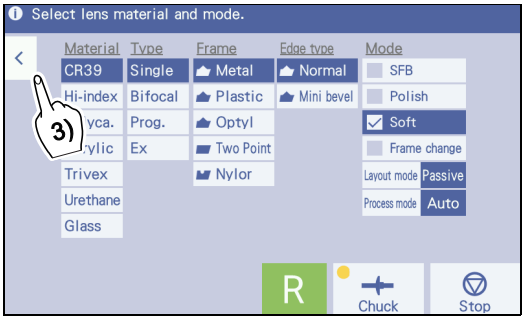
1) On the processing start screen, press Edit.

→ Processing condition confirmation screen



2) Confirm the set processing conditions. If necessary, change the settings in the same manner as the processing condition input screen. However, some items cannot be changed.

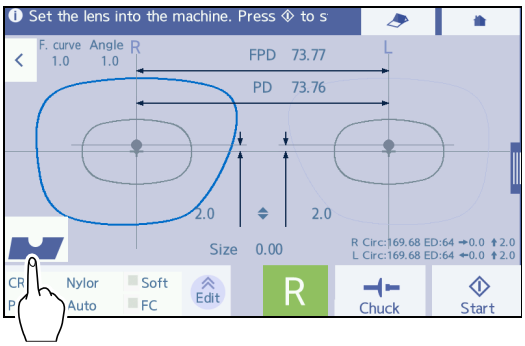
3) After confirming and changing the processing conditions, press ‹ to return to the layout input screen.



9 If necessary, change the bevel shape on the edge type confirmation screen.

On the processing start screen, press the edge type icon.

→ Edge type confirmation screen

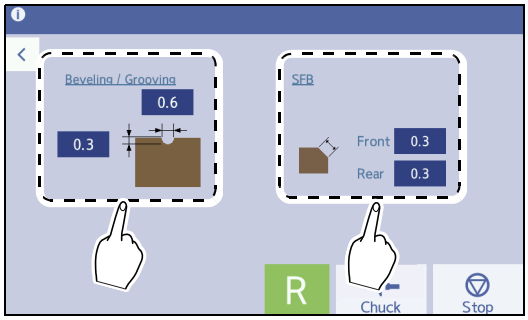


10 Change the groove width, groove depth, and safety bevel width for grooving.

To perform grooving, press the groove width or groove depth field.

To perform safety beveling, press the [Front] or [Rear] field.

Input a value with the numeric keypad.



11 Press Start to start processing.

The processing chamber door closes.

The processing starts, and the simulation screen is displayed.

Note

- During lens measuring or roughing, the process mode can be changed from Auto processing to Guide processing on the processing condition confirmation screen.
  Press the [Process mode] field on the processing condition confirmation screen, to switch the field to “Guide”.
  In this case, when lens measuring or roughing is complete, the processing is interrupted and the instrument enters the Guide process mode. After that, the groove position and such can be input.

12 When processing is complete, remove the lens.

“3.10.2 To remove lenses” (page 104)

Note

- If the thinnest point of the lens edge is thinner than the limit, the message indicating insufficient lens edge thickness is displayed after the lens measurement, then the processing is interrupted.
  Pressing [Continue] displays the simulation screen. While checking the grooving sectional view with the sectional view simulation, adjust the groove width and such.
  “4.16.2 To guide groove” (page 175)
  Pressing [Abort] interrupts the processing.

4.16.2 To guide groove

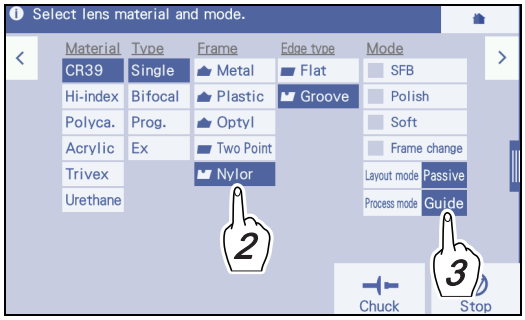
The groove for a nylor frame is processed with the position and curve that are input in Guide mode.

1 On the processing condition input screen, specify Material, Type, SFB Polish, Soft, and Layout mode.

"4.3.2 To specify processing conditions" (page 117)

2 Select [Nylor] in the Frame field.

Frame type
Nylor (grooving)



3 Select [Guide] in the Process mode field.

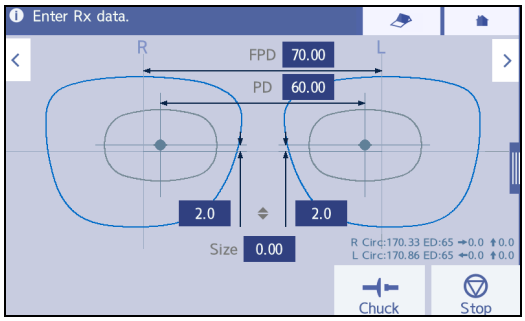
Processing mode
Guide

4 Press ›.

→ Layout input screen

5 Input the layout values according to the prescription.

"4.3.3 To input layouts according to lens types" (page 122)



6 Press ›.

→ Blocking screen

Block the lens. "4.6.1 To block" (page 136)

After blocking, the processing start screen appears.

7 Set the lens to the lens adapter.

"3.10.1 To set lenses" (page 103)

8 As necessary, change the processing conditions and edge shape settings.

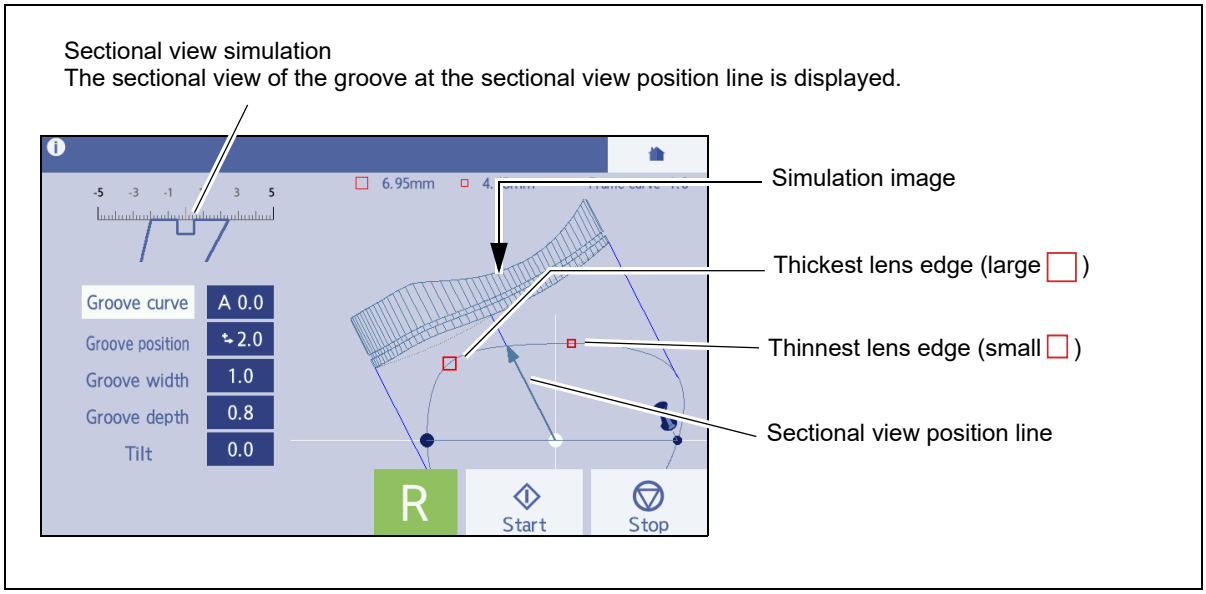
Steps 8 and 9 in "4.16.1 To auto groove" (page 172)

9 Press Start to start processing.

The processing chamber door closes. In the case of guide grooving, the simulation screen is displayed in a moment after processing starts, then the processing stops temporarily.

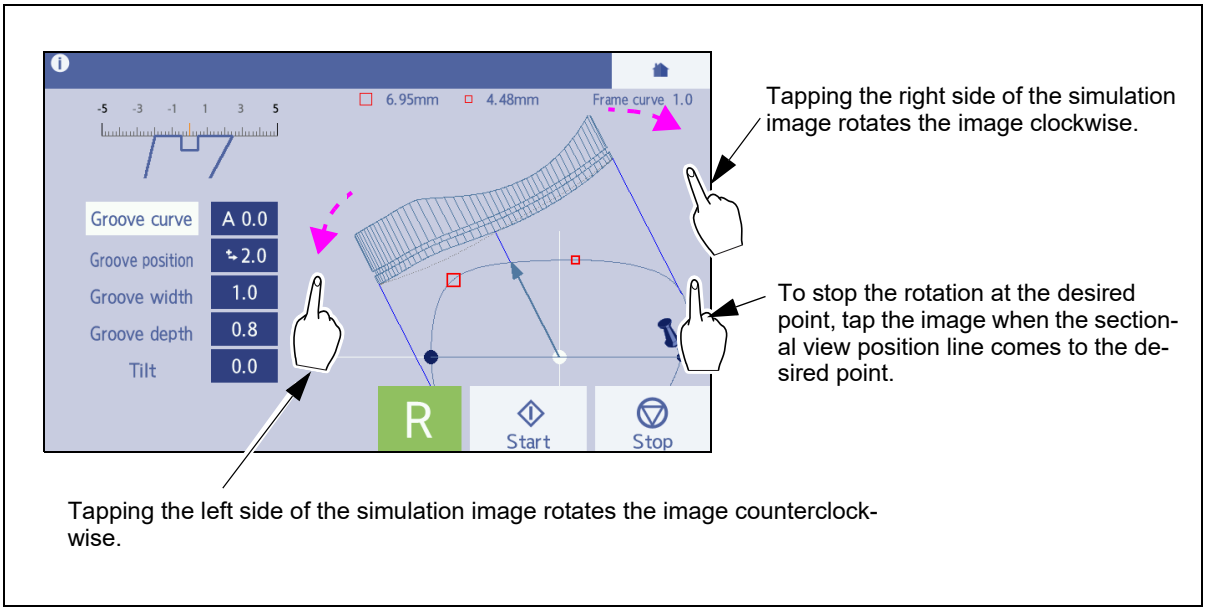
- The simulation screen for guide grooving

While checking the groove sectional view on the simulation screen, perform guide grooving settings.



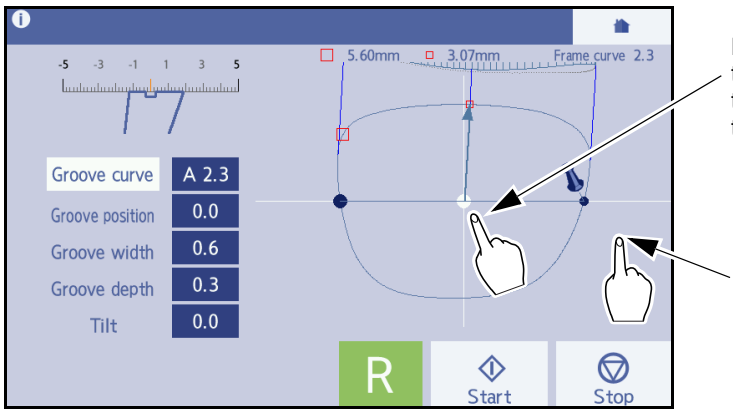
- Display operations of the guide grooving simulation screen

Tapping on the screen rotates the simulation image changes the rotation directions, or stops rotation.



- Checking the lens shape

  Tapping the center of the shape displays it in the center of the area as shown below. Further, tapping the shape repeatedly in this state moves the sectional view position line to a point mark such as that of the thickest lens edge.



Each time the shape is tapped, the sectional view position line moves to the thinnest lens edge, thickest lens edge, tilt base point, and tilt point in that order.

Tapping the outside of the shape returns the simulation image to the center.

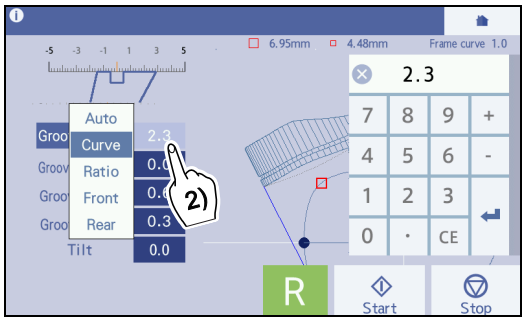
10 Move the sectional view position line to check the sectional view simulation of the groove at some points.

11 Specify the groove curve.

1) Tap the simulation image to move the sectional view position line and stop it at the thickest lens edge point (large □).

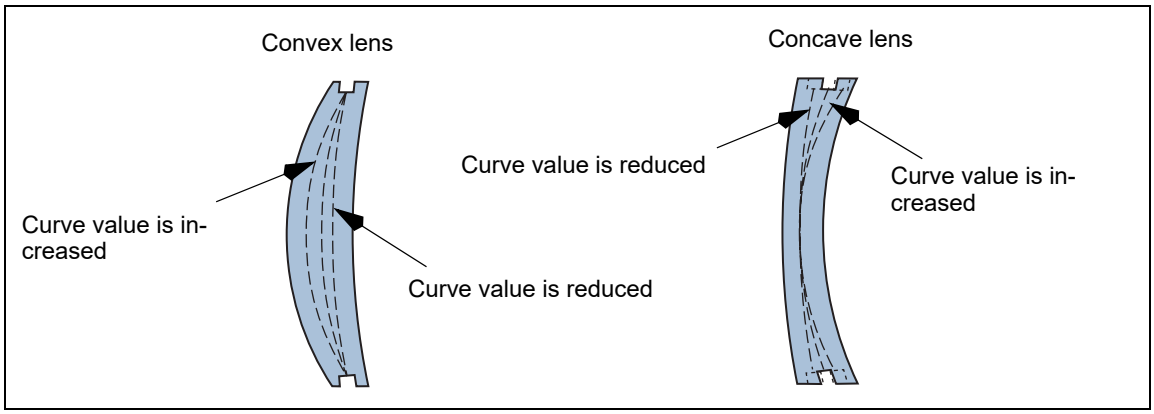
2) Press the [Groove curve] field.

   The pop-up menu for curve selection is displayed.



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

Auto	As the default value, the computer-calculated groove curve (for which “A” is displayed before the numeric value) is displayed.
Curve	Pressing the numeric field displays the numeric keypad. Input the desired groove curve value. Range: 0.1 to 12.0 (0.1 increments)
Ratio	Pressing the numeric field displays the pop-up menu. Select the desired ratio. Ratio: 7:3 / 6:4 / 5:5 / 4:6 / 3:7
Front	Groove curve profiled along the front surface of a lens
Rear	Groove curve profiled along the rear surface of a lens



Note

- The curve value preceded by “A” is the same as the computer-calculated value.
- When the front or rear curve value of the lens exceeds 12, “Front” or “Rear” cannot be selected in the Groove curve field.

Optimum processing mode for lens types in grooving

Processing mode / Lens type	Auto	Guide			
		Curve	Front	Rear	Ratio
Single	◎	◎			○ *a
Prog.	◎	◎			
Bifocal	◎	◎			
Ex				◎	

◎ : Optimum mode (recommended mode)

○ : Processable mode

*a: To select the ratio, refer to the following.

Select 5:5 for a plus single vision lens with low power.

Select 4:6 or 5:5 for a plus single vision lens with medium or high power, and for a minus single vision lens with low power.

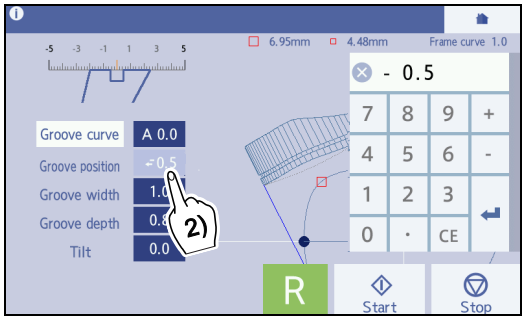
Select 3:7 or 4:6 for a minus single vision lens with medium power.

Select 3:7 for a minus single vision lens with high power.

- For Ex lenses, do not change the initial setting of “Rear”.
  With the setting of “Front” or such, grooving cannot be performed properly. To adjust the grooving position, use the tilt processing. When data for which the curve mode has been specified is loaded from the server or such, the settings according to the specified curve mode are displayed as the initial settings.

“4.21.2 To perform tilt processing” (page 199)

12 If necessary, change the entire groove position.



1) Tap the simulation image to move the sectional view position line and stop it at the thickest lens edge point (large □).
2) Press the [Groove position] field.
   → Numeric keypad
3) Input the amount to move the groove toward the front or rear surface with the numeric keypad. (Unit: mm)

Minus value	Groove moves toward the front surface.
Positive value	Groove moves toward the rear surface.

Ex.— Inputting "-0.4" with the numeric keypad displays "←0.4" in the Groove position field and moves the groove toward the lens front surface by 0.4 mm.

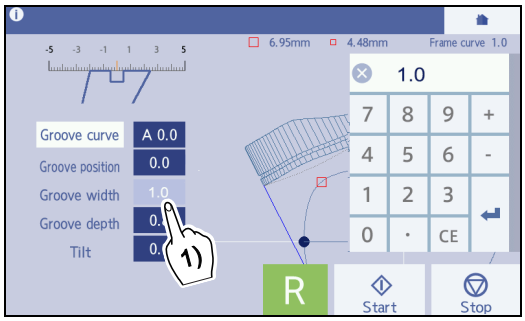
The arrow ← before the value indicates that the groove is moved toward the lens front surface. → indicates that the groove is moved toward the rear surface.

Ex.— Curve: 5.0 Position: ←0.4

It indicates the groove with curve 5.0 is horizontally moved toward the lens front surface by 0.4 mm.

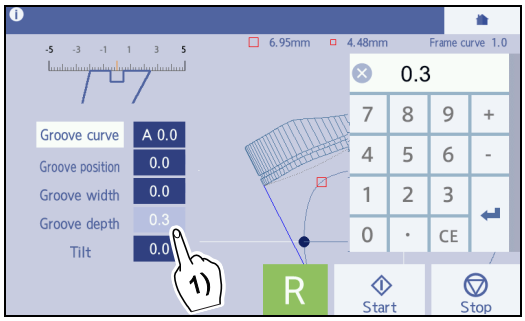
4) To prevent the groove from coming off the lens edge, change the groove position while confirming the groove sectional view at the thinnest point of the lens edge (small □).

13 Change the groove position as necessary.



1) Press the [Groove width] field.
   → Numeric keypad
2) Input the groove width. (Unit: mm)
   - Range: 0.6 to 1.2 mm
   - Increments: 0.1 mm

14 Change the groove depth as necessary.



1) Press the [Groove depth] field.
   → Numeric keypad
2) Input the groove depth. (Unit: mm)
   - Range: 0.0 to 0.8 mm
   - Increments: 0.1 mm

15 Confirm that the desired groove sectional view is obtained in the same manner as Step 10. Repeat Steps 11 to 14 until the desired groove sectional view is obtained.

16 Press Start to restart the processing.

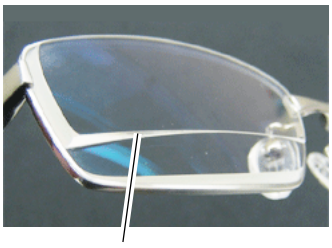
The processing chamber door closes.

17 When processing is complete, remove the lens.

“3.10.2 To remove lenses” (page 104)

4.17 Processing (Groove) EX Lenses

For EX lens processing, be sure to select [Ex] in the Type field. With other settings, a lens cannot be measured because the feeler of the feeler unit gets caught on the level difference on the front surface.



Level difference of EX lens

- Grooving is unavailable for glass lenses.
- For EX lens processing mode, in the same manner as guide processing mode, enter the groove position, curve, tilt, and such manually.
- If cataract lenses with a large protruding part on the front surface or prism lenses cannot be processed due to a lens measurement error, use EX lens processing mode.

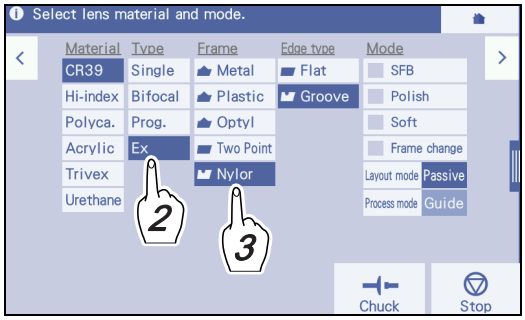
1 On the processing condition input screen, specify Material, SFB, Polish, Soft, and Layout mode.

Process mode is displayed as Process mode Guide and deactivated.

"4.3.2 To specify processing conditions" (page 117)

2 Select [Ex] in the Type field.

Lens type
Ex



3 Select [Nylor] in the Frame field.

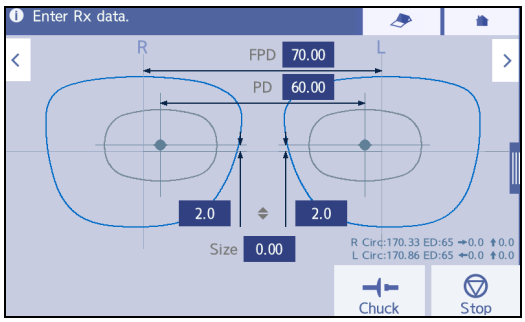
Frame type
Nylor (grooving)

4 Press ›.

→ Layout input screen

5 Input the layout values according to the prescription.

"4.3.3 To input layouts according to lens types" (page 122)



6 Press ›.

→ Blocking screen

Block the lens. *“4.6.1 To block” (page 136)*

After blocking, the processing start screen appears.

7 Set the lens to the lens adapter.

“3.10.1 To set lenses” (page 103)

8 As necessary, change the processing conditions and edge shape settings.

“4.16 Grooving” (page 172)

9 Press 

to start processing.

The processing chamber door closes.

The processing starts, and the simulation screen is displayed.

Shortly after grooving the Ex lens starts, the processing temporarily stops on the simulation screen. Perform the same operations as Steps 9 and later for guide grooving.

“4.16.2 To guide groove” (page 175)

4.18 Drilling

- When the lens material is set to “Glass”, drilling does not function.
- When layout mode is set to “Active”, blocking cannot be performed with drilling data. Toggle the setting to “Passive”, or delete the drilling data.
- When an instruction to edit a hole again appears at the start of processing, edit the hole in orange.
- For “High quality drilling”, set the drilling speed parameter to widen the hole diameter to “10”.

“ Drilling” (page 240)

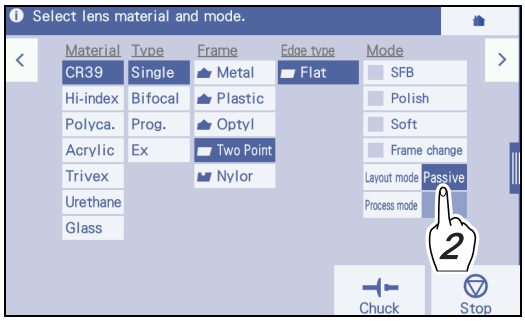
4.18.1 To set and edit holes (operation from the side menu)

1 Specify processing conditions on the processing condition input screen.

“4.3.2 To specify processing conditions” (page 117)

2 Select [Passive] in the Layout mode field.

Layout mode
Passive

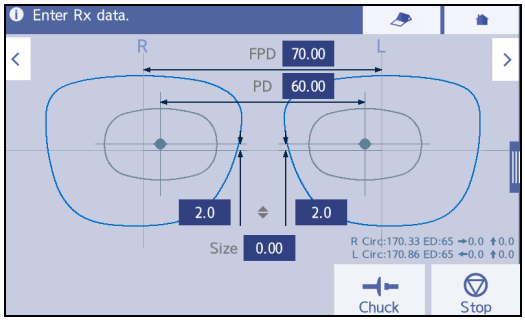


3 Press ›.

→ Layout input screen

4 Input the layout values according to the prescription.

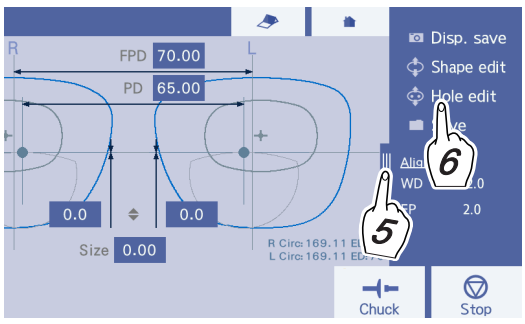
“4.3.3 To input layouts according to lens types” (page 122)



5 Display the side menu.

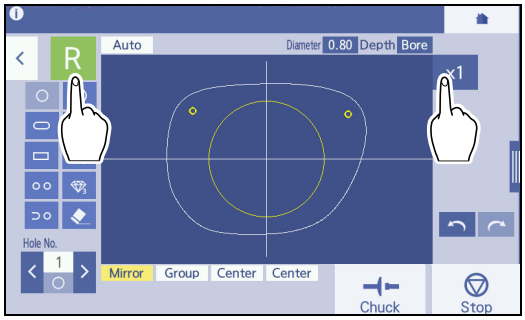
6 Press Hole edit in the side menu.

→ Hole editor screen



- To operate the hole editor screen

  - Press R or L according to the lens.
  - If necessary, press x1 to magnify the displayed shape from 1 to 6 times so that the shape position can be easily adjusted.
  - cancels the last change. restores the canceled change. These can be performed a maximum of five times.

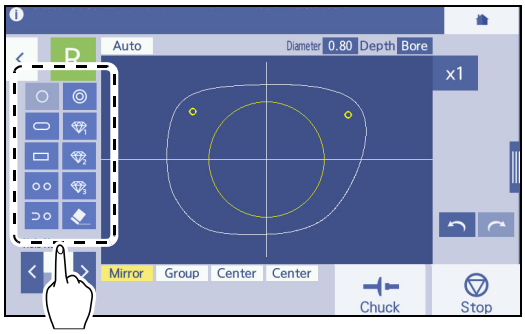


- To add holes

  1) Select a hole type with the hole addition buttons.
  2) Specify the hole position.

     A maximum of 64 holes can be specified for both eyes.

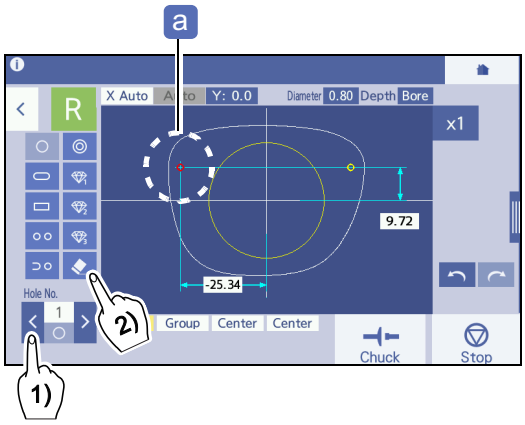
     "4.18.3 Drilling" (page 192)



- To select and delete holes

  1) Press a hole selection button and select the hole number. The selected hole a is displayed in red.
     - : Previous hole No.
     - : Next hole No.

     Pressing the hole center without hole addition button held can also specify the hole.
  2) Pressing deletes the selected hole.

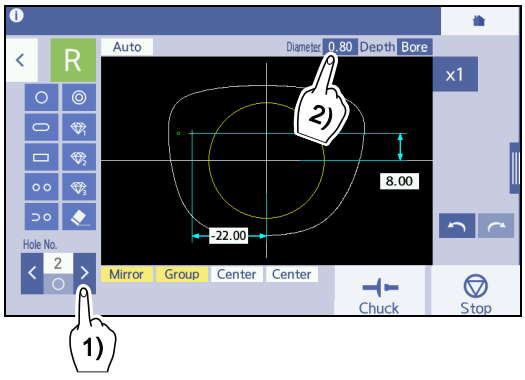


- To change hole diameters

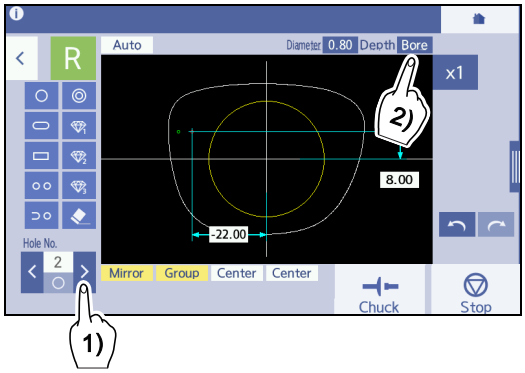
  1) Press or to select a hole. The selected hole is displayed in red.
  2) Press the [Diameter] field.

     → Numeric keypad

     Input a value and press to confirm the input.



● To change hole depths



1) Press ‹ or › to select a hole. The selected hole is displayed in red.

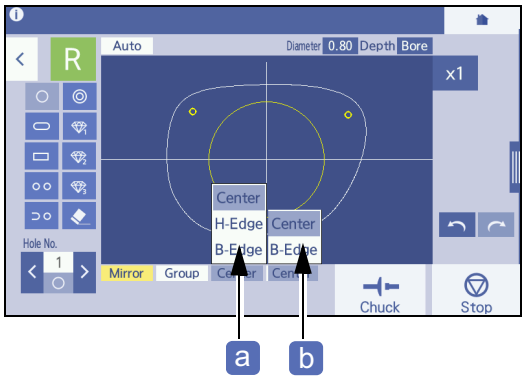
2) Press the [Depth] field.

→ Numeric keypad

Input a value and press ↵ to confirm the input.

For a through hole, input 0.0.

● To display hole coordinates



On the hole editor screen, press the horizontal hole coordinate button or vertical hole coordinate button.

- The reference position of the horizontal coordinate (X) a can be selected from three types: [Center], [B-Edge], and [H-Edge].
- The reference position of the vertical coordinate (Y) b can be selected from two types: [Center] and [B-Edge].
- They can be changed for each hole.

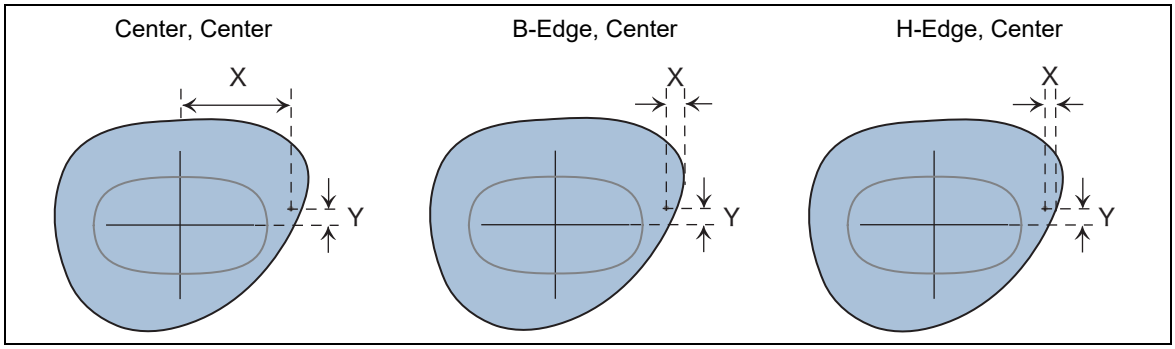
● Horizontal (X) a reference position

Center	Frame center
H-Edge	The widest point of the lens shape on the temporal side or nasal side
B-Edge	The temporal side or nasal side that is closest to the hole

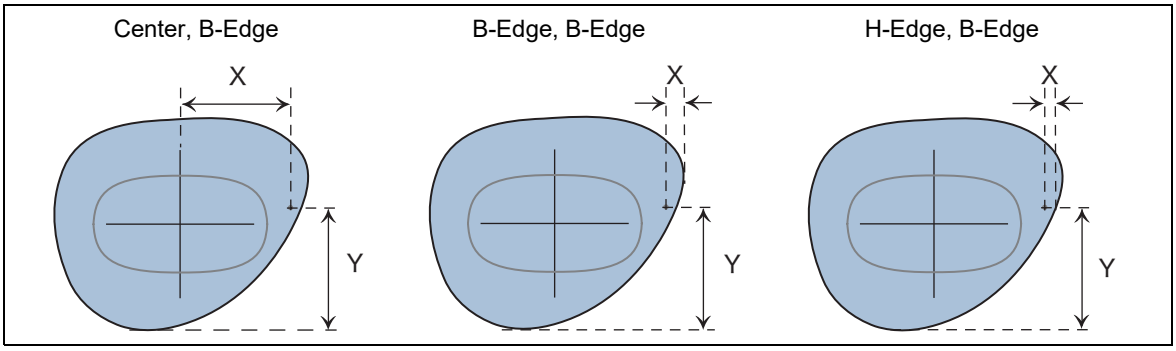
● Vertical (Y) b reference position

Center	Frame center
B-Edge	The lowest point on the lens shape

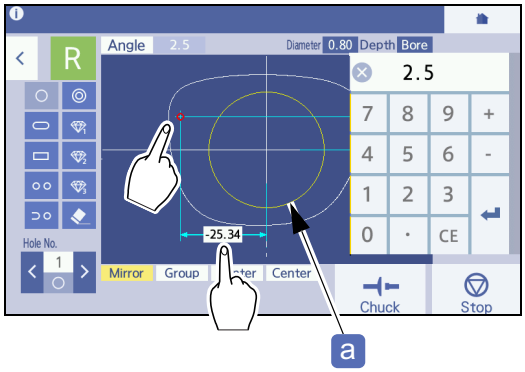
● When the vertical hole coordinate button is set to “Center”



- When the vertical hole coordinate button is set to “B-Edge”



- Changing hole positions



There are two methods to change the hole position as follows:

Hole positions cannot be specified inside the yellow circle (hole setting invalid range) a .

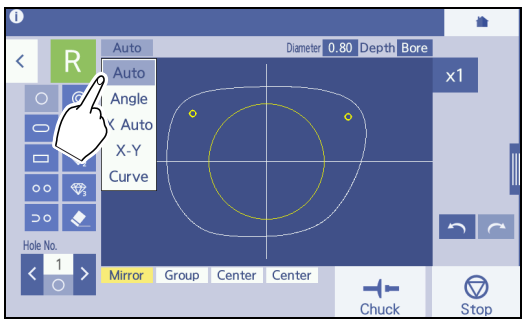
- To change holes with hole coordinates

1) Press the field for the horizontal hole coordinate (X) or vertical hole coordinate (Y) to be changed.
2) Input a value with the displayed numeric keypad and press ↵ to confirm it.

- To change by touching with a finger

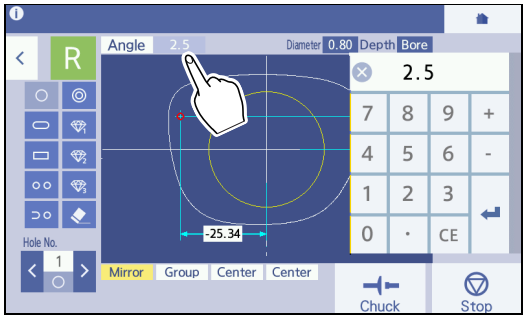
1) Ensure that no hole addition buttons are selected.
2) Touching the desired position on the displayed shape moves the selected hole to the touched position.

- To specify hole angles

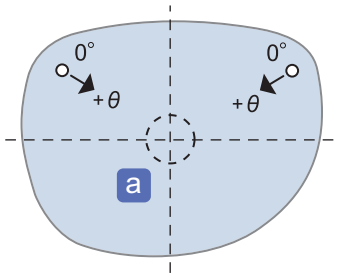
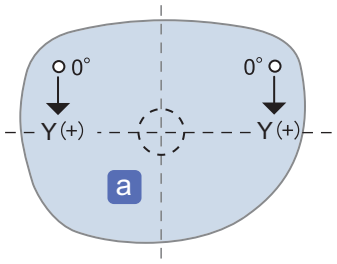
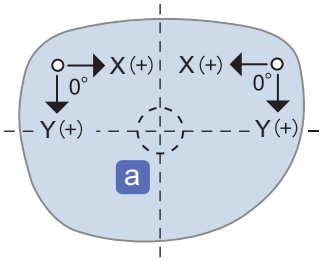


1) Press the hole angle button and select a hole angle type from the pop-up menu.

The hole angle button can be set to only “Auto”, “Angle”, or “Curve” when the hole addition button of paired holes, notched holes, or counterbored holes is selected.



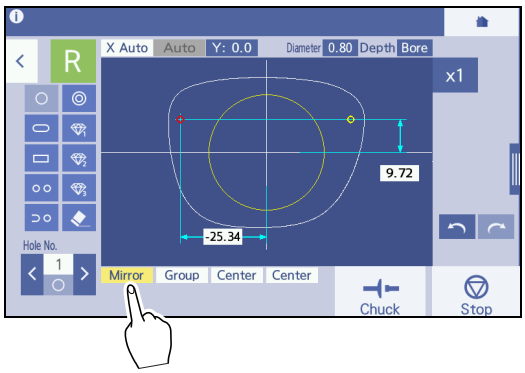
2) For the settings other than “Auto”, a numeric field is displayed to the right of the hole angle button. Change the angle with the numeric keypad that is displayed by pressing the numeric field.

Auto	Drills a hole perpendicularly to the lens front surface.
Angle	Specifies the tilt of the hole axis. • With 0°, the hole axis becomes parallel to the chuck axis a . • Entering a positive value tilts the hole axis toward the chuck axis. 
X Auto	Specifies the tilt of the Y axis (vertical). • X axis (horizontal): It is perpendicular to the lens front. • Y axis (vertical): With the setting of "Y: 0.0", it becomes parallel to the chuck axis a . Entering a positive value tilts the hole axis toward the chuck axis. 
X-Y	Specifies the tilts of the X axis (horizontal) and Y axis (vertical). • X axis (horizontal): With the setting of "X: 0.0", it becomes parallel to the chuck axis a . Entering a positive value tilts the hole axis toward the chuck axis. • Y axis (vertical): With the setting of "Y: 0.0", it becomes parallel to the chuck axis. Entering a positive value tilts the hole axis toward the chuck axis. 
Curve	Drills a hole perpendicularly according to the entered lens curve value.

● Mirror function

When a hole is added, the mirror function is turned on. The added hole is automatically mirrored to the opposite shape.

Pressing the [Mirror] button toggles the mirror function between on and off. When it is on (the button is displayed in yellow), the selected hole in reverse is displayed on the (R or L) opposite lens. In addition, if the hole created with the mirror function is deleted or moved, the change is applied to the hole on the opposite shape.

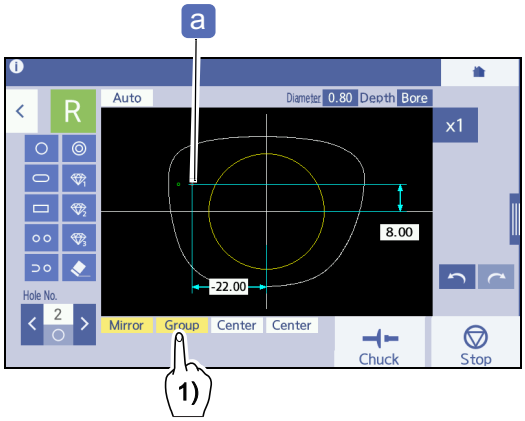


● Grouping

To drill multiple holes parallel (with the same hole angle), group the holes.

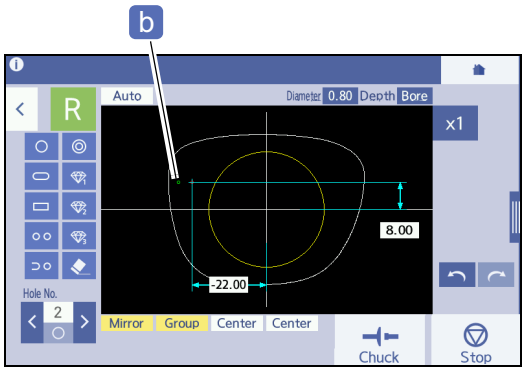
1) After selecting the first hole a , press the [Group] button.

The [Group] button blinks.



2) With the [Group] button blinking, pressing the second hole b groups the first and second holes, and a group number is assigned to this group.

While the [Group] button is blinking, pressing it again cancels grouping. Also, when the [Group] button is pressed with the grouped holes selected, the grouping is canceled.



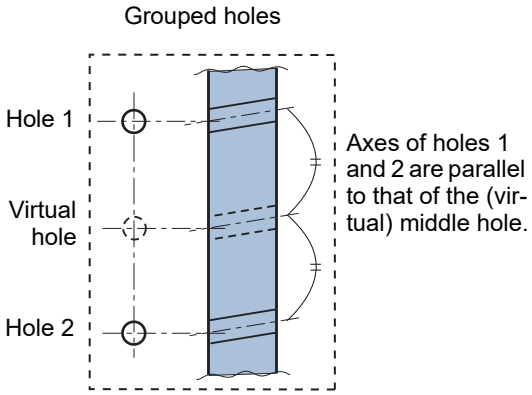
Note

- Up to two holes can be grouped per group.
- Paired, notched, or counterbored holes are automatically set as a group.
- When a hole of a group is selected, the other hole turns green.

The grouped holes are drilled at the same angle and parallel to that of the (virtual) middle hole.

Note that, when grouped holes are on both right and left lenses, the holes for each lens are grouped separately.

The tilt angle of grouped holes can be selected only among “Auto”, “Angle”, and “Curve”.



◆ Hole type list

	Hole description and specified point for hole position	Hole size setting
 Simple hole	• Standard circular hole • Specify the hole center position.	Hole position, hole diameter, hole depth
 Slotted hole	• Rounded slotted hole • Specify the start and end points of the hole.	Start and end points, hole diameter (width), hole depth
 Rectangular hole	• Square-cornered slotted hole. • Specify the start and end points of the hole.	Start and end points, hole diameter (width), hole depth
 Paired holes	• Combination of two horizontal simple holes • Specify the center of the inside hole (closer to the frame center) and the distance between the paired holes.	Hole position, distance between the two holes, hole diameter, hole depth
 Notched holes	• Combination of a simple hole and notch • Specify the position of the simple hole and the distance between the hole and notch. The horizontal position of the notch on the edge side is automatically determined according to the shape.	Hole position, distance between the simple hole and notch, hole diameter, hole depth
 Counterbored hole	• Counterbored hole • Specify the diameter and depth individually for the hole and counterbore. Specify the hole center position.	Hole position, hole diameter, hole depth
 Jewel hole 1	• Hole for embedding a jewel. Set the “Jewel 1” parameter in “Default-3”. • Specify the hole center position.	Hole position * Hole diameter and depth are set by the parameter.*a
 Jewel hole 2	• Hole for embedding a jewel. Set the “Jewel 2” parameter in “Default-3”. • Specify the hole center position.	Hole position * Hole diameter and depth are set by the parameter.
 Jewel hole 3	• Hole for embedding a jewel. Set the “Jewel 3” parameter in “Default-3”. • Specify the hole center position.	Hole position * Hole diameter and depth are set by the parameter.

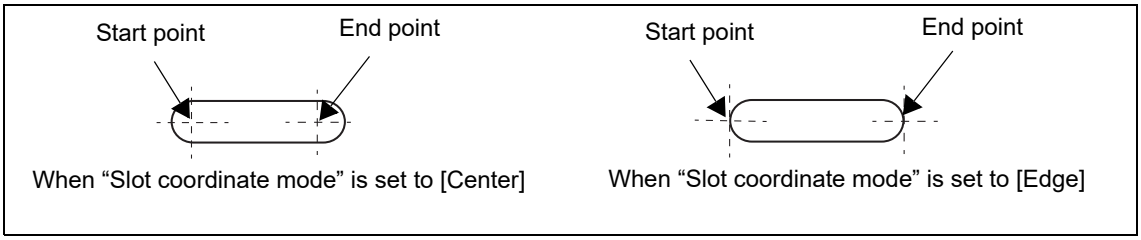
*a. “ *Default-3” (page 234)*

Note

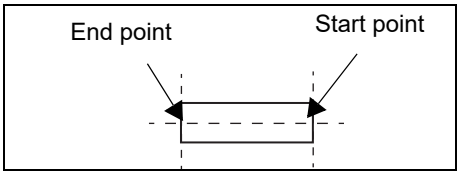
- Paired, notched, and counterbored holes are in pairs. Select each hole with the hole selection buttons, then specify the hole size.
- For paired and notched holes, when the reference hole (closer to the frame center) is selected, the coordinate of the reference hole and the distance between the two holes are displayed. The distance can be changed by inputting the distance with the numeric keypad in the same manner as hole position change or dragging the hole farther from the frame center.

◆ Hole position and size setting

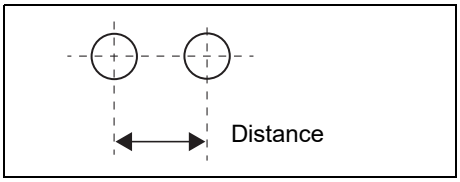
- To add or move a simple hole, specify the hole center position.
- To add or move a slotted hole, specify the start point by tapping the screen, then drag and release it to the desired end point.
  The positions of the start and end points can be set to [Center] or [Edge] by the “Slot coordinate mode” parameter. “ *Slot coordinate mode” (page 229)*



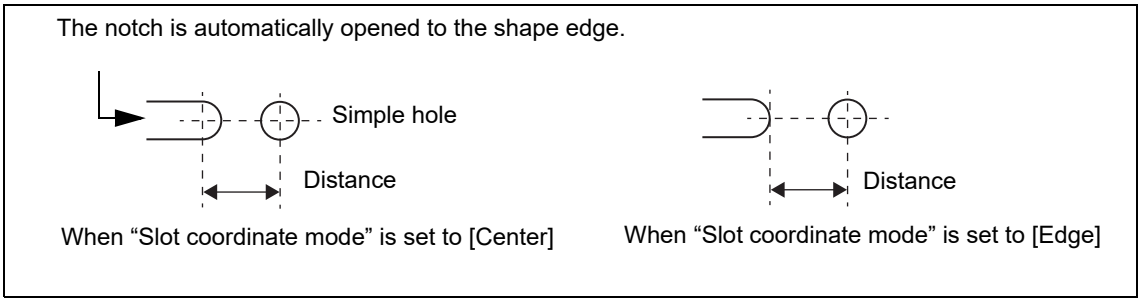
- To add or move a rectangular hole, specify the start point by tapping the screen, then drag and release it to the desired end point.



- To add or move paired holes, specify the position of the hole closer to the frame center. The distance between the two holes can be changed as well.



- To add or move notched holes, specify the simple hole position. The distance between the simple hole and notch can be changed as well.
  The positions of the start and end points can be set to [Center] or [Edge] by the “Slot coordinate mode” parameter. “ *Slot coordinate mode” (page 229)*



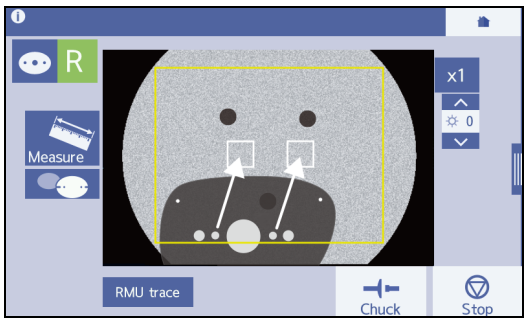
- To add or move a counterbored hole, specify the hole center position.
- To add or move jewel holes 1 to 3, specify the hole center position. The hole diameter and depth are set by the parameter.

4.18.2 To edit holes (operation from the scan screen)

The image that is scanned on the scan screen (by the Shape imager function) is displayed and superimposed. Edit the holes while viewing this image.

1 On the scan screen, center the reference holes of the pattern or the markings of the demo lens to the alignment scale and align them as precisely as possible.

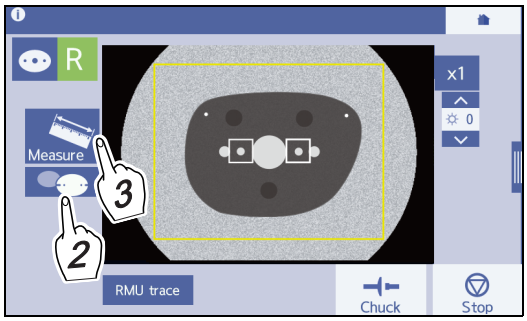
As the tilt of the pattern or demo lens is automatically corrected, they are not necessary to be exactly horizontal.



2 Turn on the hole detection function  .

3 Press  .

The measurement results are displayed on the hole editor screen.

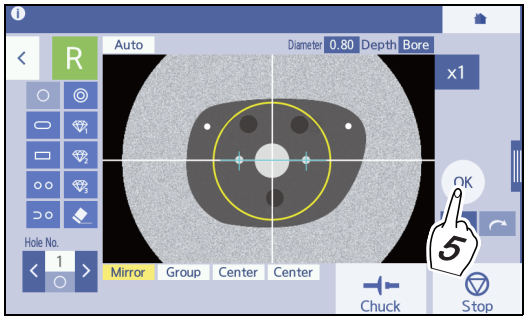


4 Edit the holes.

This is the same as *"4.18.1 To set and edit holes (operation from the side menu)" (page 183)*.

5 When hole editing is complete, press [OK] to confirm the edited data.

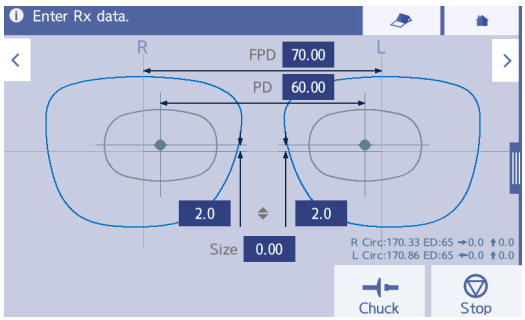
→ Frame data confirmation screen



Note

- When is pressed after the hole editor screen is displayed, the scan screen appears, and measurement can be performed again.
- When  is pressed in Step 5, not [OK], to return to the home screen, a confirmation message appears.
  - [OK]: Discards measurement data and returns to the home screen.
  - [Cancel]: Resumes the operation on the hole editor screen.

4.18.3 Drilling



1 After the hole setting and hole editing are complete, press ❯.

→ Blocking screen

2 Block the lens.

"4.6.1 To block" (page 136)

After blocking, the processing start screen appears.

3 Set the lens to the lens adapter.

"3.10.1 To set lenses" (page 103)

4 As necessary, change the processing conditions and edge shape settings.

Steps 8 and 9 in *"4.9.1 To auto bevel" (page 153)*

5 Press [Start] to start processing.

The processing chamber door closes, then processing starts.

→ Simulation screen

6 When processing is complete, remove the lens.

"3.10.2 To remove lenses" (page 104)

◆ Processing continuous function in the event of drill breakage

If the drill is broken during drilling, the following procedure allows you to restore the data on the lens that was being processed and continue the processing.

1) Replace the drill.

"7.4 Drill Replacement" (page 269)

2) Turn off and on power to the instrument.

A confirmation message asking whether to adjust the hole depth appears.

3) To adjust the hole depth, press [Yes].

If the hole depth is not adjusted properly, readjust as necessary.

"6.4.7 To adjust hole depths" (page 260)

4) After the hole depth adjustment is complete, turn off and on power to the instrument.

The confirmation message asking whether to adjust the hole depth appears again.

5) Press [No].

The processing data immediately before the drill replacement is restored, and retouching can be performed.

"♦ To retouch" (page 193)

If the lens immediately before the drill replacement does not need further processing, you can advance to another lens processing.

Note

- Until retouching is performed, the confirmation message appears again when the instrument is restarted, and the processing data immediately before the drill replacement can be restored.

  Even if power is turned off without processing the lens after selecting [Yes] and adjusting the hole, or after selecting [No] and restoring the data, the confirmation message appears again the next time the instrument is started.
- If the lens is retouched with the restored data, or if the lens is processed with another loaded data, the processing data immediately before the drill replacement is no longer restored.

4.19 Checking and Retouching Lens Sizes

Check the lens size after processing. If the finish size is large or the groove depth/width is small, retouch the lens to correct the size. Also, if polishing is insufficient, polishing refinishing can be performed.

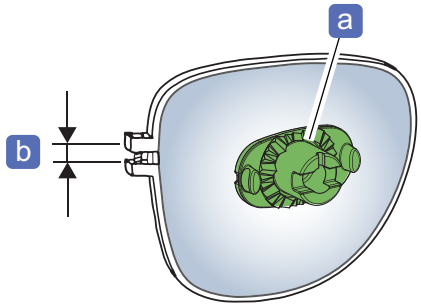
Note

- When Edit is pressed on the processing start screen after processing, the processing condition confirmation screen is displayed. However, while the processing conditions can be confirmed at this time, they cannot be changed.

◆ To check lens sizes

Fit the lens with the lens cup a into the frame, then measure the clearance b at the rim joint to confirm the lens size.

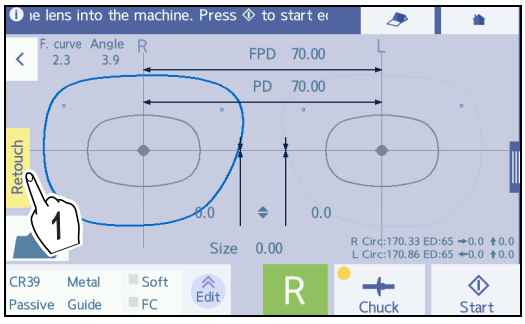
- Confirm the lens size without removing the lens cup. Once the lens cup is removed, the lens cannot be retouched.



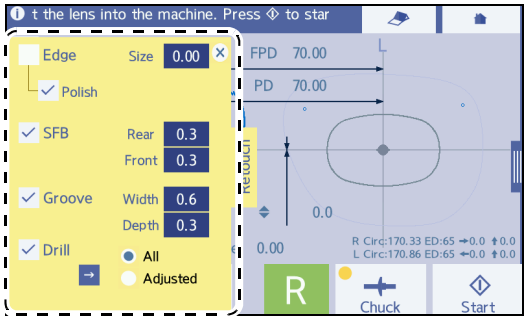
◆ To retouch

1 After processing the lens, press [Retouch] on the processing start screen.

→ Retouch panel



2 As necessary, change the retouching settings.



Retouching is performed for the checked items. The items displayed in gray cannot be changed.

- Edge

  Check [Edge].

- Size

  Press the [Size] field and input the value with the numeric keypad.

  Guide for size adjustment: From the Size value, subtract the value that is obtained by dividing the clearance of the rim joint by pi (approximately 3).

  Increments: 0.01 mm

Ex.— The clearance is 1.20 mm.

1.20 mm (clearance) ÷ 3.00 (pi) = 0.40 mm

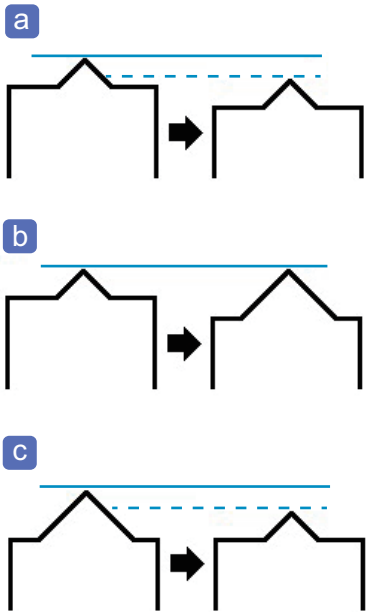
Decrease the Size value by 0.40.

- Mini bevel size adjustment

  For mini beveling, when only the value in the Size field is changed, the bevel height is not changed (Figure a). When the size is not changed, the bevel height can be increased but cannot be lowered (Figure b). When the size is lowered, the height can be lowered accordingly (Figure c).

  Check [Edge]. Press the height field and input a value with the numeric keypad.

  Increments: 0.1 mm



- Polishing refinishing

  Check [Polish].

- Safety bevel

  Check [SFB]. Press the [Rear] and [Front] fields and input a value with the numeric keypad.

  Increments: 0.1 mm

  Note that when the value in the Size field of [Edge] is changed, safety beveling is deactivated when the lens is retouched.

- Groove

  Check [Groove]. Press the [Width] and [Depth] fields and input a value with the numeric keypad.

  Increments: 0.1 mm

- Drilling

  If necessary, press → to display the hole editor screen. The hole diameter, depth, position (in the range of ±1 mm) can be changed. After the hole editing is complete, press ❮ to return to the processing start screen.

  Check [Drill].

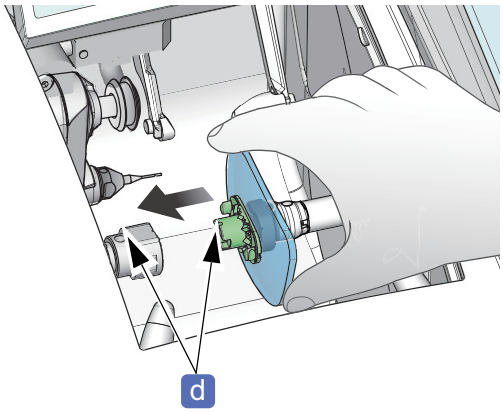
  - [All]: retouches all holes.
  - [Adjusted]: processes only adjusted holes.

To cancel retouching, press ⊗ to close the retouch panel.

3 Set the lens to the lens adapter.

Securely insert the lens cup into the lens adapter so that the top marks d are aligned.

"3.10.1 To set lenses" (page 103)



4 Press Start to start retouching.

The processing chamber door closes, then processing starts.

→ Simulation screen

5 When processing is complete, remove the lens.

"3.10.2 To remove lenses" (page 104)

6 After processing, check the lens size. If the size is large, perform retouching again.

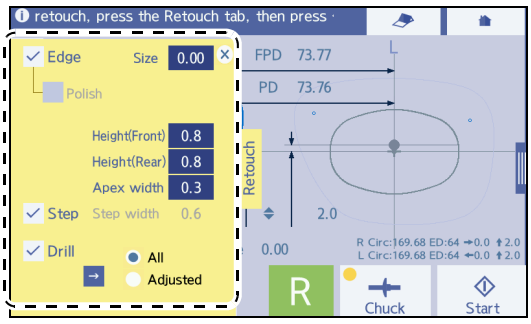
Note

- When [Groove] is checked to retouch the lens after guide processing, the processing is interrupted on the simulation screen and the groove width and depth can be changed.
- The lens can be retouched with the desired values changed on the retouch panel. In this case, changes in the following values are automatically used as the default values for the opposite lens if it has not been processed yet: groove width, groove depth, front bevel height, rear bevel height, bevel apex width, step width, and mini-bevel height.

◆ To retouch in Trend8

When Edge type is set to [Hi-curve] or [Custom], the following items can be set on the retouch panel.

As necessary, change the retouching settings. Retouching is performed for the checked items. The items displayed in gray cannot be changed.



- Edge

  Check [Edge].

- Size

  [Polish] is deactivated. Other settings are the same as those for the Trend type.

- Bevel front height

  Press the Height(Front) field and input a value with the numeric keypad.

  Input range: 0.0 to 1.8 mm; Increments: 0.1 mm

  The value cannot be smaller than that set in the processing performed previously.

- Bevel rear height

  Press the Height(Rear) field and input a value with the numeric keypad.

  Input range: 0.0 to 1.8 mm; Increments: 0.1 mm

  The value cannot be smaller than that set in the processing performed previously.

- Bevel apex width

  Press the Apex width field and input a value with the numeric keypad.

  Input range: 0.0 to 2.0 mm; Increments: 0.1 mm

  The value cannot be greater than that set in the processing performed previously.

- Selection of step beveling

  Check [Step].

  Retouching is performed after step beveling. Step beveling can be added when the lens is retouched even if it was not performed during the first processing.

- Step width

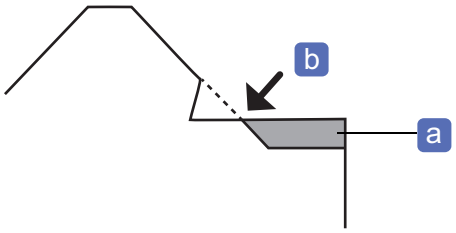
  Check [Step]. Press the Step width field and input a value with the numeric keypad.

  Input range: 0.0 to 3.8 mm; Increments: 0.1 mm

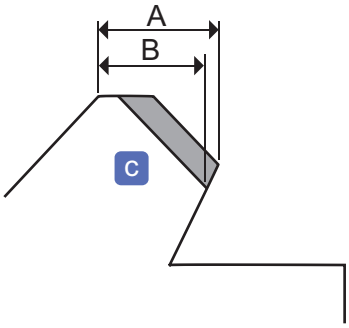
  The Step width value cannot be input to be smaller than the Apex width value.

To retouch after step beveling

- Changing the size or bevel rear height on the retouch panel after step beveling automatically selects the step beveling. The selection of step beveling can be canceled manually. In that case, since only the shaded area a as shown in the figure below is retouched, the area indicated by the arrow b will remain uneven. Performing retouch after step beveling will remove this unevenness.



- Changing the bevel apex width on the retouch panel after step beveling automatically cancels the selection of step beveling. At this time, a step width value smaller than that of the previous step beveling is displayed in the Step width input field. This smaller value is displayed because processing the shaded area c changes the dimensions corresponding to the step width changes from A to B as shown in the figure below. By selecting the step beveling under this condition, step beveling will be performed at the same position as that for the previous processing.
  When changing the step width along with the bevel apex width, check the value of step width B after changing the bevel apex width, and then select [Step] again to change the step width.



- Selection of [Step] may not be possible depending on the processing conditions such as lens type, bevel height, bevel apex width, step width or such.
  In this case, pressing [Start] will not start step beveling. Instead, the message indicating that step beveling cannot be selected is displayed. Reducing the bevel apex width enables the step beveling. Depending on the processing conditions, step beveling can be performed even if the bevel height or such is changed.

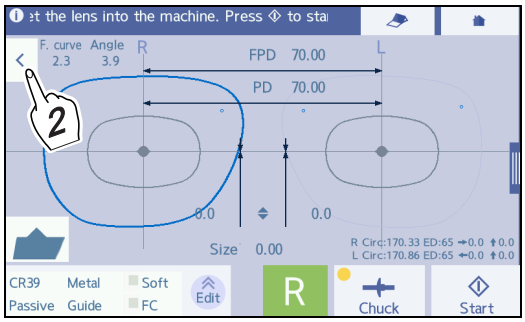
4.20 Processing Opposite Lenses

After processing a lens, process the lens on the opposite side.

1 After lens processing, the processing start screen automatically appears.

2 Press ❮.

→ Blocking screen



3 Toggle between R or L to select the opposite lens to be processed, then block it.

"4.6.1 To block" (page 136)

After blocking, the processing start screen appears.

Note

- During processing, after the simulation screen is displayed automatically, the opposite lens can be blocked by pressing ❮ and displaying the blocking screen.
- During guide processing, the opposite lens can be blocked after settings on the simulation screen are input and [Start] is pressed to start processing.

4 Set the lens to the lens adapter.

"3.10.1 To set lenses" (page 103)

❖ The following procedure is the same as that for the normal lens processing.

4.21 Other Processing

By other processing methods, perform frame changing and tilt processing.

4.21.1 To change frames

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

The following is the procedure after the processing condition input screen is displayed.

- In Frame change mode, measure the 1.5 mm inside from the actual lens dimensions to avoid measurement failure as the stylus of the feeler unit comes off during the lens shape measurement.
- Before processing, be sure to confirm whether the lens size is sufficient for processing.
  In Frame change mode, as the lens dimensions 1.5 mm inside the actual lens dimensions is measured, insufficient lens size may not be detected, resulting in chipping of the bevel apex.
- In Frame change mode, the actual lens dimensions are not measured. Therefore, depending on the lens curve or lens shape, the accuracy of the bevel or groove position may be lowered compared with that of normal processing.

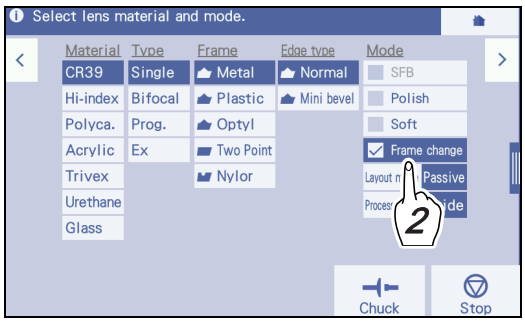
1 Display the processing condition input screen and specify the processing conditions.

“4.3.2 To specify processing conditions” (page 117)

2 Select “Frame change”.

Check the [Frame change] box.

Frame changing active	☑ Frame change

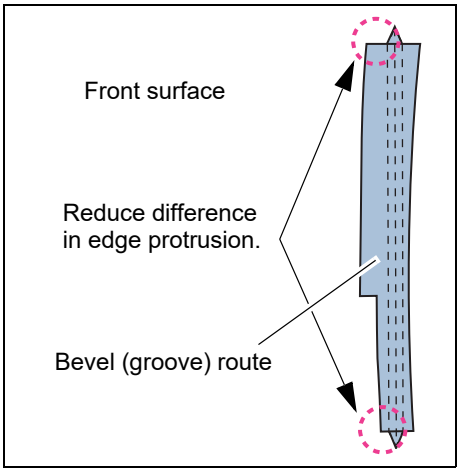


❖ The following procedure is the same as that for the normal lens processing.

4.21.2 To perform tilt processing

When a lens has an extreme difference in width between the edge thickest and thinnest points (EX lens or such), the appearance of the glasses may be impaired. In this case, tilt processing improves the appearance by reducing the lens edge protrusion from the frame.

- As shown to the right, an EX lens or such has the thick upper edge and thin lower edge. So, if such lenses are processed in normal mode, there is a difference in the amount of the lens edge protrusion from the frame between the upper and lower edges, resulting in bad appearance of the glasses.
- The tilt function reduces the difference in edge protrusion and processes a lens with an enhanced appearance by shifting the beveling (or grooving) route toward the rear surface on the thin lower part and toward the front surface on the thick upper part.



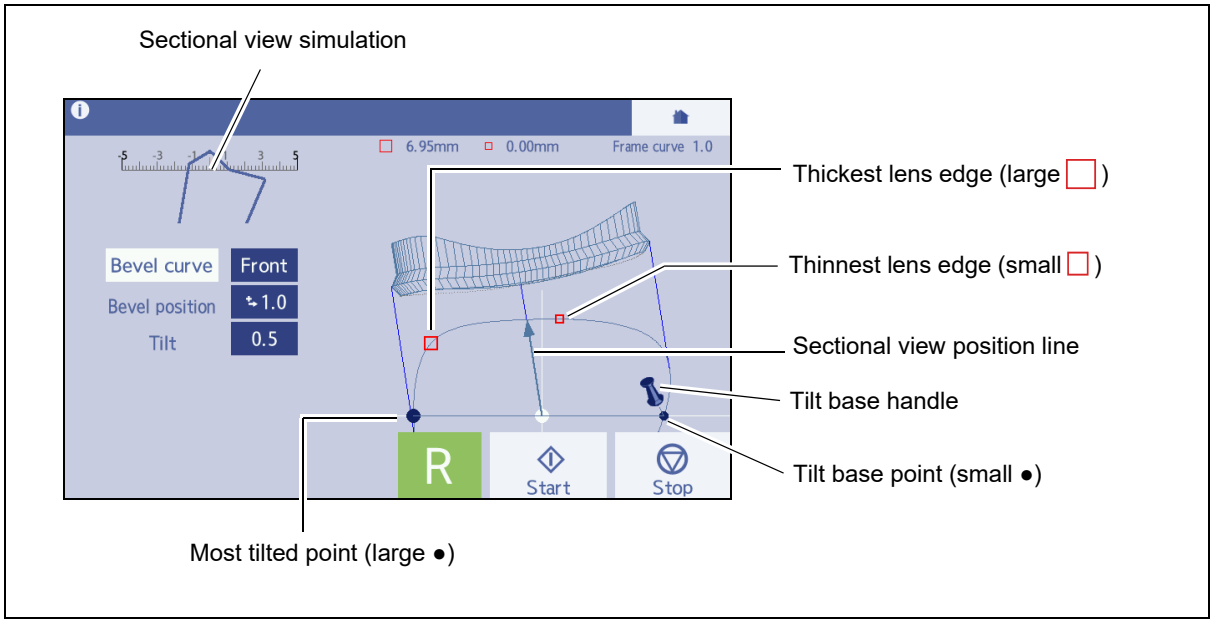
◆ To perform tilt processing (example of guide beveling)

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

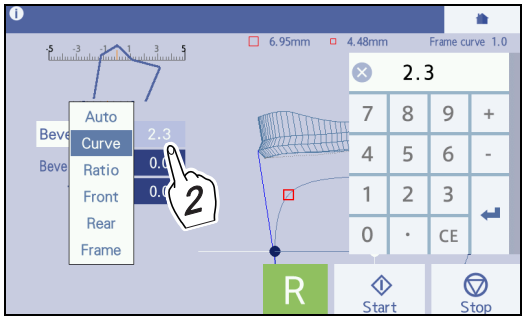
1 Perform Steps 1 to 8 of guide beveling.

The screen switches to the simulation screen, and the processing is interrupted.

"4.9.2 To guide bevel" (page 156), "4.16.2 To guide groove" (page 175)



2 Press the [Bevel curve] field and set the desired curve value.



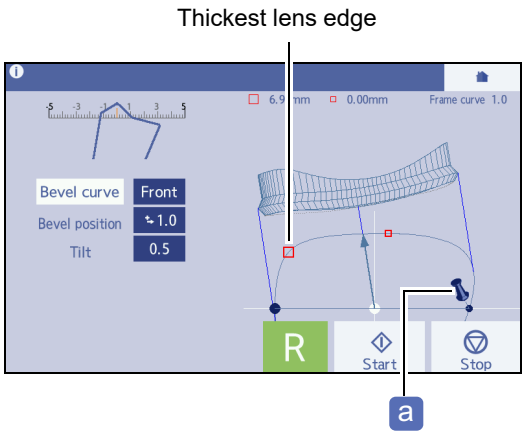
Note

- The curve value with “A” indicates the bevel position obtained from a computer-calculated curve value. The curve value without “A” indicates the bevel position calculated from the spherical curve of the lens.
- With tilt processing, the bevel position is adjusted according to the spherical curve value of the lens. Therefore, if tilt processing is set with a curve value with “A”, the set tilt value may differ from the actual tilt amount.

3 Set the tilt base point and bevel position.

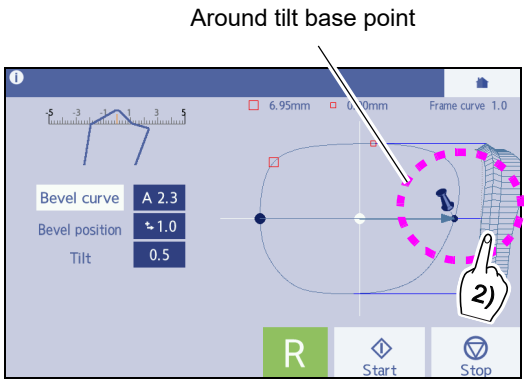
1) Drag the tilt base handle a to the point diagonally opposite the thickest lens edge (large □) to set the tilt base point (that is the base point for shifting the beveling route).

When the tilt base point is confirmed by dropping the tilt base handle, the sectional view position line is moved to the most tilted point (large ●) that is diagonally opposite the tilt base point (that is the most shifted bevel point).



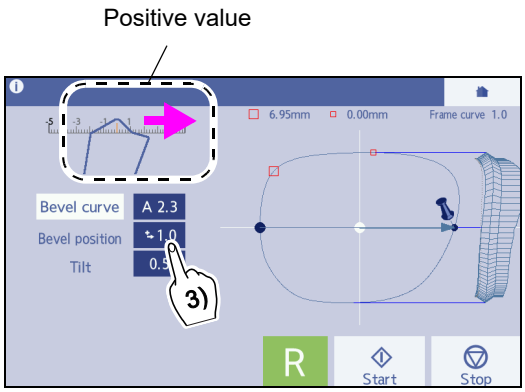
2) Tap the left/right or upper/lower part of the sectional view to rotate the sectional view position line. When it comes around the tilt base point (small ●), tap the view again to stop rotating.

The sectional view simulation around the tilt base point is displayed.



3) Input the desired value in the Bevel position field while viewing the sectional view simulation to determine the bevel position at the tilt base point.

- When the lens edge is thin, shift the bevel as far as possible toward the rear surface (in the arrow direction).
- If the edge is relatively thick, shift the edge to approximately 1/3 from the rear surface.

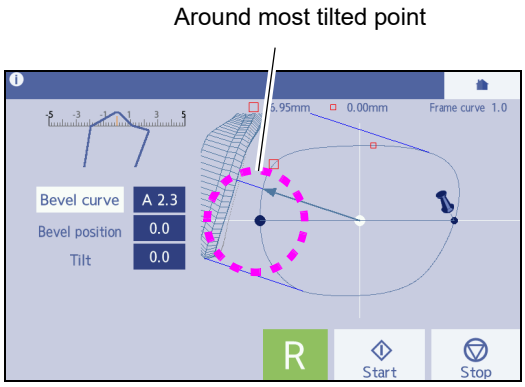


Minus value	Bevel moves toward the front surface.
Positive value	Bevel moves toward the rear surface.

4 Determine the most tilted bevel point.

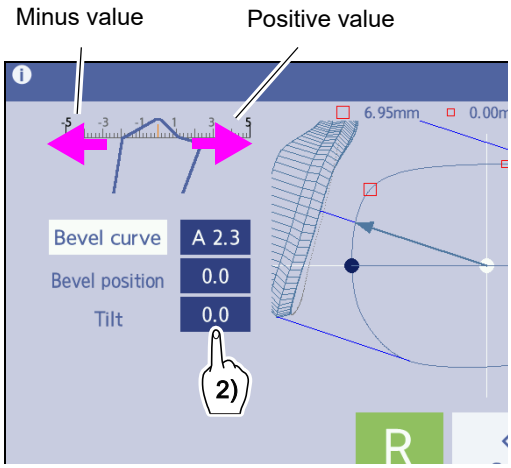
1) Tap the left/right or upper/lower part of the sectional view to rotate the sectional view position line. When it comes around the most tilted point, tap the view again to stop rotating.

The sectional view simulation around the most tilted point is displayed.



2) Determine the most tilted bevel point by pressing the [Tilt] field and inputting the bevel tilt amount while viewing the sectional view simulation. Make it as close as possible to the front surface.

- Adjust the tilt amount so that the bevel apex can be seen a little.
- If the bevel is off from the front surface edge, add a positive value in the Tilt field to shift it in the plus direction (rear surface).
- If the bevel is within the edge, add a minus value in the Tilt field to shift it in the minus direction (front surface).



Minus value	Bevel moves toward the front surface.
Positive value	Bevel moves toward the rear surface.

5 Check the entire bevel position.

Tap the screen to rotate the sectional view position line and make sure that the bevel in within the edge at the thinnest point (small □) and the bevel position is appropriate in some points.

6 Repeat Steps 4 and 5 until the desired bevel position is obtained.

7 Press Start to start processing.

8 When processing is complete, remove the lens.

"3.10.2 To remove lenses" (page 104)

9 When the opposite lens is processed subsequently by toggling between R and L, the previous settings are displayed as the defaults.

For the tilt base position, tilt amount, curve, and bevel position, the previous setting values are displayed by default.

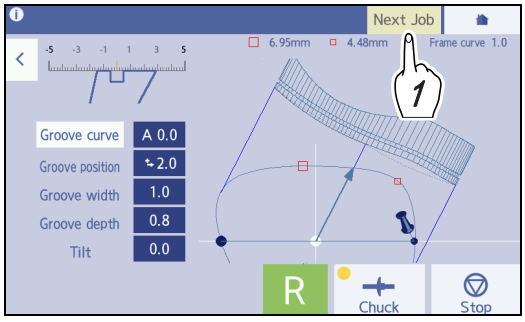
4.22 Editing Next Shape during Processing

Before completion of processing, shape data and layout can be loaded or edited for the next shape to be processed. However, the functions such as tracing pattern or demo lens are deactivated.

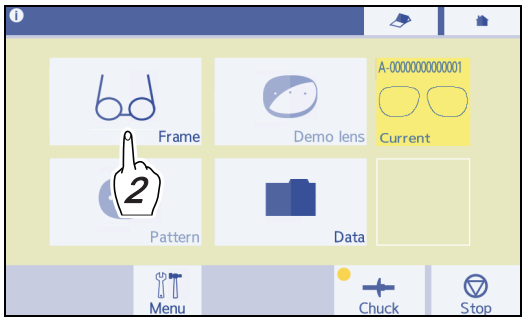
1 Press Next Job that is displayed on the simulation screen during processing.

→ Home screen

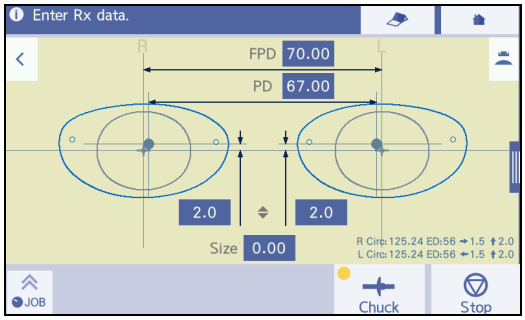
After that, the screen background is displayed in light yellow, which indicates that the next data is being edited.



2 Press Frame to trace the frame (The figure to the right is an example of frame tracing).



3 As usual, perform the operations from the frame data confirmation screen to the layout input screen.



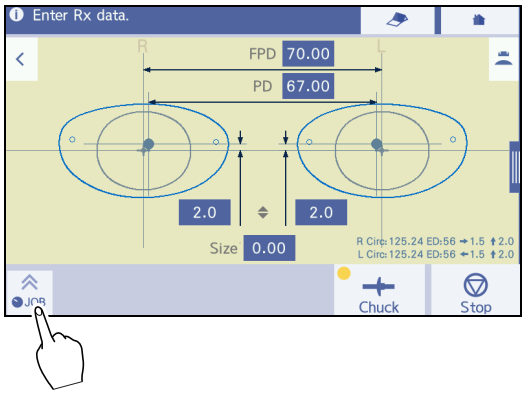
Example of layout input screen

- If the operation proceeds to the blocking screen before completion of the previous processing, the message, “Currently grinding. Please wait.”, appears, and the operation after blocking cannot be performed. After the previous processing is complete, the operation can be proceeded.

● To display the data being processed

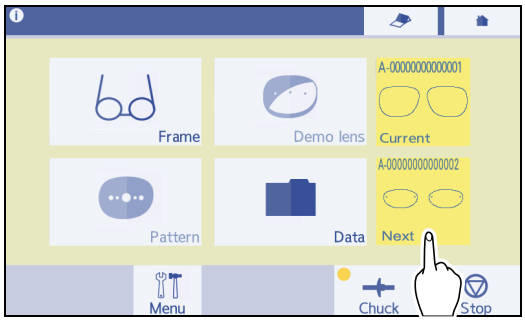
Pressing JOB during processing stops the editing and returns to the simulation screen.

Also, when the processing is complete while new data is being edited, JOB blinks. Pressing JOB returns to the processing start screen.



● To display the next data

When the previous data is displayed after editing new data is stopped, press the [Next] button on the home screen to restart the editing.



4 When the previous processing is complete, restart to the operations after blocking.

- When blocking operation is restarted, the previous data is deleted and replaced with new data. After that, the lens cannot be retouched with the previous processing data or such.

❖ The subsequent operations are the same as the normal shape editing.

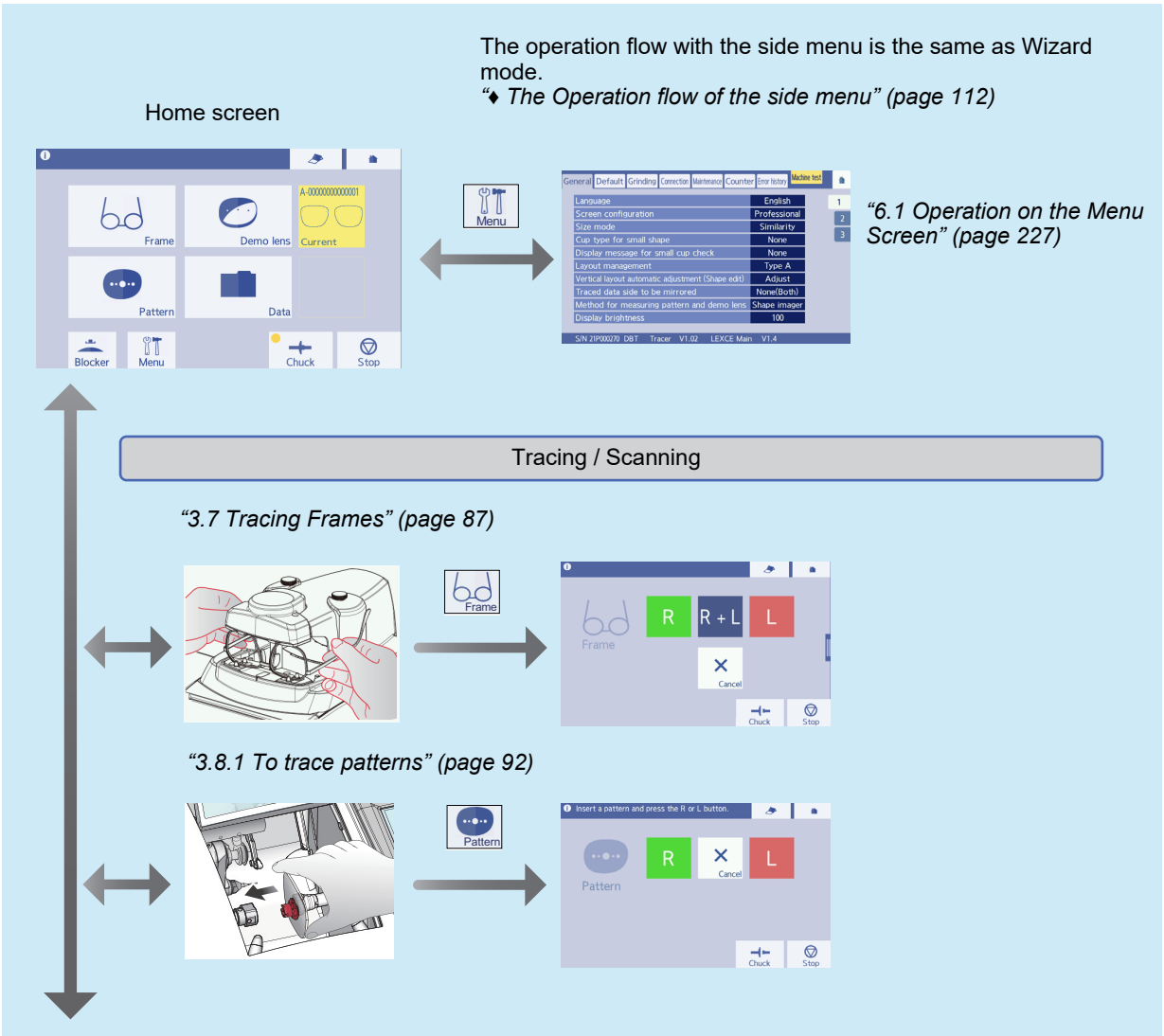
5 PROFESSIONAL MODE

This chapter explains Professional mode. With this mode, main operations can be performed on the processing start screen. Compared to Wizard mode in Chapter 4, Professional mode is recommended for operators who are accustomed to operations.

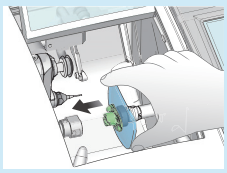
5.1 Operation Flow in Professional Mode

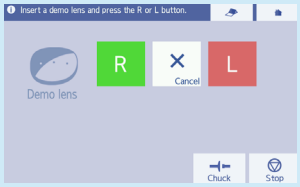
This “Operation Flow in Professional Mode” flowchart is an example of a standard system and its operations.

- ex.) Standard system configuration

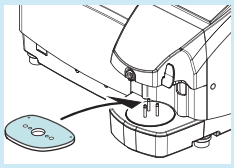


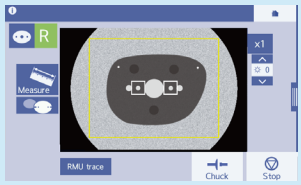
"3.8.2 To trace demo lenses" (page 94)



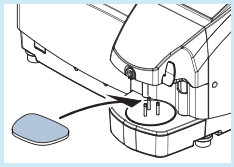


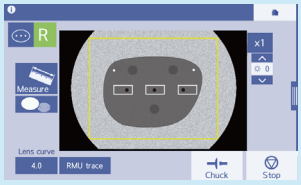
"3.9.1 To scan patterns" (page 96)





"3.9.2 To scan demo lenses" (page 98)





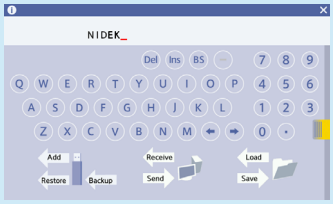
Shape editing

Loading shape data

"5.3 Editing Shape Data" (page 212)

"3.2 Loading, Saving, Receiving, and Sending Shape Data" (page 62)

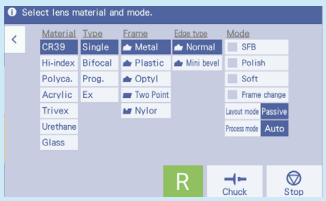
Load



Data

From home screen

Edit

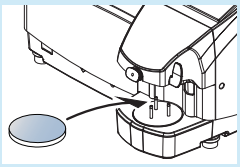


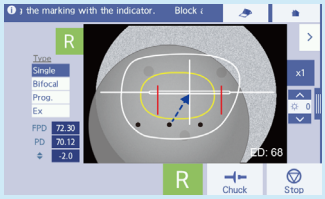
"9 If necessary, change the bevel shape on the edge type confirmation screen." (page 154)

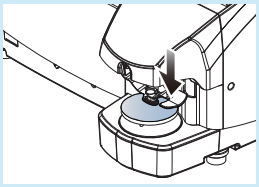
"8 If necessary, confirm or change the settings on the processing condition confirmation screen." (page 154)

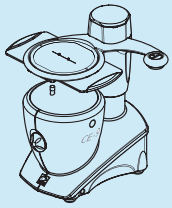
Blocking

"4.6 Blocking" (page 136)



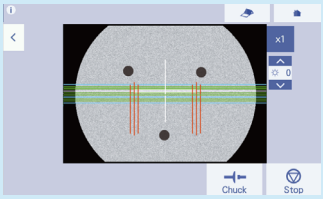






Blocking (with CE-9)
"4.7 Blocking Lenses with CE-9" (page 146)

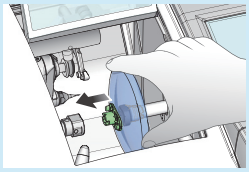
Blocker



When blocking simply
"4.6.2 To block lenses simply" (page 140)

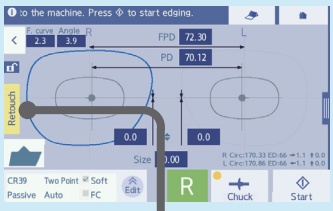
Processing

Chuck

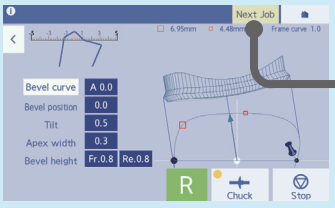


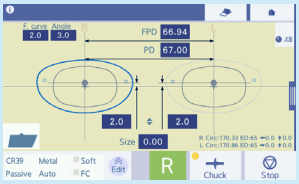
"3.10.1 To set lenses" (page 103)

"4.9 Beveling" (page 153)
"4.15 Flat Edging" (page 171)
"4.16 Grooving" (page 172)

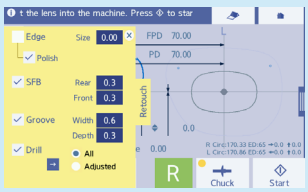


Start





"5.5 Editing Next Shape during Processing" (page 217)

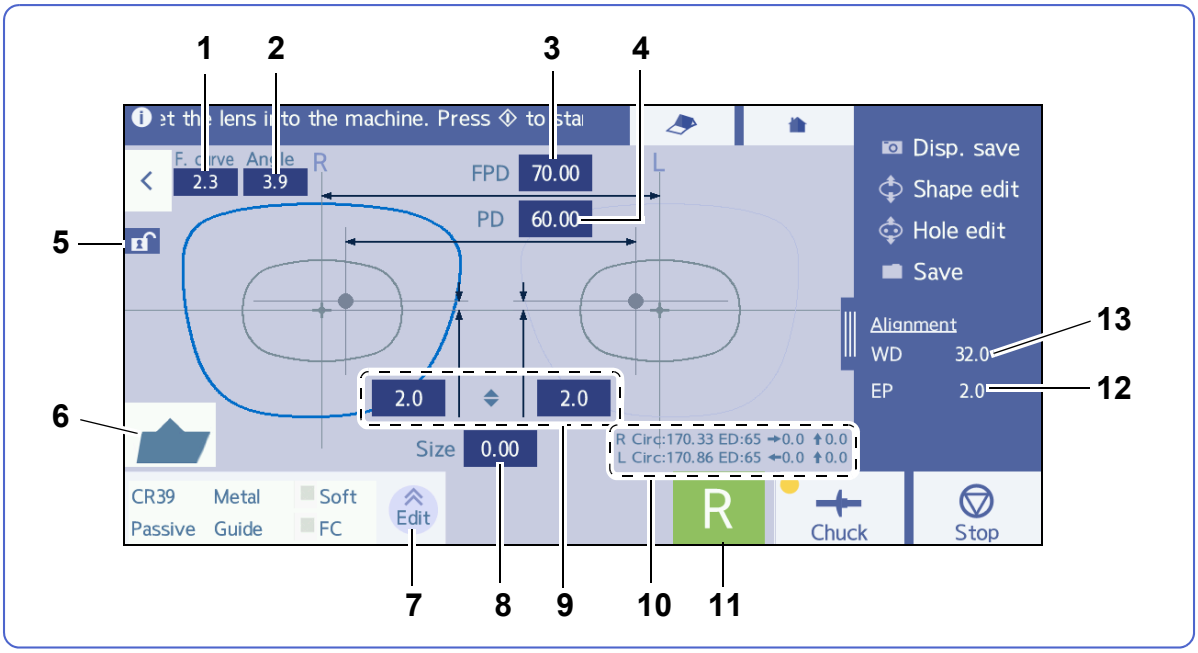


"♦ To retouch" (page 193)

Detailed steps are omitted from this flowchart.

5.2 Processing on the Start Screen (Professional Mode)

In Professional mode, the main editing and operation are performed on the processing start screen. For other screens, see Wizard mode.



1 [F. curve] (frame curve) field

Press the input field and input a value with the numeric keypad.

2 [Angle] (frame warping angle) field

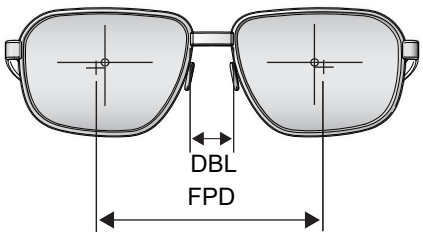
Press the input field and input a frame warping angle value with the numeric keypad to be displayed.

3 [FPD] field

Input the frame pupillary distance.

Pressing [FPD] toggles between “FPD” and “DBL”.

“4.3.3 To input layouts according to lens types” (page 122)

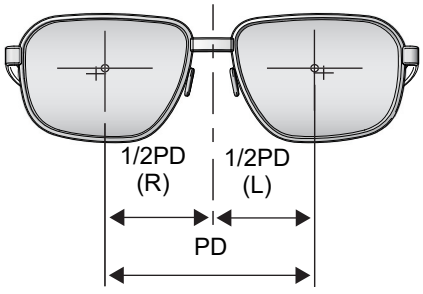


4 [PD] field

Input the prescribed pupillary distance.

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

Pressing [PD] toggles between “PD” and “1/2PD”.



5 Layout fix button

Pressing fixes ( ) the layout settings and processing conditions. After that they cannot be changed.

6 Edge type icon

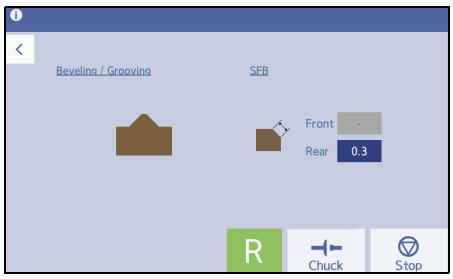
Represents the edge type corresponding to the processing mode specified on the processing condition input screen.

Examples of edge type icons

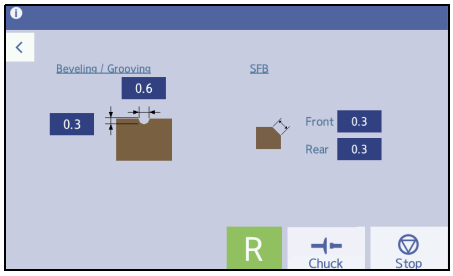
Flat		Bevel		Bevel and safety bevel	
Flat, safety bevel, and polish		Mini bevel		Groove, safety bevel, and polish	
Trend8					
High base curve bevel		High base curve bevel and step bevel		Custom bevel	
Custom bevel and step bevel					

Pressing the edge type icon displays the edge type confirmation screen specified on the processing condition input screen. The following edge type settings can be changed.

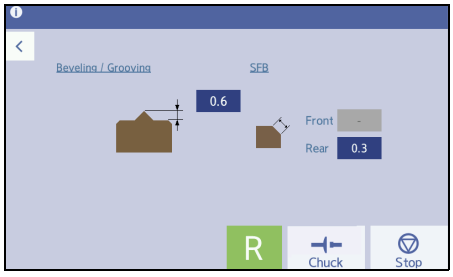
- Change of safety bevel width for beveling



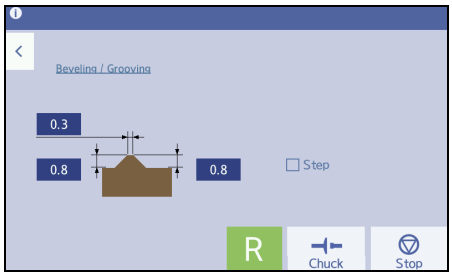
- Change of groove width, groove depth, and safety bevel width for grooving



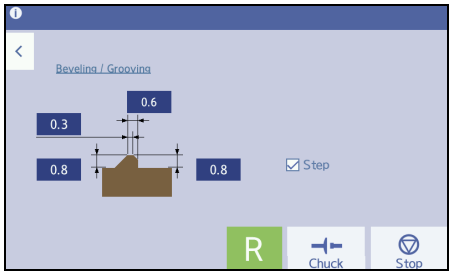
- Change of safety bevel width and bevel height for mini beveling



- Change of high base curve bevel Trend8
- Change of custom bevel Trend8

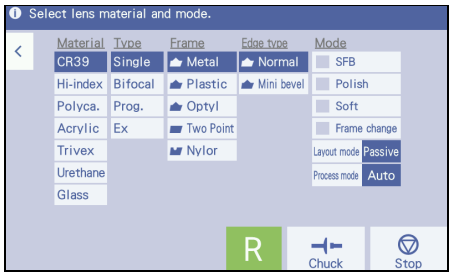


- Change of high base curve bevel and step bevel Trend8
- Change of custom bevel and step bevel Trend8

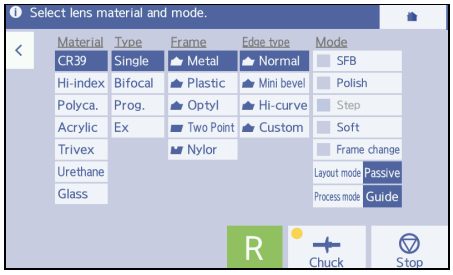


7 [Edit] button

Displays the processing condition confirmation screen to change the processing conditions.



Processing condition confirmation screen for Trend8



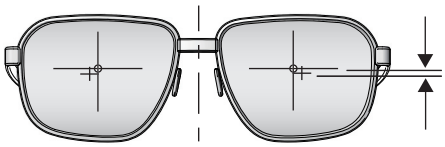
8 [Size] field

As the standard frame diameter is 0.00, a compensation value for the lens finish size is input in this field as necessary.

9 Optical center height field (▲▼)

Input the height from the frame center (boxing center) to the optical center.

Pressing ▲▼ switches among ▲▼, PD▲▼, BT▲▼, and ▲▼ in the order.



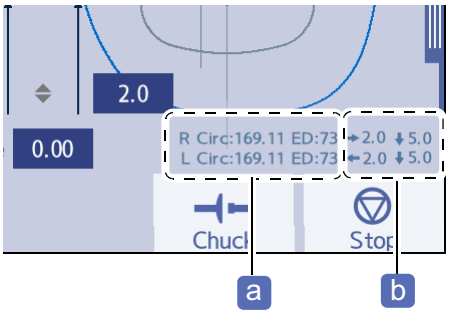
Optical center height (▲▼)

10 Circumference, required lens diameter, and decentering amount

Represents the left and right shape circumferences and required lens diameters a.

When Layout mode is set to “Passive”, vertical and horizontal decentering amounts b are displayed.

“4.7.2 To block lenses at frame centers” (page 148)



11 R / L [R]/[L] button

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

12 [EP] field

Adjusts the height of the distance eyepoint.

This is displayed when [Prog.] is selected in the Type field.

“4.5 Inputing WD and EP” (page 134)

13 [WD] field

Adjusts the width of the alignment scale on the blocking screen.

The alignment scale differs depending on the lens type.

◆ Items same as Wizard mode

The following items are the same as those in Wizard mode. See the descriptions for Wizard mode.

- *“3.2 Loading, Saving, Receiving, and Sending Shape Data” (page 62)*
- *“3.2.4 To receive data from the server computer” (page 67)*
- *“3.6 Handling Tracer” (page 81)*
- *“3.8 Tracing Patterns and Demo Lenses” (page 92)*
- *“3.9 Scanning (Shape imager)” (page 96)*

5.3 Editing Shape Data

This section describes shape data editing in order of frame data confirmation → processing data input → layout input.

5.3.1 To confirm frame data

Confirmation of frame data is the same as the following in Wizard mode. See the descriptions for Wizard mode.

"4.3.1 To confirm frame data" (page 115)

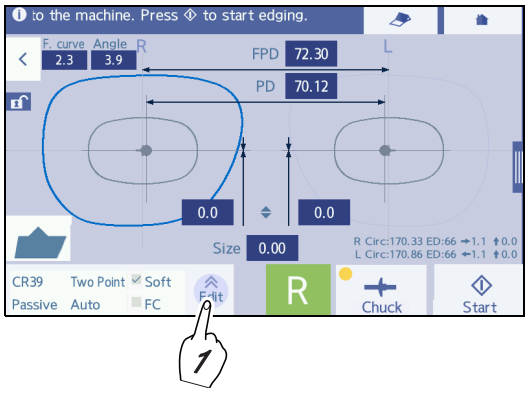
Note

- When both-eye tracing is performed with the built-in tracer in Professional mode with the standard configuration, the processing start screen automatically appears. In this state, layout values cannot be input, but the processing conditions can be set after switching the screen to the processing condition confirmation screen. When tracing is complete, the shape is displayed on the processing start screen, and layout values can be input.

5.3.2 To specify processing conditions

1 On the processing start screen, press Edit.

→ Processing condition confirmation screen

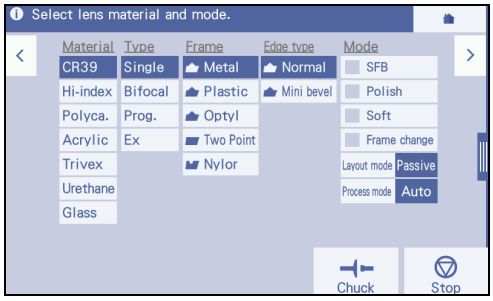
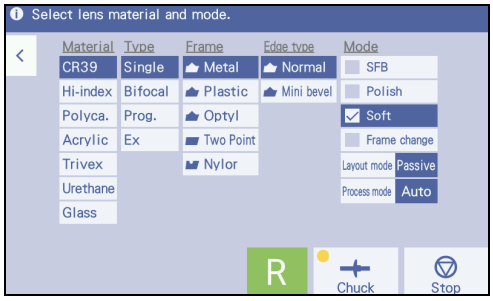


2 Specify processing conditions on the processing condition confirmation screen.

1) Select the processing conditions.

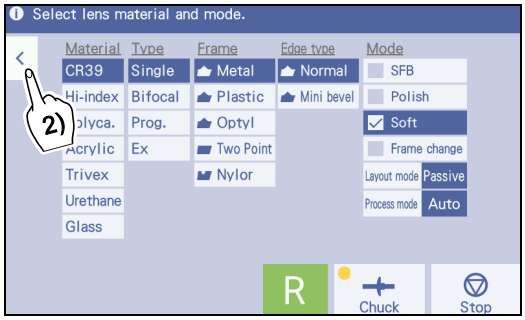
The procedure of inputting processing conditions is the same as the following in Wizard mode. However, replace the processing condition input screen (in Wizard mode) with the processing condition confirmation screen (in Professional mode) to refer to it.

"4.3.2 To specify processing conditions" (page 117)

(Wizard mode) Processing condition input screen		(Professional mode) Processing condition confirmation screen
	→	

2) After selecting the processing conditions, press ❮.

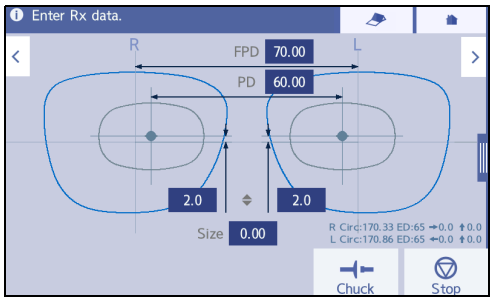
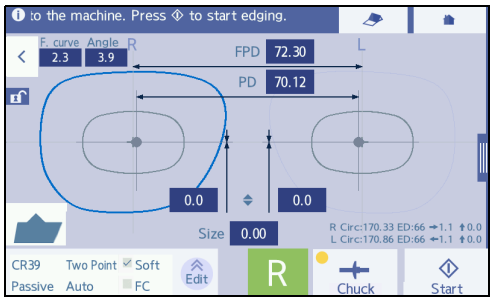
→ Processing start screen



3 Input the layout data in the processing start screen.

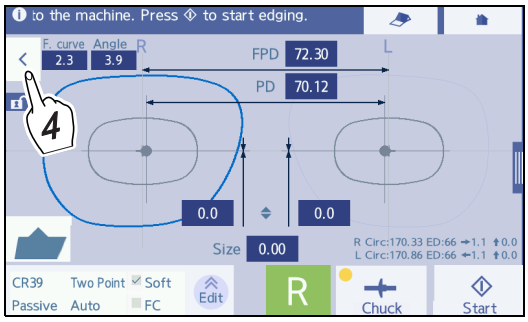
The following operations are the same as those in Wizard mode. However, replace the layout input screen (in Wizard mode) with the processing start screen (in Professional mode) to refer to it.

- *"4.3.3 To input layouts according to lens types" (page 122)*
- *"4.4 Changing the Shape" (page 132)*
- *"4.5 Inputing WD and EP" (page 134)*
- *"4.18 Drilling" (page 183)*

(Wizard mode) Layout input screen		(Professional mode) Processing start screen
	→	

4 When shape editing is complete, press ❮ on the processing start screen.

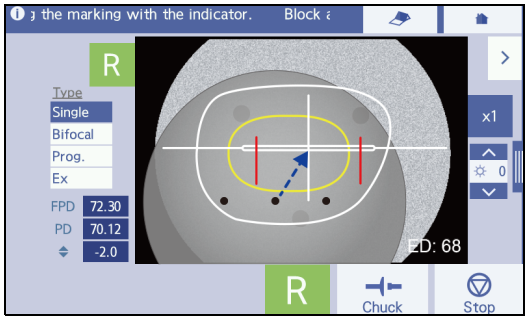
→ Blocking screen



5 Block the lens.

❖ The subsequent procedure is the same as the following in Wizard mode.

"4.6 Blocking" (page 136)

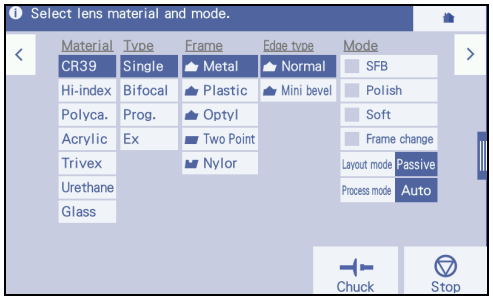
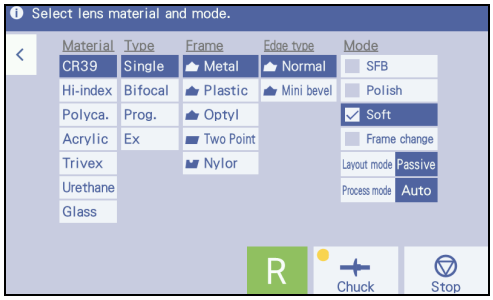
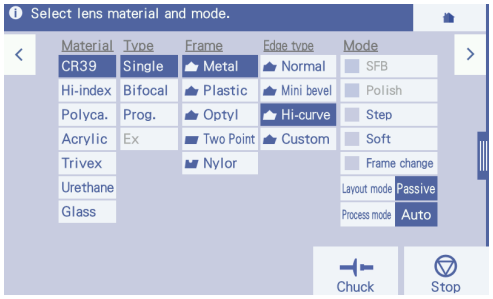
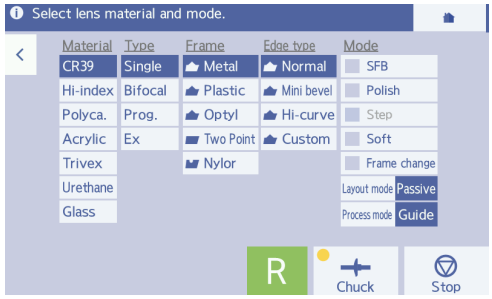
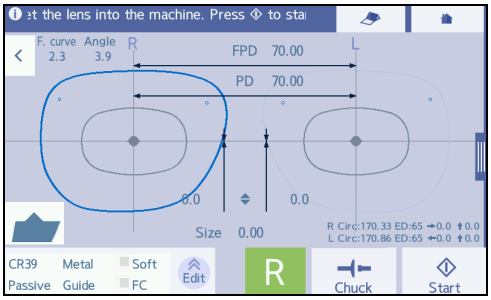
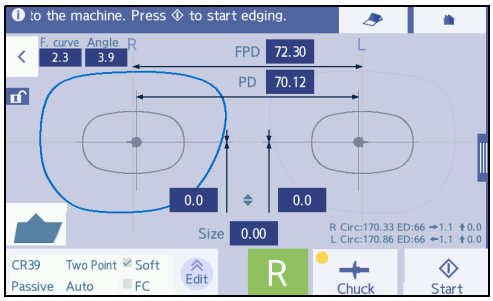


Note

- Blocking with the CE-9 (for DI/D/I/N model)
  Block the lens while the processing start screen is displayed. For the operating procedure, refer to the operator's manual for the CE-9.

5.4 Processing

The operating procedures for each processing are the same as those in Wizard mode. However, replace the screens in Wizard mode with those in Professional mode to refer to it.

Processing condition input screen (Wizard mode)		Processing condition confirmation screen (Professional mode)
	→	
Trend8 (Wizard mode) Processing condition input screen		**Trend8** (Professional mode) Processing condition confirmation screen
	→	
Processing start screen (Wizard mode)		Processing start screen (Professional mode)
	→	

◆ Items same as Wizard mode

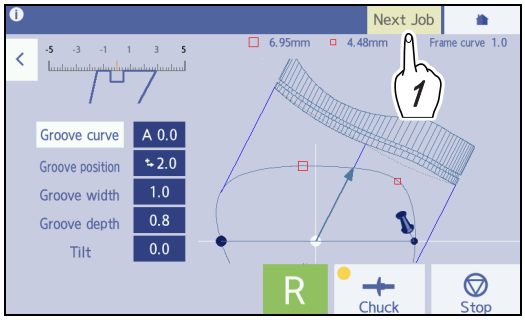
The following items are the same as those in Wizard mode. See the descriptions for Wizard mode.

- *"4.9 Beveling" (page 153)*
- *"4.10 Mini Beveling" (page 161)*
- *"4.11 High Base Curve Beveling for Trend8" (page 162)*
- *"4.12 Custom Beveling for Trend8" (page 165)*

5.5 Editing Next Shape during Processing

Before completion of processing, shape data and layout can be loaded or edited for the next shape to be processed. However, the functions such as tracing pattern or demo lens are deactivated.

1 Press Next Job that is displayed on the simulation screen during processing.

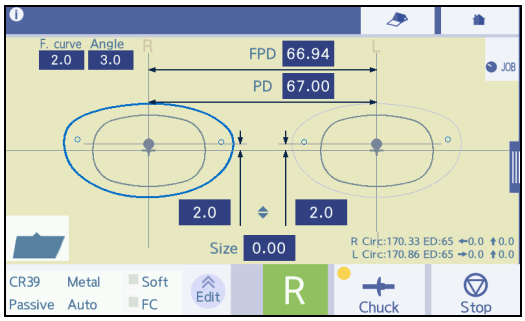


→ Home screen

After that, the screen background is displayed in light yellow, which indicates that the next data is being edited.

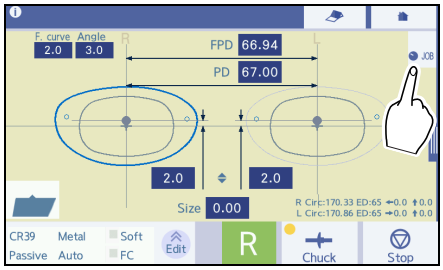
The operations to trace from the home screen and proceed to the processing start screen are the same as those in the normal mode. The [Pattern] button and [Demo lens] button are deactivates as with Wizard mode.

2 As with the normal editing, input layout data and such on the processing start screen.

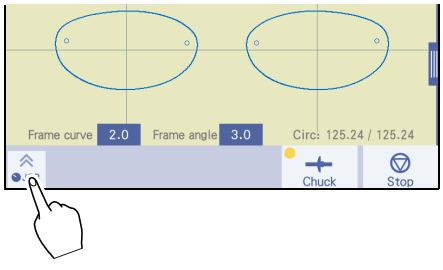


Note

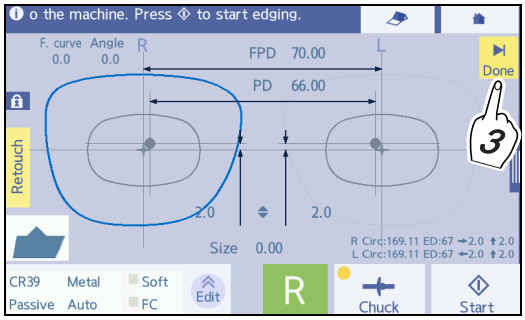
- To edit the next shape data during processing in Professional mode, press JOB on the processing start screen to return to the screen for the previous data.



- On the screen other than the processing start screen, pressing JOB returns to the screen for the previous data.



3 To proceed to processing the next data after both-eye processing is complete, press JOB to return to the screen for the previous data. Pressing Done deletes the displayed data and replaces with next data.



4 Continue operations after blocking.

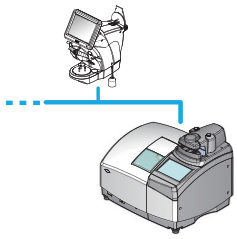
- When blocking operation is restarted, the previous data is deleted and replaced with new data. After that, the lens cannot be retouched with the previous processing data or such.

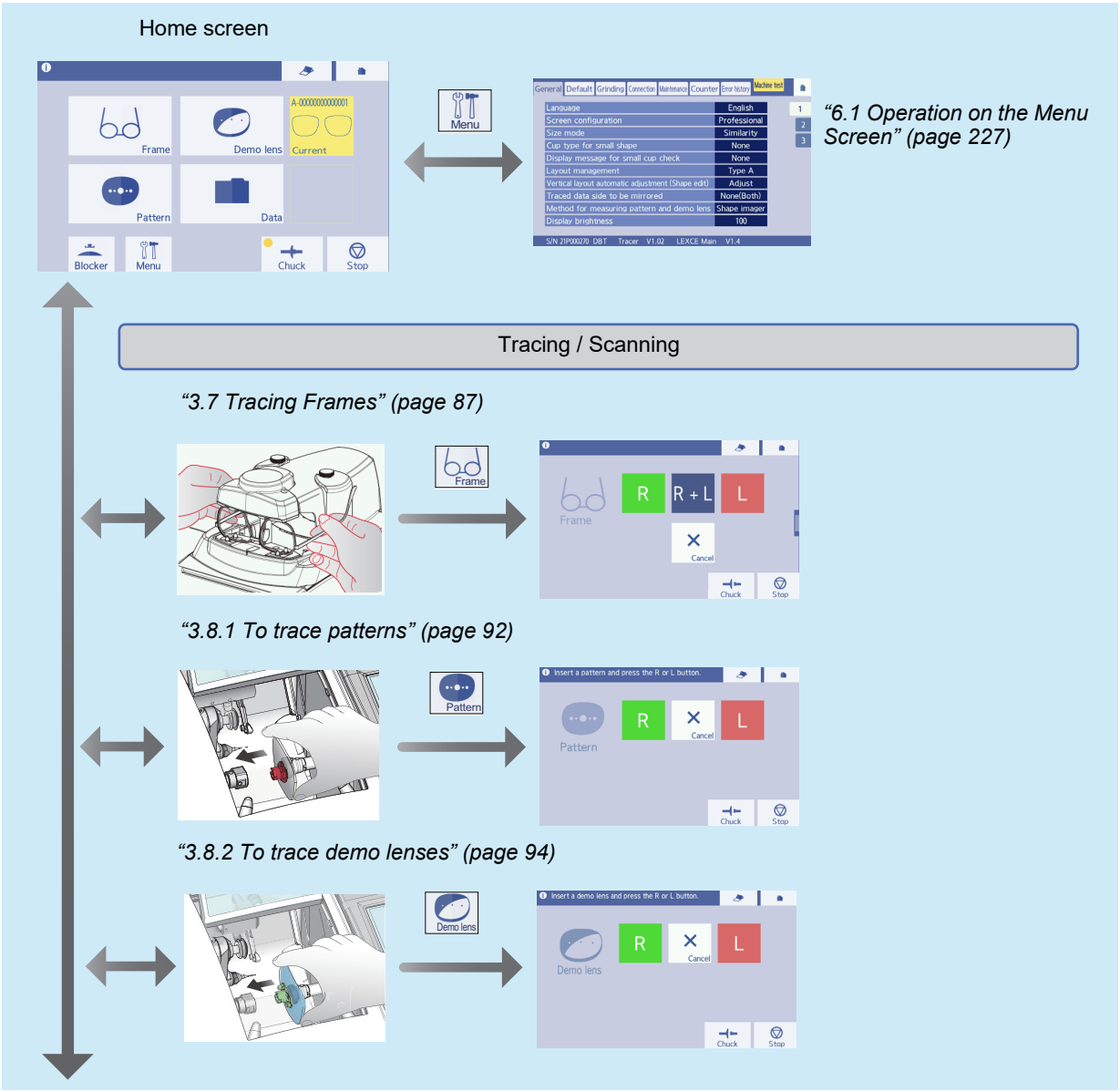
❖ The subsequent operations are the same as the normal shape editing.

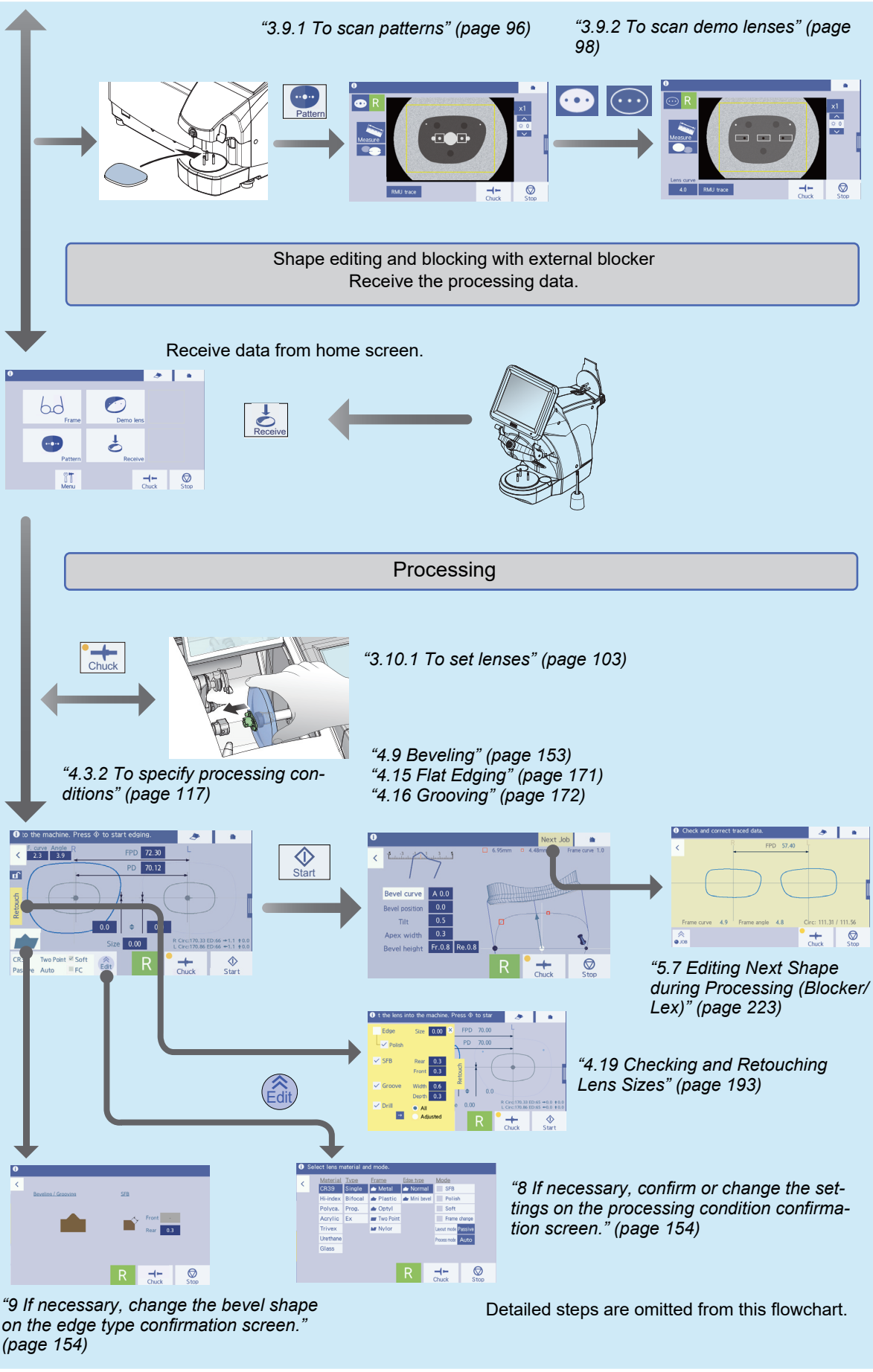
5.6 The Blocker/Lex System

The Blocker/Lex system automatically sends the data traced by this instrument to the external blocker. After editing and blocking a lens by the external blocker, the data is sent to this instrument again to process the lens.

5.6.1 Operation flow of the Blocker/Lex system

Configuration example		Applied function
	• LEXCE • Tracer • External blocker	• This system is compatible only with the tracer equipped type. • Parameter settings Set *" System" (page 240)* to "Blocker/Lex". • The operation is Professional mode only.




"3.9.1 To scan patterns" (page 96)
"3.9.2 To scan demo lenses" (page 98)
Pattern
Shape editing and blocking with external blocker
Receive the processing data.
Receive data from home screen.
Receive
Processing
Chuck
"3.10.1 To set lenses" (page 103)
"4.3.2 To specify processing conditions" (page 117)
"4.9 Beveling" (page 153)
"4.15 Flat Edging" (page 171)
"4.16 Grooving" (page 172)
Start
"5.7 Editing Next Shape during Processing (Blocker/Lex)" (page 223)
Edit
"4.19 Checking and Retouching Lens Sizes" (page 193)
"8 If necessary, confirm or change the settings on the processing condition confirmation screen." (page 154)
"9 If necessary, change the bevel shape on the edge type confirmation screen." (page 154)
Detailed steps are omitted from this flowchart.

5.6.2 To operate in the Blocker/Lex system

1 Turn on the power switch.

→ Home screen

"3.1.2 To start up" (page 59)

2 Trace the frame.

"3.6 Handling Tracer" (page 81)

- The Blocker/Lex system allows tracing a pattern or demo lens and scanning.

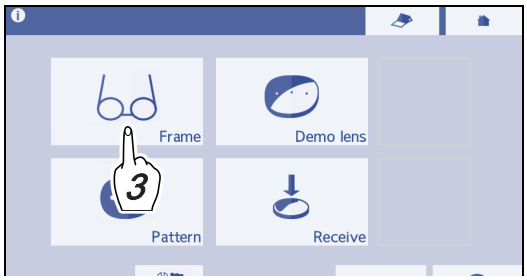
"3.8 Tracing Patterns and Demo Lenses" (page 92)

"3.9 Scanning (Shape imager)" (page 96)

3 Press 

.

When tracing is completed, data is automatically sent to the connected external blocker.



- After data is sent to the external blocker, data edited with the LEXCE is not reflected to the data in the external blocker.

4 Edit and block the shape with the external blocker.

Refer to the operator's manual for the external blocker.

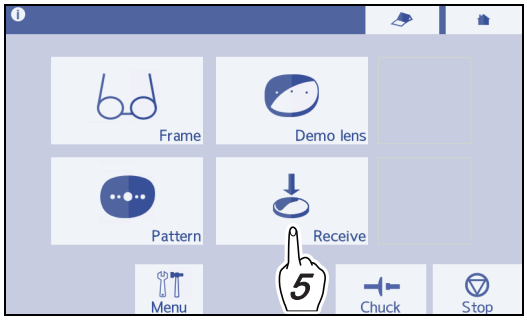
5 Receive data from the external blocker.

Press 

.

The shape data that is displayed on the screen of the blocker is received.

→ Processing start screen



6 If necessary, edit the shape on the processing start screen.

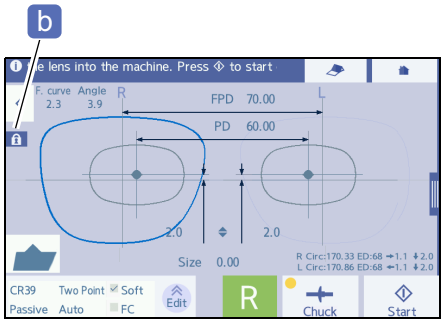
"5.3 Editing Shape Data" (page 212)

Note

- When data of which the layout is set in Passive mode is received, the layout settings and processing conditions are fixed and cannot be changed to prevent misoperation.

  Pressing the layout fix button b releases the lock  .

- The layout fix button is displayed in Mini Lab system as well.



7 Set the lens to this instrument.

"3.10.1 To set lenses" (page 103)

8 Press Start to start processing.

9 When processing is complete, remove the lens.

"3.10.2 To remove lenses" (page 104)

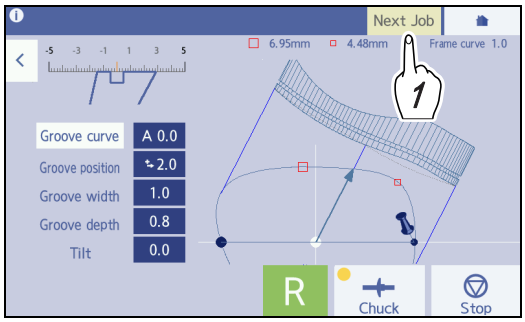
5.7 Editing Next Shape during Processing (Blocker/Lex)

Before completion of processing, the shape data for the next lens to be processed can be traced or sent to the external blocker. However, the functions such as tracing pattern or demo lens are deactivated.

1 Press Next Job that is displayed on the simulation screen during processing.

→ Home screen

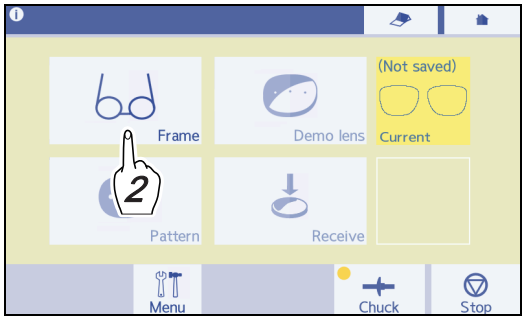
After that, the screen background is displayed in light yellow, which indicates that the next data is being edited.



2 Press Frame to trace the frame (The figure to the right is an example of frame tracing).

When tracing is completed, data is automatically sent to the connected external blocker.

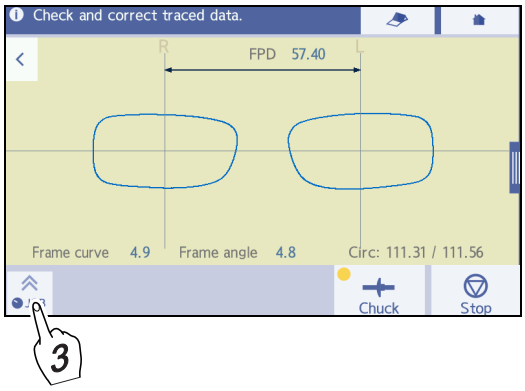
- After data is sent to the external blocker, data edited with the LEXCE is not reflected to the data in the external blocker.



3 Display the data of the lens being processed, and wait for the processing to be completed.

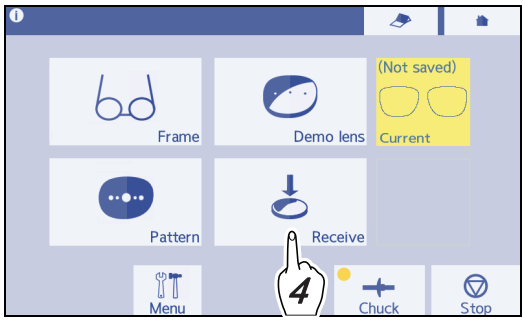
- Pressing JOB during processing returns to the simulation screen.
- If the processing is complete without changing the screen, JOB blinks. Pressing JOB returns to the simulation screen.

- Data from the external blocker cannot be received until the processing being executed is complete.



4 When the processing being executed is complete, press Receive on the home screen to receive data from the external blocker.

- When the data for the next processing is received from the external blocker, the previous data is deleted and replaced with new data. After that, the lens cannot be retouched with the previous processing data or such.

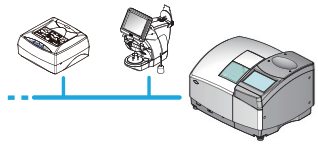


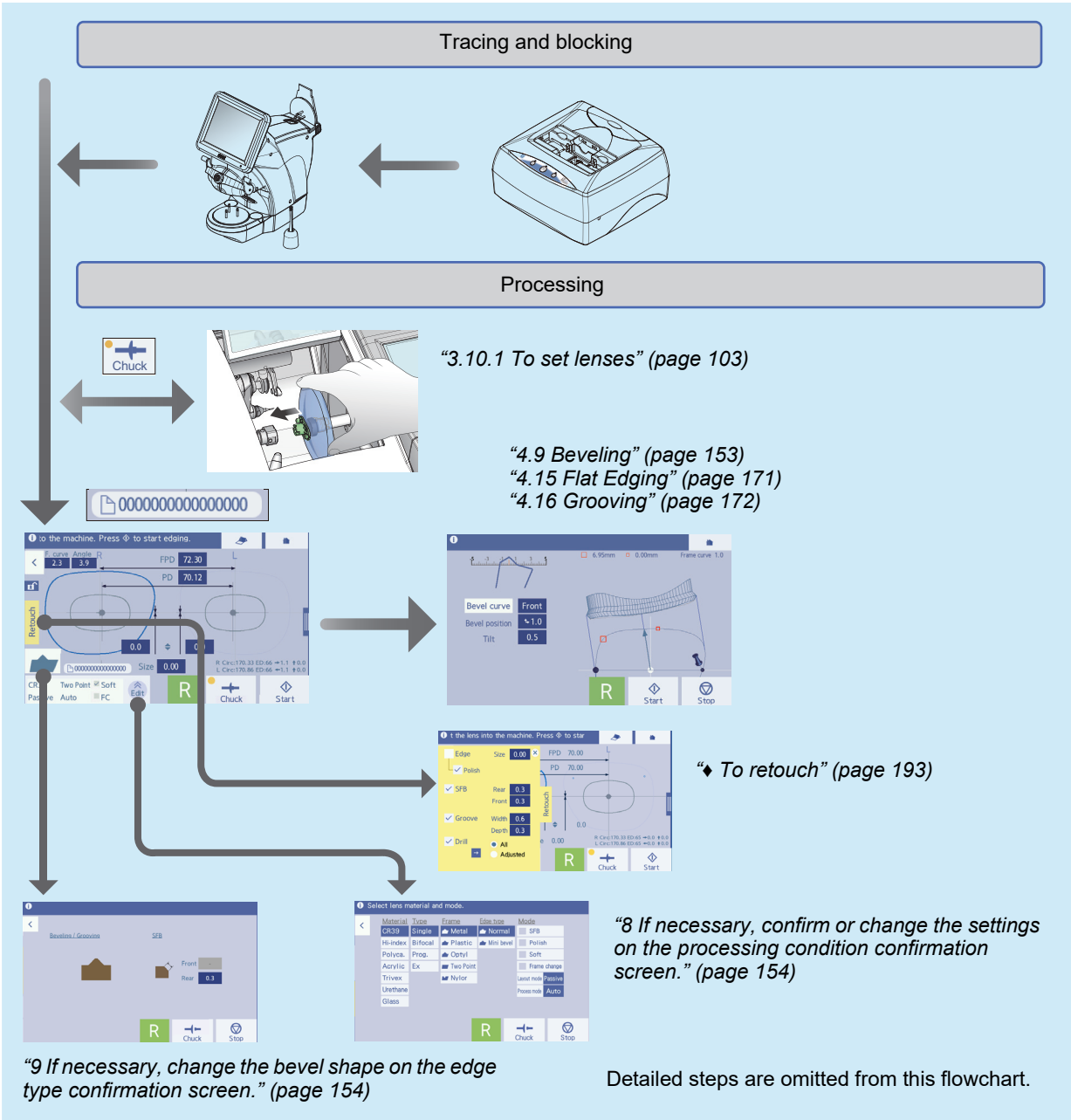
5

5.8 The Mini Lab System

In the Mini Lab system, after data is received from the server computer or external blocker, the instrument performs lens processing only.

5.8.1 Operations of the Mini Lab system

Configuration example		Applied function
	• LEXCE • External blocker • External tracer • Server computer	• Parameter settings Set *" System" (page 240)* to "Mini Lab". • The operation is Professional mode only.



5.8.2 To operate in the Mini Lab system

Note

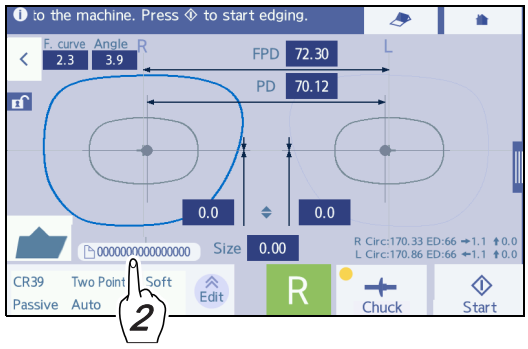
- In the Mini Lab system, the internal memory cannot be used.
- When the barcode scanner or 2D barcode scanner (external or built-in) is connected
  By reading a barcode or QR code with the barcode scanner or 2D barcode scanner on the processing start screen, data can be received from the server computer or blocker without Steps 2 to 4 below.
  The shape data cannot be received under any of the following conditions.
  - The system is not Mini Lab.
  - The processing start screen is not displayed.
  - When processing is in progress

1 Turn on the power switch.

→ Processing start screen

2 On the processing start screen, press 0000000000000000.

→ Data management screen



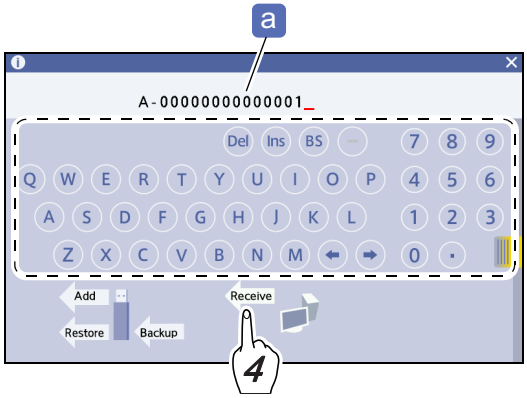
3 Specify the shape data name.

Enter the shape data name in the data name field a.

The length of shape data name is 16 characters including a hyphen.

4 Press Receive [Receive] to receive data from the server computer or blocker that is connected to Ethernet.

→ Processing start screen



5 If necessary, edit the shape on the processing start screen.

"5.3 Editing Shape Data" (page 212)

6 Set the lens to this instrument.

"3.10.1 To set lenses" (page 103)

7 Press Start to start processing.

The processing chamber door closes.

8 When processing is complete, remove the lens.

"3.10.2 To remove lenses" (page 104)

6 PARAMETER SETTING AND ADJUSTMENT

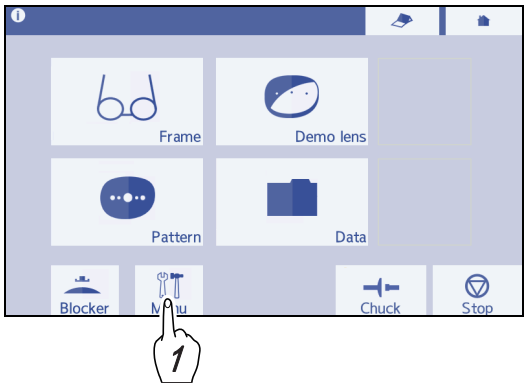
6.1 Operation on the Menu Screen

The menu screen is used for all the parameter settings and adjustments.

1 Display the home screen.

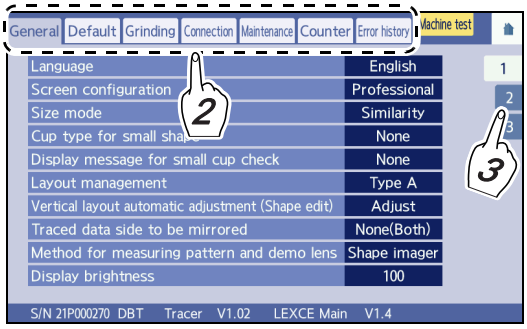
Press Menu on the home screen.

→ Menu screen



2 Select a tab among [General], [Default], [Grinding], [Connection], [Maintenance], [Counter], and [Error history].

3 When there are multiple pages, press the desired tab to the right to display the page of the parameter to be changed.



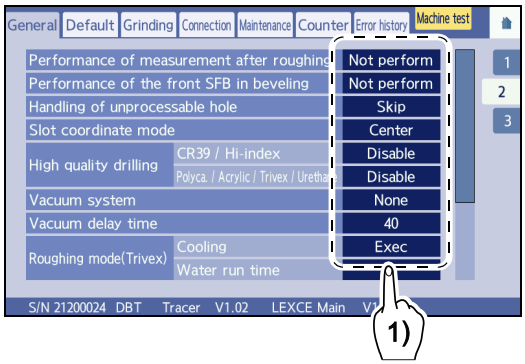
4 Change the desired parameter setting.

1) Press the setting field of the parameter to be changed.

   The selected setting field turns blue, and the numeric keypad or pop-up menu appears.

2) Change the setting.

   - Input a value with the numeric keypad and press ↵.
   - Select the desired setting from the pop-up menu.



5 When the setting is complete, press Home to return to the home screen.

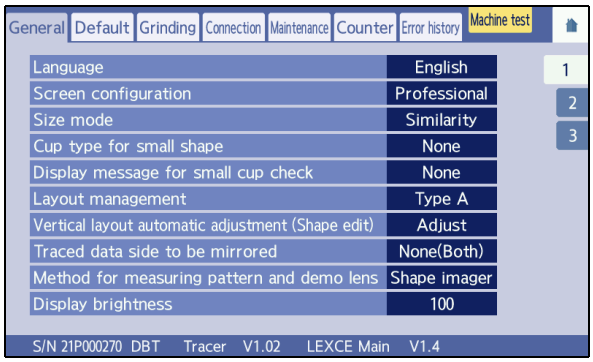
6.1.1 To set parameters

Depending on the type of the instrument, some parameters are not displayed.

The settings in brackets are the factory settings. The unit of the numerical values for which unit is not displayed is mm.

◆ General settings

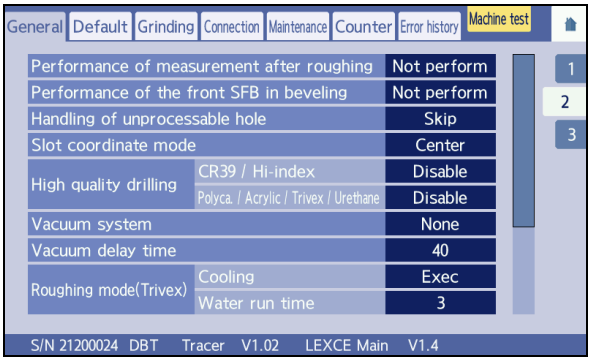
General-1



Setting items	Selection items
Language	[English]
	The language displayed on the screen
Screen configuration	Wizard, [Professional]
	Either Wizard mode or Professional mode can be selected.
Size mode	[Similarity], Concentric
	Sets the shape editing method in relation to the size.
Cup type for small shape	[None], Mini, Nano, Nano + Supporter
	When using the pliable cup only, set the parameter to “None”. When using both the pliable cup and mini cup, set to “Mini”. * This item is displayed when a pliable cup and a mini cup (optional), or a nano cup (optional) is used.
Display message for small cup check	[None], Exec
	When processing with the mini cup or nano cup is necessary, sets whether the confirmation message is displayed before processing starts. * This item is displayed when a pliable cup and a mini cup (optional), or a nano cup (optional) is used.
Layout management	[Type A], Type B
	When the connected instrument does not have this parameter or a manual blocker such as the CE-9 is used, select [Type A]. When “Type B” is set, the parameters of all connected instruments must be set to “Type B”. If Type A / Type B is incorrectly set, the PD when the lenses are set in frames may not satisfy the specifications.
Vertical layout automatic adjustment (Shape edit)	Not adjust, [Adjust]
	When the position of the optical center and the frame center change along with shape change, sets whether to change the optical center as well or to remain the optical center position by recalculating the optical center height.

Traced data side to be mirrored	Right, Left, [None(Both)]
	Sets whether to mirror the 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. * For single-eye tracing, the shape of the traced side is mirrored regardless of this setting.
Method for measuring pattern and demo lens	[RMU], Shape imager
	Sets whether to use RMU tracing function or Shape imager as the method of measuring a pattern and demo lens. * For the DI and I models, the setting is fixed to “Shape imager”.
Display brightness	[100] Setting range: 10 to 100
	Sets the LCD screen brightness.

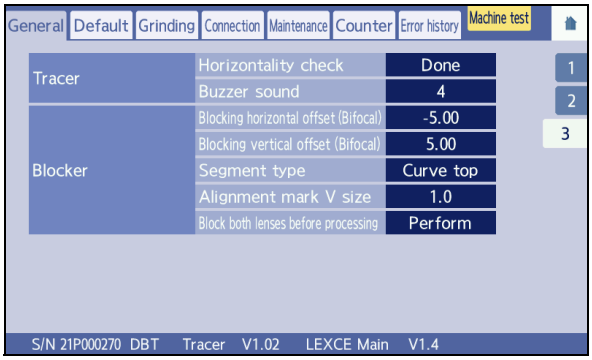
General-2

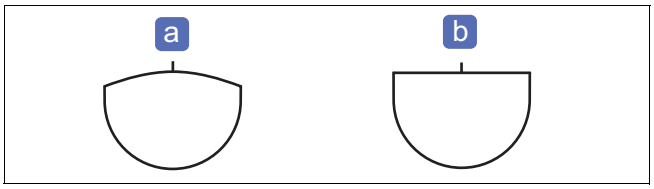


Setting items		Selection items
	Performance of measurement after roughing	[Not perform], Perform, CR39 / Hi-index only
		Sets whether to measure the lens shape again after roughing. Remeasuring lens shape after roughing increases the processing time, but reduces bevel or groove shift from the desired position due to lens distortion occurring during roughing. However, remeasuring lens shape after roughing is not performed for glass lenses.
	Performance of the front SFB in beveling	[Not perform], Perform
		Sets whether to perform safety beveling along the front lens edge.
	Handling of unprocessable hole	Marking, [Skip]
		Sets handling of holes determined as unprocessable. • Marking: Marks the position of the hole that cannot be processed with the tip of the drill. • Skip: Does nothing to holes that cannot be processed.
	Slot coordinate mode	[Center], Edge
		Coordinate input method for the start and end points of the slotted hole
High quality drilling	CR39 / Hi-index	[Disable], Enable
		Specifies whether to drill holes with high quality drilling.
	Polyca. / Acrylic / Trivex / Urethane	Disable, [Enable]
		Specifies whether to drill holes with high quality drilling.

	Vacuum system	[None], LED, Lfu, LED + Lfu
		Sets the configuration of the vacuum device.
	Vacuum delay time	[40] Setting range: 0 to 50
		Specifies the time to continue vacuuming after processing.
Roughing mode (Trivex)	Cooling	[Exec]/None
		Sets whether to run cooling water for roughing with the lens material of Trivex. • Exec: Processing is performed while the cooling water stops for a certain seconds after running for a certain seconds repeatedly. • None: Processing is performed without running cooling water. Cooling water suppresses the generation of smoke. As necessary, adjust “Water run time” and “Water pause time”.
	Water run time	[3] Setting range: 1 to 10
		Displayed when “Cooling” is set to “Exec”. Sets “Second” for running cooling water.
	Water pause time	[7] Setting range: 3 to 25
		Displayed when “Cooling” is set to “Exec”. Sets “Second” for pausing cooling water.
Maintenance message	Water replacement	[Exec]/None
		Sets whether to display the message for water replacement when the number of processed lenses reaches the specified number.
	Message count (Water)	[100] Setting range: 10 to 2000
		When “Water replacement” is set to “Exec”, specifies the number of lenses that is used as the guide for the timing of displaying the message.
	Drill	[Exec]/None
		Sets whether to display the message when the number of drilled lenses reaches the specified number.
	Message count (Drill)	[200] Setting range: 10 to 1000
		When “Drill” is set to “Exec”, specifies the number of drilled lenses that is used as the guide for the timing of displaying the message.

General-3



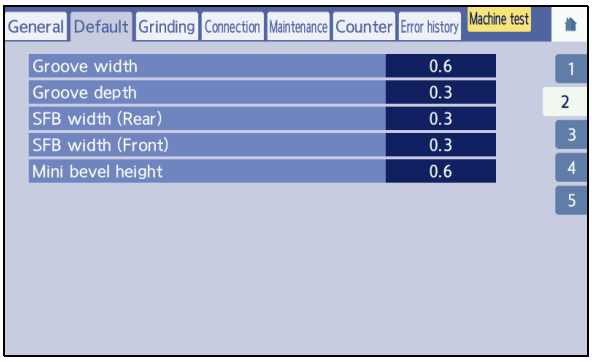
Setting items		Selection items
Tracer	Horizontality check	[Done]
		Checks whether the built-in tracer is in a horizontal state.
	Buzzer sound	[3] Setting range: 1 to 5
		Sets buzzer volume of the built-in tracer.
Blocker	Blocking horizontal offset (Bifocal)	[-5.00] Setting range: -10.00 to +10.00
		Sets the (horizontal) blocking position with reference to the segment vertex point when “Bifocal” is selected.
	Blocking vertical offset (Bifocal)	[5.00] Setting range: -10.00 to +10.00
		Sets the (vertical) blocking position with reference to the segment vertex point when “Bifocal” is selected.
	Segment type	[Curve top], Flat top, Received
		Sets the segment shape that is displayed on the shape when “Bifocal” is selected. When “Ethernet port” is set to “VCA-B” or “VCA-C”, setting this parameter to “Received” toggles the displayed segment shape to curve top a or flat top b according to the segment shape specified by the server. 
Blocker	Alignment mark V size	0.0, [1.0], 2.0
		Selects the height of the alignment scale (horizontal ellipse) among 0.0, 1.0, and 2.0. When “0.0” is selected, the alignment scale becomes a straight line.
	Block both lenses before processing	[Not perform], Perform
		Sets whether to switch the screen to the processing start screen automatically after blocking a lens or to block the opposite lens. To block the opposite lens, set this parameter to “Perform”.

◆ Default setting

Default-1

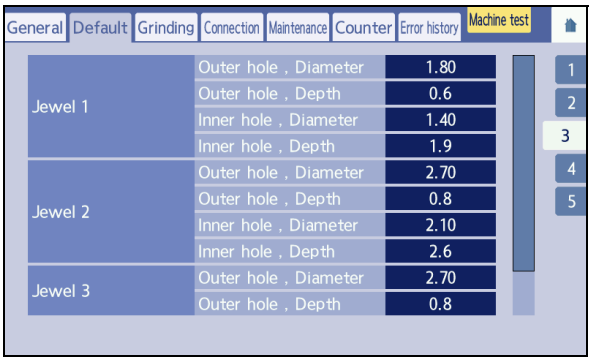
Setting items	Selection items
FPD	[70.00] Setting range: 30.00 to 99.50
	Sets the initial value of FPD.
DBL	[18.00] Setting range: 5.00 to 30.00
	Sets the initial value of DBL.
PD	[62.00] Setting range: 30.00 to 99.50
	Sets the initial value of PD.
Optical center height	[2.0] Setting range: -15.0 to 15.0
	Sets the initial value of the optical center height.
Frame curve	[4.0] Setting range: 0 to 12.0
	Sets the initial value of the frame curve.
Frame angle	[5.0] Setting range: 0 to 45.0
	Sets the initial value of the wrapping angle.
Active side (R/L)	R, L, [Received]
	Sets whether to display the left or right shape when loading shape newly. When “Received” is set, the right shape is displayed (note that the left shape is displayed only when the left single-eye trace data is received).
Layout mode	Active, Passive, [Received]
	Sets the layout mode when shape data is loaded from the blocker or server computer. When this parameter is set to “Received”, follow the layout settings of the loaded shape data.
Layout mode (Bifocal)	[Bifocal], Passive
	Sets the initial value of layout mode when the lens type is set to “Bifocal”.
Soft processing mode	[None], Exec, Glass
	Sets the initial values of Soft processing mode. When this parameter is set to “Glass”, Soft processing mode is automatically activated.

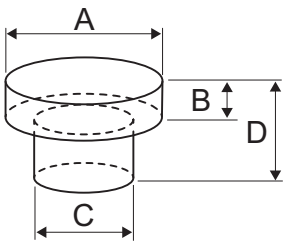
Default-2



Setting items	Selection items
Groove width	[0.6] Setting range: 0.6 to 1.2
	The initial value of groove width
Groove depth	[0.3] Setting range: 0.0 to 0.8
	The initial value of groove depth
SFB width (Rear)	[0.3] Setting range: 0.0 to 0.8
	The initial value of the safety bevel width (rear surface)
SFB width (Front)	[0.3] Setting range: 0.0 to 0.8
	The initial value of the safety bevel width (front surface)
Mini bevel height	[0.6] Setting range: 0.4 to 0.7
	The initial value of mini bevel height

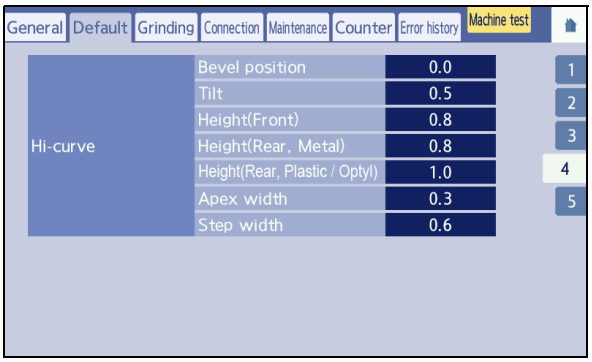
Default-3

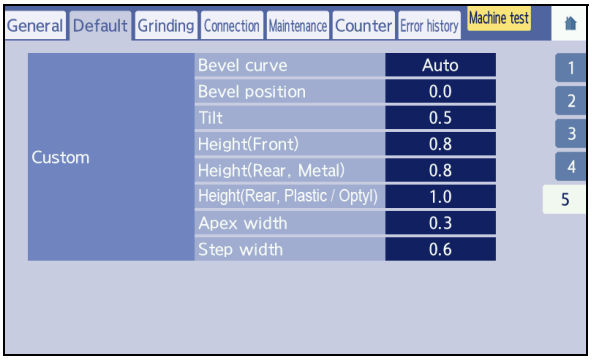




A = outer hole diameter B = outer hole depth
C = inner hole diameter D = inner hole depth
Only values that satisfy A ≥ C and D ≥ B can be input.

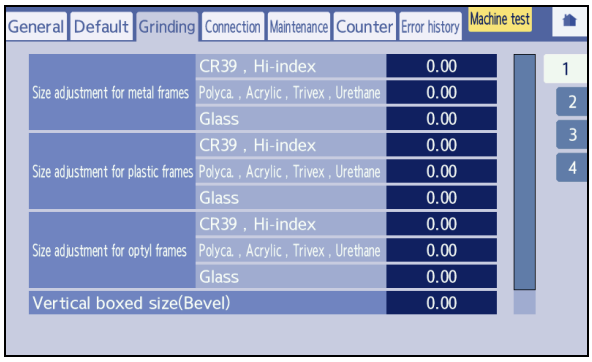
Setting items		Selection items
Jewel 1	Outer hole , Diameter	[1.80]
		Setting of outer hole diameter of Jewel hole 1
	Outer hole , Depth	[0.6]
		Setting of the outer hole depth of Jewel hole 1
	Inner hole , Diameter	[1.40]
		Setting of inner hole diameter of Jewel hole 1
	Inner hole , Depth	[1.9]
		Setting of the inner hole depth of Jewel hole 1
Jewel 2	Outer hole , Diameter	[2.70]
		Setting of outer hole diameter of Jewel hole 2
	Outer hole , Depth	[0.8]
		Setting of the outer hole depth of Jewel hole 2
	Inner hole , Diameter	[2.10]
		Setting of inner hole diameter of Jewel hole 2
	Inner hole , Depth	[2.6]
		Setting of the inner hole depth of Jewel hole 2
Jewel 3	Outer hole , Diameter	[2.70]
		Setting of outer hole diameter of Jewel hole 3
	Outer hole , Depth	[0.8]
		Setting of the outer hole depth of Jewel hole 3
	Inner hole , Diameter	[2.10]
		Setting of inner hole diameter of Jewel hole 3
	Inner hole , Depth	[2.6]
		Setting of the inner hole depth of Jewel hole 3

Default-4		
		
Hi-curve (Trend8)	Bevel position	[0.0] Setting range: -12.8 to 12.7
		Sets the initial value of the bevel position.
	Tilt	[0.5] Setting range: -9.9 to 9.9
		Sets the initial value of tilt.
	Height(Front)	[0.8] Setting range: 0.0 to 1.8
		Sets the initial value of the bevel front height.
	Height(Rear, Metal)	[0.8] Setting range: 0.0 to 1.8
		Sets the initial value of the bevel rear height when the frame type is metal.
	Height(Rear, Plastic / Optyl)	[1.0] Setting range: 0.0 to 1.8
		Sets the initial value of the bevel rear height when the frame type is plastic or optyl.
	Apex width	[0.3] Setting range: 0.0 to 2.0
		Sets the initial value of the bevel apex width.
	Step width	[0.6] Setting range: 0 to 3.8
		Sets the initial value of the step bevel width.

Default-5		
		
Custom (Trend8)	Bevel curve	[Auto], Front
		Sets the initial value of the bevel curve.
	Bevel position	[0.0] Setting range: -12.8 to 12.7
		Sets the initial value of the bevel position.
	Tilt	[0.5] Setting range: -9.9 to 9.9
		Sets the initial value of tilt.
	Height(Front)	[0.8] Setting range: 0.0 to 1.8
		Sets the initial value of the bevel front height.
	Height(Rear, Metal)	[0.8] Setting range: 0.0 to 1.8
		Sets the initial value of the bevel rear height when the frame type is metal.
	Height(Rear, Plastic / Optyl)	[1.0] Setting range: 0.0 to 1.8
		Sets the initial value of the bevel rear height when the frame type is plastic or optyl.
	Apex width	[0.3] Setting range: 0.0 to 2.0
		Sets the initial value of the bevel apex width.
	Step width	[0.6] Setting range: 0 to 3.8
		Sets the initial value of the step bevel width.

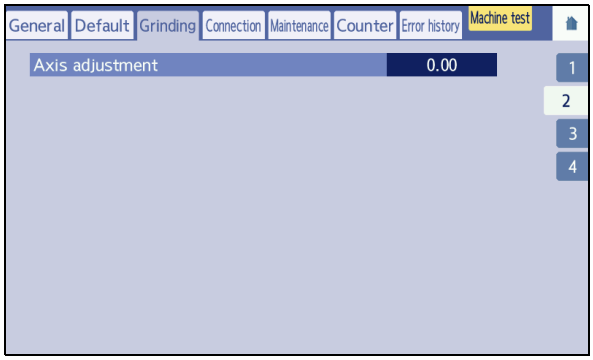
◆ Process setting

Grinding-1



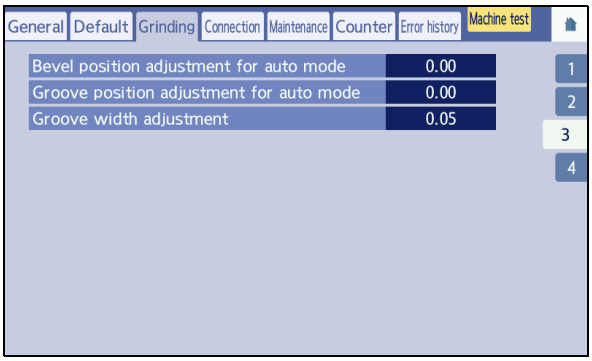
Setting items		Selection items
Size adjustment for metal frames	• CR39, Hi-index • Polyca., Acrylic, Trivex, Urethane • Glass	[0.00] -9.95 to 9.95 Increasing the input value enlarges the processing size.
Size adjustment for plastic frames	• CR39, Hi-index • Polyca., Acrylic, Trivex, Urethane • Glass	[0.00] -9.95 to 9.95 Increasing the input value enlarges the processing size.
Size adjustment for optyl frames	• CR39, Hi-index • Polyca., Acrylic, Trivex, Urethane • Glass	[0.00] -9.95 to 9.95 Increasing the input value enlarges the processing size.
Vertical boxed size (Bevel)		[0.00] -9.95 to 9.95 Sets the vertical size of shape to be beveled. Increasing the value enlarges the vertical size of the shape.
Soft processing level(CR39 / Hi-index / Acrylic)		[Level 10] Level 1 to 10 Sets the speed of soft processing by the ratio with normal processing speed. Increasing the value makes it closer to normal speed.

Grinding-2



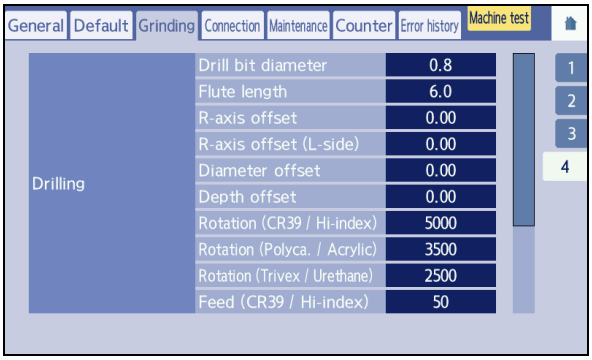
Setting items	Selection items
Axis adjustment	[0.00] -9.95 to 9.95
	Sets the entire processing outline axial. Increasing the value tilts the axis toward the lower right when viewed from the front surface (convex surface).

Grinding-3



Setting items	Selection items
Bevel position adjustment for auto mode	[0.00] -9.95 to 9.95
	Adjusts the auto-processed bevel position. Increasing the input value moves the bevel toward the rear surface.
Groove position adjustment for auto mode	[0.00] -9.95 to 9.95
	Sets the auto-processed groove position. Increasing the input value moves the groove toward the rear surface.
Groove width adjustment	[0.05] 0.00 to 0.20
	Sets the groove width for grooving. Increasing the input value enlarges the groove width.

Grinding-4

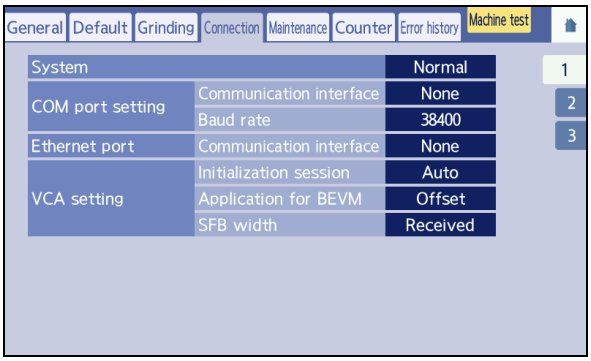


Setting items		Selection items
Drilling	Drill bit diameter	[0.8] 0.5 to 2.0 * [1.0] only for USA
		Sets a drill diameter.
	Flute length	[6.00] 5.0 to 8.0
		Sets the flute length of a drill. Input the value that is smaller than the nominal effective cutting length by 0.5 mm.
	R-axis offset	*.** -9.95 to 9.95 (*.** shows an adjustment value.)
		Sets the axis position for drilling. Increasing the input value moves the drilling axis toward the upper right in the shape outline as viewed from the front.
	R-axis offset (L-side)	[0.00] -9.95 to 9.95
		In addition to the R-axis offset value, sets the drilling axis position only for the left shape.
	Diameter offset	*.** -1.00 to +1.00 (*.** shows an adjustment value.)
		Sets the hole diameter value. Increasing the input value widens the hole.
	Depth offset	*.** -9.95 to 9.95 (*.** shows an adjustment value.)
		Sets the hole depth. Increasing the value makes the hole deeper.
	Rotation (CR39 / Hi-index)	[5000] Setting range: 2000 to 5000
		Sets the drill rotation speed during processing (CR39, Hi-index)
	Rotation (Polyca. / Acrylic)	[3500] Setting range: 2000 to 5000
		Sets the drill rotation speed during processing (Polyca., Acrylic).
	Rotation (Trivex / Urethane)	[2500] Setting range: 2000 to 5000
		Sets the drill rotation speed during drilling (Trivex, Urethane).
	Feed (CR39 / Hi-index)	[50] Setting range: 10 to 200
		Sets the drill cutting speed during drilling (CR39, Hi-index).
	Feed (Polyca. / Acrylic)	[200] Setting range: 10 to 200
		Sets the drill cutting speed during processing (Polyca., Acrylic).

Drilling	Feed (Trivex / Urethane)	[200] Setting range: 10 to 200
		Sets the drill cutting speed during drilling (Trivex, Urethane).
	Slot (CR39 / Hi-index)	[40] Setting range: 10 to 100
		Sets the speed to widen the hole diameter (CR39/Hi-index).
	Slot (Polyca. / Acrylic)	[10] Setting range: 10 to 100
		Sets the speed to widen the hole diameter (Polyca., Acrylic).
	Slot (Trivex / Urethane)	[10] Setting range: 10 to 100
		Sets the speed to widen the hole diameter (Trivex / Urethane).

◆ Connection setting

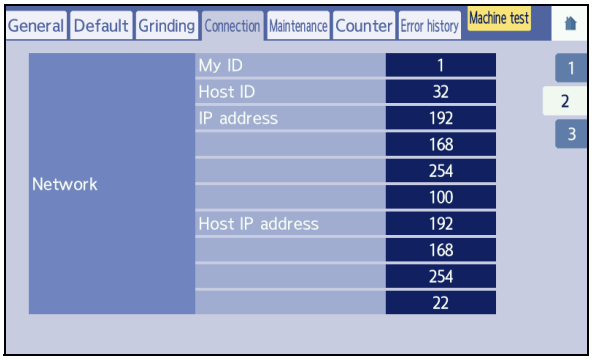
Connection-1



Setting items		Selection items
System		[Normal], Blocker/Lex, Mini Lab
		• DB/B model with the tracer: Normal (not displayed) • DB/B model without the tracer: Normal (not displayed) • DI/D/I/N model with the tracer: Normal, Blocker/Lex • DI/D/I/N model without the tracer: Normal, Mini Lab
COM port setting	Communication interface	[None], Tracer, Barcode, Navis, Meganet (M), Meganet (V)
		The parameter setting changes depending on the model, presence/absence of the tracer (optional), and the System setting. *"8.1.1 To perform COM port settings" (page 287)*
	Baud rate	9600, [38400]
		Sets the bit transmission speed during communication.
Ethernet port	Communication interface	[None], N-LAN, VCA-B, VCA-C
		Sets the communication of the device or server that are connected by Ethernet. • None: Deactivates the communication function by LAN port. • N-LAN: Connects to the NIDEK LAN format, ICE-1500, ICE-1, or such. • VCA-B: Recalculates the 3-D circumference based on the frame curve, and processes the lens by VCA format or VCA (OMA) communication. • VCA-C: Calculates FPD based on DBL sent by VCA format or VCA (OMA) communication.

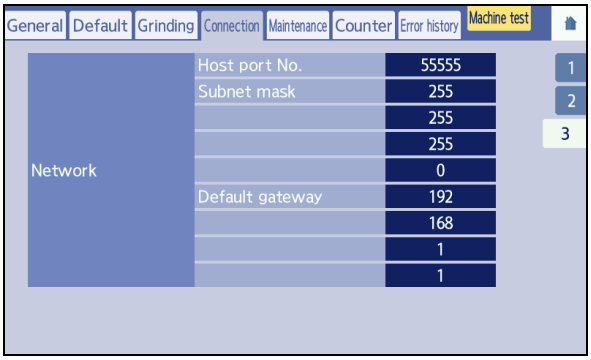
VCA setting	Initialization session	[Auto], Preset
		Selects either auto initialization or preset initialization.
	Application for BEVM	[Offset], Distance
		For the BEVM (bevel position) data, selects either the distance from the front/rear surface or offset from the auto position.
	SFB width	Fixed, [Received]
		Sets whether to use the safety bevel width that is received by VCA as the initial setting or received value. Fixed: Initial value, Received: Received value

Connection-2



Setting items		Selection items
Network	My ID	[1] Setting range: 1 to 32767
		Sets the own ID for communication with an external terminal.
	Host ID	[32] Setting range: 1 to 32767
		Sets the ID of the external terminal to communicate with.
	IP address	[192.168.254.100] Setting range: 0.0.0.0 to 255.255.255.255
		Sets the own IP address for communication with an external terminal.
	Host IP address	[192.168.254.100] Setting range: 0.0.0.0 to 255.255.255.255
		Sets the IP address of the external terminal to communicate with.

Connection-3



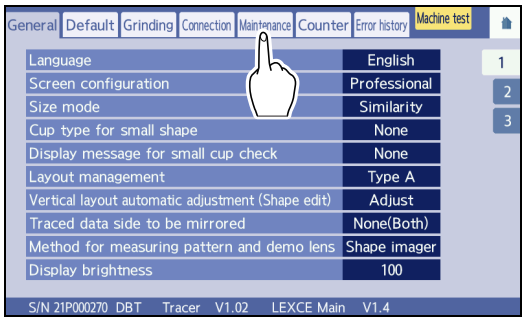
Setting items		Selection items
Network	Host port No.	[55555] Setting range: 00000 to 65535
		Sets the host port number for connection with the Ethernet port.
	Subnet mask	[255.255.255.0] Setting range: 0.0.0.0 to 255.255.255.255
		Sets the subnet mask for communication with an external device or external terminal.
	Default gateway	[192.168.1.1] Setting range: 0 to 255
		Sets the default gateway for communication with external terminals.

6.1.2 To operate on the Maintenance screen

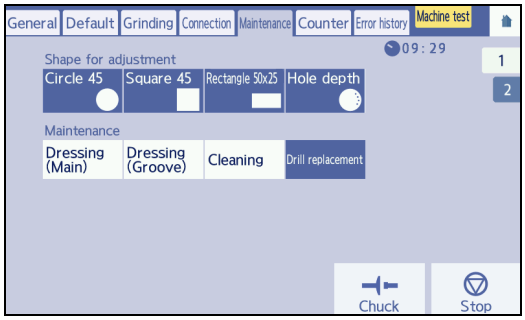
The maintenance screen allows loading shape for adjustment, dressing, cleaning, drill replacement, date and time settings, and calibration.

Press the [Maintenance] tab on the menu screen.

→ Maintenance screen



- Shape for adjustment



Press the desired [Shape for adjustment] button to load the shape. The shape is automatically displayed on the processing condition input screen.

Circle 45 loads shape with the diameter of 45.

Square 45 loads shape with the square of side 45.

Rectangle 50×25 loads shape with the rectangle of width 50 and length 25.

Hole depth loads shape for hole depth adjustment.

- Maintenance

Dressing (Main) [Dressing (main)]

Mode for dressing a wheel

Dressing (Groove) [Dressing (Groove)]

Mode for dressing a grooving wheel

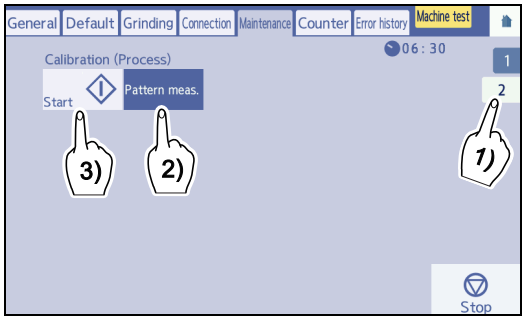
Cleaning [Cleaning]

Mode for cleaning the processing chamber

Drill replacement [Drill replacement]

Mode for drill replacement

- Calibration



1) Press the [2] tab on the maintenance screen.
2) Press the desired Calibration button.

   Pattern meas. calibrates pattern measurement.

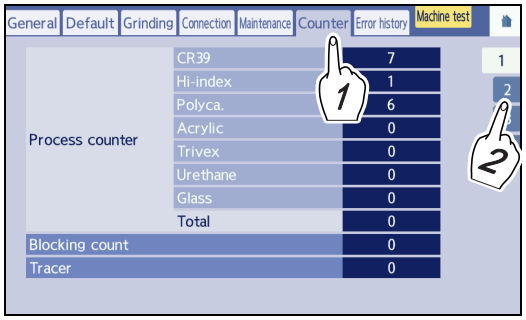
3) Press Start . Calibration starts.

6.1.3 To display the process counter

On the counter screen, the number of processed lenses is displayed by lens material and wheel type.

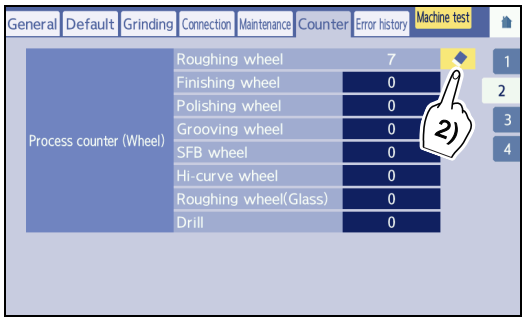
1 On the menu screen, press the [Counter] tab.

The counter screen is displayed, and the number of blocked lenses and the number of processed lenses by lens material are displayed.



2 To check the number of processed lenses by wheel type, press the [2] tab.

3 Confirm or reset the displayed number of processed lenses.



1) To clear the count to “0”, press the desired numeric field to be cleared.

   The button is displayed.

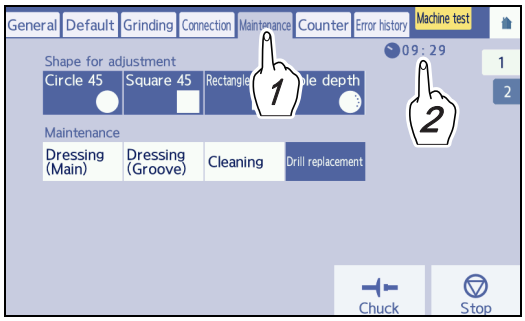
2) Press and hold to clear the count to “0”.

3) Press to return to the home screen.

6.1.4 To set date and time

1 Press the [Maintenance] tab on the menu screen.

→ Maintenance screen



2 Press 07 41 .

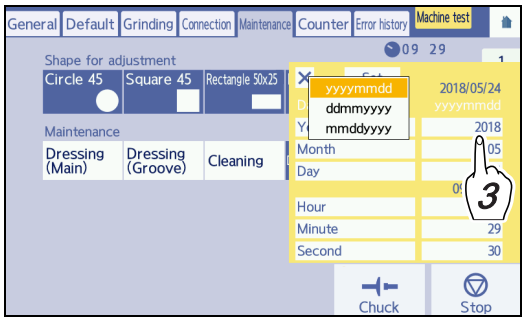
The date and time setting panel appears.

On the date and time setting panel, the current year, month, day, time, ✕ , and Set are displayed.

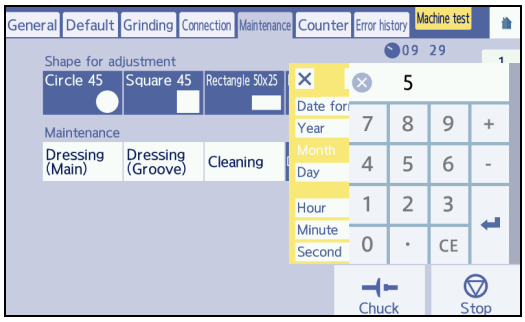
3 If necessary, press [Date format] to select the display format.

Date display format

yyyymmdd → Year/Month/Day
ddmmyyyy → Day/Month/Year
mmddyyyy → Month/Day/Year



4 Press the field to be changed among Year, Month, Day, Hour, Minute, and Second to display the numeric keypad. Input the desired value and press ↵.



5 After all changes, press Set to update the time.

6 Press ✕ to close the date and time setting panel.

7 Press 🏠 to return to the home screen.

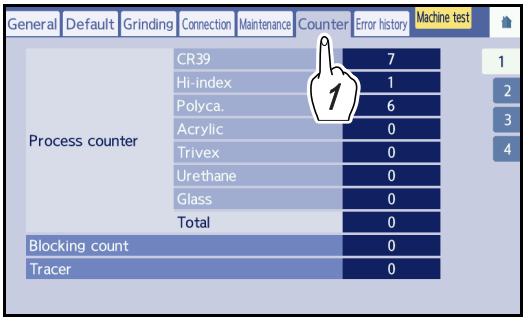
6.1.5 To display the maintenance monitor

The maintenance monitor indicates the track record of use and predicted replacement time for each item.

- If the Track record value for any item is 90% or more, the instrument notifies it immediately after start-up (only when “Notification” is set to “Enable”).
- It is recommended to replace the item whose Track record value has reached 100%. Contact Nidek or your authorized distributor for replacement.
- Predicted replacement time is calculated from how long and how often each item has been used, but replacement may be needed earlier depending on its wear and tear.

1 Press [Counter].

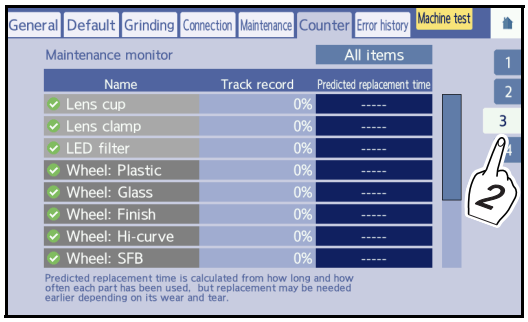
→Counter screen



2 Press [3].

→Maintenance monitor

The track record of use and predicted replacement time are indicated for each item. The icon to the left of each item name changes depending on the Track record value.



Icon	Track record
	Less than 90%
	90 to 99%
	100%

● Item list

Name	Remarks
Lens cup	
Lens clamp	
LED filter	Displayed only when the “Vacuum system” parameter is set to “LED” or “LED + Lfu”.
Wheel: Plastic	
Wheel: Glass	
Wheel: Finish	
Wheel: Hi-curve	Displayed only for Trend8
Wheel: SFB	
Wheel: Groove	
Sub spindle unit	
Spindle drive belt	

Strain sensor	
Chuck shaft unit	
Inverter	

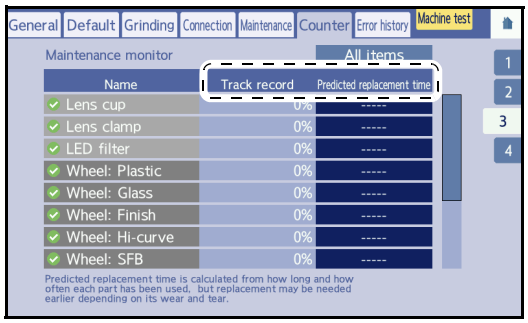
- Resetting the Track record value

  Only for “Lens cup”, “Lens clamp”, and “LED filter”, pressing and holding the “Track record” field can reset the value.

  Reset the Track record value only when the item has been replaced.

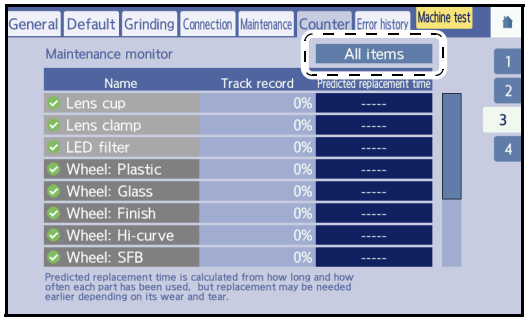
- Sorting the items

  Pressing [Track record] or [Predicted replacement time] sorts the items in ascending or descending order.



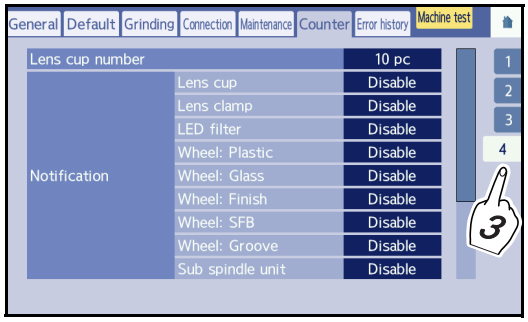
- Refining the items

  Pressing the refinement setting field refines the items.



All items	Displays all items.
Less than 90%	Displays the items whose “Track record” value is less than 90%.
90 to 99%	Displays the items whose “Track record” value is 90% or more but less than 100%.
100%	Displays the items whose “Track record” value is 100%.
Within 6 months	Displays the items whose predicted replacement time is within 6 months.

3 To set the maintenance monitor, press [4].



- Changing the number of lens cups

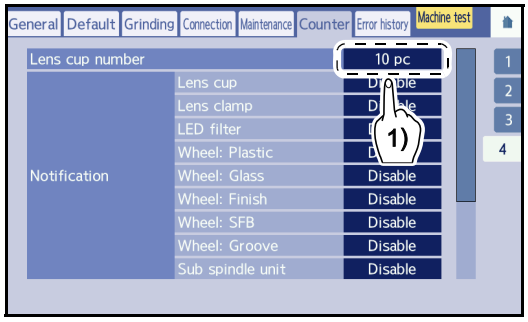
1) Press the Number of lens cups field.

→Numeric keypad

2) Enter a number with the numeric keypad.

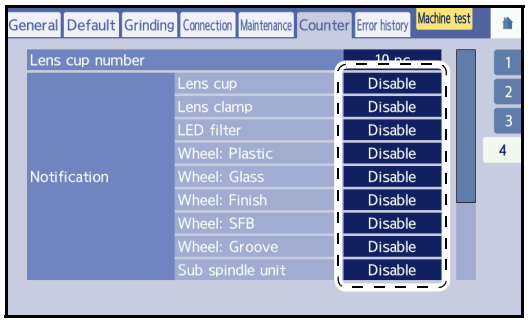
Change the setting accordingly for the number of the lens cups in use.

Input range: 1 to 9999



- Changing the Notification setting

Pressing the Notification field for each item can switch its setting.



4 Press  .

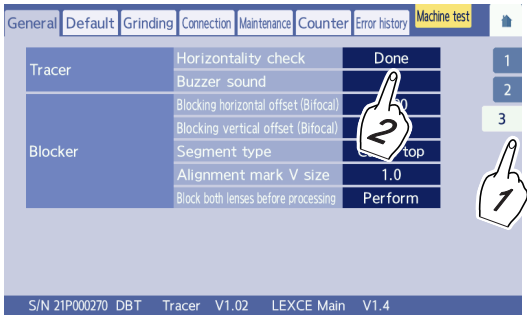
6.2 Tracer Horizontality Check

Check whether the tracer is in a horizontal state using its horizontality check function.

1 Press the [3] tab on the General screen.

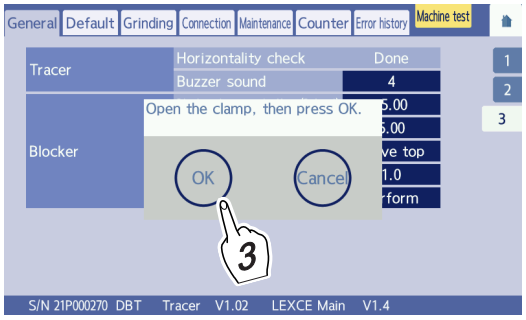
2 Press [Done] for “Horizontality check” of “Tracer”.

→Message



3 While opening the upper and lower sliders of the tracer with the fingers, press OK .

> Keep the upper and lower sliders open with the fingers until the horizontality check is complete.

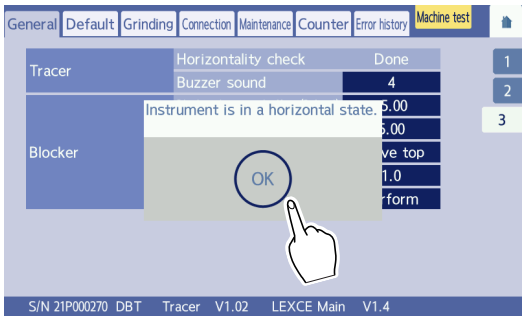


4 Check the message.

- When the instrument is in a horizontal state

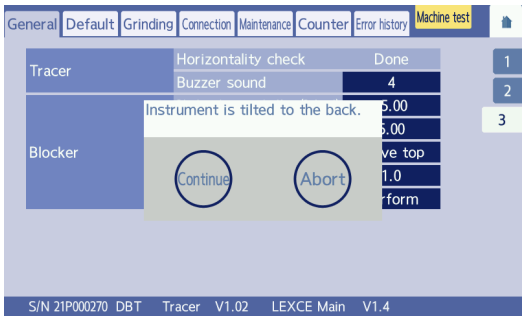
The message, “Instrument is in a horizontal state.” appears.

Press OK .



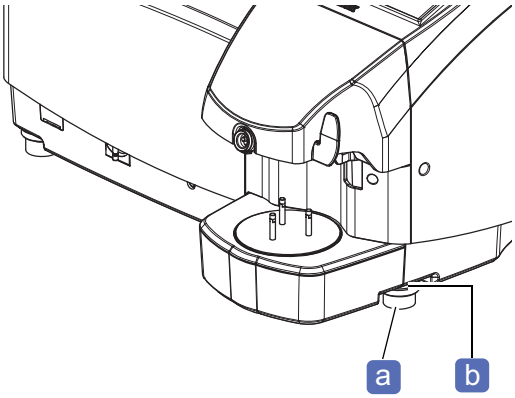
- When the instrument is tilted to the back

The message, “Instrument is tilted to the back.” appears.



1) Turn the handle b for the front adjustable leg a on each side to loosen the leg.

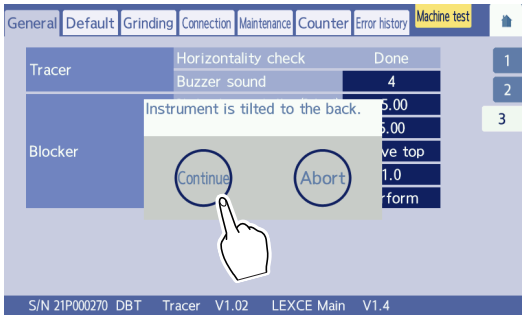
2) Turn each adjustable leg to remove the tilt of the instrument.



3) Press Continue.

- If the message, “Instrument is in a horizontal state.” appears, the adjustment is complete.
- If the message, “Instrument is tilted to the back.” appears, repeat Steps 2) and 3).

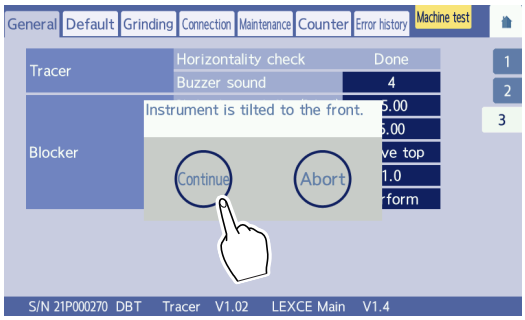
4) Turn each handle for the adjustable leg to fasten the leg.



● When the instrument is tilted to the front

The message, “Instrument is tilted to the front.” appears.

Remove the tilt of the instrument in the same manner as “When the instrument is tilted to the back”, except for turning the adjustable legs in the reverse direction.



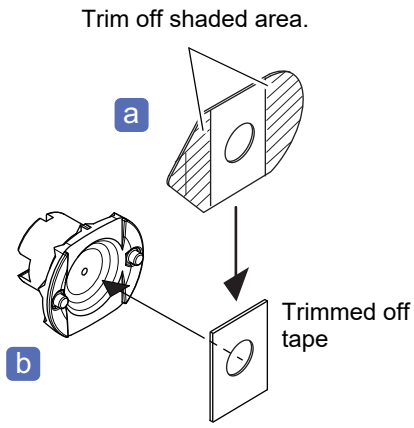
6.3 Calibration

Calibration of the surface measurement (LMU), periphery measurement (RMU), and pattern measurement can be performed with the provided calibration jig.

- Before calibration, clean the LMU stylus and RMU stylus. A soiled stylus may cause incorrect measurement.
- To prevent the calibration jig from dropping off, be sure to hold it by hand when attaching or removing it.
  The jig may become detached from the lens adapter and fall into the processing chamber.

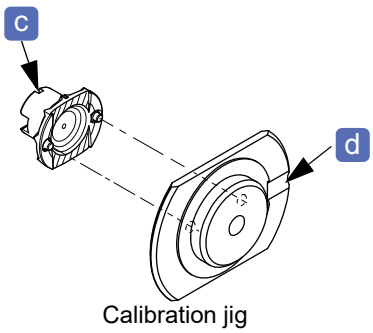
1 Trim off both ends of the double-coated adhesive pad a and attach it to the pattern holder b.

Trim off the shaded area with scissors as shown to the right.



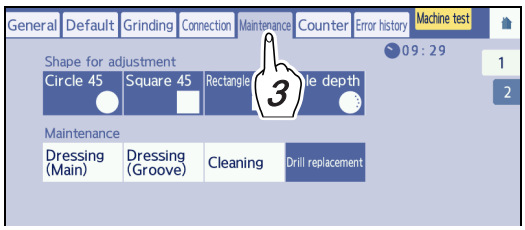
2 Attach the pattern holder to the calibration jig in the orientation shown to the right.

Make the top mark c of the pattern holder and groove d of the calibration jig in the orientation as shown to the right, then insert the two pins of the pattern holder into the holes of the calibration jig.



3 Press the [Maintenance] tab on the menu screen.

The processing chamber door opens and the maintenance screen is displayed.

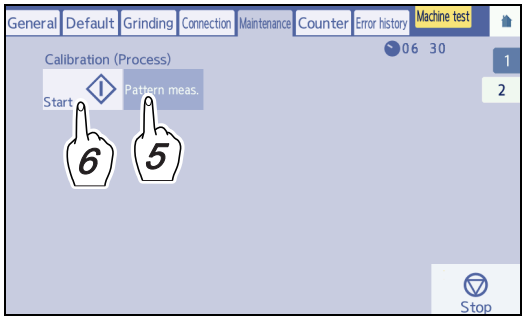


4 Press the [2] tab.

5 Press the desired Calibration button. Two or more options can be selected.

The selected buttons turn blue.

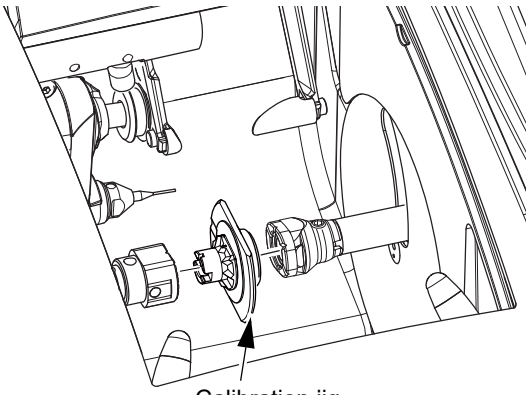
Pattern meas. calibrates pattern measurement.



6 Press Start .

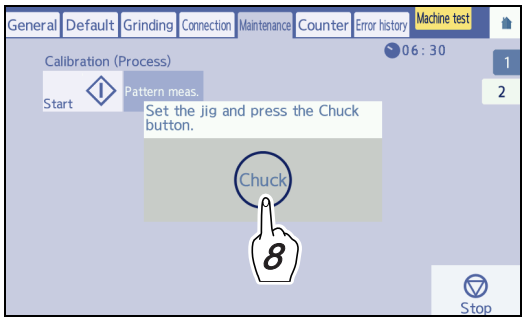
A chuck message appears.

7 Fit the calibration jig to the lens adapter and hold it by hand.



8 Press Chuck in the message box to secure the jig.

In 3 seconds after closing the chuck, the door is closed and the calibration starts.

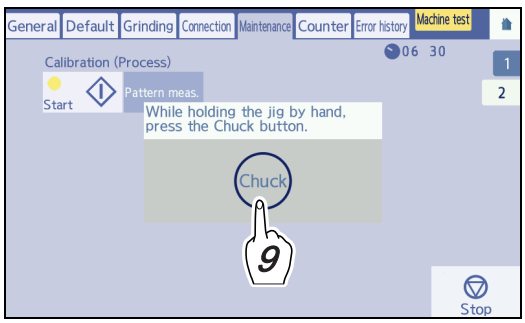


⚠ CAUTION

- Be careful not to get fingers caught when chucking (securing) the lens.
  Injury may result.

9 When calibration is finished, press Chuck and remove the jig while holding the jig by hand.

10 Press to return to the home screen.



6.4 Adjustment

This section described adjustment of size, axis, bevel position, groove position, groove width, and hole depth.

6.4.1 To adjust sizes

After repeated processing, lens finish size becomes larger than the specified size due to wear on the wheels or such. If this occurs, check the sizes and perform the following size adjustment by changing the parameter values.

- Size adjustment for metal frames
- Size adjustment for plastic frames
- Size adjustment for optyl frames

1 Check the lens size.

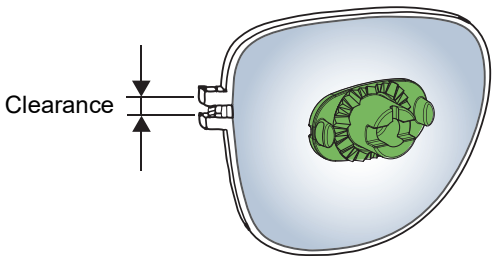
1) Fit the processed lens into the frame and measure the clearance at the rim joint.

2) Divide the clearance by pi (approximately 3) to obtain the size adjustment value.

Ex.— The clearance is 1 mm.

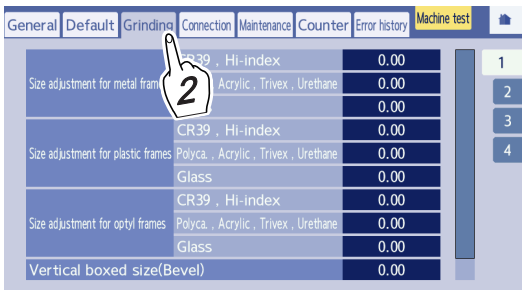
1 mm ÷ 3 ≈ 0.3 mm

Decrease the size adjustment value by 0.3 mm.



2 Press the [Grinding] tab on the menu screen.

→ Grinding screen



3 Adjust the size.

1) Press the field for the desired size adjustment.

- Size adjustment for metal frames
  - CR39, Hi-index
  - Polyca., Acrylic, Trivex, Urethane
  - Glass
- Size adjustment for plastic frames
  - CR39, Hi-index
  - Polyca., Acrylic, Trivex, Urethane
  - Glass
- Size adjustment for optyl frames
  - CR39, Hi-index
  - Polyca., Acrylic, Trivex, Urethane
  - Glass

→ Numeric keypad

2) Enter the value obtained in Step 1 with the numeric keypad.

4 Press  to return to the home screen.

5 If necessary, repeat Steps 1 to 4 until the lens fits the frame.

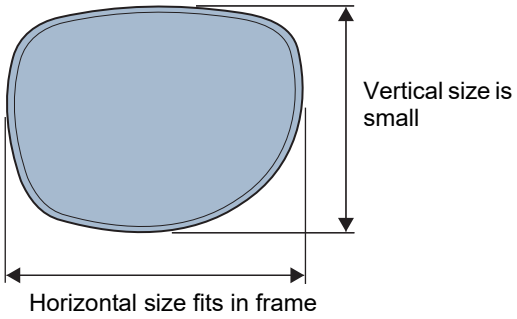
Note

To adjust only vertical size of the shape to be beveled, change the value in the “Vertical boxed size (Bevel)” field.

“6.4.2 To adjust vertical shape sizes” (page 254)

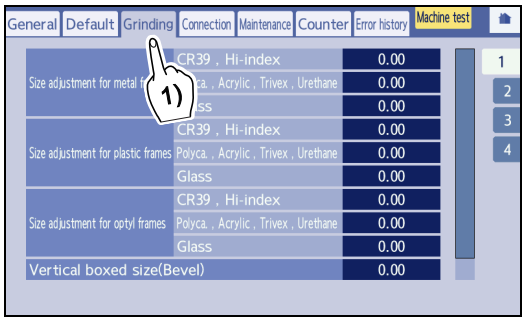
6.4.2 To adjust vertical shape sizes

When the horizontal size of a beveled lens fits in the frame, but the vertical size is small, adjust “Vertical boxed size (Bevel)”.

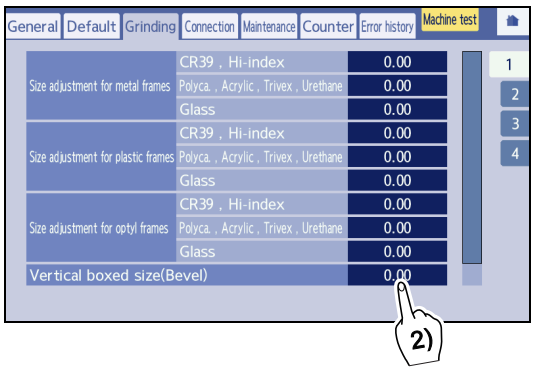


1 Adjust the vertical shape size.

1) On the menu screen, press the [Grinding] tab.



2) Press the [Vertical boxed size (Bevel)] field.
→ Numeric keypad



2 Change the parameter value to increase/decrease the vertical shape.

Input a value with the numeric keypad and press ↵.

Ex.— Increasing the parameter value by 0.20 enlarges the vertical shape by 0.2 mm.

3 Press  to return to the home screen.

6.4.3 To adjust axises

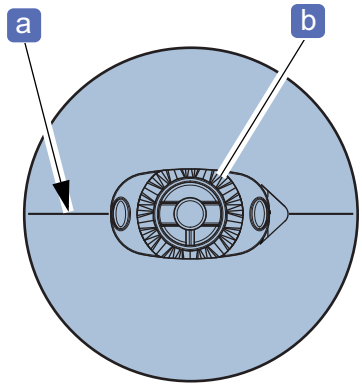
When the axis angle of finished lenses is shifted, follow the procedure below for axis adjustment.

1 Check the axis shift.

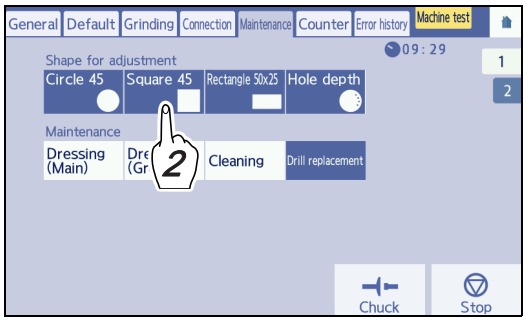
1) Provide a horizontal marking-off line a on the lens.

   Provide a straight horizontal line across the lens in the middle with a paper cutter.

2) Block the lens so that the pliable cup b is aligned with the marking-off line.



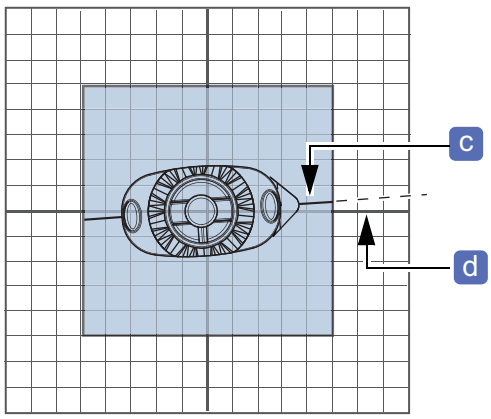
2 Press and load Square 45 [Square 45] to perform flat edging.



3 Place the processed lens on a piece of graph paper and align the lens edge with a square.

Measure the angle between the marking-off line c on the lens and the horizontal line d on the graph paper with a protractor.

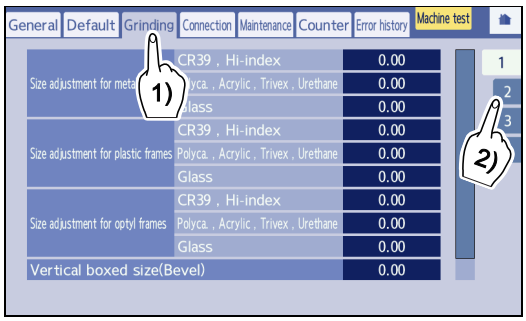
When the angle is outside the range of ±1°, adjust the axis angle.



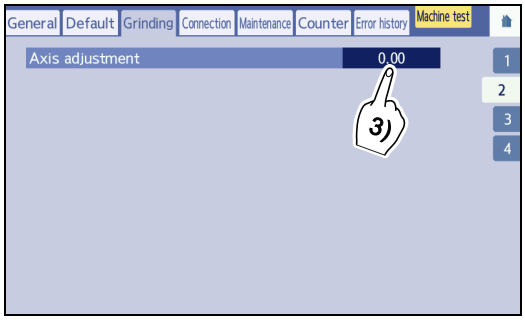
4 Adjust the axis angle.

1) On the menu screen, press the [Grinding] tab.

2) Press the [2] tab.



3) Press the [Axis adjustment] field.
→ Numeric keypad

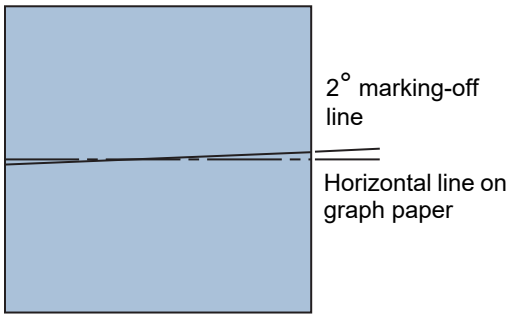


5 Change the parameter value.

Input a value with the numeric keypad and press ↵.

- Change the parameter value by the axis angle difference.
- When the right side of the marking-off line is higher as viewed from the lens front, increase the parameter value.

Ex.— When the marking-off line is moved toward the upper right by 2 degrees, increase the parameter value by 2.00.



6 Press [⌂] to return to the home screen.

7 If necessary, repeat Steps 1 to 6 until the axis shift becomes within ±1 degree.

6.4.4 To adjust auto-processed bevel positions

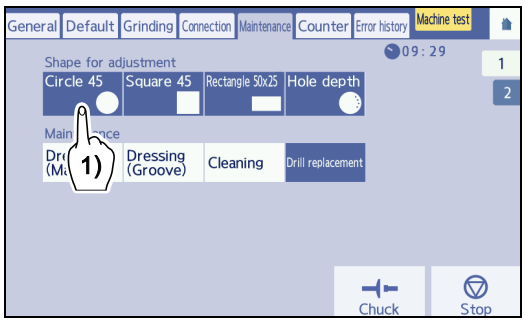
The auto-processed bevel position can be shifted toward the front/rear surface of the lens by adjustment.

1 Check the bevel position.

1) Load the shape with the diameter of 45 Circle 45 from the internal data, and process a lens with a frequently used thickness.

2) Check the bevel position of the processed lens.

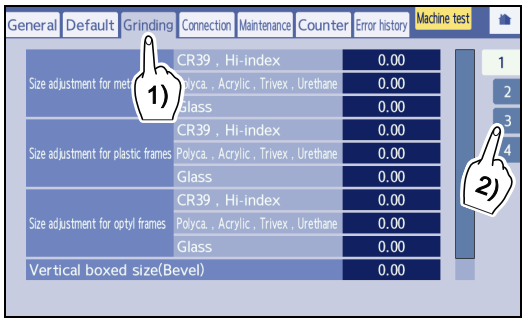
To move the bevel position toward the front/rear, adjust the bevel position in the following procedure.



2 Adjust the auto-processed bevel position.

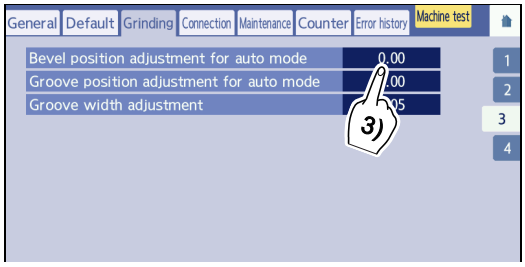
1) On the menu screen, press the [Grinding] tab.

2) Press the [3] tab.



3) Press the [Bevel position adjustment for auto mode] field.

→ Numeric keypad

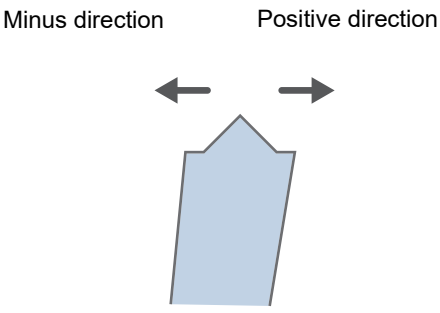


3 Change the parameter value.

Input a value with the numeric keypad and press ↵.

- Decreasing the value moves the bevel toward the front of the lens (in the ← direction).
- Increasing the value moves the bevel to the rear of the lens (in the → direction).

Ex.— To move the bevel position toward the front surface by 0.5 mm, decrease the value by 0.50.



4 Press [⌂] to return to the home screen.

5 If necessary, repeat Steps 1 to 3 until the desired bevel position is obtained.

6.4.5 To adjust auto-processed groove positions

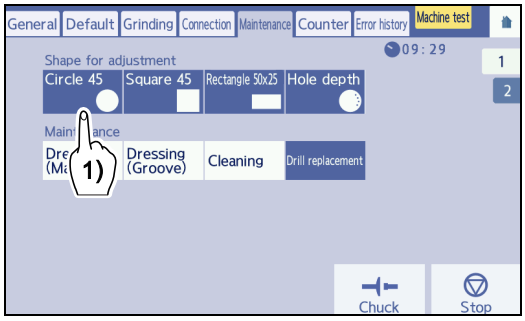
The auto-processed groove position can be moved toward the front/rear surface of the lens.

1 Check the groove position.

1) Load the shape with the diameter of 45 Circle 45 from the internal memory, then process a lens with a frequently used thickness in auto grooving mode.

2) Confirm the groove position on the processed lens.

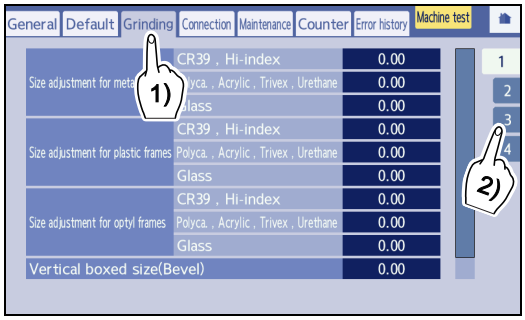
To move the groove position toward the front/rear surface of the lens, adjust the groove position in the following procedure.



2 Adjust the auto-processed groove position.

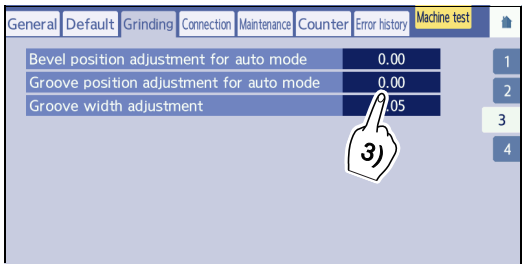
1) On the menu screen, press the [Grinding] tab.

2) Press the [3] tab.



3) Press the [Groove position adjustment for auto mode] field.

→ Numeric keypad

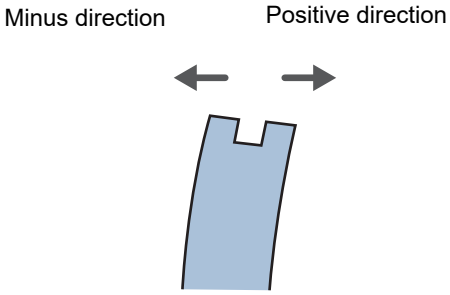


3 Change the parameter value.

Input a value with the numeric keypad and press ↵.

- Decreasing the value moves the groove toward the front (in the ← direction).
- Increasing the value moves the groove toward the rear (in the → direction).

Ex.— To move the groove position toward the front surface by 0.5 mm, decrease the value by 0.50.



4 Press [⌂] to return to the home screen.

5 If necessary, repeat Steps 1 to 3 until the desired groove position is obtained.

6.4.6 To adjust groove widths

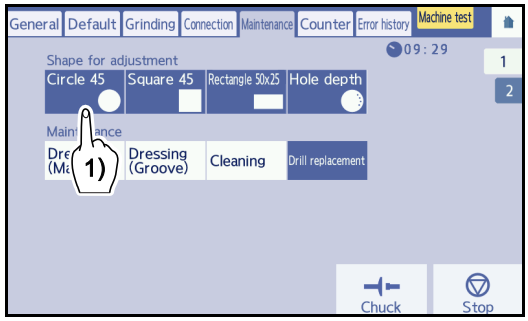
The groove width can be adjusted for a grooved lens.

1 Check the groove width.

1) Load the shape with the diameter of 45 Circle 45 from the internal memory, then groove a lens with a frequently used thickness.

2) Check the groove width of the processed lens.

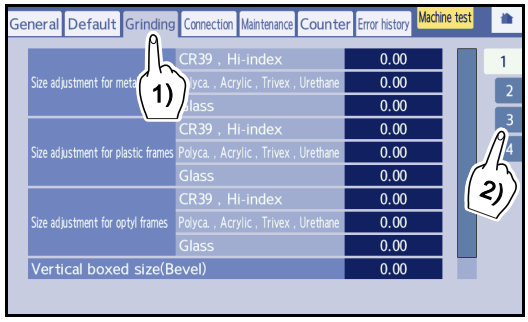
To increase the groove width, follow the procedure below.



2 Adjust the groove width.

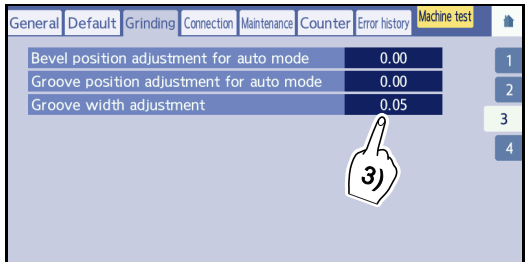
1) Press the [Grinding] tab on the menu screen.

2) Press the [3] tab.

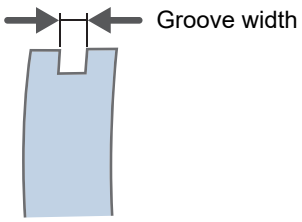


3) Press the [Groove width adjustment] field.

→ Numeric keypad



Ex.— Increasing the parameter value by 0.05 enlarges the groove width by 0.05 mm.



3 Press  to return to the home screen.

4 If necessary, repeat Steps 1 to 3 until the desired groove width is obtained.

6.4.7 To adjust hole depths

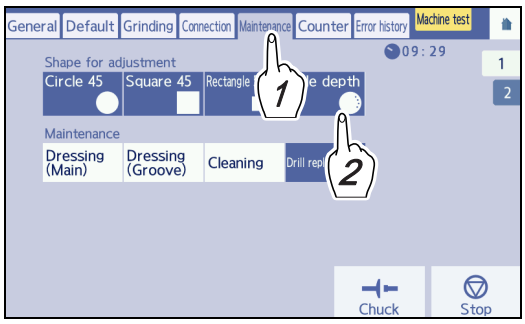
This section describes an adjustment method of the hole depth for when the drilled hole is too deep or shallow.

- If a drill breaks during drilling and the drill is replaced, turn off and on the instrument after adjusting the hole depth. By following the displayed messages, the processing data can be restored.
  "♦ *Processing continuous function in the event of drill breakage*" (page 192)

1 Press the [Maintenance] tab on the menu screen.

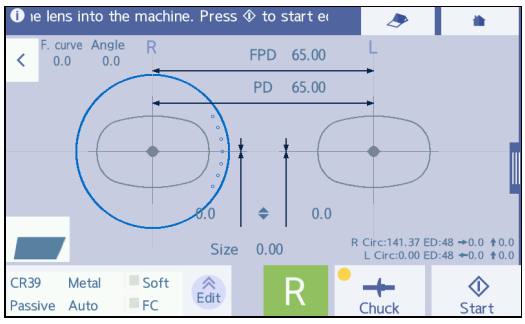
2 Press Hole depth [Depth].

The shape for hole depth adjustment is displayed.



3 Process the lens with the shape for hole depth adjustment.

→ Adjustment wizard screen

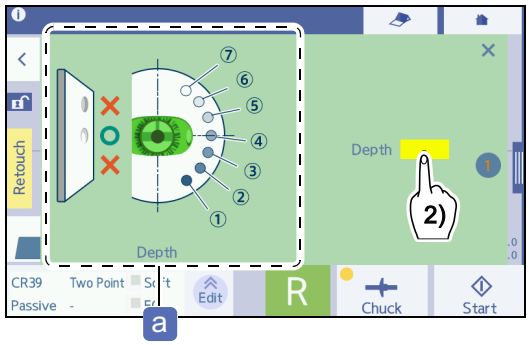


4 Confirm and input the number of processed holes.

1) Confirm how many holes on the image of a processed lens a are processed on the flat lens. Count a scratch as one hole.

2) Press – in the [Depth] field.

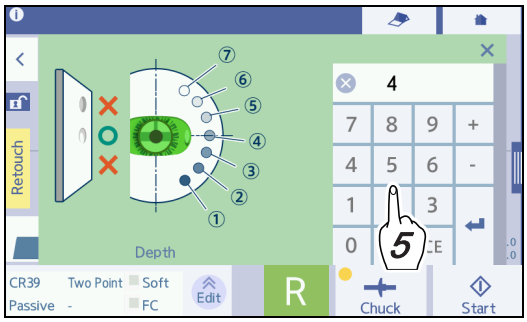
→ Numeric keypad



5 Input the number of processed holes and press ↵.

6 Press ×.

The [Grinding] parameter is automatically adjusted according to the values input on the adjustment wizard screen.

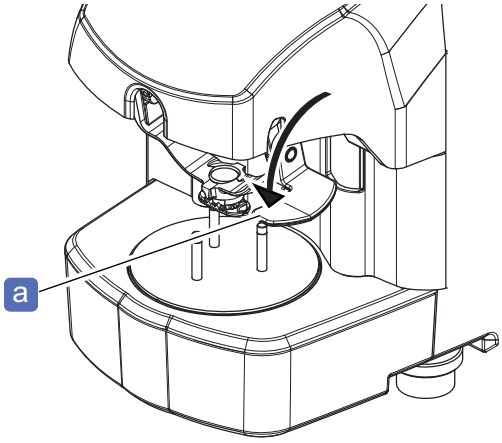


6.4.8 To adjust cup holders

This section describes the adjustment procedure for when the lens cup cannot be inserted into the cup holder smoothly or it is easily detached.

- If the lens cup wears out and cannot hold a lens, replace the lens cup with a new one without adjusting the worn out cup holder.

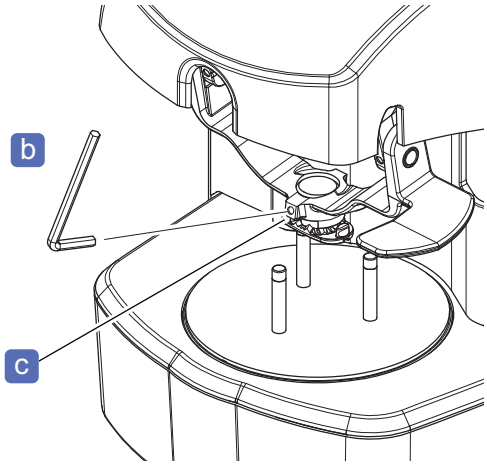
1 Lower the blocking lever a so that the plunger can be seen.



2 Turn the plunger c with a hexagonal wrench b (2.0 mm).

Perform 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 clockwise reduces it.

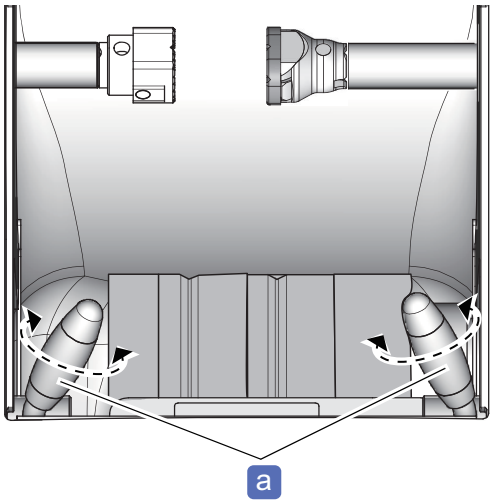


6.4.9 To adjust cooling water for wheels

This section describes the adjustment of cooling water amount for the wheels.

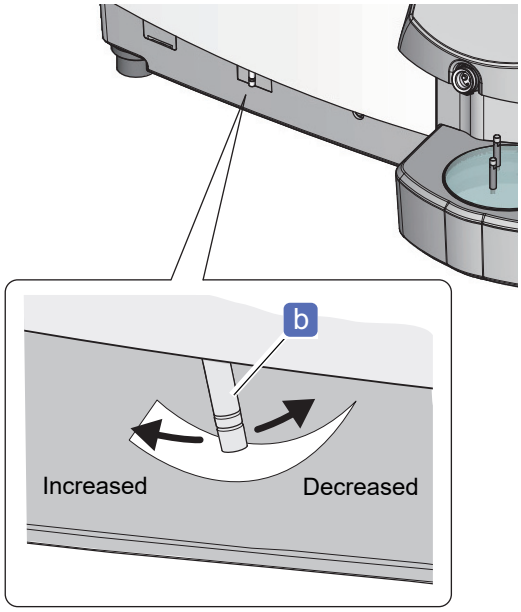
- Only when the water amount is inappropriate, adjust this.

1 Before adjusting the amount of water, turn the cooling water nozzle a of the cooling water unit by hand to confirm and adjust the amount of water applying to the wheels.



2 To adjust the water amount, turn the adjustment knob b right and left.

- Turning counterclockwise decreases the water amount.
- Turning clockwise increases the water amount.



7 MAINTENANCE

7.1 Troubleshooting

If the instrument does not work correctly, attempt to correct the problem according to 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 power outlet is within the range specified.
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 input screen blinks after lens shape measurement.	• The diameter of the lens to be processed is insufficient. The blinking part indicates where the diameter is insufficient. After pressing Chuck to release the lens, replace the lens with a larger diameter or change the layout. (To change the layout, return to the layout input screen.)
Processing does not start even though Start is pressed.	• Make sure that the instrument is not attempting to process a lens that is already processed. Toggle the side of the lens to be processed.
The lens cup cannot be inserted into the cup holder of the blocker smoothly or easily detached.	• Adjust the plunger of the cup holder. *"6.4.8 To adjust cup holders" (page 261)*
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 code is displayed and the instrument stops.	• An abnormality occurs in the instrument. Turn off and on the instrument. If the error code is displayed again, contact NIDEK or your authorized distributor.
The lens size, axis, bevel, groove position, or such has become substantially deviated for some time when tracing or processing is performed.	• Perform readjustment after calibration. *"3.6.2 To calibrate the tracer" (page 81)* *"6.4 Adjustment" (page 253)*

❖ If the problem is not corrected by the actions above, contact NIDEK or your authorized distributor.

7.2 Error Code Table

The following table indicates the details of the error codes. For errors for which remedies are described below, attempt to correct the problem according to the remedy in the table before reporting the malfunction.

- Error code table

Code	Error	Details	Remedy
101	Roughing not completed	Roughing does not come to completion.	Confirm that the wheel for glass lenses is sufficiently dressed. Confirm the lifetime of the plastic roughing wheel or abnormality.
102	Finishing not completed	Finishing does not come to completion.	Confirm 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	Value of strain gauge is abnormal.	The strain sensor value failed to be obtained.	
106	SFB not completed	SFB does not come to completion.	
107	Drilling not completed	Drilling does not come to completion.	Clean the drill. Replace the drill.
108	Value of strain gauge is abnormal. (Roughing)	The strain sensor shows an abnormal value during roughing.	Contact NIDEK or your authorized distributor.
109	Value of strain gauge is abnormal. (Finishing)	The strain sensor shows an abnormal value during finishing.	
110	Strain gauge initialization error	Abnormality is found during initialization of the strain sensor.	
201	Feeler off error	The feelers become detached during lens measurement.	Confirm that the lens diameter is sufficient.
202	No lens set.	No lens is detected at the start of lens measurement.	Confirm the lens has sufficient thickness.
203	Front & rear measuring data error	Abnormal measurement data (front and rear surfaces intersect)	
204	Start & end measuring data error	The start measurement point and end point do not match.	Remove any foreign matters such as the protective tape or double-coated adhesive pad on the measurement surface.
205	Feeler lift up error	The feeler is caught on a lens during measurement.	Confirm that the lens is appropriate. Confirm that there are no foreign matter or dirt on the lens surface.
206	Exceeded the measurement limit	The limit of the measurable lens is exceeded.	Confirm that the lens is appropriate.

Code	Error	Details	Remedy
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.	Confirm that a pattern is set.
301	Drill calc error	Calculation for drilling operation data is failed.	Change the drilling settings.
302	Unprocessable angle error	Drilling operation data that exceeds the operation limit of the T axis or E axis is set.	
305	Interference between lens and feeler	As a result of the interference calculation, it is determined that the lens and the feeler will interfere with each other, or the feeler comes into contact to the lens during drilling.	
307	Drill calc timeout error	The calculation for the drilling operation data does not come to completion.	
309	Unprocessable data position error	As the result of the drilling operation data calculation, the Y-axis position exceeds the operation limit.	

Code	Error	Details	Remedy
402	X initialization error	The X axis does not initialize.	Contact NIDEK or your authorized distributor.
403	Y initialization error	The Y axis does not initialize.	
404	Rf initialization error	The Rf axis does not initialize.	
405	Rr initialization error	The Rr axis does not initialize.	
421	X-axis step-out error	The X axis is stepped out.	
450	TE initialization error	The T/E axis does not initialize.	
451	T initialization error	The T axis does not initialize.	
452	E initialization error	The E axis does not initialize.	
460	Cover Open Error	When the cover opening operation is completed, the cover origin sensor does not turn off.	
461	Cover Close Error	When the cover closing operation is completed, the cover origin sensor does not turn on.	
501	Chuck origin error	The chuck origin sensor did not turn on even after 5 seconds since the chuck opening operation starts.	
502	Chuck close error	Chuck closing is not detected even after 5 seconds since the chuck closing starts.	
601	Main wheel does not rotate.	The wheel for the outside shape does not rotate.	
602	SFB/Grooving wheel does not rotate	The sub spindle does not rotate.	
603	The electric current of the main wheel is abnormal.	An abnormality in load current is detected during processing.	
604	The temperature of the sub-spindle motor reached the limit.	The temperature of the sub spindle motor has increased.	

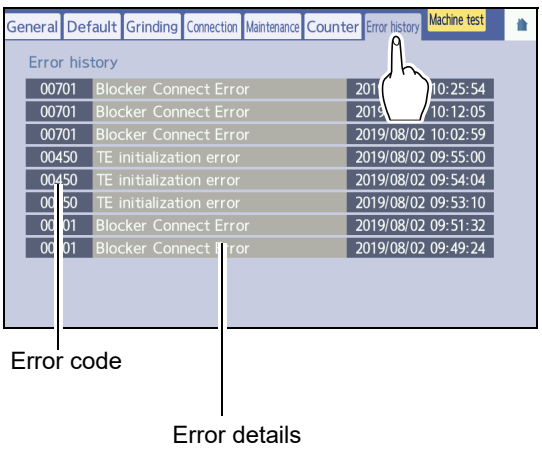
Code	Error	Details	Remedy
701	Blocker Connect Error	Despite the setting where the blocker unit is installed, the connection of the blocker unit cannot be detected.	Contact NIDEK or your authorized distributor.
802	Inappropriate jig or RMU encoder error	Installation error of calibration jig	
803	LMU encoder error	The LMU encoder does not count during the calibration.	
811	T Calibration error	Calibration does not end normally.	
812	E Calibration error	Calibration does not end normally.	
831	Subspindle X Position error	Calibration does not end normally.	
840	Value of strain gauge is abnormal. (Surface meas calibration)	The strain sensor shows an abnormal value during surface measurement calibration.	
841	Value of strain gauge is abnormal. (Wheel calibration)	The strain sensor shows an abnormal value during wheel calibration.	
842	Value of strain gauge is abnormal. (SFB/Groove calibration)	The strain sensor shows an abnormal value during safety bevel calibration or groove calibration.	
901	Touch Panel Connect Error	It is determined that the touch screen is not connected.	

◆ To display error histories

The error history can be checked.

On the menu screen, press [Error history].

→ Error history



7.3 Periodic Inspection

It is recommended that a periodical inspection be conducted every two years so that the instrument can be used in a proper condition for a long time. The periodical inspection includes a check of performance and such of the whole instrument and replacement of maintenance parts. To ask for the periodical inspection, contact NIDEK or your authorized distributor.

⚠ CAUTION

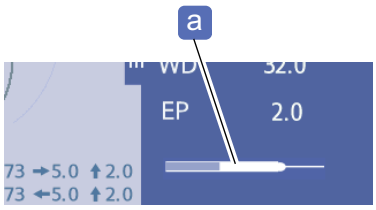
- The parts that the customer can replace are only the drill, stocking filter, and cooling fan filter. Be sure to follow the local ordinances when disposing of replaced parts.
- The periodical inspection of the instrument and replacement of the parts other than those are performed by personnel authorized by NIDEK.
  As malfunction or injury may occur, do not replace other parts. Do not attempt to repair or disassemble the instrument.

Periodic maintenance item	Maintenance cycle	Maintenance / Replacement contents
Wheels	2 years or 5,000 lenses	Confirm that there is no deterioration in the processing performance. Replace the wheels if the processing surface is frayed, which may cause problems in practical use.
Sub spindle unit	2 years	Check abnormal sounds and vibration. Replace it if there is a problem.
Spindle drive belt	2 years	Replace it if it is worn, deteriorated, or damaged.
Stylus of tracer	Every 2 years or after 10,000 lenses of tracing	Replace it if it is worn, deteriorated, or damaged.
Tracer clamp holder	2 years	
Strain sensor	2 years	
Chuck shaft unit	2 years	Apply more grease to the slide part of the lens chuck shaft. Apply more grease to the chuck drive shaft feed screw. Replace it if the chuck shaft leaf spring is deformed.
Feedwater hose	2 years	
Waterproofing cushion / boot	2 years	
Drill	200 holes	Confirm the condition of processed surface. Replace it if there is a problem such as deterioration.
Cooling fan filter	2 years	Confirm the condition of processed surface. Replace it if there is a problem such as deterioration.
Inverter	3 years	
Switching power supply	7 years	

- Wheels must be replaced every two years or after processing of 5,000 lenses. Contact NIDEK or your authorized distributor. Note that the number of lenses is a guide. Replacement at an earlier period may be needed under conditions such as successive processing of hard lenses, processing of numerous high-power minus lenses, and such.

7.4 Drill Replacement

When the drill count bar graph a is displayed in red or the drill is broken, replace the drill with a new one.



⚠ WARNING

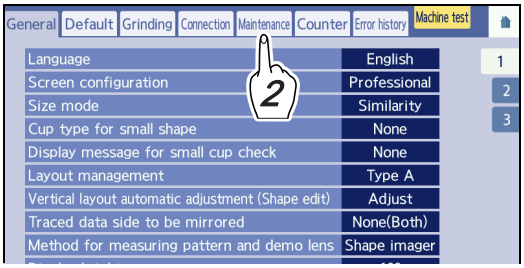
- To replace the drill, observe the following precautions. Failure to do to may result in injury or burns.
  - Use the drill specified by NIDEK.
  - Before replacing the drill, enter Drill replacement mode and turn off the instrument.
  - After drilling, wait approximately for 1 minute or more to replace the drill because the drill immediately after drilling is at a high temperature.

1 Press Menu on the home screen.

→ Menu screen

2 Press the [Maintenance] tab.

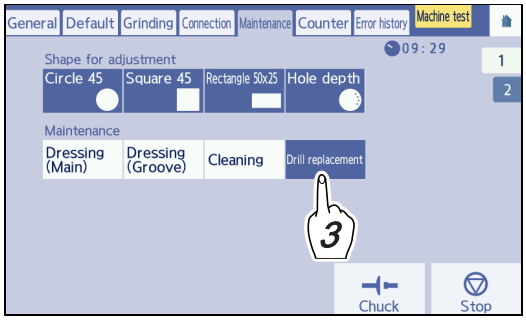
→ Maintenance screen



3 Press Drill replacement.

The confirmation message appears.

Remove the lens according to the message.



4 Press the [Yes] button.

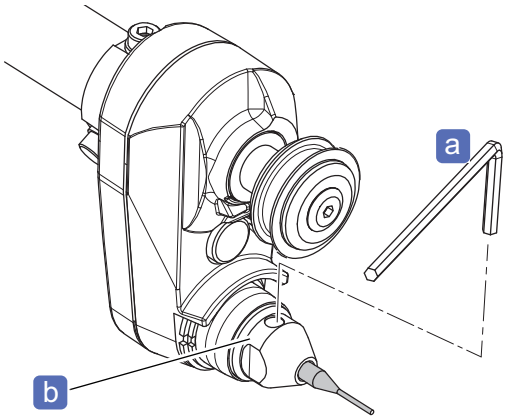
When the sub spindle unit moves to the replacement position, the message is displayed, and it stops.

5 Turn off the power switch.

⚠ WARNING

- Be sure to turn off the power switch.
  If replacement is performed with the power switch on, inadvertently coming into contact with the operation buttons or screen moves the sub spindle unit and chuck shaft, which may result in injury or malfunction.

6 As shown to the right, insert the hexagonal wrench (2.0 mm) a into the set screw b of the drill.

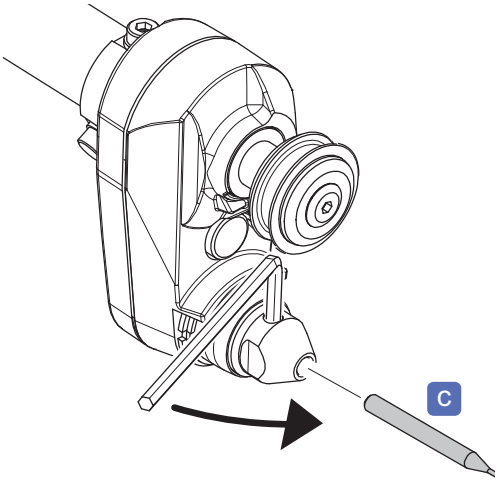


7 Turn the hexagonal wrench (2.0 mm) counter-clockwise to loosen the set screw.

8 Remove the drill c .

9 Attach a new drill and turn the hexagonal wrench (2.0 mm) clockwise to secure it.

10 Turn on the power switch.



7.5 Dressing of Wheels

If wheels are dull, the processing time becomes longer or the accuracy in size and polishing is degraded. Dress the wheels periodically.

⚠ CAUTION

- In dressing mode, the wheels rotate with the processing chamber door open. Work with special care during dressing so that hands do not come into contact with the wheels.
- When dressing the wheel, hold the dressing stick with both hands with a minimum of 2 to 3 cm protruding.
  Failure to do so may cause injury by hand contact with the wheel.
- When the dressing stick is worn to the length of 4 cm, replace it with a new one.
  It is difficult to hold the shortened dressing stick, so finger injury or wheel damage may result.
- The vapor and particles produced during dressing may be harmful. If necessary, wear a protective mask and glasses.
- Protect the display from splashing water. Do not operate the display with wet hands.
- Do not dress the roughing wheel for plastic lenses and polishing wheel using the dressing stick.
  Doing so may damage the wheel impairing normal lens processing.
- Be sure to select the dressing stick suitable for the wheel type. Failure to do so may damage the wheel impairing normal lens processing.
- Apply the end face of the dressing stick to the wheel. If its corner or edge is applied, the wheel may be damaged.
- Lightly apply the dressing stick to the wheel. Otherwise, the wheel may be damaged.
- Do not repeatedly start and stop wheel rotation.
- When processing cannot be finished within the specified time due to clogged glass roughing wheel or finishing wheel, processing is stopped and the error message, “Roughing not completed” or “Finishing not completed”, is displayed. In this case, dress the wheel.

Dressing tools suitable for each wheel type

Finishing wheel	Dressing stick for finishing wheel (white) WA500
High base curve finishing wheel	
Grooving wheel	
Roughing wheel for glass lenses	Dressing stick for glass roughing wheel (orange) WA80K
Polishing wheel	Compound kit

7.5.1 To dress roughing wheels for glass lenses, finishing wheels, and high base curve finishing wheels (Trend8)

1 Soak the dressing stick in water for approximately 5 minutes.

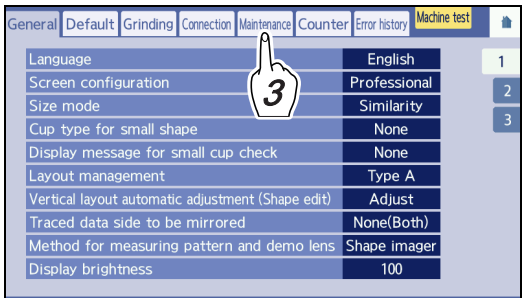
- Roughing wheel for glass lenses: dressing stick for glass roughing wheel (orange) WA80K
- Finishing wheel and high base curve finishing wheel: dressing stick for finishing wheel (white) WA500

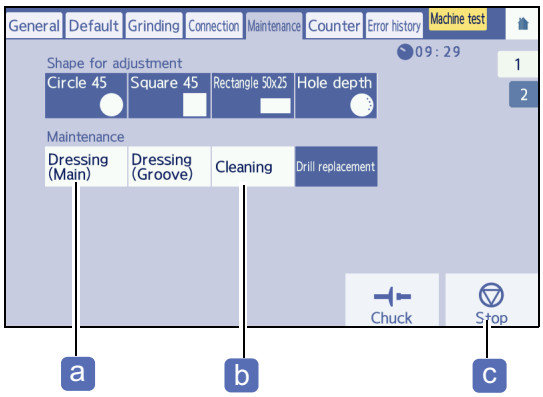
2 On the home screen, press Menu (for Mini Lab mode, ⌂ on the processing start screen).

→ Menu screen

3 Press the [Maintenance] tab.

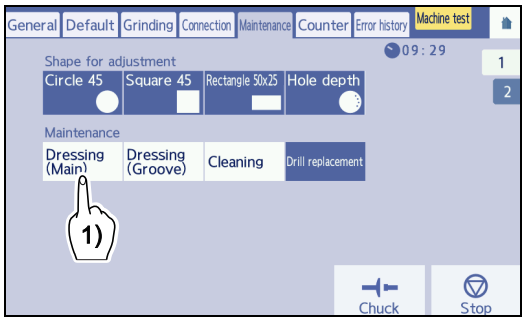
→ Maintenance screen





a	Rotates the wheels at a low speed and releases water from the cooling water nozzle. Then, repeatedly, stops the water approximately for 10 seconds after coming out of the nozzle for several seconds.
b	Applies water to the wheel. The wheels do not rotate.
c	Stops dressing and cleaning operations.

4 Dress the wheel.



1) Press Dressing (Main) to run water from the cooling water nozzle.

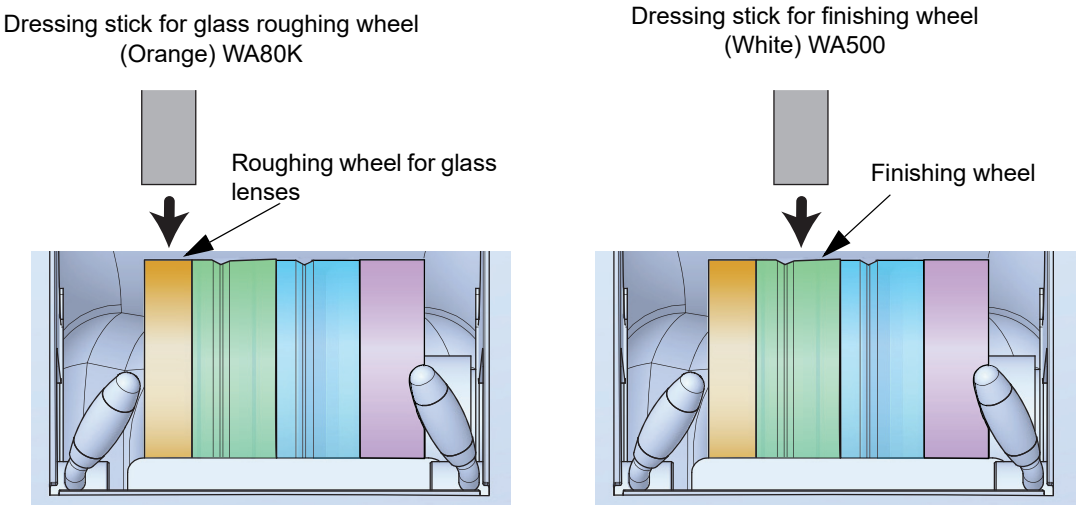
   The wheels rotate at a low speed and water comes out of the cooling water nozzle. Repeatedly, the water stops approximately for 10 seconds after coming out of the nozzle for several seconds.

2) Wet the dressing stick well with running water.

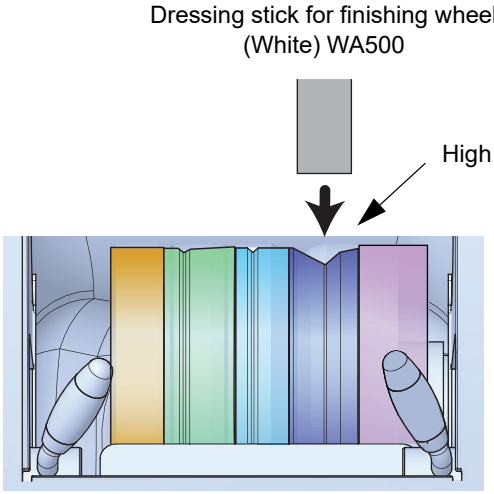
3) After water stops running, lightly apply the dressing stick to the wheel.

- When applying the dressing stick to the wheel lightly, be sure to hold the dressing stick firmly by hand.
- Apply the dressing stick perpendicularly to the wheel. If the wheel is dressed with the dressing stick tilted, the surfaces of the wheels may become uneven, which may result in polishing unevenness.

Trend (PLB-2R)



Trend8 (PLB-2R8)



Dress the glass roughing wheel and finishing wheels as dressing those of Trend (PLB-2R).

4) When water comes out, release the dressing stick from the wheel, then wash the wheel surface and dressing stick with running water.

5) Repeat Steps 1) to 4) two or three times.

5 Press Stop.

The water and wheels come to a stop.

7.5.2 To dress polishing wheels

⚠ CAUTION

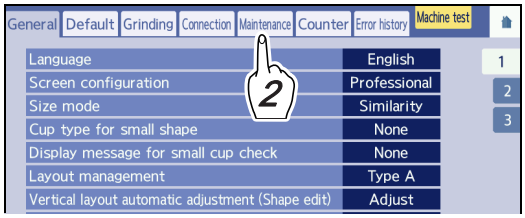
- Be sure to dress the polishing wheel with the provided compound kit for polishing wheel.
- Persons with sensitive skin should wear protective gloves to prevent irritation.
- If the compound enters the eye, rinse it under running water and consult a doctor if necessary.
- Since the compound is toxic, never ingest it.
  If it is accidentally ingested, immediately consult a doctor.

1 On the home screen, press Menu (for Mini Lab mode, on the processing start screen).

→ Menu screen

2 Press the [Maintenance] tab.

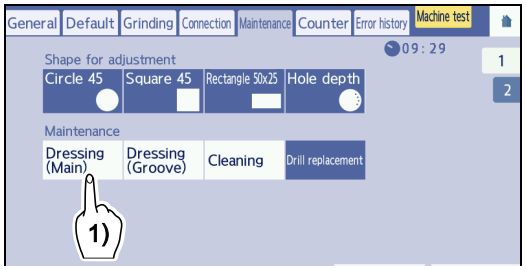
→ Maintenance screen



3 Dress the polishing wheel.

1) Press Dressing (Main) to run water from the cooling water nozzle.

   The wheels rotate at a low speed, and water comes out of the cooling water nozzle. Repeatedly, the water stops approximately for 10 seconds after coming out of the nozzle for several seconds.



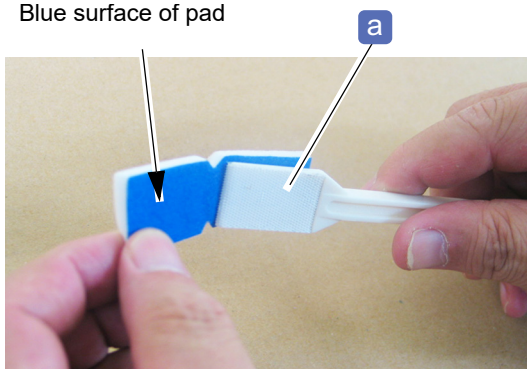
2) Press Stop to stop cooling water. Then, wait for approximately 1 minute until the wheels are dry.

   When the water remains running, the compound is soon washed away and dressing cannot be properly performed. Be sure to stop the water.

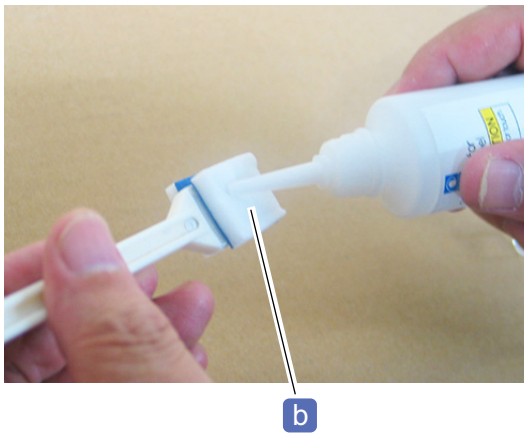
3) Press and hold Dressing (Main). The wheels rotate at a slow speed, but cooling water does not come out.

4) Attach the pad to the dressing stick a.

   The blue surface of the pad is Velcro tape. Attach the blue surface of the pad to the rough surface of the dressing stick.

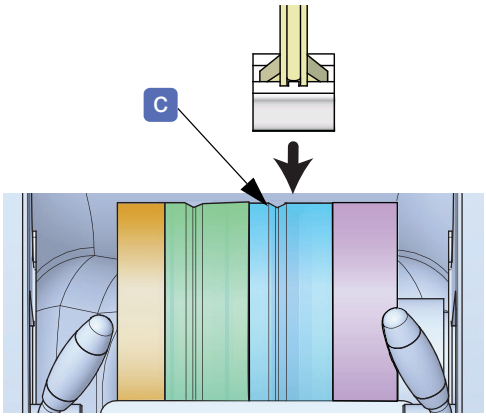


5) Thoroughly and evenly apply the compound b to one side of the pad.



6) Holding the dressing stick by the handle, lightly apply the pad surface covered with compound to the rotating polishing wheel c.

The pad is gradually worn away. Dress the wheel until the white surface of the pad disappears. Take care not to wear away the dressing stick as well.



7) In the same manner as Steps 5) and 6), apply the compound to the other side of the pad and dress the polishing wheel again.

8) After pressing Stop to stop the wheel rotating, press Dressing (Main) again to run cooling water to wash the wheel.

With water running, hold the stick by the handle and lightly apply the pad to the polishing wheel to wash away any remaining compound from the surface of the wheel.

9) Press Stop to stop the wheel rotating and water running.

10) After the wheel and cooling water stop, remove moisture from the surface of the polishing wheel by patting with a soft, dry cloth.

Do not scrub the wheel roughly with the cloth. Remained cloth fibers may interfere polishing.

11) When the surface of the polishing wheel dries, confirm that the compound is completely washed away. When the dried polishing wheel has a shine on the surface, the compound has been washed away.

12) Confirm that the entire polishing wheel has a shine on it.

7.5.3 To dress grooving wheel

⚠ CAUTION

- Dress the grooving wheel only.
- Do not dress the safety beveling wheel.
  It may damage the wheel, which impairs normal lens processing.
- While holding the dressing stick firmly by hand, apply the dressing stick to the grooving wheel lightly.
  Applying the dressing stick forcefully may affect the grooving amount.

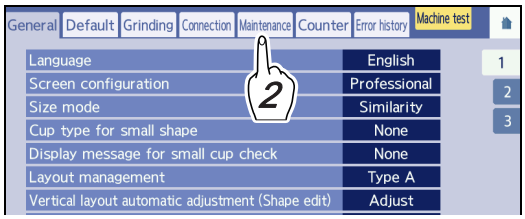
1 Soak the dressing stick in water for approximately 5 minutes.

2 On the home screen or processing start screen, press [Menu].

→ Menu screen

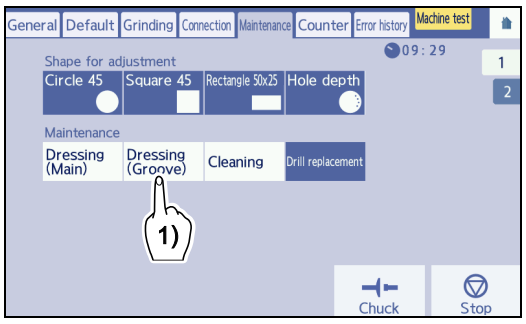
3 Press the [Maintenance] tab.

→ Maintenance screen



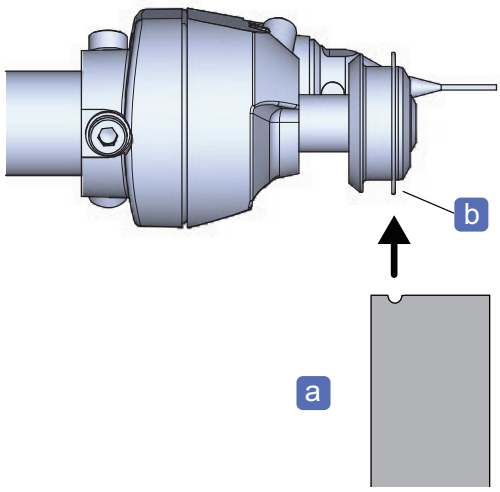
4 Dress the grooving wheel.

1) Press [Dressing (Groove)] to run water from the cooling water nozzle.
   The grooving wheel rotates. Repeatedly, the water applied to the wheel stops approximately for 10 seconds after coming out of the nozzle for several seconds.
2) Wet the dressing stick well with running water.



5 After water stops running, lightly apply the dressing stick for finishing wheel (white) WA500 a to the grooving wheel b.

6 When water comes out, release the dressing stick from the grooving wheel, then wash the grooving wheel and dressing stick with running water.



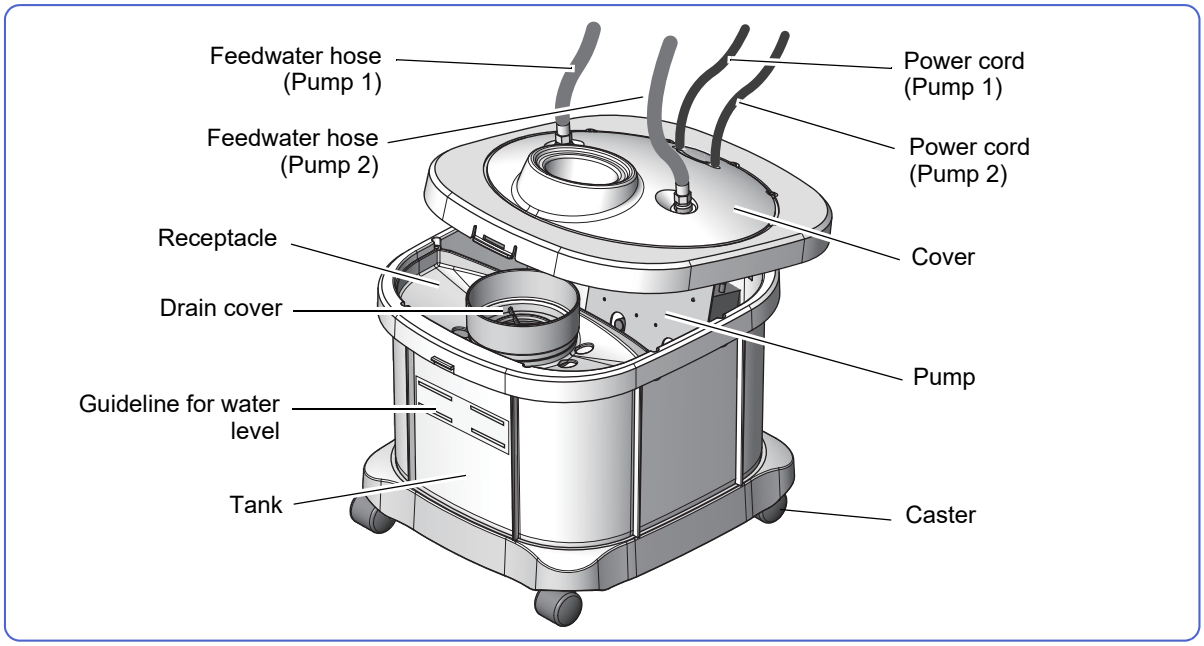
7 Repeat Steps 1 to 6 two or three times.

8 Press [Stop].

The water and wheels come to a stop.

7.6 Exchanging Water in the Pump Tank and Filter

Replace the water in the pump tank (optional) and stocking filter when a message urging to clean the pump tank and replace the stocking filter is displayed. It is recommended to replace both for every 100 lenses processed.



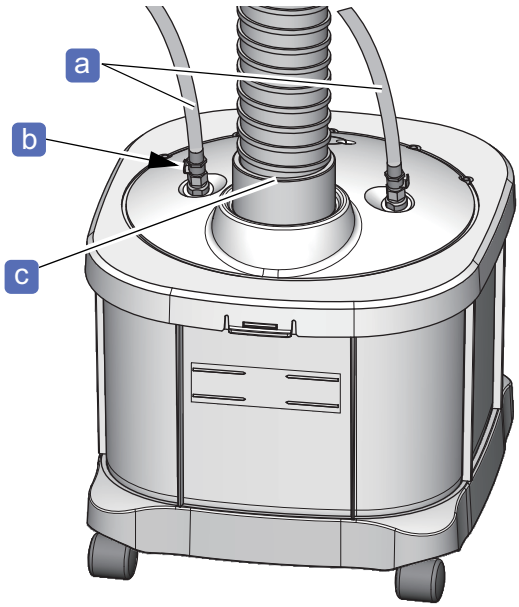
1 Open the table and pull out the pump tank.

2 Remove the connectors of power cord for Pump 1 and Pump 2.

"♦ *Connection diagram for power cord" (page 282)*

3 Remove the feedwater hoses a for Pump 1 and Pump 2 while pressing and holding the lock buttons b in gray.

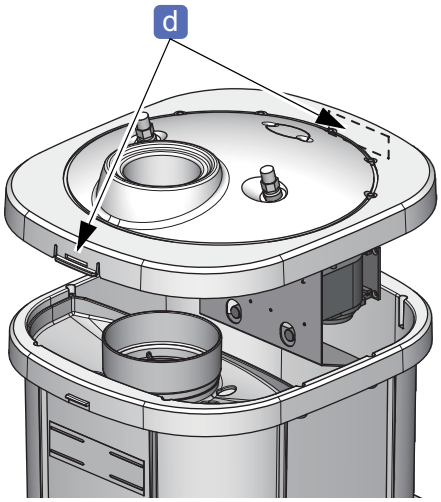
4 Disconnect the drain pipe (with cuff) c from the pump tank.



5 Move the pump tank to the washing place.

Be aware that when the cover is removed, processing waste and water drop off and the floor becomes dirty.

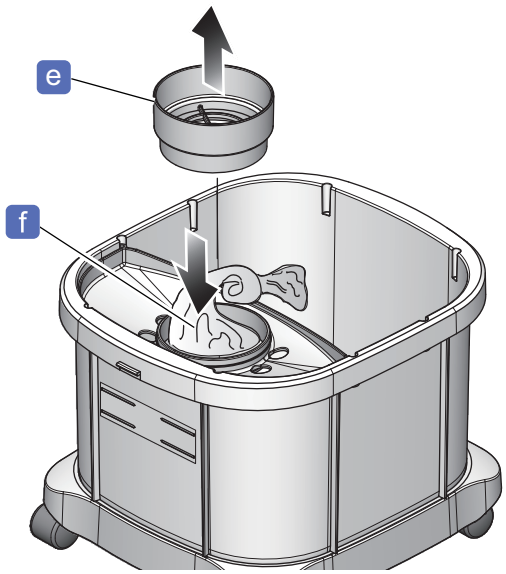
6 While pulling the hooks d on the front and rear sides of the cover, remove the cover.



⚠ CAUTION

- The cover has a heavy pump. Take care not to drop the cover and get caught fingers when closing it.

7 Remove the drain cover e and tie up the stocking filter f at the top so that processing waste does not escape from the filter. After that, drop the stocking filter into the tank.



8 Dispose of the processing waste and stocking filter.

⚠ CAUTION

- When disposing of lens processing waste and stocking filter, follow the laws and local ordinances of your country.
  Inappropriate disposal may contaminate the environment.

9 Dispose of processing wastewater in the tank.

⚠ CAUTION

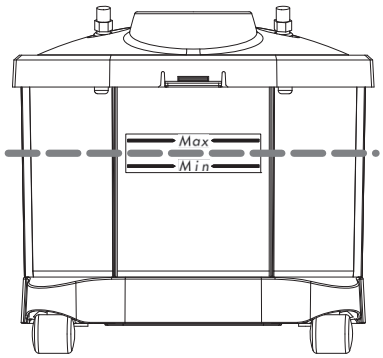
- When disposing of processing wastewater in the tank, follow the laws and local ordinances of your country.
  Inappropriate disposal may contaminate the environment.

10 Wash away any bubbles or soiling on the tank, cover, receptacle, and drain cover.

11 Fill the tank with water up to the guideline for water level.

- Do not put a plastic sheet in the tank. The pump supply aperture may be blocked, which causes malfunction.
- Do not allow the water level to rise over the maximum line, which may cause malfunction or water leakage.

Guideline for water level



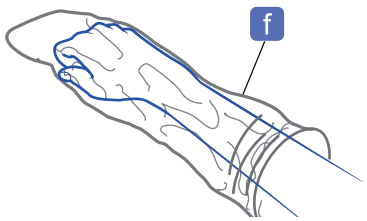
Note

- For antifoaming and deodorizing, it is recommended to put "Antifoaming deodorant +" in the water.
  For the maximum tank water level, put three cups of "Antifoaming deodorant +" in the water.

12 Place the arm into the new stocking filter f and lightly stretch it to the back.

Failure to do so may easily get processing waste clogged.

The stocking filter is not reusable. Use a new one.



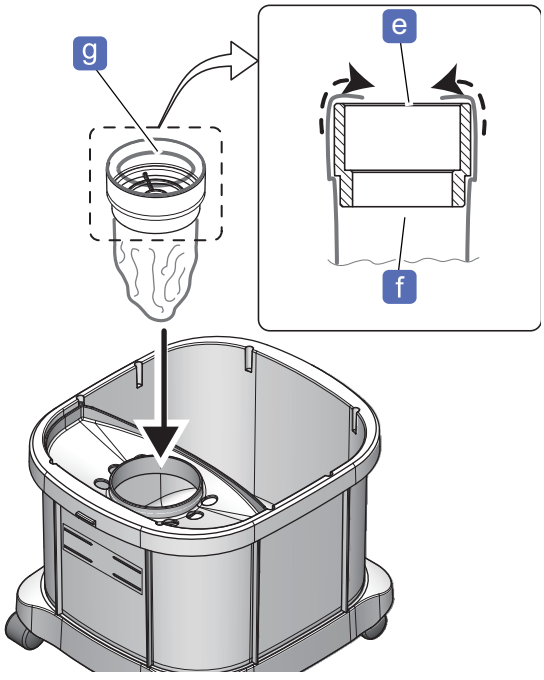
13 Attach the stocking filter f to the drain cover e.

Fold the rubber part g of the stocking filter inside the drain cover.

14 Thread the stocking filter through the large hole on the receptacle and attach the drain cover in its original position.

15 Attach the cover to the pump tank.

Push down the cover until the hooks on the front and rear sides snap into place.

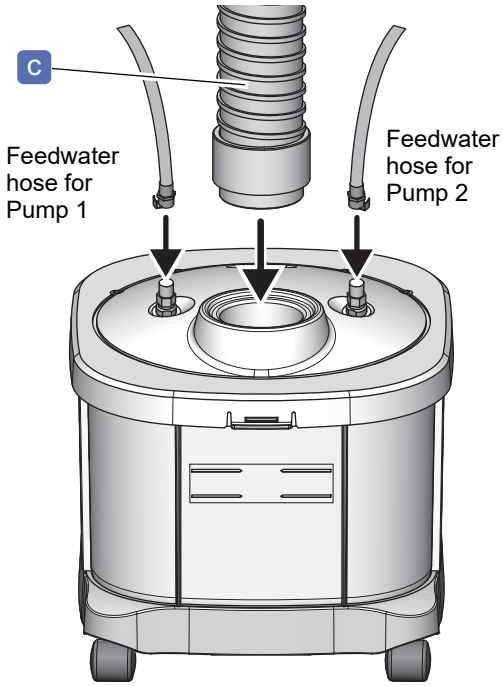


16 Place the pump tank back under the table and connect the drain pipe (with cuff) C.

17 Connect the feedwater hoses to the tank.

1) Connect the feedwater hose with the label 1 to the connection with the indication, Pump 1, until a click is heard.

2) Connect the feedwater hose with the label 2 to the connection with the indication, Pump 2, until a click is heard.



18 Insert the connectors of the power cords for Pump 1 and Pump 2.

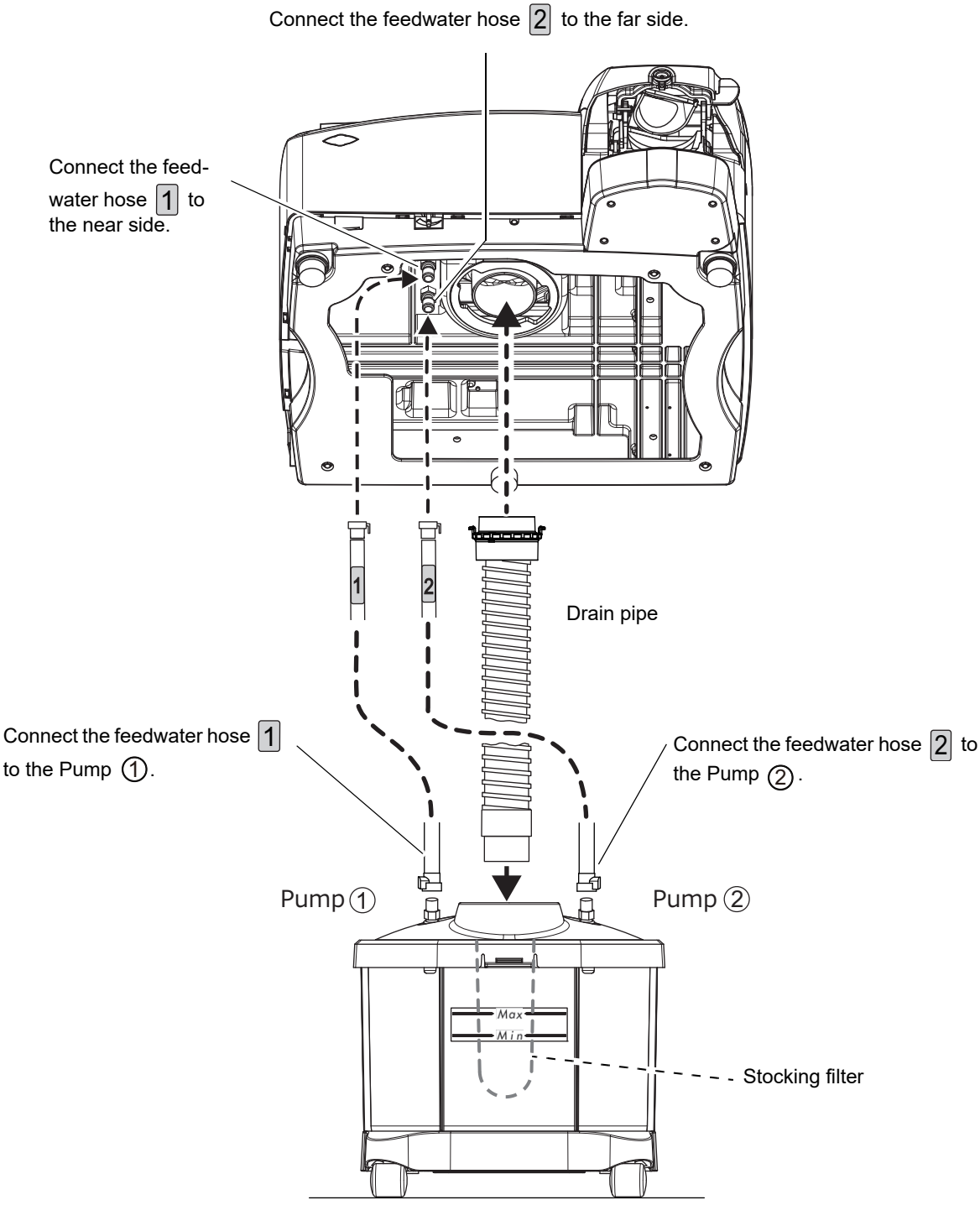
1) Connect the power cord with the label 1 to the extension cord for the outlet for Pump 1.

2) Connect the power cord with the label 2 to the extension cord for the outlet for Pump 2.

"♦ Connection diagram for power cord" (page 282)

◆ Pipe arrangement diagram

The following is an example of connecting the hoses and pipe of the pump tank to the LEXCE.

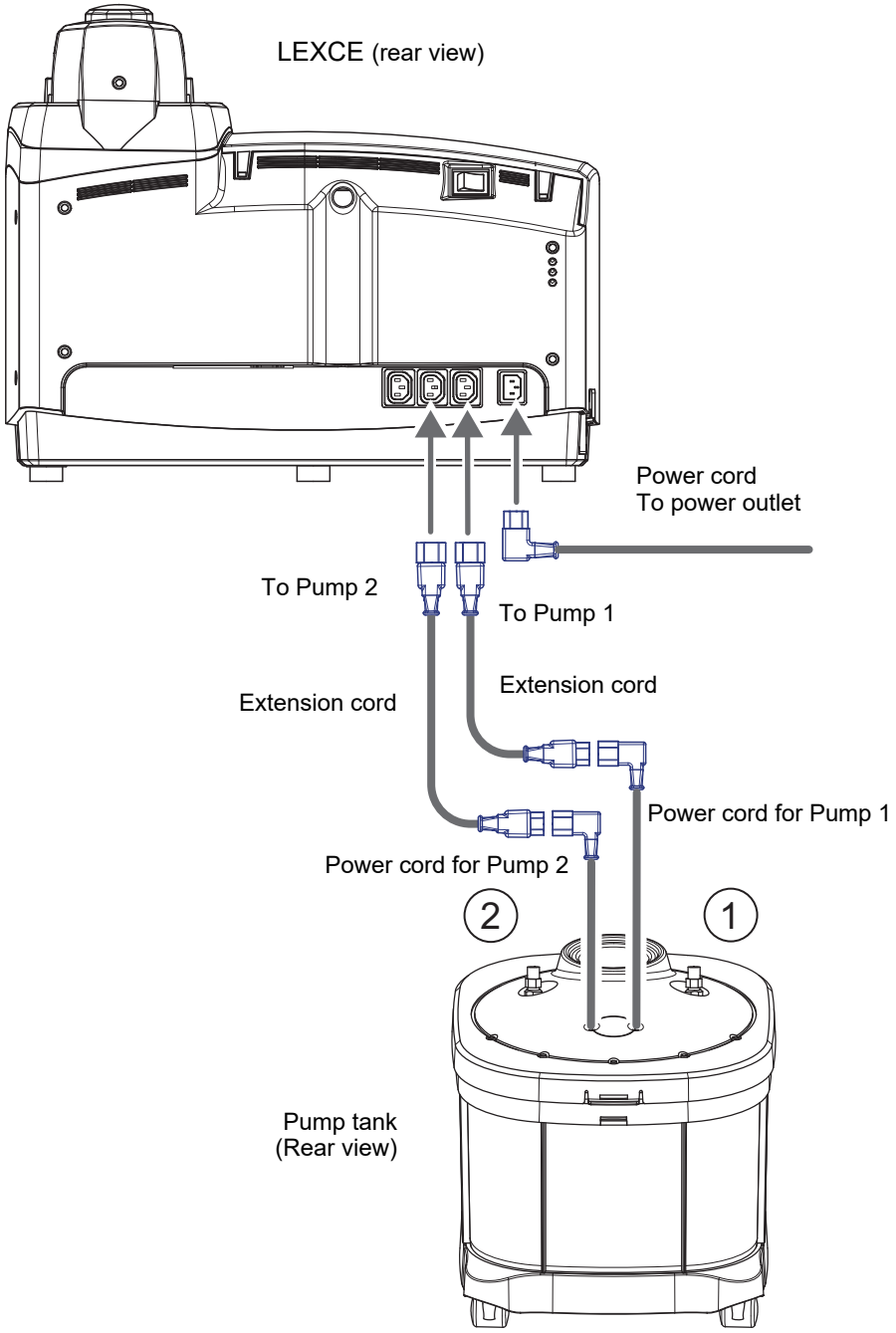


◆ Connection diagram for power cord

The following is an example of connecting the LEXCE and the power cords for the pump tank.

⚠ CAUTION

- Before connecting the power cords, be sure to turn off the power switches of all instruments.
- When connecting the power cord, be sure to work with dry hands. Also if the power cords and the instrument are wet, wipe off the water well before operation.
  Electric shock or malfunction of the instrument may result.



7.7 Cleaning

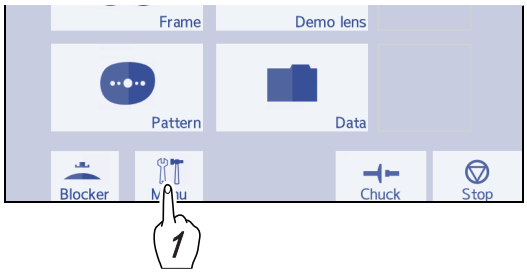
7.7.1 To clean the processing chamber

⚠ CAUTION

- Take care not to splash water into the interior of the instrument.
  Protect the display from splashing water. Do not operate the display with wet hands.
  Water seeping into the instrument may result in electric shock, malfunction, or fire.
- Be sure to clean the processing chamber after the last use of the day.
  If the chamber is left for some days after being used, the processing waste becomes settled.

1 Press [Menu] on the home screen.

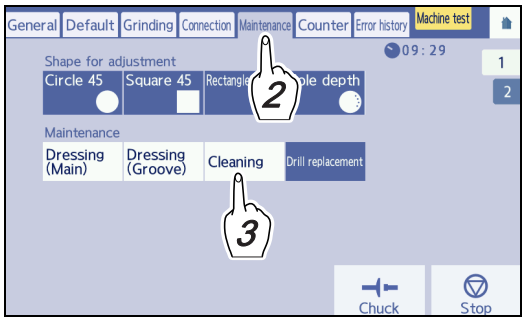
→ Menu screen



2 Press the [Maintenance] tab.

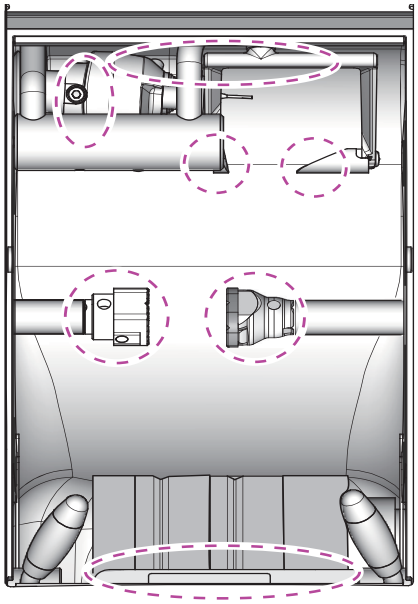
→ Maintenance screen

3 Press [Cleaning] to run cleaning water and remove processing waste settled in the processing chamber with a brush.



4 In the same manner, clean the arm and feeler unit of the grooving wheel.

Remove the dirt especially in the positions (○) where processing waste accumulate by running water.



5 When cleaning is completed, press [Stop] to stop cleaning water.

6 Turn off the power switch.

7.7.2 To clean the cover, display, and lens stages

When the cover of the instrument becomes dirty, clean it with a soft cloth. For severe stains, after soaking the cloth in a neutral detergent diluted with water and wring well, wipe the stains with it. After that, dry with a soft dry cloth.

Periodically clean the display and lens stage 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.
  This could damage the surface of the instrument.

7.7.3 To clean the cooling fan filter

Remove the cooling fan filter on the left side of the instrument periodically and vacuum up the dust. If the filter becomes clogged, the temperature inside the instrument will rise, resulting in malfunction.

1 Turn off the power.

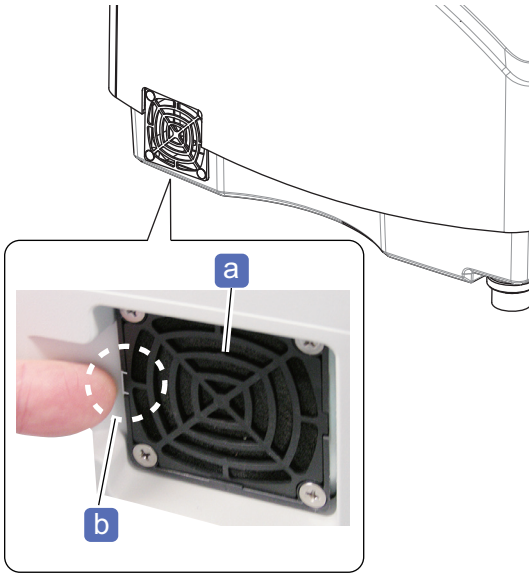
2 Remove the filter holder a and the filter on the rear side of it from the cooling fan on the left side of the instrument.

The filter cover is removed by pulling the hook b toward the operator.

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 Attach the filter and filter cover in the same position as before.

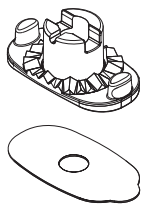
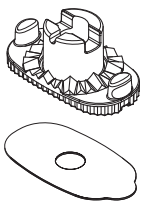
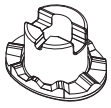


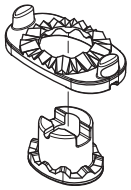
7.8 List of Consumables and Replacement Parts

Part name	Remarks
Compound kit	
Dressing stick for finishing wheel (white)	WA500
Dressing stick for glass roughing wheel (orange)	WA80K
Drill	ø0.8 L6.5 (10 units per set) For USA: ø1.0 L6.5 (10 units per set)
Drill (optional)	ø1.2 L6.5 (10 units per set)
Drill (optional)	ø1 6 L 7 1. (10 units per set)
Drill (optional)	ø1.0 L6.5 (10 units per set)
Stocking filter	
Cooling fan filter	
Cable clamp	If it is torn or deteriorated, contact NIDEK or your authorized distributor.
Bellows	
Boot	

◆ Lens cups

The following lens cups can be used for this instrument.

Part name		Remarks
	Pliable cup (white)	For normal lenses
	Pliable cup (red)	For left lenses
	Pliable cup (green)	For right lenses
	Double-coated adhesive pad	For pliable cups (100 sheets per set)
	Pliable cup for high base curve lenses (green)	For right lenses
	Pliable cup for high base curve lenses (red)	For left lenses
	Double-coated adhesive pad	For pliable cups (100 sheets per set)
	Mini cup (red)	For left lenses
	Mini cup (green)	For right lenses
	Double-coated adhesive pad	Use the double-coated adhesive pad for half-eye lens after trimming off it.

Part name		Remarks
	Nano cup (red)	For left lenses
	Nano cup (green)	For right lenses
	Double-coated adhesive pad	For nano cups (100 sheets per set)

8 TECHNICAL INFORMATION AND SPECIFICATIONS

8.1 Instrument Connection

The following is the method of communicating with the data server that is compatible with NIDEK LAN, VCA, or the tracers such as the LT-980.

8.1.1 To perform COM port settings

The parameter setting changes according to the model, presence/absence of the tracer, and the System setting.

"♦ *Connection setting" (page 240)*

Model	COM port setting
DB/B model with tracer	None / Barcode / Navis / Meganet (M) / Meganet (V)
DI/D/I/N model with tracer in Normal mode	
DI/D/I/N model with tracer in Blocker/Lex mode	
DB/B model without tracer	None/Barcode/Tracer
DI/D/I/N model without tracer in Normal mode	
DI/D/I/N model without tracer in Mini Lab mode	None/Barcode

8.1.2 To communicate with the LT-980 and perform communication settings

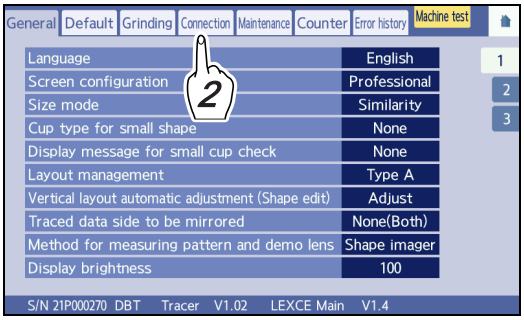
This is the settings for the communication by connecting the LEXCE and LT-980 by RS-232C cable.

1 Press Menu on the home screen of the LEXCE.

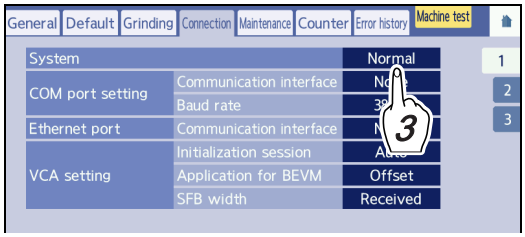
→ Menu screen

2 Press the [Connection] tab.

→ Connection screen

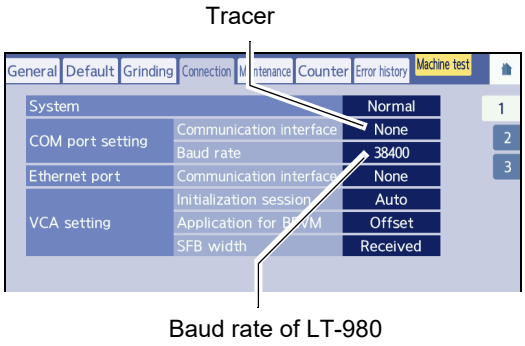


3 Set the System field to “Normal”.



4 Set “Communication interface” in the “COM port setting” field to “Tracer”.

5 Set “Baud rate” according to the communication speed of the LT-980.



Note

- The communication speed of the LT-980 is different according to the RS-232C port used and the settings. Contact NIDEK or your authorized distributor.

6 Press  to return to the home screen.

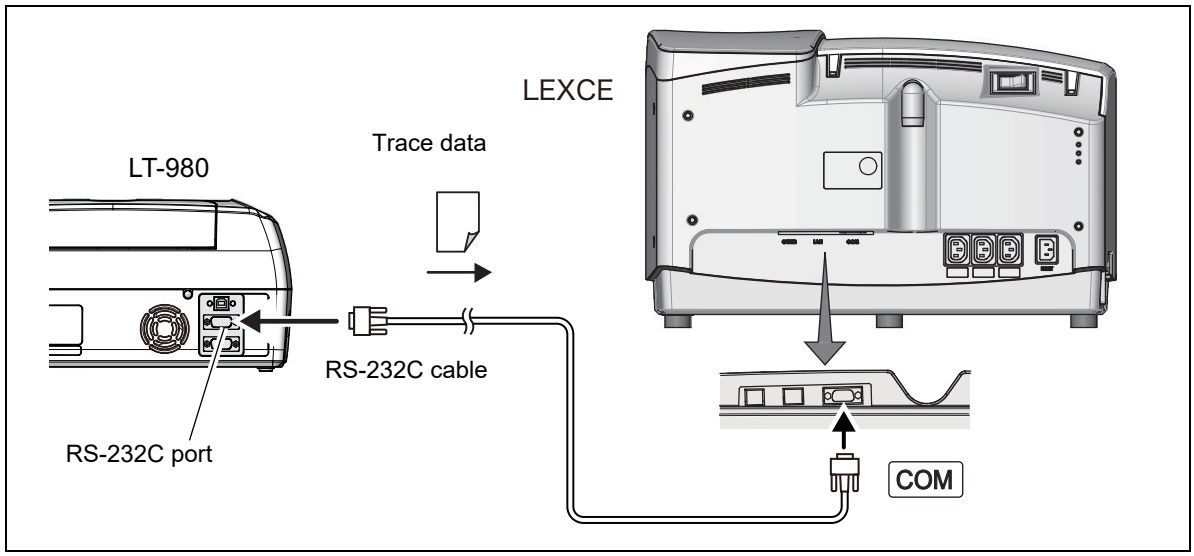
Note

- Restarting the instrument
  Depending on the change of the communication setting, pressing  may display the message to the right. In this case, turn off and on the power switch.

7 Turn off the LEXCE and all connected devices.

8 Connect the RS-232C cable provided with the LT-980 to the RS-232C port on the LT-980.

9 Connect the other end of the RS-232C cable to the RS-232C port (COM) on the LEXCE.



10 Turn on the LT-980 and LEXCE.

11 Press 

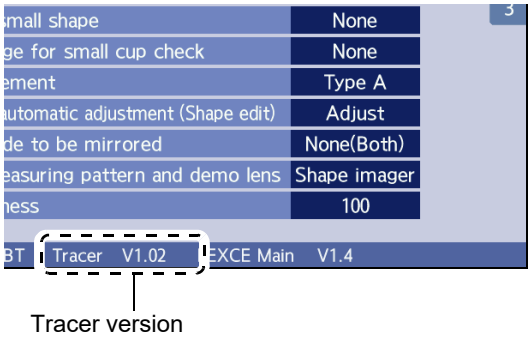
on the home screen of the LEXCE.

→ Menu screen

12 Confirm that the tracer version is displayed on the general screen.

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

If the instrument is not connected to the tracer properly, “Unconnected” is displayed.



13 Press  to return to the home screen.

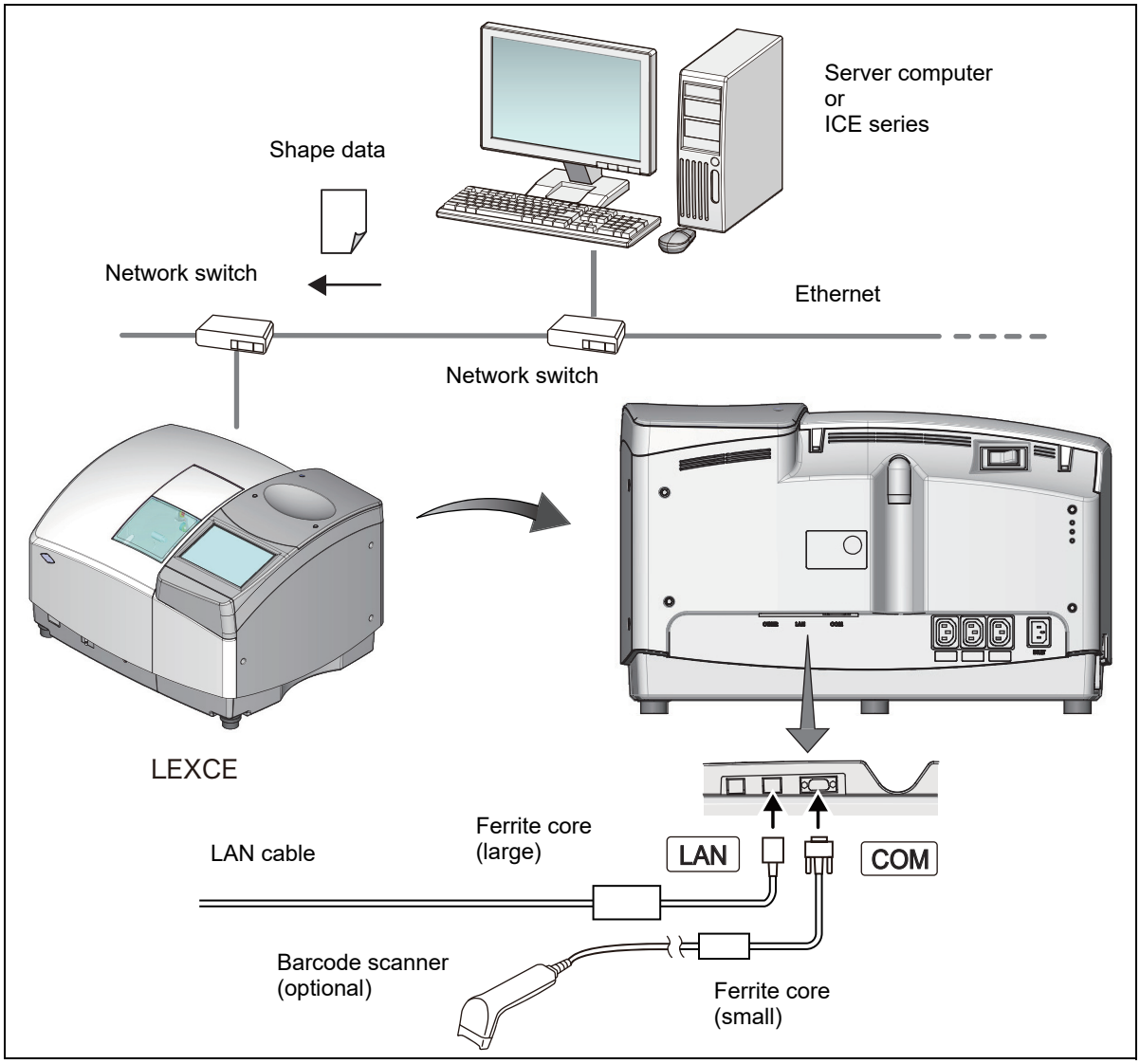
8.1.3 To communicate through NIDEK LAN

This is the system that is connected through LAN cable, and for which the server computer or the ICE series is used as the host server.

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

If necessary, connect the optional barcode scanner.

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

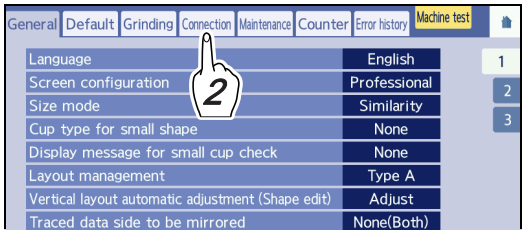


1 Press Menu on the home screen of the LEXCE.

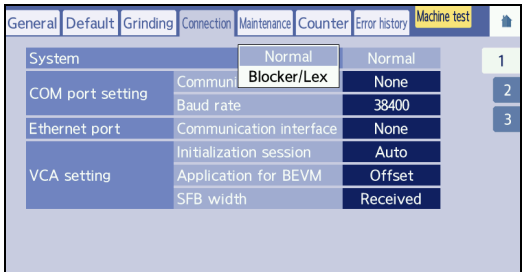
→ Menu screen

2 Press the [Connection] tab.

→ Connection screen

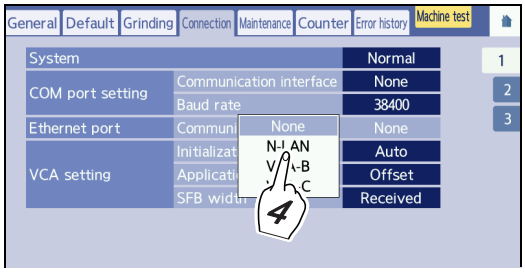


3 If necessary, set “System” on the Connection screen.



4 Set the communication parameter of the LEXCE.

Set “Communication interface” in the “Ethernet port” field to “N-LAN”.



Note

- For LAN connection, “Host ID”, “My ID”, “Host IP address”, “IP address”, “Subnet mask”, and “Default gateway” need to be set. Contact the network administrator.

5 Press  to return to the home screen.

6 Turn off the LEXCE and all connected devices.

7 Connect a LAN cable for the LEXCE to the network switch connected with the LAN system.

8 Connect the other end of the LAN cable to the LAN port on the LEXCE.

8.1.4 To communicate in VCA

This is the system that is communicated by the server computer and VCA format through Ethernet.

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

If necessary, connect the optional barcode scanner.

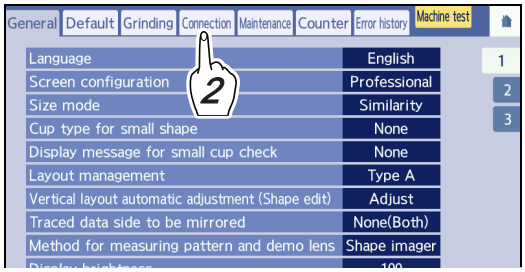
- Do not use the instrument in a network connected to an intranet or the Internet. Communication failure may result.

1 Press Menu on the home screen of the LEXCE.

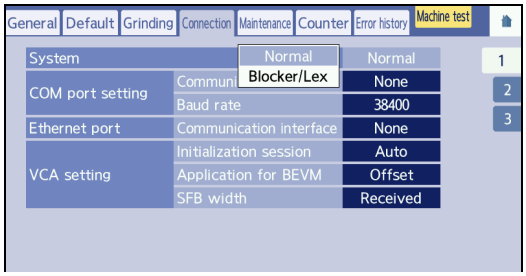
→ Menu screen

2 Press the [Connection] tab.

→ Connection screen



3 If necessary, set “System” on the Connection screen.



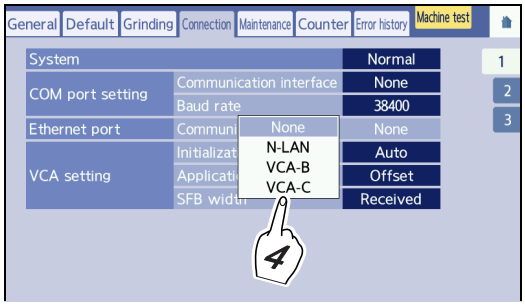
4 Set the communication parameter of the LEXCE.

Set “Communication interface” in the “Ethernet port” field to “VCA-B” or “VCA-C”.

- VCA-B

  For when the circumference sent is not used but rather 3-D circumference recalculated with the frame curve is used for processing
- VCA-C

  For when FPD is calculated with DBL sent



Note

- For LAN connection, “Host ID”, “My ID”, “Host IP address”, “IP address”, “Subnet mask”, and “Default gateway” need to be set. Contact the network administrator.

5 Press to return to the home screen.

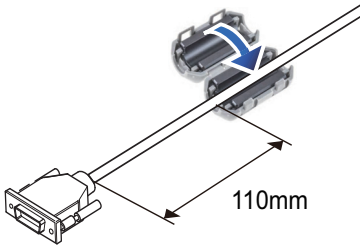
6 Turn off the LEXCE and all connected devices.

7 Connect a LAN cable for the LEXCE to the network switch connected with the LAN system.

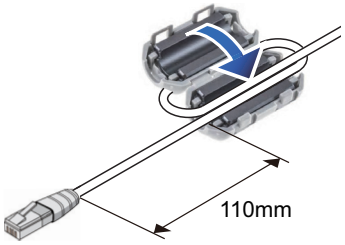
8 Connect the other end of the LAN cable to the LAN port on the LEXCE.

Note

- To connect the barcode scanner (optional), the settings need to be changed by personnel authorized by NIDEK. Contact NIDEK or your authorized distributor.
- To connect the external barcode scanner or external 2D barcode scanner, set the ferrite core (small) to the RS-232C cable as shown to the right.



- To connect a LAN cable, set the ferrite core (large) to the LAN cable as shown to the right.



8.2 Communication Settings for Safety Beveling

8.2.1 To communicate through NIDEK LAN

When the communication mode is set to “N-LAN”, only the setting of safety beveling (active/inactive) is sent/received.

- When shape for which safety beveling is active is received from the data server or blocker, the default value is set for the safety beveling width.
- When shape for which safety beveling is active is sent to the data server or blocker, the safety beveling width is not saved.

8.2.2 To communicate in VCA

For communication with the data server in the communication mode of “VCA-B” or “VCA-C”, if the received data has the settings of safety beveling (active/inactive and the width), the settings are used for the processing. For sending from this instrument to the data server, the safety bevel settings are not sent.

Also, the initial value set by the instrument can be used instead of the received safety bevel width by the following procedure.

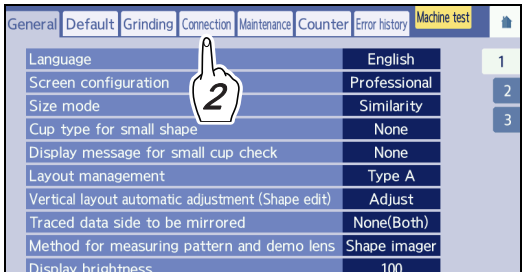
1 Press 

on the home screen.

→ Menu screen

2 Press the [Connection] tab.

→ Connection screen



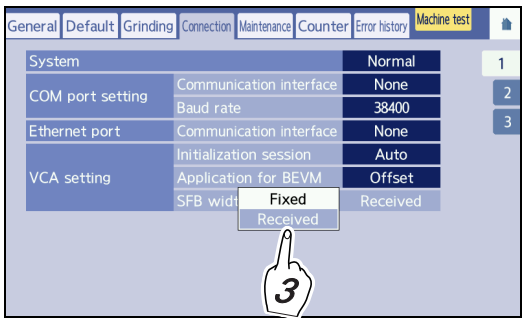
3 Press the [SFB width] field.

Factory setting: Received

- Fixed: Initial settings

  The initial settings in *“ SFB width (Rear)” (page 233)* and*“ SFB width (Front)” (page 233)* are used.
- Received: Received value

  The received safety bevel width is used.



4 Press  to return to the home screen.

8.3 Checklist

◆ Pre-use Checklist

Pre-use checklist for LEXCE

Items	Satisfactory/Unsatisfactory (date and name)
Items to be checked before turning on power	
The power cord is connected to the power inlet and outlet properly.	
The cables of the connected devices are connected securely.	
The power of the connected devices is turned on.	
The processing chamber or the door is not contaminated.	
The wheels have no abnormality such as chipping or cracking.	
The drill has no abnormality such as breaking or deformation.	
No frame is set to the tracer.	
The feeler unit is clean.	
The tracer clamp and stylus are cleaned.	
No object is put on the processing chamber door.	
The water level in the tank is appropriate.	
The hoses and power cord for hoses are connected properly.	
Items to be checked after turning on power	
No error message appears.	
After initialization, the screen is displayed normally.	
The tracer horizontality is checked.	
The tracer is calibrated.	
The cooling and cleaning water run properly.	

◆ After-use checklist

After-use checklist for LEXCE

Items	Satisfactory/Unsatisfactory (date and name)
The power switch of the instrument is off.	
The power of the connected devices is turned off.	
The wheels have no abnormality such as chipping or cracking.	
The drill has no abnormality such as breaking or deformation.	
The processing chamber is cleaned.	
The feeler unit is clean.	
The processing chamber door is closed after the inside of the chamber has dried.	
The tracer clamp and stylus are clean.	
The appearance of the instrument is cleaned.	
No frame is set to the tracer.	
There is no damage or loss in the accessories.	
The processing waste in the pump tank is discarded as industrial waste.	
The pump tank is cleaned.	
The filter of the pump tank is replaced.	
The water level in the tank is appropriate.	

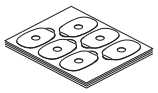
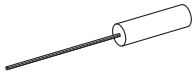
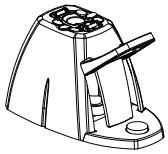
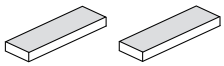
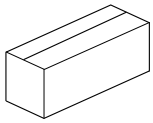
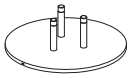
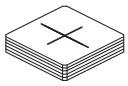
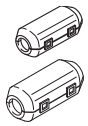
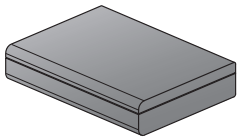
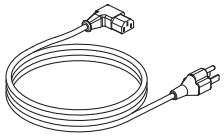
8.4 Specifications

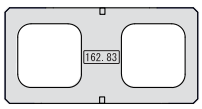
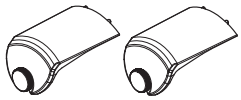
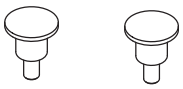
Processing unit		Setting range (increments) mm
Processing mode	• Beveling	Auto, guide, soft, and mini beveling High base curve, custom, and step beveling (Trend8 only)
	• Flat edging	Soft processing
	• Grooving	Auto grooving, guide, soft processing
	• Safety beveling	Width of 0.0 to 0.8 (0.1)
	• Polishing	Bevel, flat
	• Drilling	
	• Step beveling (Trend8)	
	• Retouching	Retouching of outline, groove, safety bevel, polishing, and hole High base curve, custom, and step beveling (Trend8 only)
Processable lens	• Plastic lens (CR-39) • High Index plastic • Polycarbonate • Acrylic • Trivex • Polyurethane • Glass	Plastic lens with the lens exceeding the refractive index of 1.498 Trivex lens
	* Only spectacle lenses can be processed.	
Processing range	Maximum processable lens diameter	A radius of 50 mm or less from the blocked position
	Minimum lens diameter Pliable cup	• Beveling (mm) with safety beveling ø36.6 × 23.6 without safety beveling ø33.0 × 20.6 • Flat edging (mm) with safety beveling ø35.0 × 22.0 without safety beveling ø32.0 × 19.0 • High base curve and custom beveling ø37.8 × 24.8 (Trend8 only)
	Minimum lens diameter Mini cup (optional)	• Beveling (mm) with safety beveling ø26.6 × 21.9 without safety beveling ø23.0 × 18.4 • Flat edging (mm) with safety beveling ø25.0 × 20.3 without safety beveling ø22.0 × 17.4 • High base curve and custom beveling ø27.8 × 23.2 (Trend8 only)

Processing range	Minimum lens diameter Nano cup (optional)	• Beveling (mm) with safety beveling Φ24.6 × 20.1 without safety beveling Φ21.0 × 16.5 • Flat edging (mm) with safety beveling Φ23.0 × 18.5 without safety beveling Φ20.0 × 15.5 • High base curve and custom beveling ø25.8 × 21.3 (Trend8 only)
Processing unit		Setting range (increments) mm
Layout setting range	• FPD	30.00 to 99.50 (0.01)
	• DBL	5.00 to (0.01) * The DBL upper limit is automatically calculated with the FPD.
	• PD	30.00 to 99.50 (0.01)
	• Optical center height	±15.0 (0.1) when converted vertically from the boxing center
	• Size adjustment	±9.95 (0.01)
	• Frame warping angle	0.0 to 45.0° (0.1°)
	• Frame curve	0.0 to 12.0 curve (0.1 curve)
	• Bevel / Mini bevel / Groove curve	0.1 to 12.0 curve (0.1 curve)
	• Bevel /Mini bevel / Groove position	-12.8 to 12.7 (0.1)
	• Mini bevel height	0.4 to 0.7 (0.1)
	Custom bevel / high base curve bevel (Trend8)	
	• Bevel front height	0.0 to 1.8 (0.1)
	• Bevel rear height	0.0 to 1.8 (0.1)
	• Bevel apex width	0.0 to 2.0 (0.1)
	• Bevel position	-12.8 to 12.7 (0.1)
	• Tilt amount	-9.9 to 9.9 (0.1)
	• Groove width	0.6 to 1.2 (0.1)
	• Groove depth	0.0 to 0.8 (0.1)
	• Bevel / Mini bevel / Groove guide tilt amount	-9.9 to 9.9 (0.1)
	• Bevel / Mini bevel / Groove guide tilt part	0 to 360° (10°)
	• Drilling angle (in Angle mode)	0.0 to 18.0° (0.1°)
	• Drilling angle (in X Auto, X-Y mode)	Automatically calculated with the X Auto, X-Y mode setting values (0.1°)
	• Drilling angle (in Curve mode)	Automatically calculated with the Curve mode setting value

Layout setting range	• Diameter • Depth	Endmill setting value to ø10.00 (0.01) 0.0 to effective cutting length of the drill, 0.0 is a through hole (0.1)
	• Step width (Trend8)	0.0 to 3.8
Wheel configurations (Trend)	• Roughing wheel for plastic lenses • Roughing wheel for glass lenses • Finishing wheel • Polishing wheel	
Wheel configurations (Trend8)	• Roughing wheel for plastic lenses • Roughing wheel for glass lenses • Finishing wheel • Polishing wheel • High base curve finishing wheel	
Final lens clamping pressure	45 kg	
Tracer unit (optional)		
Tracing method	Automatic 3-D binocular tracing	
Measurement range	1,000 points	
Measurement range	Shape width: 23 to 70 mm, Shape height: 18.4 to 66.0 mm, Frame width: 113 to 150 mm	
Lens measuring unit		
Measurement range	1,000 points	
Measurement range	• Lens diameter: ø22 to ø100 mm • Lens thickness: 21.0 mm or less • Shape height: 19.5 to 66.0 mm * The shape height when a mini cup (optional) is used is 17.4 to 66.0 mm.	
Blocker unit (DB/B model)		
Blocking	Visible light transmittance of 10% or more	
Shape imager	Measurement range: 65.0 (H) × 50.0 (V) mm	
Interface ports		
External communication	• RS-232C: 1 port • Ethernet: 1 port • USB flash drive: 1 port	
Dimensions and mass		
Dimensions	545 (W) × 530 (D) × 460 (H) mm	
Mass	40 kg or less (only main body including the tracer unit and blocker)	

Power supply specifications		
Input voltage	(100 V regions): AC100 V to 120 V * Voltage fluctuation is ±10% of the nominal voltage.	
	(200 V regions): AC 200 V to 240 V * Voltage fluctuation is ±10% of the nominal voltage.	
Frequency	50/60 Hz	
Power consumption	Maximum of 1.3 kVA	
Control outlet		
Outlet	• For Pump 1: 1 unit • For Pump 2: 1 unit • For vacuum: 1 unit	Output voltage (100 V regions): AC 100 to 120 V (200 V regions): AC 200 to 240 V • Current capacity: Maximum of 1 A or less • Leakage current: 2.0 mA or less • Withstand voltage between the power supply terminal and protective earth: AC 1 kV 50/60 Hz 1 s * The connected cables must be double insulated.
LCD		
• 7-inch wide (number of pixels: 800 × 480) • Electrostatic capacitive touch screen		
Environmental conditions (during use)		
Installation location	Interior (no harmful dust or smoke), horizontal level at the time of installation is ±0.4 degrees or less	
Temperature	5 to 40℃ (41 to 104°F)	
Humidity	5 to 31°C (41 to 87.8°F): 30 to 80% 31 to 40℃ (87.8 to 104°F) (The minimum acceptable relative humidity is 30%. The maximum acceptable relative humidity is 80% for temperatures up to 31℃ (87.8°F) which decreases linearly to 50% at 40℃ (104°F).)	
Maximum height	Up to 2,000 m	
Overvoltage	Category II (IEC60664-1)	
Pollution degree	2 (IEC60664-1)	
Environmental conditions (during transport and storage)		
Temperature	0 to 50℃ (32 to 122°F)	
Humidity	0 to 85% (Non-condensing) (The conditions during transport and storage apply to the edger when packed.)	

Accessories					
Part name	Qty.	Appearance	Part name	Qty.	Appearance
Drill (10 units) (D model only)	1 set		Double-coated adhesive pad (100 sheets)	1 set	
Hexagonal screwdriver (2.5 mm)	1		Pliable cup remover	1	
Hexagonal wrench (2.0 mm, 3.0 mm, and 4.0 mm)	1 unit each		Adapter set	1	
Dressing stick for glass roughing wheel (orange) WA80K, Dressing stick for finishing wheel (white) WA500	1 unit each		Pattern holder	1	
Compound kit for polishing wheel	1 set		Stage for small diameter lenses (DB/B model only)	1	
Pliable cup (green and red)	5 units each		Calibration jig	1	
Pliable cup for high base curve lenses (green and red)	3 units each		Flat lens	5	
Ferrite core (small) Ferrite core (large)	1 unit each		Operator's manual	1	
Accessory case	1		Installation manual	1	
Power cord	1				

Accessories for tracer (optional)					
Part name	Qty.	Appearance	Part name	Qty.	Appearance
Standard frame	1		Frame holder	2	
Stopper	2		Spacer for stopper	2	

Optional configuration

Tracer, external barcode scanner, external 2-D barcode scanner, built-in 2-D barcode scanner, circular pump tank, centrifugal separation filtration unit, deodorizer, mini cup set, nano cup set, drill (ø1.0, 1.2, 1.6), USB flash drive, tray holder

8.5 Software License

This product uses licensed software.

◆ OpenCV license

8.6 Software Library License Information

Below is the license information on QR Code generator library used in the LEXCE Trend / Trend8.

◆ QR Code generator library

9 INDEX

W