NIDEK

MULTIFUNCTION EDGER

Model ME-1000

OPERATOR'S MANUAL

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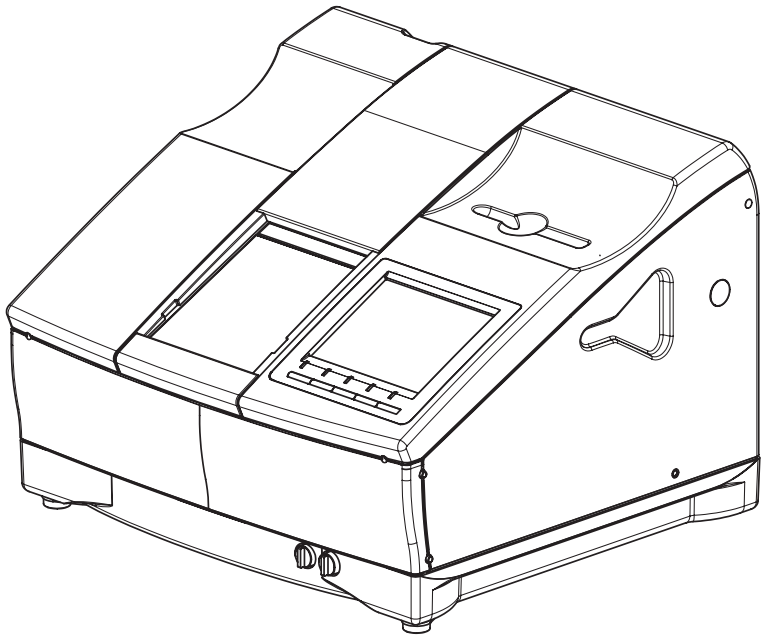

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Use this instrument properly and safely.

⚠ BEFORE USE, READ THIS MANUAL.

This operator's manual contains information necessary for the operation of the NIDEK MULTIFUNCTION EDGER ME-1000. This manual includes operating procedures, safety precautions and specifications.

Especially, the safety precautions and operating procedures must be thoroughly understood prior to operation of the instrument.

Keep this manual handy for reference.

If you encounter any problems or have questions about the product during use, contact NIDEK or your authorized distributor.

Safety precautions

In this manual, Signal Words are used to designate the degree or level of safety alert. The definitions are as follows.

⚠ **WARNING** • Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **CAUTION** • Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or property damage accident.

Even situations indicated by ⚠CAUTION may result in serious injury under certain conditions. Safety precautions must be strictly followed at all times.

Usage precautions

Before use

⚠ WARNING

- **Use a hand cart to move the edger to a different location. At least three persons are necessary to lift the edger.**
  You may hurt your back or may fall down if you do it alone.
- **When moving the edger, be sure not to hold the cover but the metal part of the underside.**
  You may drop the edger holding the cover only and it may cause injury or malfunction. The  shaped concave on the side cover is not a handle.
- **When putting the edger down, be careful not to get your fingers caught.**
  You may get your fingers caught between the cabinet and edger and it may damage your fingers.

⚠ CAUTION

- **Do not use the edger for other than the intended purpose.**
  NIDEK will not be responsible for accidents or malfunction caused by such carelessness.
- **Do not modify or touch the inside of the edger.**
  This may result in electric shock or malfunction.
- **Install the edger in an environment that meets the following conditions. The following conditions must be maintained during use.**
  Conditions during use - Temperature: 5 to 40°C
  Humidity: Relative humidity does not exceed 50% at 40°C.
  Altitude: Up to 1000 m at sea level
- **Be sure to use a wall outlet which meets the power specification requirements.**
  If the line voltage is too high or too low, the edger may not give full performance. Malfunction or fire may occur.
- **Insert the main power plug into the outlet as far as the prongs of the plug will go.**
  Insecure connections may cause fire.
- **Do not place heavy objects on the power cord nor squeeze it.**
  The damaged power cord may cause fire or electric shock.
- **Do not pull the power cord to remove it from the outlet; always hold the plug.**
  The metal core of the cord may be damaged and electric shock, malfunction or fire may result.
- **Insert the main power plug into a grounded wall outlet.**
  Electric shock or fire may occur in the event of instrument malfunction or power leakage.

⚠ **CAUTION**

- **Do not use the edger for other than the intended purpose.**
  NIDEK will not be responsible for accidents or malfunction caused by such carelessness.

- **Do not modify or touch the inside of the edger.**
  This may result in electric shock or malfunction.

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- **Insert the main power plug into the outlet as far as the prongs of the plug will go.**
  Insecure connections may cause fire.

- **Do not place heavy objects on the power cord nor squeeze it.**
  The damaged power cord may cause fire or electric shock.

- **Do not pull the power cord to remove it from the outlet; always hold the plug.**
  The metal core of the cord may be damaged and electric shock, malfunction or fire may result.

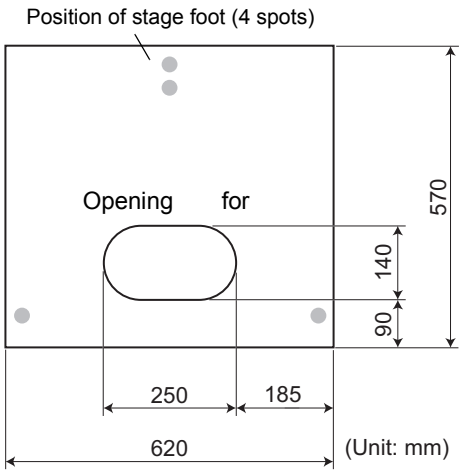
- **Insert the main power plug into a grounded wall outlet.**
  Electric shock or fire may occur in the event of instrument malfunction or power leakage.

- **Do not use the power cord other than equipped. Do not use the equipped power cord for purpose other than intended.**
  Malfunction or fire may result.

- **Install the edger on the specified cabinet (option) or stage which is strong enough for the weight of the edger (70 kg).**
  Vibrations and noises may be produced, and normal processing may not be performed.

- **Use a stage whose size is larger than the measurements of the figure on the right. Also set the adjuster at the foot of the stage so that the stage can be adjusted without tilt or play.**
  It is necessary to make openings in the top to draw the pipe and in the side or back to the power cord.

- **Be sure to leave more than 10 cm of space in the rear so that the fan is not blocked.**
  If the fan is blocked, the temperature of the inside of the edger will rise and it may cause malfunction.



⚠ **CAUTION**

- **Install the edger in a stable and level place where shock does not occur.**
  The edger may not process the lens correctly.
- **Connect a cable to the RS-232C connector or LAN connector securely.**
  Data may not be transferred correctly.

During use

⚠ **WARNING**

- **Do not touch the processing wheel when it is running.**
  You may be injured.
- **Be sure to use this edger only to process eyeglass lenses.**
  If this edger processes any other materials, the processing wheels may be damaged and cannot perform normal processing. To make matters worse, wheels may break and broken pieces may injure personnel.
- **In case of abnormal conditions such as cracks or bare areas on the processing wheel, stop using the edger immediately and contact your authorized distributor.**
  The wheels may break and broken pieces may injure personnel if used with such flaws.

⚠ **CAUTION**

- **If the internal wires of the power cord are exposed, power to the instrument is interrupted by moving the cord, or the plug or cord becomes extremely hot, this indicates that the cord is damaged. Immediately remove the plug from the outlet and contact NIDEK or your authorized distributor for replacement; otherwise, electric shock or fire may result.**
  This may result in electric shock or fire.
  In the event of malfunction, disconnect the power cord from the wall outlet. Never touch the inside of the edger and contact your authorized distributor.
- **In the event that the edger gives off smoke, etc., turn off the power and unplug the power cord. After the smoke stops coming out of the edger, contact your authorized distributor.**
  Usage of the edger under such abnormal conditions may cause fire or electric shock. In case of fire, use a dry chemical (ABC) extinguisher to extinguish the fire.
- **Be sure to confirm that wash water (for the inside wall of the processing chamber) and cooling water (for the wheels) run properly.**
  If water does not run, lenses are not processed properly and the edger may be damaged.
  See 2.16.1 Check before use (Page 110) for the confirmation method.
- **Be sure to select the material of a lens to be processed.**
  If an improper material is selected, the lens may break or lifetime of processing wheels may be reduced substantially.
- **Be sure to safety bevel the front edge and rear edge of glass lenses after processing.**
  Subtle burrs may damage one's skin.
- **Be careful not to get your fingers caught when chucking (fixing) a lens.**

⚠ **CAUTION**

- **Be sure to use the suitable dressing stick for wheel dressing.**
  The wheel may be damaged.
- **Do not dress the roughing wheel for plastic lenses.**
  The wheel may be damaged.
- **When the dressing stick is worn to length of 4 cm or so, replace the dressing stick with a new one.**
  It is hard to hold the shortened dressing stick, and your hand may get hurt.
- **Be sure to wear protective glasses for wheel dressing.**
  Spray including processing waste may damage your eyes.
- **In dressing mode, the cover sensor is released and the wheels turn with the processing chamber cover open. While dressing, work with special care.**
- **Use the specified fuses to replace the old ones.**
  If not, fire may occur.
- **Be sure to use the specified stocking filter only.**
  If not, the filter or water supply pipe may become clogged.
- **The stocking filter is disposable. Do not reuse it.**
  A filter which has a rip or run in it does not function as a filter, and therefore, the water supply pipe may be clogged.
- **Be sure to perform check before use and after use. It is recommended to have regular checks every two years.**
  Regular checks must be performed by qualified personnel. Ask NIDEK or your authorized distributor for details.
- **The display is a touch-screen. Do not touch the display with objects other than fingers or the tip of the touch pen.**
  If the display is touched with hard or sharp objects such as a ball-point pen, it may be damaged. A resin chip which reduces damage to the screen is provided on the tip of the touch pen but it may damage the display if firmly pressed.

Note

- The pliable cup is a consumable. When the double-coated adhesive tape becomes hard to remove from the pliable cup, replace it with a new one (reference of replacement: processing of 1000 lenses).

After use

⚠ **CAUTION**

- **Clean the processing unit after the last use of the day.**
  If it is left for some days after being used, the processing waste becomes settled and hard to remove.
- **Wipe between the prongs of the main plug with a dry cloth every once in a while.**
  If dust settles between the prongs, the dust will collect moisture, and short circuit or fire may occur.
- **If the edger will not be used for a long time, disconnect the power cord from the wall outlet.**
  Dust that may settle on the prongs of the plug attracts moisture and could result in short circuit, electric shock or fire.
- **Do not use organic solvents such as a paint thinner to clean the exterior of the edger.**
  This could damage the surface.
- **Do not store the instrument in an area that is exposed to rain, water, or poisonous gas or liquid.**
- **Verify that the following specified environmental conditions for transport and storage (packed condition) are met.**
  Environmental conditions
  - Temperature: –25 to 70ºC
  - Humidity: Relative humidity does not exceed 50% at 40ºC.
- **To transport the edger, use the special packing materials to protect the edger from impact of dropping.**
  Excessive vibration or impact to the edger may cause malfunction.

Disposal

⚠ **CAUTION**

- **Follow local governing ordinances and recycling plans regarding disposal or recycling of the instrument.**
  It is recommended to commission the disposal to a designated industrial waste disposal contractor.
- **When disposing of packing materials, sort them by material and follow local governing ordinances and recycling plans.**
- **When disposing of the waste of lenses, follow local governing ordinances.**

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1. BEFORE USE

1.1 Outline of the Edger

The NIDEK MULTIFUNCTION EDGER ME-1000 is designed to perform centralized processing of lenses.
It is used to process lenses so that they fit into frames based on data from the Satellite Tracer, Intelligent Blocker, or a host computer.
This edger contains a processing chamber in the center and a display and control unit on the right. The control panel is used to start or stop the processing sequence. The display is used to enter lens layout data, and shows the lens shape and layout settings.
In the processing chamber, a lens is processed into the desired shape. Since there are various kinds of processing wheels provided in the processing chamber, users can select the most suitable wheel and processing mode for the material of the lens to be processed. Not only lens processing but also grooving for nylor frames and drilling for two-point frames can be performed.
The optional software upgrades specifications equivalent to the ME-1000 DESIGN+. Decorative processing such as facet cutting, partial grooving and so on is also possible.

○ Available lens materials and processing modes

●TYPE PLB

Lens material						Processing					
Plastic	High index plastic	Polycarbonate	Acrylic resin	Trivex	Glass	Beveling	Flat edging	Safety beveling	Polishing	Grooving	Drilling
O	O	O	O	O	×	O	O	O	O	O	O

●TYPE PLB-G, TYPE PLB-2R

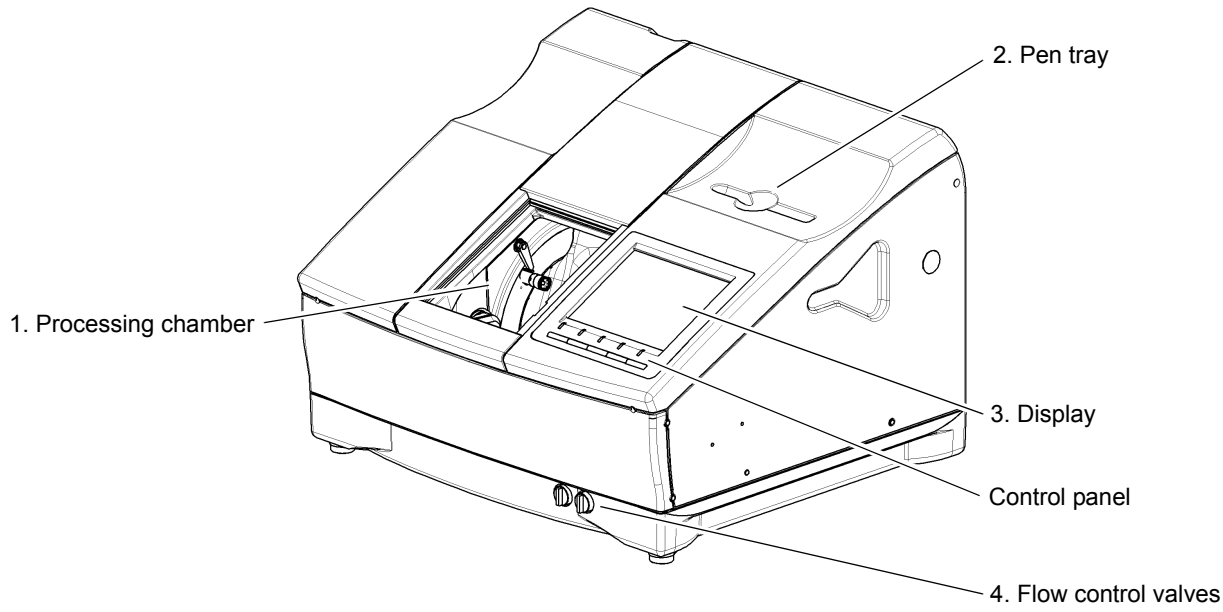
Lens material						Processing					
Plastic	High index plastic	Polycarbonate	Acrylic resin	Trivex	Glass	Beveling	Flat edging	Safety beveling	Polishing	Grooving	Drilling
O	O	O	O	O	O	O	O	O	O	O	O

O: Available
×: Not available
* Polishing, grooving or drilling cannot be performed on glass lenses.

* Type PLB-G is used for screen samples in this manual. Indications and layout differ depending on the type.

1.2 Configuration

○ Front view



1. Processing chamber

Lenses are processed here.

The processing chamber cover closes automatically before starting processing. In other cases, it opens and remains open.

2. Pen tray

The supplied touch pen is placed while not in use.

3. Display

Shows lens shapes and layout data. This is a touch-screen panel so that information can be entered.

Note

- There may be a few missing or dead pixels in your touch-screen panel, which appear as black dots or there may be lit pixels, which appear as one or several randomly-placed red, blue and/or green pixel elements.

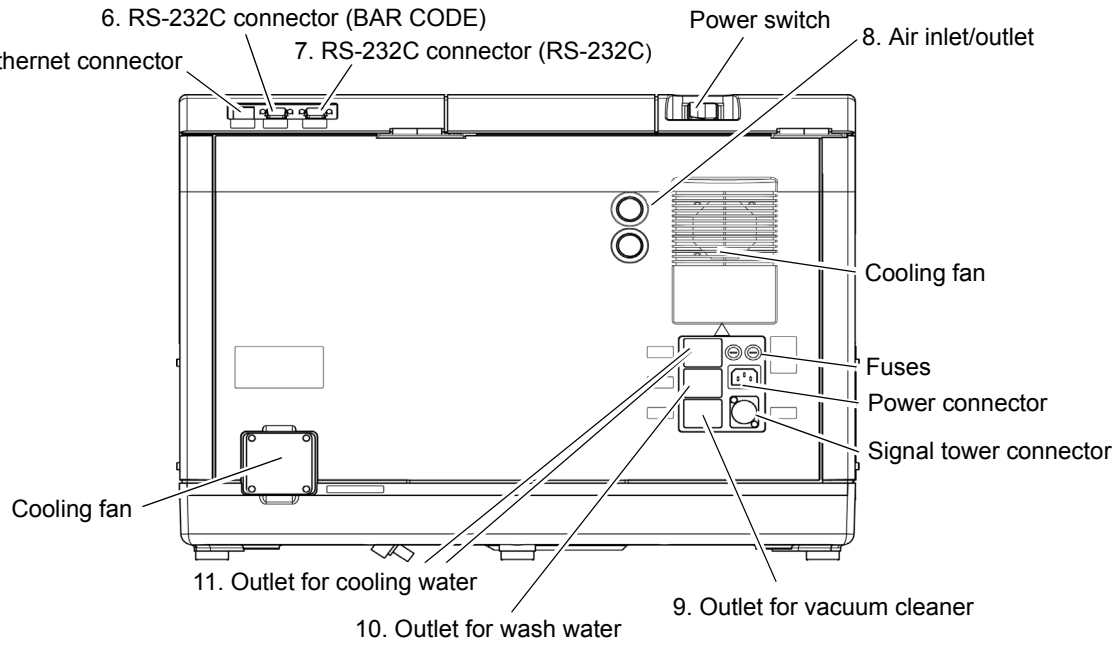
  This does not represent failure of the touch-screen panel; This is due to the structure of the liquid crystal display.

4. Flow control valves

Control the flow volume of the cooling water poured over the wheel or the wash water to prevent the lens waste from settling in the processing chamber.

Left valve ⇒ For controlling the flow volume of the cooling water.
Right valve ⇒ For controlling the flow volume of the wash water.

○ Rear view



5. Ethernet connector (LAN)
Interface connector for Ethernet.

6. RS-232C connector (BAR CODE)
Interface connector which connects the optional barcode scanner.

7. RS-232C connector (RS232C)
Interface connector which connects with the ICE-9000.

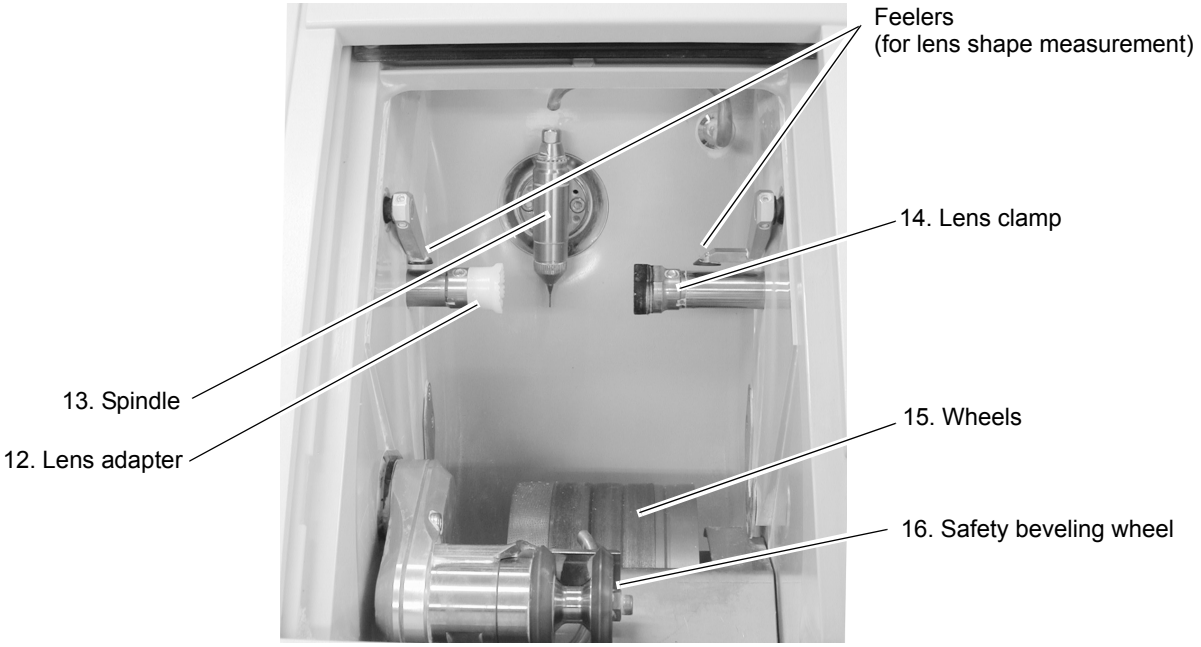
8. Air inlet/outlet
Inlet and outlet to connect the vacuum cleaner in order to gather the lens waste of polycarbonate lenses or the duct of the LED-200.

9. Outlet for vacuum cleaner (VACUUM)
Connects the power cord of the vacuum cleaner (commercial wet and dry cleaner) or the LED-200.
The cleaner automatically sucks up the lens waste or stops operation in conjunction with the edger.

10. Outlet for wash water (CLEANING)
Connects the power cord of the pump which controls the wash water.

11. Outlet for cooling water (COOLING)
Connects the power cord of the pump which controls the cooling water.

○ Processing chamber



12. Lens adapter

Holds the blocked lens.

13. Spindle

Used for drilling or grooving.

14. Lens clamp

The lens set to the adapter is pushed from the opposite side and held by this clamp.

15. Wheels

Several different types of wheels compose a set of processing wheels.

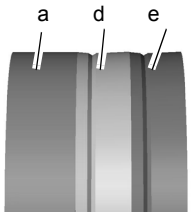
[Wheel combination]

a. Roughing wheel for plastic lenses
b. Roughing wheel for glass lenses
c. Finishing wheel for glass lenses
d. Finishing wheel for plastic lenses
e. Polishing wheel

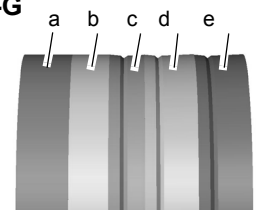
16. Safety beveling wheel

The wheel on the left is used for basic safety beveling and on the right for polishing the safety-beveled surface.

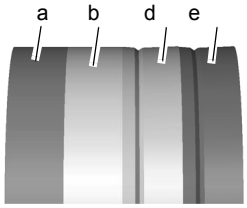
•Type PLB



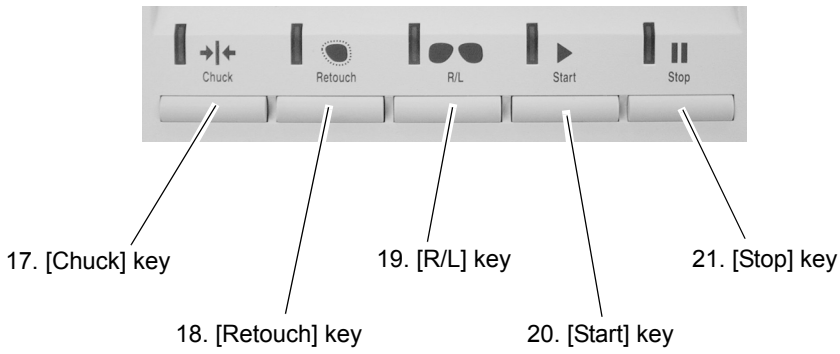
•Type PLB-G



•Type PLB-2R



○ Control panel



17. [Chuck] key

Used to fix the lens with the lens clamp or release the lens.

At the start of processing, the lens is automatically clamped.

18. [Retouch] key

Used to start retouching.

19. [R/L] key

Used to select the side of a lens to be processed, right (R) or left (L).

It can be selected by pressing the [R] or [L] button on the layout screen.

20. [Start] key

Starts processing.

21. [Stop] key

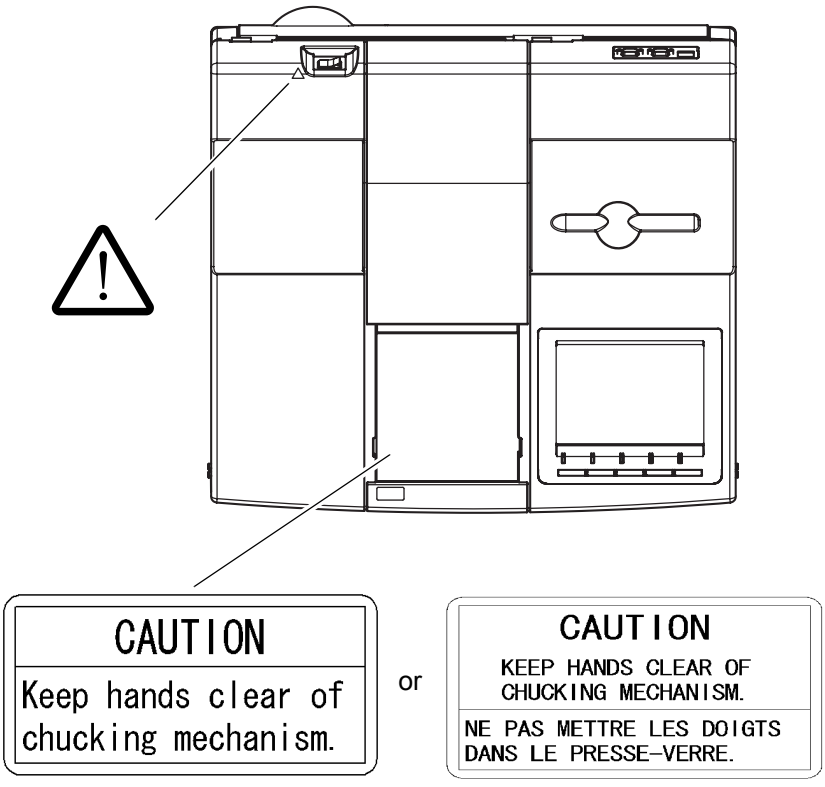
Stops processing.

○ Labels

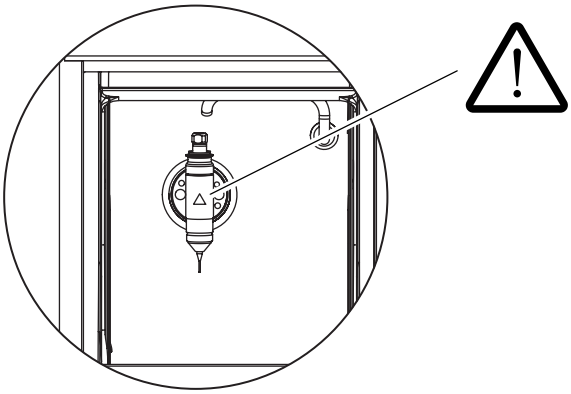
Cautionary labels are provided on the instrument.

	Indicates that caution must be taken. Refer to the operator's manual before use.
	Indicates that the state of the power switch. When the symbol side of the switch is pressed down, power is supplied to the instrument.
	Indicates that the state of the power switch. When the symbol side of the switch is pressed down, power is not supplied to the instrument.
	Indicates that the instrument must be supplied only with alternating current.
	Indicates the date of manufacture.
	Indicates the manufacturer.
	Indicates that this product shall be disposed of in a separate collection of electrical and electronic equipment in EU.
	Indicates the fuse rating.

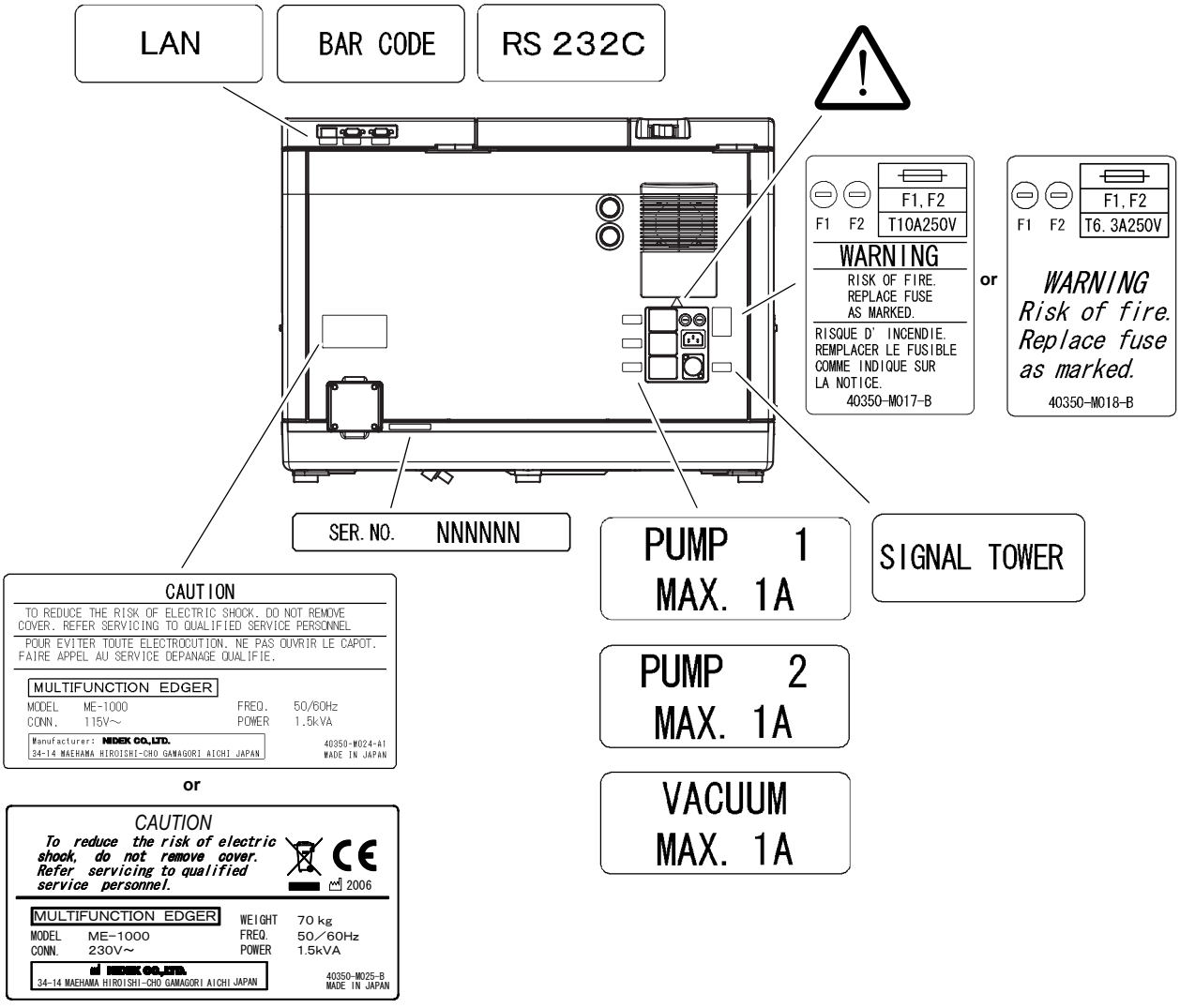
<Top view>



<Processing chamber>



<Rear side>

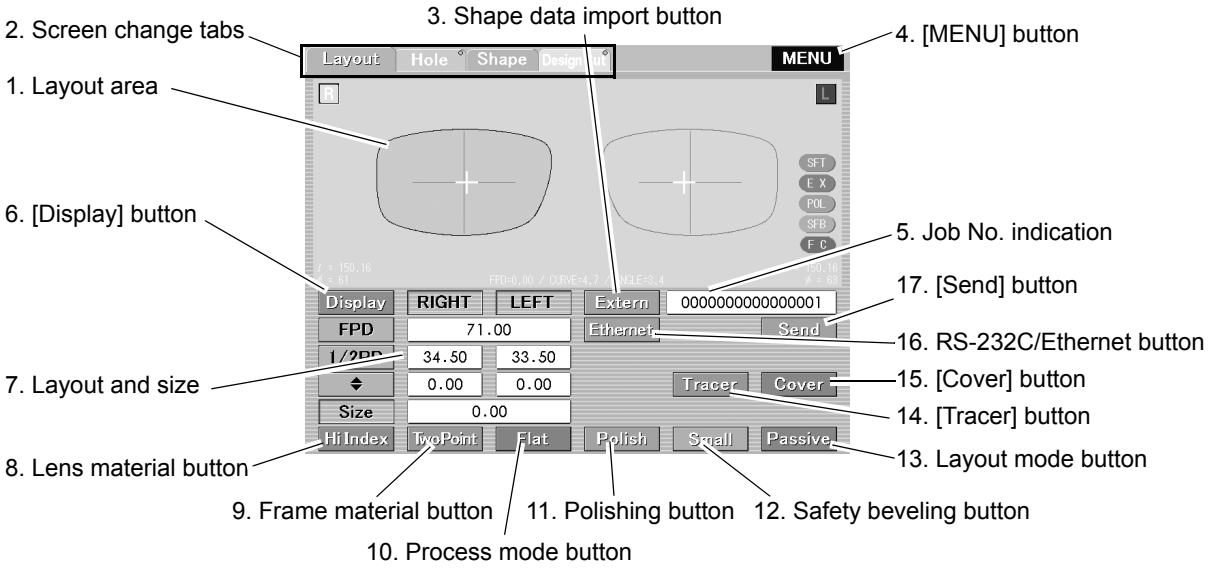


1.3 Display

1.3.1 Layout screen

The following is a sample of the layout screen.

This screen is used for entering each data of lens layout and processing.



1. Layout area

Shapes of both right and left rims are displayed in actual size.

•Minimum lens diameter (ϕ)

Indicates the minimum lens diameter (mm) required for processing.

The minimum lens diameter is provided for reference. A lens 2 - 3 mm larger in diameter is recommended when the optical center and lens center are not the same.

•3-D lens circumference (∫)

•Frame pupillary distance (FPD)

Indicates the distance between right and left frame centers. The frame centers are calculated by the boxing system.

•Frame curve (Curve)

•Frame angle (Angle)

•Frame center (Active mode: black +, Passive mode: red +)

Indicates the position of the frame center.

•Optical center (Active mode: red +, Passive mode: white +)

Indicates the position of the optical center.

•[R]/[L] buttons

Used to select the side of a lens to be processed, right (R) or left (L).

An indication selected by this button is displayed in orange.

Note

• Press the [Display] button to change the type of data shown on the layout screen.

- SFT
  Displayed when soft processing mode is selected.
- E_X
  Displayed when EX lens processing mode is selected.
- POL
  Displayed when polishing mode is selected.
- SFB
  Displayed when safety beveling mode is selected.
- F_C
  Displayed when FC mode is selected.

2. Screen change tabs

Change the screen to each function screen.

All tabs are not necessary displayed depending on the frame type. Touching a tab that is not displayed temporarily displays it and allows the tab to be checked.
[Layout] tab ⇒ Displays the layout screen.
[Hole] tab ⇒ Displays the hole edit screen.
[Shape] tab ⇒ Displays the shape change screen. It is displayed only when the frame type is two-point or nylor. It is not displayed when design cut data has already been entered.
[DesignCut] tab ⇒ Displays the design cut screen.

3. Shape data import button

Selects where shape data is imported from.

Extern: Imports traced data in external communication (such as when data is imported from the ICE-9000).
JOB Memory: Calls up job data (including material and layout) saved in the edger.
PTN Memory: Calls up pattern data (shape, FPD and hole position) saved in the edger.

4. [MENU] button

Displays the Menu screen.

5. Job No. indication

Indicates a job number when data is imported from an instrument such as the ICE-9000.

When the barcode scanner is not used, pressing the numeric button displays the numeric keypad. A job code can be entered.

6. [Display] button

Changes the type of data shown on the layout screen.

The type of data is changed by pressing the button in the following order: Lens shape/ Lens shape including frame information and minimum lens size/ Layout information and lens shape including frame information and minimum lens size/ All. For All, curve (c), position (p), groove depth (d) and groove width (w) are also displayed.

7. Layout and size

•Frame pupillary distance (FPD)

Indicates the distance between the right and left frame centers. Range: [30.00 to 99.50 mm] The frame center is calculated by the boxing system. The width between the nasal ends of the left and right rims (DBL) can be entered for the FPD value.

•Pupillary distance (PD)

Indicates the prescribed pupillary distance, which is entered manually. Range: [30.00 to 99.50 mm]
The monocular PD (1/2 PD) may be entered. Range: [15.00 to 49.75 mm]

•Height of optical center (⇕)
Indicates the height of the optical center from the frame center (boxing center), which is entered manually.
Range: [-15.00 to +15.00 mm]

•Size compensation value (Size)
Indicates the compensation value for the desired finished size in diameter, based on the traced size of the frame.
Range: [-9.95 to +9.95 mm]

8. Lens material button

Selects a lens material.

A material selected by this button is displayed.
[CR39] ⇒ Plastic
[HiIndex] ⇒ High index plastic
[Polyca.] ⇒ Polycarbonate
[Acrylic] ⇒ Acrylic resin
[Trivex] ⇒ Heat-meltable material lens (Trivex)
[Glass] ⇒ Glass (except for Type PLB)

9. Frame material button

Selects a frame material for beveling and [TwoPoint] or [Nylor] for flat edging.

[Metal] ⇒ Beveling (Metal frame)
[Plastic] ⇒ Beveling (Celluloid frame)
[TwoPoint] ⇒ Flat (rimless) edging (Two-point frame)
[Nylor] ⇒ Flat (rimless) edging (Nylor frame)

10. Process mode button

Selects processing conditions.

Beveling	Flat edging (nylor frame)	Flat edging (two-point frame)
[Auto] ⇒ Auto processing (computer-calculated bevel) **[Guide] ⇒ Guided processing (manually-entered bevel)** **[Hole] ⇒ Whether to drill** **[EX] ⇒ EX lens processing** **[Soft] ⇒ Soft processing mode ON/OFF**	**[Auto] ⇒ Auto processing (computer-calculated groove)** **[Flat] ⇒ Flat edging** **[Guide] ⇒ Guided processing (manually-entered groove)** **[Hole] ⇒ Whether to drill** **[EX] ⇒ EX lens processing** **[Soft] ⇒ Soft processing mode ON/OFF**	**[Hole] ⇒ Flat edging and drilling** **[Flat] ⇒ Flat edging** **[EX] ⇒ EX lens processing** **[Soft] ⇒ Soft processing mode ON/OFF**

11. Polishing mode button

Selects a polishing mode.

When safety beveling	When not safety beveling
[NONE] ⇒ No safety beveling. **[Polish] ⇒ Safety beveling of edge.**	**[NONE] ⇒ No polishing.** **[Pol (S.B.)] ⇒ Polishing of safety-beveled surface only.** **[Pol (Edge)] ⇒ Polishing of edge only.** **[Polish] ⇒ Polishing of edge and safety-beveled surface.**

12. Safety beveling button

Displays the safety beveling mode selected by this button.

[NONE] ⇒ No safety beveling.
[Small] ⇒ Minor safety beveling of edge.

[Medium] ⇒ Medium safety beveling of edge.
[Large] ⇒ Major safety beveling of edge.

13. Layout mode button

Selects a layout mode.

[Active] ⇒ Active mode
[Passive] ⇒ Passive mode
[BiFocal] ⇒ Bifocal mode
[F.C.] ⇒ Frame changing mode

14. [Tracer] button

Imports shape data from the tracer connected to the RS-232C connector (RS-232C).

Only when the “Communication interface” parameter is set to “TRACER” on the Setting - Communication screen (RS-232C), this button is displayed.

15. [Cover] button

Opens or closes the processing chamber cover.

Holding this key for 3 seconds allows the operator to remove the processing chamber cover.

16. [RS-232C/ Ethernet] button

Selects an instrument from which data is imported. When importing data by entering job codes, select either the instrument connected to the RS-232C connector or one connected to the Ethernet connector.

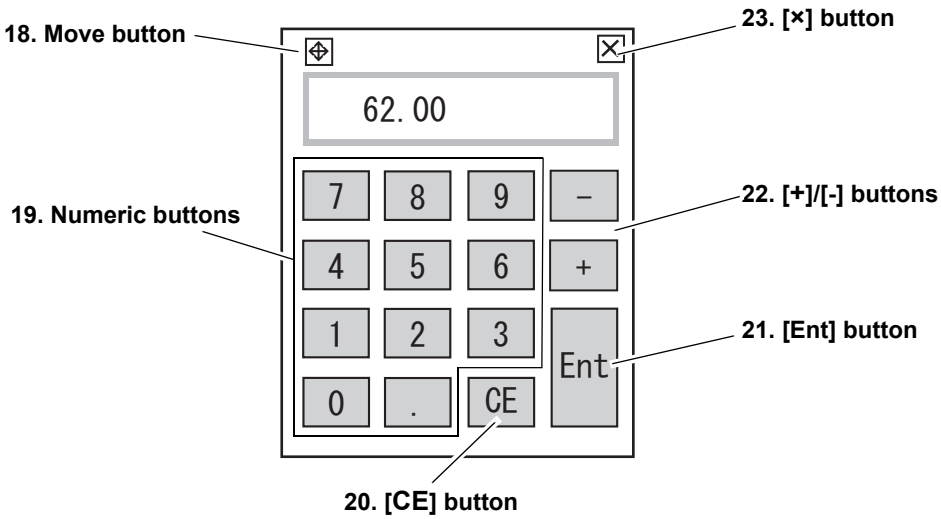
Pressing this button switches between “RS-232C” and “Ethernet”.
Only when the “Communication interface” parameter is set to other than “TRACER” or “NONE” on the Setting - Communication screen (RS-232C), and the “Communication interface” parameter is set to “LAN” on the Setting - Communication screen (Ethernet), this button is displayed.
On the “Server name” parameter on the Setting - Communication screen (RS-232C) or the Setting - Communication screen (Ethernet), the indication on the button can be changed to the connected instrument name (See Page 105).

17. [Send] button

Sends the job data displayed on the layout screen via the Ethernet or RS-232C connector.

This button is displayed only when the “Communication interface” parameter is set to LAN and the shape data import button is Extern.

The figure below shows a numeric keypad.
This keypad is used to enter numeric values when necessary.
Buttons to be displayed depend on entered items.



18. Move button
Pressing and dragging this button moves the numeric keypad.

19. Numeric buttons
Used to enter numeric values.

20. [CE] button
Clears the values entered last.
Pressing this button after all values are cleared closes the numeric keypad.

21. [Ent] button
Confirms the entered values.

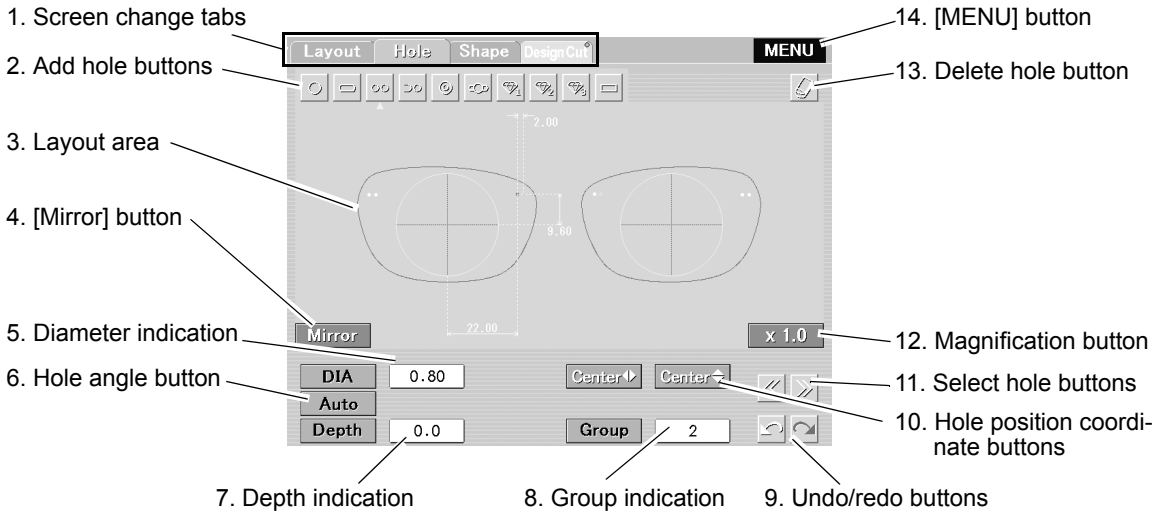
22. [+]/[-] buttons
Used to enter the positive sign or negative sign.

23. [×] button
Cancels the entry and closes the numeric keypad.

1.3.2 Hole edit screen

The screen is used for specifying hole positions and shapes to be drilled.

The following is a sample of the hole edit screen in the icon style.
It is displayed in the same classic style as that of the original ME-1000 when the “Hole editor type” parameter is set to PREVIOUS. See Page 40.



1. Screen change tabs

Change the screen to each function screen.

2. Add hole buttons

Specify the type of the hole to be added.

Select the desired hole type. Press with the touch pen the position where the hole of the type selected is to be added. A hole of the selected type is added in the pressed position on the screen.

3. Layout area

Shapes of both right and left rims and hole positions are displayed.

The hole being edited is displayed as a red circle. The area within the yellow circle on the shape is the hole prevention area in which hole positions cannot be set.

4. [Mirror] button

When adding holes, the mirror function activates and holes are automatically specified in mirrored positions on the other shape.

Each press of the [Mirror] button when the hole is selected adds or deletes the mirrored hole.

5. Diameter indication

Displays the set hole diameter.

Pressing the numeric button displays the numeric keypad to change the hole diameter. It is not displayed when the type of the selected add hole button is T screw or Jewel hole 1 to 3.

6. Hole angle button

Sets a hole angle.

Auto ⇒ A hole is drilled in the lens front perpendicular to the hole position.
X Auto ⇒ The tilt angle in the Y axis (vertical) direction is specified. The tilt angle in the X axis direction is the same as that for Auto.
ANG ⇒ The tilt angle in the X axis (horizontal) direction is specified.

ANGx-y ⇒ The tilt angles in the X and Y axes are specified.
Curve ⇒ Direction perpendicular to the entered curve value.

7. Depth indication

Displays the set hole depth.

Pressing the numeric button displays the numeric keypad to change the hole depth. It is not displayed when the type of the selected add hole button is Jewel hole 1 to 3. The rotation angle is displayed when T screw is selected.

8. Group indication

Displays the group number of the currently selected hole.

Pressing the numeric button displays the numeric keypad to enter a group number.

9. Undo/redo buttons

Undo the last change (up to five changes) or redo the change.

10. Hole position coordinate buttons

Select the coordinate display method.

Horizontal reference position:

Center ◆▶ ⇒ The frame center is regarded as the reference position.

B-Edge ◆▶ ⇒ The temporal end or nasal end of the lens shape is regarded as the reference position.
H-Edge ⇒ The temporal edge or nasal edge that is right beside to the hole is regarded as the reference position.

Vertical reference position:

Center ▲▼ ⇒ The frame center is regarded as the reference position.

B-Edge ▲▼ ⇒ The lowest point of the lens shape is regarded as the reference position.

11. Select hole buttons

Switch the hole to be edited. The selected hole is displayed in red.

12. Magnification button

Selects the magnification of the layout area.

Each press of the button switches the magnification between [×1.0] and [×1.5]. When the lenses of the data have been already processed, the options become [×1.0] and [×4.0]. The screen can be scrolled when the option other than [×1.0] is selected.

13. Delete hole button

Deletes the currently selected hole(s).

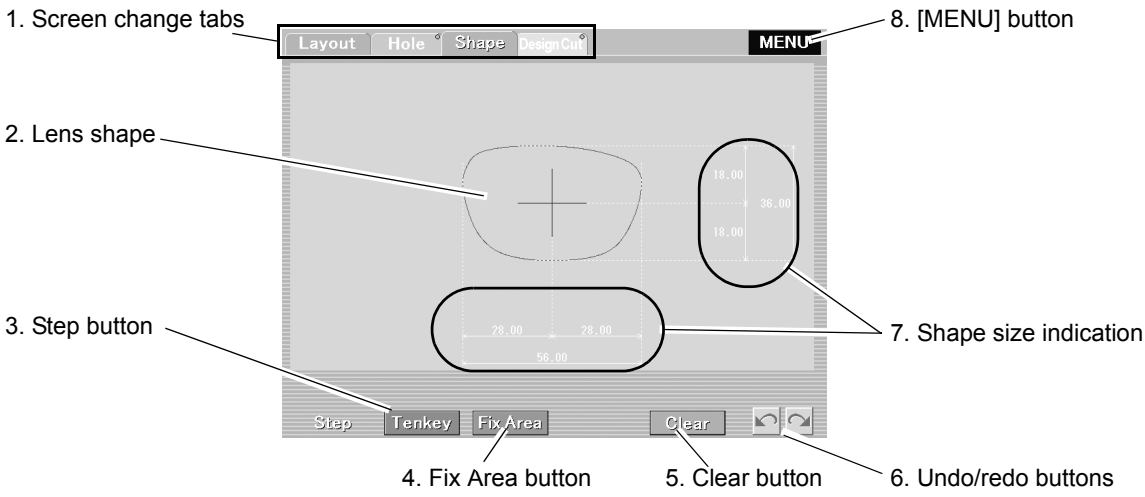
14. [MENU] button

Displays the Menu screen.

1.3.3 Shape change screen

The following is a sample of the shape change screen.

The screen is used for partly changing the lens shape based on the existing lens with the shape editor.



1. Screen change tabs

Change the screen to each function screen.

2. Lens shape

Changes the shape by dragging the outline.

3. Step button

Increase or decrease is specified with +/- buttons.

4. Fix Area button

Fixed area specification mode (specifying the area that is not to be changed).

Pressing this button again cancels the mode.

5. Clear button

Cancels all changes performed.

In fixed area specification mode, the fixed area is canceled. Pressing this button again resets the canceled fixed area.

6. Undo/redo buttons

Undo the last change (up to three changes) or redo the change.

7. Shape size indication

Displays the size of each part of the lens shape.

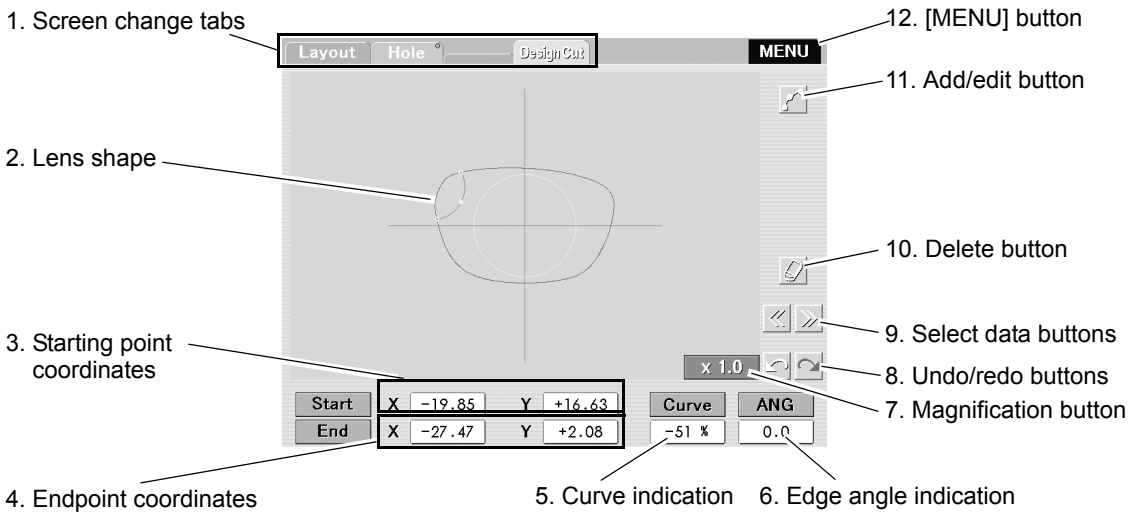
Pressing the numeric value area allows size change with a numeric keypad or +/- buttons.

8. [MENU] button

Displays the Menu screen.

1.3.4 Design cut screen

The following is a sample of the design cut screen.



1. Screen change tabs

Change the screen to each function screen.

2. Lens shape

Specifies and displays the front side edge of the design-cut lens.

3. Starting point coordinates

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

Pressing either of these buttons displays a numeric keypad to change the coordinates.

4. Endpoint coordinates

Display the coordinates of the endpoint in the selected design cut data.

Pressing either of these buttons displays a numeric keypad to change the coordinates.

5. Curve indication

Displays the curve of the data being edited.

If 0% is specified, the starting point and endpoint are in line.

6. Edge angle indication

Displays the edge angle of the data being edited.

Pressing the numeric button displays the numeric keypad to change the angle in the range of 0 to 30°.

7. Magnification button

Selects the magnification of the layout area.

Each press of the button switches the magnification in the order of [×1.0], [×1.5], [×2.0], and [×4.0]. The screen can be scrolled when the option other than [×1.0] is selected.

8. Undo/redo buttons

Undo the last change (up to five changes) or redo the change.

9. Select data buttons

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

10. Delete button

Deletes the selected data.

11. Add/edit button

Switches between Add mode and Edit mode.

12. [MENU] button

Displays the Menu screen.

1.4 Connection

1.4.1 LAN connection with the ICE-9000

Note

- Connect the RS-232C cable while the power of the ICE-9000 and ME-1000 is off.

1 Connect the RS-232C cable supplied with the ICE-9000 to the PC/LAN/EDGER 1 connector of the ICE-9000.

For the second lens edger, connect the cable to the EDGER 2 connector.

2 Connect the other end of the RS-232C cable to the RS-232C connector of the ME-1000.

3 Turn on the ICE-9000 and ME-1000.

4 After setting “System” to “Mini LAB” and “ID No.” to “32” on the Parameter 1 screen of the ICE-9000, check the setting of the communication speed.

See “2.13 Setting Parameters” of the ICE-9000 operator’s manual for the setting method.

5 Set “Communication Interface” to “LAN” on the Setting - Communication screen (RS-232C) of the ME-1000.

(See (page 103).)

6 Set “Baud Rate” on the Setting - Communication screen (RS-232C) of the ME-1000.

Baud Rate: Select the baud rate set in the ICE-9000.

7 Set “Host ID” to “32” on the Setting Communication screen of the ME-1000.

1.4.2 Connection with the LT-900

Note

- Connect the RS-232C cable while the power of the LT-900 and ME-9000 is off.

1 Connect the RS-232C cable supplied with the LT-900 to the RS-232C connector of the LT-900.

2 Connect the other end of the RS-232C cable to the RS-232C connector of the ME-1000.

3 Turn on the LT-900 and ME-1000.

4 Set “Communication Interface” to “TRACER” on the Setting - Communication screen (RS-232C) of the ME-1000.

(See Page 103.)

5 Set “Baudrate” to “9600” on the Setting - Communication screen (RS-232C) of the ME-1000.

Note

- If communication has failed, change “Baud Rate” of the ME-1000 to “38400”.

2. OPERATING PROCEDURES

2.1 Operation Flow

2.2 Preparation

2.2.1 Getting started

1 Make sure that the power cord is connected with the power connector and wall outlet.

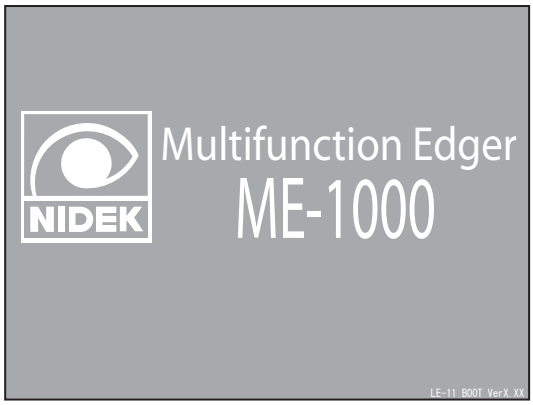
⚠ **CAUTION** • **Make sure that the mains plug is inserted into a wall outlet as far as the prongs will go.**

Insecure connection of the power cord may cause fire.

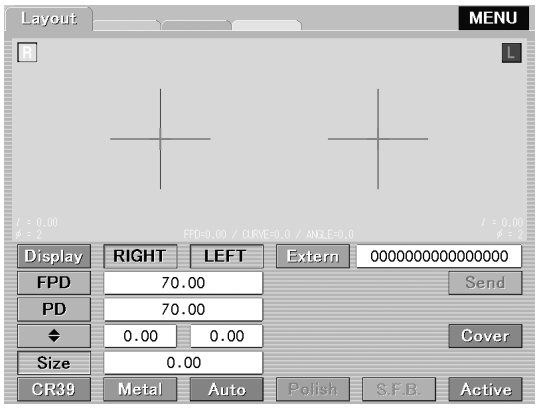
2 Turn the power on.

Turn ON (|) the power switch.

The screen on the right is displayed.



After the edger finishes initializing, the layout screen appears automatically and the processing chamber cover opens.



Note

• After power shutdown, do not turn the power on for about 10 seconds.

The edger may not operate normally.

3 Check visually that the processing wheels are not cracked.

⚠ **WARNING** • **Check visually that the processing wheels are not cracked before processing.**
The wheels may break and broken pieces may injure personnel if used with such flaws.

2.2.2 Exiting

1 Turn the power off while the edger is not in operation.
Turn OFF (○) the power switch.

⚠ **CAUTION** • **Do not turn the power off during processing.**
Failure of the edger may result.

2.3 Lens Layout

The ME-1000 does not contain a tracer. Process data (lens shape data and layout data) need to be imported through communication.

2.3.1 Data entry from the ICE-9000

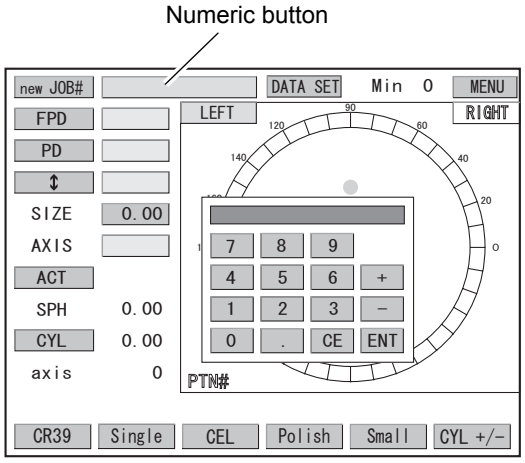
The following describes the MINI Lab system configured with the NIDEK Intelligent Blocker ICE-9000. Layout data can be entered with the ME-1000, but more convenient with the ICE-9000.
See each operator's manual for details of the operating procedures of the ICE-9000.

1 Enter a job code (ICE-9000).

The numeric keypad and barcode scanner are available for entering job codes.

Using the numeric keypad:

Pressing the numeric button on the right of [new JOB#] displays the numeric keypad. After entering a job code, press the [ENT] button.



Using a barcode scanner:

Read the bar code with the barcode scanner connected to the ICE-9000.

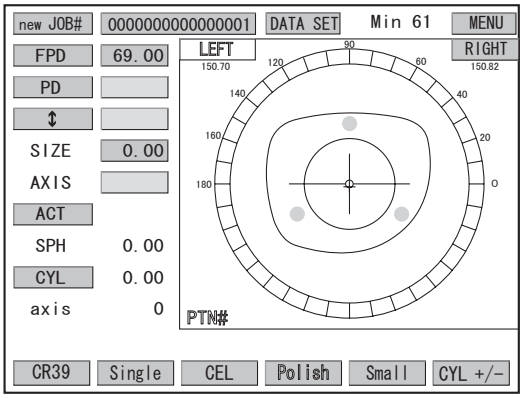
The job code is displayed.

2 Trace a frame (ICE-9000).

3 Import traced data (ICE-9000).

Press [DATA SET].

The lens shape is displayed in actual size on the screen.



4 Enter processing conditions and layout data. (ICE-9000)

See “2.7 Entering Grinding Conditions and Entering Lens Layout Data”, “2.9 Setting the Grooving Process”, or “2.10 Setting the Drilling Process” of the ICE-9000 operator’s manual.

Note

- For trivex lenses, select “TRX” with the ICE-9000.

5 Block a lens. (ICE-9000)

See “2.11 Blocking Lenses” of the ICE-9000 operator’s manual.

Processing conditions and layout data are saved when the lens is blocked.

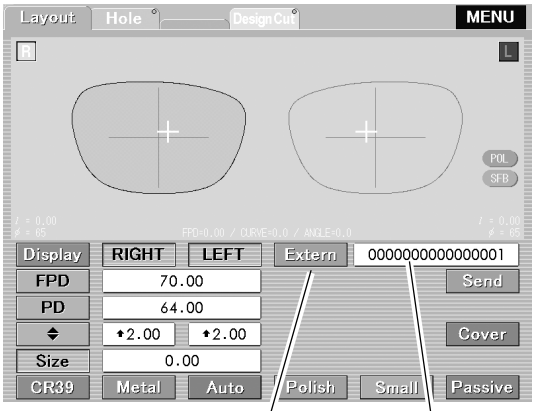
6 Block the other lens if necessary. (ICE-9000)

7 Import processing data from the ICE-9000. (ME-1000)

1) Set the shape data import button to [Extern].
2) Read a job code using the barcode scanner of the ME-1000 (option) which is in the standby status (not during processing).

   When the barcode scanner is not used, pressing the job No. button displays the numeric keypad. After entering a job code, press the [Ent] button.

   The request for data transfer is sent to the ICE-9000.
3) The ICE-9000 which received the request sends data corresponding to the job code to the ME-1000.
4) Data transferred to the ME-1000 appears.



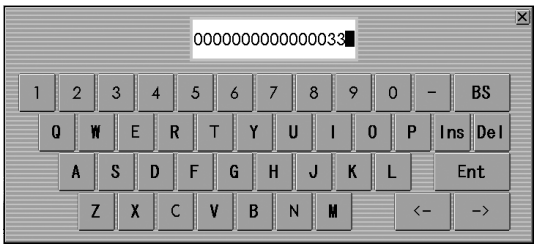
[Job codes with alphanumeric characters]

Set the “Input interface (JOB/PTN code)” parameter to KEYPAD.

Only uppercase alphabetic characters may be entered as job codes.

1) Press the job No. indication.

   The keyboard screen appears.



2) After entering a job code, press the [Ent] button.

   [-] key ⇒ Enters a hyphen. Only one hyphen may be entered in the desired position. It is used to separate the manufacturer name and code.

   [BS] key ⇒ Deletes the character to the left of the cursor. Holding this button down deletes all characters to the left of the cursor.

   [Ins] key ⇒ Enters Insert mode. Pressing this button again places in overwrite mode.

   [Del] key ⇒ Deletes the character where the cursor is placed.

   [Ent] key ⇒ Confirms the entered character. If the [Ent] button is pressed when less than 16 characters are entered, zeroes are automatically inserted so that the characters are right-aligned. If a hyphen is entered, zeroes are inserted to the right of the hyphen.

   For example:

   a. When A234 is entered ⇒ 000000000000A234

   b. When NIDEK-A01 is entered ⇒ NIDEK-0000000A01

   [<-] ⇒ Moves the cursor to the left.

   [->] ⇒ Moves the cursor to the right.

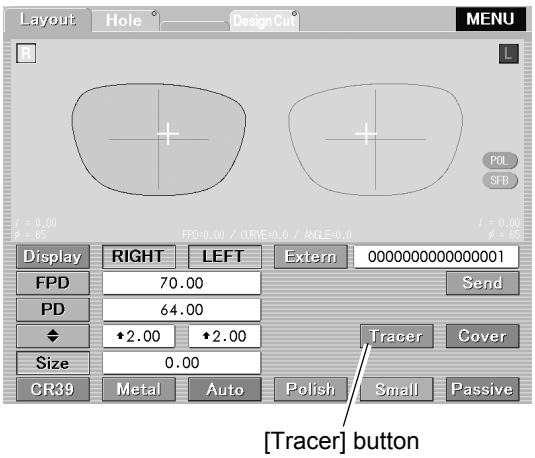
   [x] button ⇒ Pressing [x] in the upper right of the keypad screen cancels the job code entry.

2.3.2 Importing data from the LT-900

This section describes how to import data traced by the connected NIDEK Satellite Tracer LT-900. In this case, layouts need to be set by the ME-1000.
See the LT-900 operator's manual for details of the LT-900.

1 Trace a frame (LT-900).

2 Press the [Tracer] button to import the traced data (ME-1000).

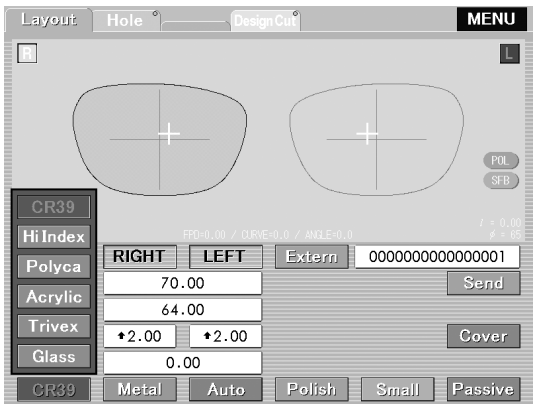


2.3.3 Setting layouts with the ME-1000

In general, it is recommended to enter lens layout data and processing conditions from the ICE-9000, LT-800, or a computer, but it is also possible to change settings of the ME-1000. The layout screen is used to change those settings.

○ Changing processing conditions

Change settings with buttons at the bottom of the layout screen.



- Selecting R or L

  Select a lens to be processed with the [R/L] key.

  The [R] or [L] button can also be used.

  The color of the selected R or L indication turns orange.

- Selecting a lens material

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

  [CR39 (plastic), Hi Index (high index plastic), Polyca. (polycarbonate), Acrylic (acrylic resin), Trivex, Glass]

⚠ CAUTION • **Be sure to select the correct lens material.**

If an incorrect material is selected, the lens may not be processed properly, or lifetime of the processing wheel may be reduced.

Note

- Select “HiIndex” when processing plastic lenses which produce burrs and chips easily.
- Select “Trivex” when processing lenses which melt easily from heat.
- Glass lenses cannot be processed with Type PLB.

- Selecting beveling or flat edging

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

  Flat edging ⇒ Select [TwoPoint] or [Nylor].

  Beveling ⇒ Select [Metal] or [Plastic] (computer-calculated bevel).

- Selecting a processing mode

  Pressing the process mode button displays the pop-up menu of process mode.

  Beveling ⇒ Select [Auto], [Guide] or [EX].

  [Auto] ⇒ Auto processing (computer-calculated bevel)
  [Guide] ⇒ Guided processing (manually-entered bevel)
  [Hole] ⇒ Drilling
  [EX] ⇒ EX lens processing

Flat edging (Nylor) ⇒ Select [Auto], [Flat], [Guide] or [EX].

[Auto] ⇒ Auto grooving (computer-calculated groove)
[Flat] ⇒ Flat edging
[Guide] ⇒ Guided grooving (manually-entered groove)
[Hole] ⇒ Drilling
[EX] ⇒ EX lens processing

Flat edging (TwoPoint) ⇒ Select [Hole], [Flat], or [EX].

[Hole] ⇒ Drilling
[Flat] ⇒ Flat edging
[EX] ⇒ EX lens processing

* See the following "● Turning on the soft processing mode" for [Soft].

● Turning on the soft processing mode

For processing of lenses whose coating is slippery, turn on the soft processing mode to reduce the axis shift due to slippage.

To turn on the soft processing mode, press the process mode button and select [Soft] from the displayed pop-up menu.

This is the mode to control the roughing process more accurately. The processing time is extended a little but the axis shift during processing can be reduced.

When the soft processing mode is on, SFT is displayed to the right of the layout screen.

Pressing [Soft] on the process mode button again turns off the soft processing mode.

● Selecting a polishing mode

Pressing the polishing mode button displays the pop-up menu. This menu is used to select whether to polish the safety-beveled surface. The menu to be displayed depends on whether safety beveling is performed.

When safety beveling is not performed. ⇒ Select [NONE] or [Polish].

[NONE] ⇒ No polishing.
[Polish] ⇒ Polishing.

When safety beveling is performed. ⇒ Select [NONE], [Pol(S.B.)], [Pol(Edge)] or [Polish].

[NONE] ⇒ No polishing.
[Pol(S.B.)] ⇒ Polishing the safety-beveled surface only.
[Pol(Edge)] ⇒ Polishing the edge excluding the safety-beveled surface.
[Polish] ⇒ Polishing the edge including the safety-beveled surface.

● Selecting a safety beveling mode

Pressing the safety beveling mode button displays the pop-up menu. Select the desired safety bevel mode from the menu.

No safety beveling. ⇒ Select [NONE].

Safety beveling. ⇒ Select [Small], [Medium], or [Large] according to the desired safety bevel amount.

Note

• The safety bevel amount can be changed with parameters (Page 139).

○ Changing each data of lens layout

● Entering FPD

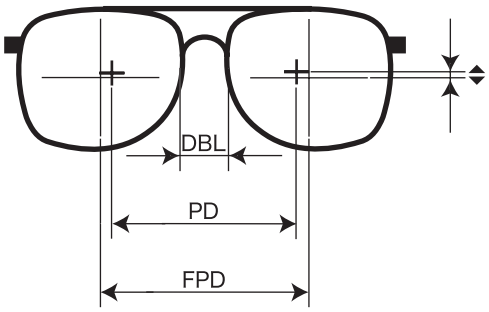
1) Press the numeric button on the right of [FPD].

   The numeric button turns red and numeric keypad appears.

2) After entering a FPD value of the prescription with the numeric keypad, press the [Ent] button.

   [30.00 to 99.50 mm]

   [CE] ⇒ Clears one character entered last.



Note

- It is possible to enter the FPD by nose width (DBL).

  This is the method of entering the width between the nasal ends of the left and right rims.

  1) Press [FPD] to display the pop-up menu.
  2) Press [DBL].

     FPD changes to DBL.
  3) Enter a numeric value of DBL in the same manner as FPD.

● Entering PD

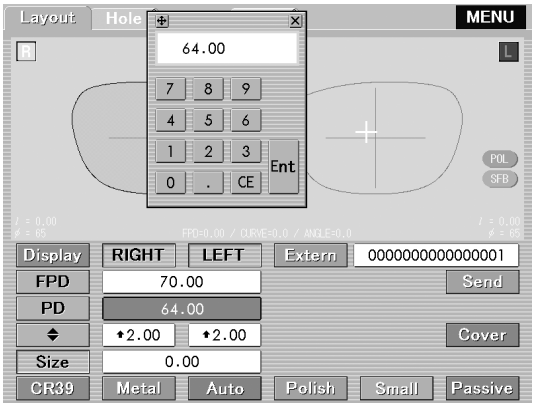
1) Press the numeric button on the right of [PD].

   The numeric button turns red and the numeric keypad appears.

2) After entering a PD value of the prescription with the numeric keypad, press the [Ent] button.

   [30.00 to 99.50 mm]

   [CE] ⇒ Clears one character entered last.



Note

- It is possible to enter PD by monocular PD.

  In this method, the distance from the bridge center to each eye point is entered.

  1) Press [PD] to display the pop-up menu.
  2) Press [1/2PD].

     PD changes to 1/2PD.
  3) Enter 1/2PD for each of the right eye and left eye.

     [15.00 to 49.75 mm]

     The data entered for the right eye is copied to the left eye automatically.

- Entering the optical center

1) Press the numeric button of the right lens of [▲▼].

   The numeric button turns red and numeric keypad appears.

2) After entering the height of the optical center from the level of the frame center with the numeric keypad, press the [Ent] button.

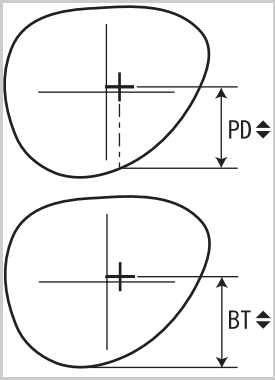
   [-15.00 to +15.00 mm]

   [CE] ⇒ Clears one character entered last.

   The data entered for the right lens is copied to the left lens automatically.

3) If necessary, enter the height of the optical center of the left lens.

Note



• It is also possible to enter the height from the bottom of the shape.

1) Press [▲▼] to display the pop-up menu.
2) Press [PD▲▼] or [BT▲▼] to change the entry form.
   ▲▼ changes to PD▲▼ or BT▲▼.
   PD▲▼: Height from the center point on the top line of the segment straight down to the point on the shape.
   BT▲▼: Height from the point level with the center of the segment on the top line straight down to the lowest point on the shape.
3) Enter a numeric value of PD▲▼ or BT▲▼ in the same manner as ▲▼.

- Compensating the finishing size

1) Press the numeric button on the right of [Size].

   The numeric button turns red and numeric keypad appears.

2) After entering the compensation value of the finishing size with the numeric keypad, press the [Ent] button.

   [-9.95 to +9.95 mm]

   [CE] ⇒ Clears one character entered last.

○ Changing layout mode (Active/Passive)

Select a layout mode (active or passive) according to the position where a lens is blocked with the pliable cup.

Pressing the layout mode button displays the pop-up menu. Select a layout mode from the menu.

Active: A lens is blocked with the pliable cup at the optical center.

Passive: A lens is blocked with the pliable cup at the boxing center.

BiFocal (bifocal): Bifocal lens processing mode

F.C. (frame changing): Frame changing mode

Note

- When data laid out in passive mode is received, layout mode, FPD, PD, vertical layout and size for two-point frames are locked against erroneous operation.

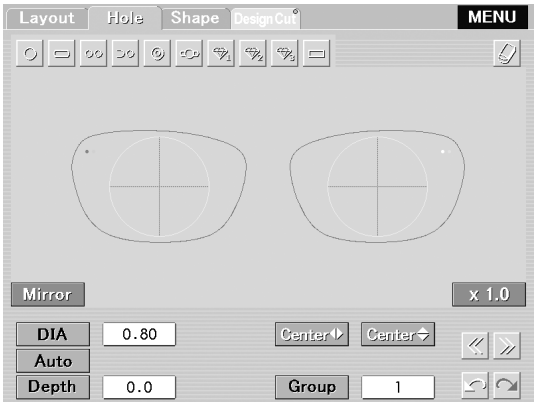
  Depressing the layout mode button for several seconds releases the lock.

2.3.4 Specifying the drilling process (Icon style)

This is the drilling specification method when the “Hole editor type” parameter is set to NEW. See “2.3.5 Specifying the drilling process (Classic style)” (Page 40) when the parameter is set to PREVIOUS.

1 Press the [Hole] tab.

The hole edit screen is displayed.



2 Specify the desired hole type among the add hole buttons.

Add hole button	Setting and positioning of hole	Setting of hole size	
Simple hole	Normal circular hole. Specify the hole center position.	Diameter	Hole diameter
		Depth	Hole depth
Slotted hole	Rounded slotted hole. Specify the start and end points of the hole.	Diameter	Slotted hole width
		Depth	Slotted hole depth
Pair hole	Combination of two horizontal simple holes. Specify the center of the inside hole (nearer to the frame center) and the distance between the paired holes.	Diameter	Hole diameter
		Depth	Hole depth
Notched hole	Combination of a simple hole and notch. Specify the vertical position of the simple hole and the distance between the hole and notch. The horizontal position of the simple hole is automatically determined according to the shape.	Diameter	Hole diameter, notch width
		Depth	Depth of the hole and notch
Countersunk hole	Countersunk hole. Specify the hole diameter and depth separately for the hole and countersink. Specify the hole center position.	Diameter	Diameter of the hole and countersink
		Depth	Depth of the hole and countersink
T screw	Combination of a simple hole and groove (countersunk slotted hole). Specify the hole center position and groove angle.	Diameter	—
		Rotation angle	Groove angle
Jewel hole 1	Hole for embedding a jewel. Set with the Jewel hole1 parameter. Specify the hole center position.	Diameter	—
		Depth	—
Jewel hole 2	Hole for embedding a jewel. Set with the Jewel hole2 parameter. Specify the hole center position.	Diameter	—
		Depth	—
Jewel hole 3	Hole for embedding a jewel. Set with the Jewel hole3 parameter. Specify the hole center position.	Diameter	—
		Depth	—
Rectangular hole	Square-cornered slotted hole. Specify the start and end points of the hole.	Diameter	Rectangular hole width
		Depth	Rectangular hole depth

Select the desired hole type. Press with the touch pen the position where the hole of the type selected is to be added. A hole of the selected type is added in the pressed position on the screen. The selected type holes can be added successively until the selected button is pressed again or another button is pressed.

3 Press the position on which a hole needs to be drilled with the touch pen.

The hole is automatically added in the mirrored position on the other shape.

The hole position cannot be specified within the yellow circle on the shape displayed.

Note

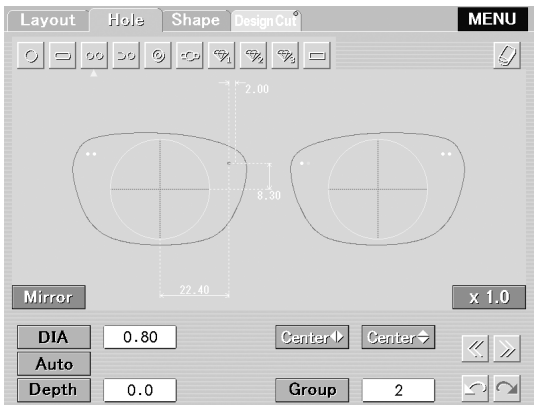
- When adding holes, the mirror function activates and holes are automatically specified in mirrored positions on the other shape. The holes of the other shape are displayed in light blue.

  Holes entered by the mirror function are simultaneously changed or deleted as right and left pairs.

  When not drilling in symmetric positions on the other lens, press the [Mirror] button to turn off the mirror function.
- When drilling in the left lens only, press the [Mirror] button to turn off the mirror function and then press the left shape with the touch pen.

4 Release the add hole button pressed in Step 2 by pressing it again.

The hole position can be edited. The coordinates of the selected hole are displayed on the shape.



5 Enter the desired hole position by changing the numeric value displayed on the lens shape screen.

1) Press the numeric value for the horizontal position.

   The value turns red and numeric keypad appears.

2) After entering the X coordinate (horizontal position) of the hole with the numeric keypad, press the [Ent] button.

   [CE] ⇒ Clears one character entered last.

3) Enter the Y coordinate (vertical position) of the hole in the same manner.

Note

- The hole position can be changed also by dragging. Change the selected hole position by dragging the hole.
- After the hole position is changed by manually dragging it or by entering the coordinates using the numeric keypad,  and  become available. These buttons allow the operator to return the hole position to one of the five latest positions or redo the returned modification.

  It is possible to return the hole position back to one of the five latest positions.

  When the one of the add hole buttons or  is pressed,  is reset.

  If the hole position is additionally modified by manually dragging it or by entering the coordinates using the numeric keypad, only  is reset.

6 Enter the desired hole size by changing the numeric button on the right of [DIA].

1) Press the numeric button on the right of [DIA].

   The numeric button turns red and numeric keypad appears.

2) After entering the hole diameter (mm) with the numeric keypad, press the [Ent] button.

   [0.8 to 10.0 mm] (The minimum diameter depends on the drill diameter.)

   [CE] ⇒ Clears one character entered last.

7 Enter the desired hole depth by changing the numeric button on the right of [Depth].

1) Press the numeric button on the right of [Depth].

   The numeric button turns red and numeric keypad appears.

2) After entering the hole depth (mm) with the numeric keypad, press the [Ent] button.

   Up to the setting of the “Flute length” parameter of the Setting - Grinding screen (Adjustment) can be entered.

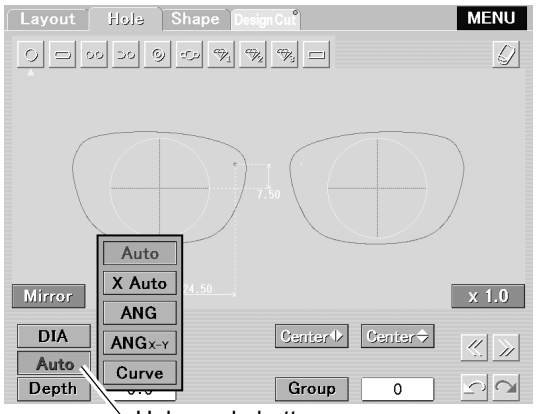
   [CE] ⇒ Clears one character entered last

Note

- To drill through a hole, set [Depth] to “0.0”.

8 Set a hole angle.

Press the hole angle button to display the pop-up menu. Select the desired setting from the menu. When a setting other than [Auto] is selected, also enter the angle.

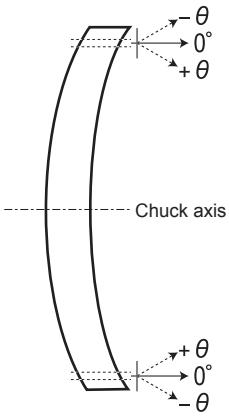


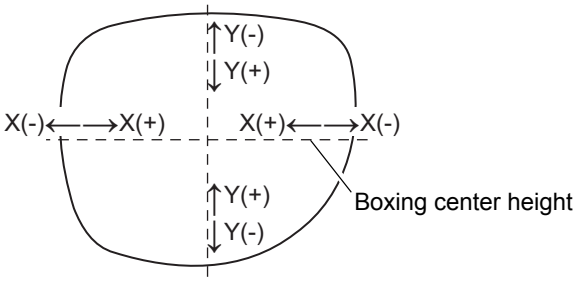
When [Auto] is selected, a hole is drilled in the lens front perpendicular to the hole position.

When [X Auto] is selected, enter only the tilt angle of the Y axis (vertical) direction. Entering a positive value tilts the axis in the direction of the boxing center height. The X axis (horizontal) direction is tilted by 90° to the lens front surface of the hole position.

When [ANG] is selected, enter the tilt angle. With 0°, it becomes parallel to the chuck axis. Entering a positive value tilts the axis in the direction of the chuck axis.

When [ANGX-Y] is selected, enter the tilt angles of the X axis (horizontal) direction and Y axis (vertical) direction. With 0°, they become parallel to the chuck axis. Entering a positive value tilts the axis in the direction of the chuck axis.

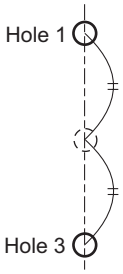




When [Curve] is selected, a hole is drilled in the direction perpendicular to the entered curve value.

9 Specify a group No. to drill multiple holes in parallel.

When the group No. is entered, the holes assigned to the same group No. are drilled in parallel. For example, with the hole angle button set to [Auto], those holes are drilled in the lens front at right angles to the middle point in the same group of holes. Even in the same group, the holes between the left- and right-eye lenses are regarded as those in separate groups.



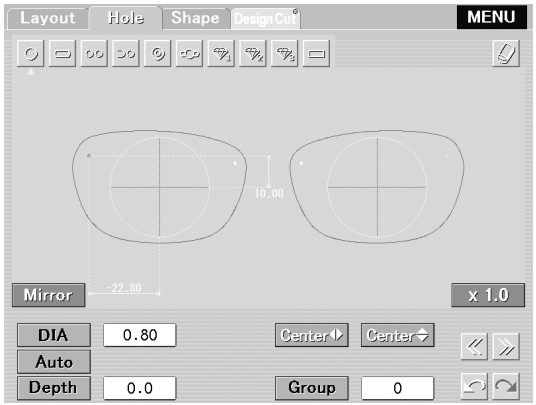
When hole 1 and hole 3 are assigned to the same group, those holes are drilled in the lens front at right angles to the middle point of the holes.

Note

- "0" in the numeric button on the right of [Group] indicates that the hole is not assigned to a group.
- The holes with the same group No. to be made in the same lens (right lens or left lens) are shown in green.
- Using ∞ in Step 2 can also align two holes horizontally.

10 Set other holes in the same manner.

Up to 16 holes can be set for the right side and left sides in total.



Note

- To check the entered hole position, select the hole with the [<<] or [>>] button.
  The selected hole is displayed in red and its coordinates are displayed.
  The triangle below the add hole button indicates the currently selected hole type.

11 Press [Layout] tab.

The screen returns to the layout screen.

[Changing magnification]

Each press of the magnification button switches the magnification between [×1.0] and [×1.5].

The screen can be scrolled by touching the hole prevention area and dragging while the magnification is other than [×1.0].

When the lens of the data has been already processed, the options become [×1.0] and [×4.0].

[Canceling hole settings]

Set hole positions can be canceled.

1) With the [<<] or [>>] button at the lower right of the hole edit screen, select the hole to be canceled.

   The selected hole is displayed in red on the displayed lens shape.

2) Press the  button.

   The specification of the selected hole is canceled.

[Drilling for T screws]

Holes for T screws can be drilled.

1) Press  and then the lens shape with the touch pen to add the hole for T screw.
2) Set the position of the hole in the center.
3) Set the rotation angle of the slotted hole with the numeric button on the right of [Rotation].

   0°: horizontal, 90°: vertical

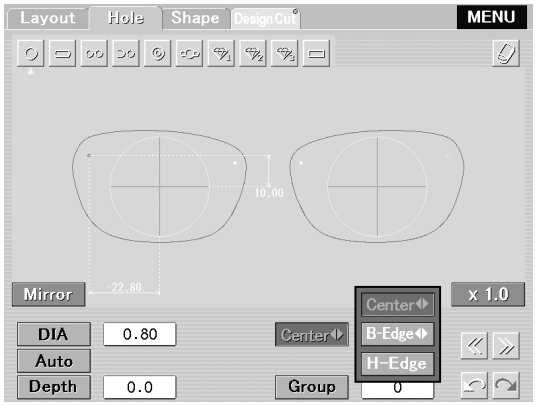
   * In T-Screw mode, the hole depth cannot be changed.

[Jewel hole drilling function]

For drilling holes to embed jewel, multiple holes can be drilled in combination. Using the jewel hole drilling function, such drilling is easier by selecting the hole position and hole type after setting the hole shape in advance.

See “2.7.6 Jewel hole drilling function” (Page 83).

[Display method of hole position coordinates]



As the displaying method of coordinates, select the horizontal base point from among Center ⇹, B-Edge ⇹, and H-Edge. Also select the vertical base point from either Center ⇳ or B-Edge ⇳.

The coordinate display method can be selected separately for each hole.

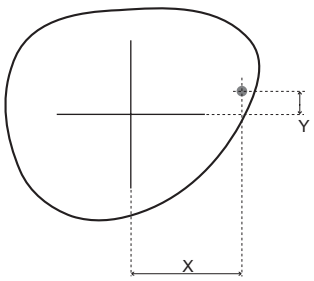
Center ⇹, Center ⇳: Boxing center.

B-Edge ⇹: Temporal end or nasal end of the shape.

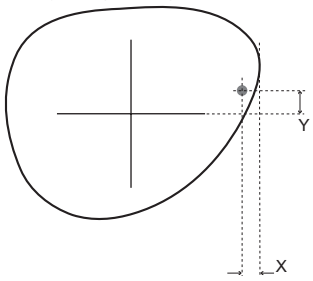
H-Edge: Edge right beside the hole.

B-Edge ⇳: Lowest point of the shape.

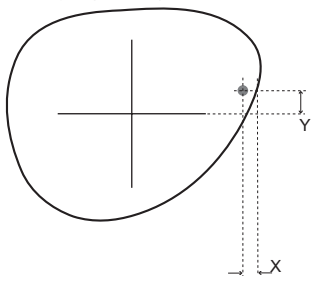
Center⇹, Center ⇳



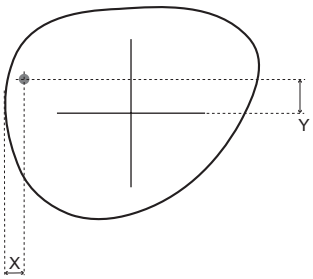
B-Edge⇹ (Nasal), Center⇳



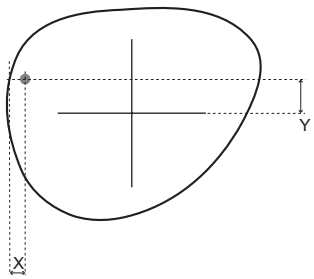
H-Edge (Nasal), Center⇳

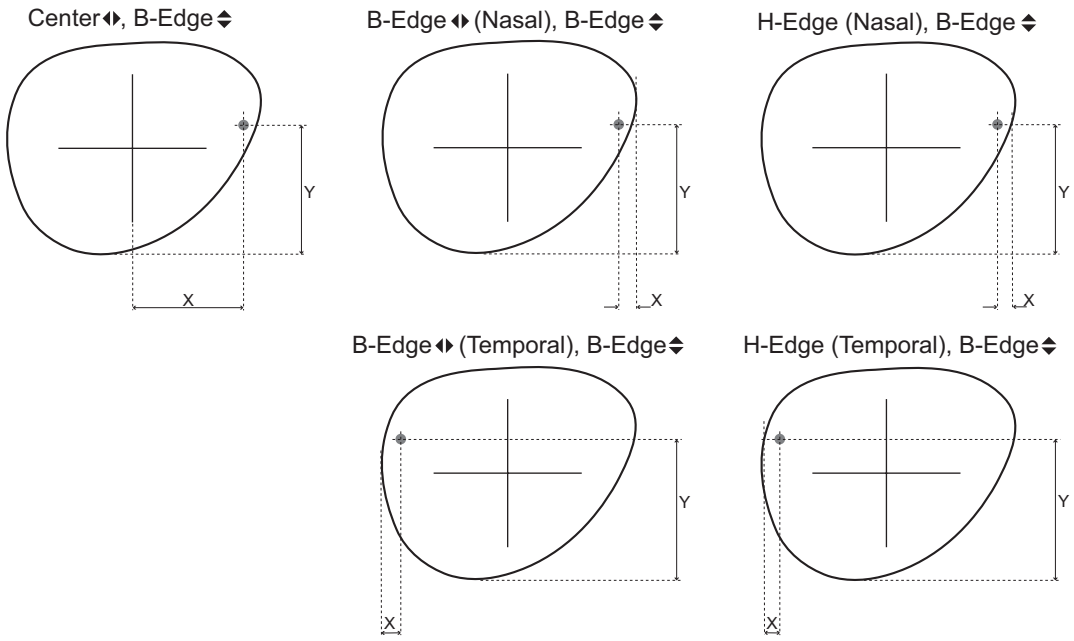


B-Edge⇹ (Temporal), Center⇳



H-Edge (Temporal), Center⇳





[Hole position correction when a size value is entered]

When a size is entered with the “Correct hole position” parameter set to “EXEC” on the Setting - Grinding screen (Others), the X coordinate is automatically corrected so that the H-Edge value of each hole position is preserved.

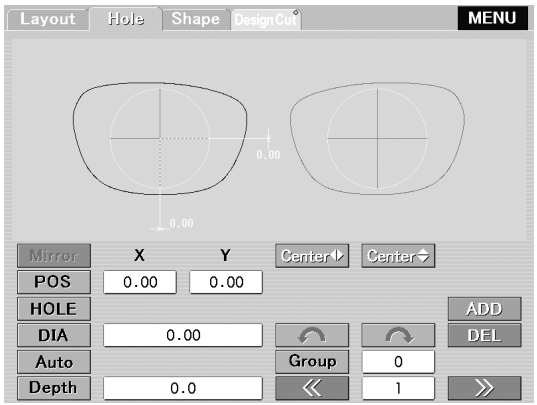
The Y coordinate value cannot be corrected.

2.3.5 Specifying the drilling process (Classic style)

This is the drilling specification method when the “Hole editor type” parameter is set to PREVIOUS. See “2.3.4 Specifying the drilling process (Icon style)” (Page 33) when the parameter is set to NEW.

1 Press the [Hole] tab.

The hole edit screen is displayed.



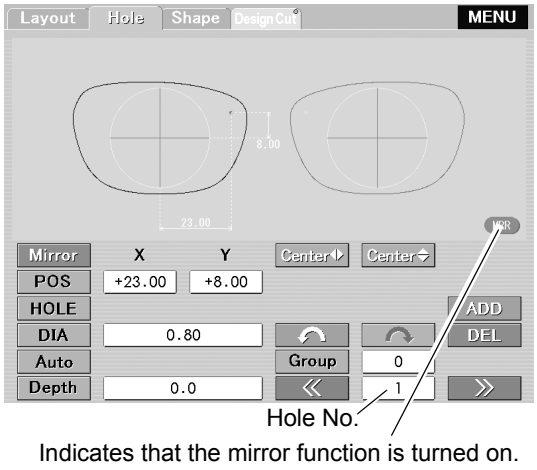
2 Press the [ADD] button.

3 Press the position on which a hole needs to be drilled with the touch pen.

The coordinates of the specified hole position is displayed.

The hole is automatically added in mirrored positions on the other shape.

The hole position cannot be specified within the yellow circle on the shape displayed.



Note

- When adding holes, the mirror function activates and holes are automatically specified in mirrored positions on the other shape. The holes of the other shape are displayed in light blue and the hole No. is automatically set to the set hole No. + 1.

  Holes entered by the mirror function are simultaneously changed or deleted as right and left pairs.

  When not drilling in symmetric positions on the other lens, press the [Mirror] button to turn off the mirror function.
- When drilling in the left lens only, press the [Mirror] button to turn off the mirror function and then press the left shape with the touch pen or press the [R/L] key of the control panel.

4 Enter the desired hole position by changing the numeric value of X and Y on the right of [POS].

1) Press the X value button.

   The value button turns red and numeric keypad appears.

2) After entering the X coordinate (horizontal position) of the hole with the numeric keypad, press the [Ent] button.

   [CE] ⇒ Clears one character entered last.

3) Enter the Y coordinate (vertical position) of the hole with the Y value button in the same manner.

Note

- After the hole position is changed by manually dragging it or by entering the coordinates using the numeric keypad, [↶] and [↷] become available. These buttons allow the operator to return the hole position to one of the five latest positions or redo the returned modification.

  When [↶] and [↷] are available, the buttons are highlighted by an orange background.

  It is possible to return the hole position back to one of the five latest positions.

  When the hole No. is changed, the [ADD] button is pressed, the [DEL] button is pressed or the hole, [↶] and [↷] are reset.

  If the hole position is additionally modified by manually dragging it or by entering the coordinates using the numeric keypad, only [↷] is reset.

5 Enter the desired hole size by changing the numeric button on the right of [DIA].

1) Press the numeric button on the right of [DIA].

   The numeric button turns red and numeric keypad appears.

2) After entering the hole diameter (mm) with the numeric keypad, press the [Ent] button.

   [0.8 to 10.0 mm] (The minimum diameter depends on the drill diameter.)

   [CE] ⇒ Clears one character entered last.

6 Enter the desired hole depth by changing the numeric button on the right of [Depth].

1) Press the numeric button on the right of [Depth].

   The numeric button turns red and numeric keypad appears.

2) After entering the hole depth (mm) with the numeric keypad, press the [Ent] button.

   Up to the setting of the “Flute Length” parameter of the Setting - Grinding screen (Adjustment) can be entered.

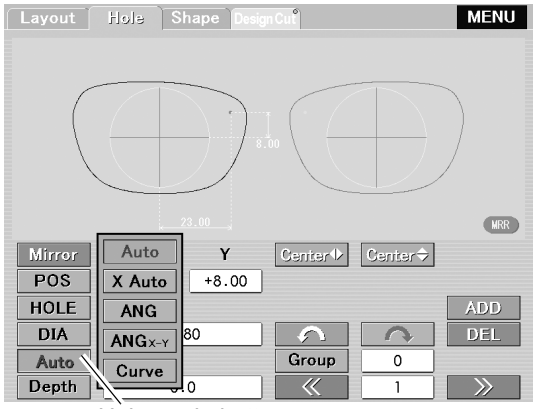
   [CE] ⇒ Clears one character entered last.

Note

- To drill through a hole, set [Depth] to “0.0”.

7 Select a hole angle.

Press the hole angle button to display the pop-up menu. Select the desired setting from the menu. When a setting other than [Auto] is selected, also enter the angle.



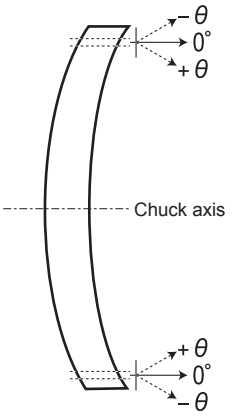
Hole angle button

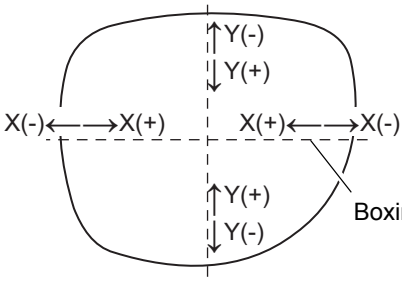
When [Auto] is selected, a hole is drilled in the lens front perpendicular to the hole position.

When [X Auto] is selected, enter only the tilt angle of the Y axis (vertical) direction. Entering a positive value tilts the axis in the direction of the boxing center height. The X axis (horizontal) direction is tilted by 90° to the lens front surface of the hole position.

When [ANG] is selected, enter the tilt angle. With 0°, it becomes parallel to the chuck axis. Entering a positive value tilts the axis in the direction of the chuck axis.

When [ANGX-Y] is selected, enter the tilt angles of the X axis (horizontal) direction and Y axis (vertical) direction. With 0°, they become parallel to the chuck axis. Entering a positive value tilts the axis in the direction of the chuck axis.

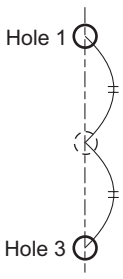




When [Curve] is selected, a hole is drilled in the direction perpendicular to the entered curve value.

8 Specify a group No. to drill multiple holes in parallel.

When the group No. is entered, the holes assigned to the same group No. are drilled in parallel. For example, with the hole angle button set to [Auto], those holes are drilled in the lens front at right angles to the middle point in the same group of holes. Even in the same group, the holes between the left- and right-eye lenses are regarded as those in separate groups.



When hole 1 and hole 3 are assigned to the same group, those holes are drilled in the lens front at right angles to the middle point of the holes.

Note

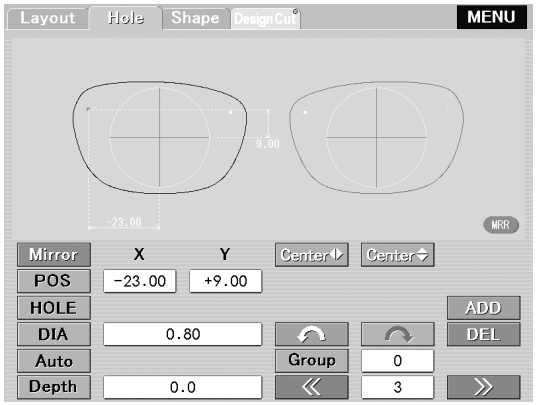
- "0" in the numeric button on the right of [Group] indicates that the hole is not assigned to a group.
- The holes with the same group No. to be made in the same lens (right lens or left lens) are shown in green.

9 Press the [ADD] button to set other holes.

The set hole is displayed in light blue, and the hole number at the lower right of the screen changes.

10 Set other holes in the same manner.

Up to 16 holes can be set for the right side and left side in total.



Note

- To check the entered hole position, select the hole No. with the [<<] or [>>] button.
  When the mirror function is on, only the hole No. of the right lens shape can be selected.
  The coordinates of the selected hole No. position are displayed.

11 Press the [Layout] tab.

The screen returns to the layout screen. [Hole] is selected for the process mode.

[Drilling slotted holes]

1) When the hole position is set, pressing and dragging the touch pen sets a slotted hole.

   Pressing the [HOLE] button and selecting [SLOT] from the menu sets the same condition.

2) With the numeric button on the right of [POS] and [SLOT], set the starting point and endpoint.

   The base points of coordinate can be selected by the “15: Slot coordinate mode” parameter on the Setting - Grinding (Others) screen.

   * The slotted hole can be drilled at the same angle from the starting point to the endpoint.

   Notching can be done by setting either the starting point or endpoint to the outside of the lens shape.

[Drilling rectangular holes]

1) Press the [HOLE] button and select [RECT] from the menu to set the rectangular hole.

2) With the numeric button on the right of [POS] and [RECT], set the starting point and endpoint.

   * Rectangular holes can be drilled at the same angle from the starting point to the endpoint.

   Notching can be done by setting either the starting point or endpoint to the outside of the lens shape.

   The corner roundness of rectangular holes depends on the radius of a drill.

[Canceling the hole setting]

The set hole position can be canceled.

1) With the [<<] or [>>] button at the lower right of the hole edit screen, select No. of the hole to be canceled.

   The hole of the selected No. is displayed in red on the displayed lens shape.

2) Press the [DEL] button.

   The specification of the selected hole No. is canceled and then the next and later hole Nos. are brought forward.

[Drilling for T screws]

Holes for T screws can be drilled.

1) After pressing the [HOLE] or [SLOT] button, select [T-Screw] from the menu.
2) Set the position of the hole in the center with the numeric button on the right of [POS].
3) Set the rotation angle of the slotted hole with the numeric button on the right of [Rotation].

   0°: horizontal, 90°: vertical

   * In T-Screw mode, the hole depth cannot be changed.

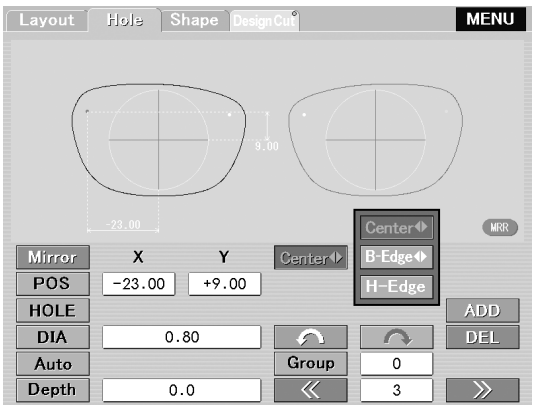
[Jewel hole drilling function]

For drilling holes to embed jewel, multiple holes can be drilled in combination. Using the jewel hole drilling function, such drilling is easier by selecting the hole position and hole type after setting the hole shape in advance.

See “2.7.6 Jewel hole drilling function” (Page 83).

[Display method of hole position coordinates]

As the displaying method of coordinates, select the horizontal base point from among Center ⇹, B-Edge ⇹, and H-Edge. Also select the vertical base point from either Center ⇳ or B-Edge ⇳.



The coordinate display method can be selected separately for each hole.

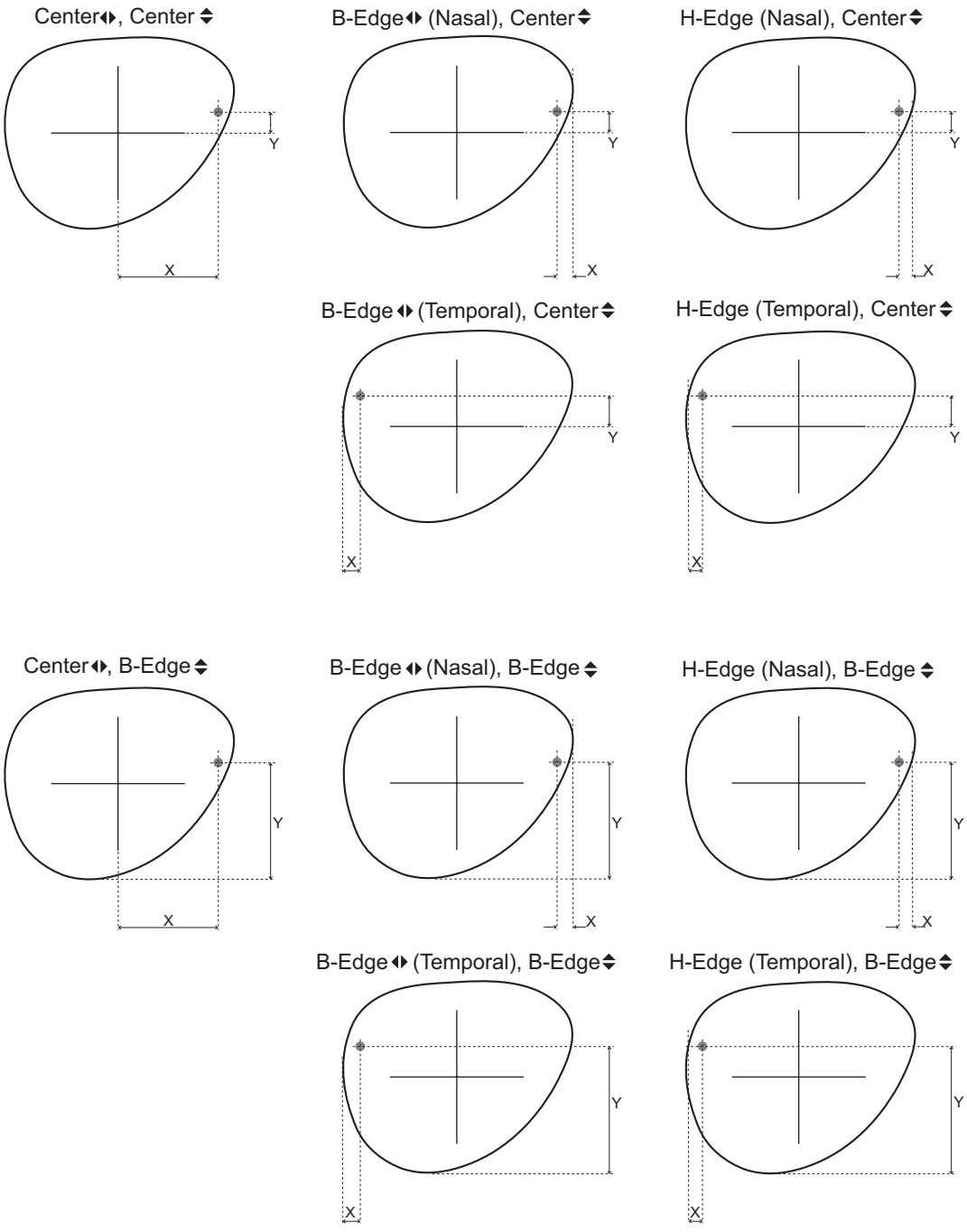
Center ⇹, Center ⇳: Boxing center.

B-Edge ⇹: Temporal end or nasal end of the shape.

H-Edge: Edge right beside the hole.

B-Edge ⇳: Lowest point of the shape.

When B-Edge ⇹ or H-Edge is selected, Nasal or Temporal can be selected.



[Hole position correction when the size value is entered]

When a size is entered with the “Correct hole position” parameter set to “EXEC” on the Setting - Grinding screen (Others), the X coordinate is automatically corrected so that the H-Edge value of each hole position is preserved.

The Y coordinate value cannot be corrected.

2.4 Blocking Lenses

Block a lens with the pliable cup according to the layout mode.

Note

- Provide the lens which has enough size for processing.
  If the lens diameter is short, the feelers may come off the lens, which may result in malfunction.
- Use only the supplied pliable cup.

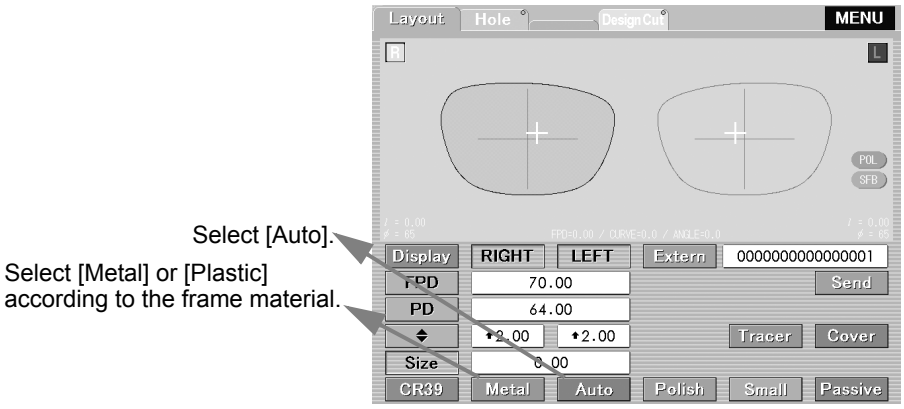
2.5 Beveling

Select processing conditions with four buttons in the lower center of the layout screen. See “2.3.3 Setting layouts with the ME-1000” (Page 28).

2.5.1 Auto processing

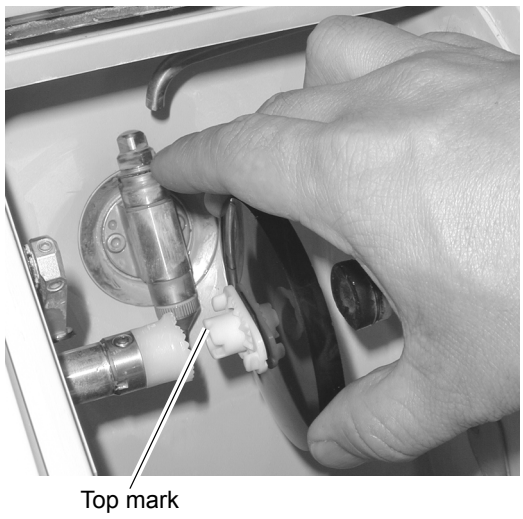
In this mode, a lens is automatically processed into the computer-calculated beveled edge.

1 Check the processing conditions.



2 Set a lens to the adapter in the processing unit.

Insert the pliable cup fully into the adapter with the top mark facing up.



⚠ **CAUTION** • **Pressing the [Start] key closes the processing chamber cover automatically. Be careful not to get your hand caught.**

3 Start processing.

Press the [Start] key.

1) Lens chucking

The processing chamber cover closes automatically.

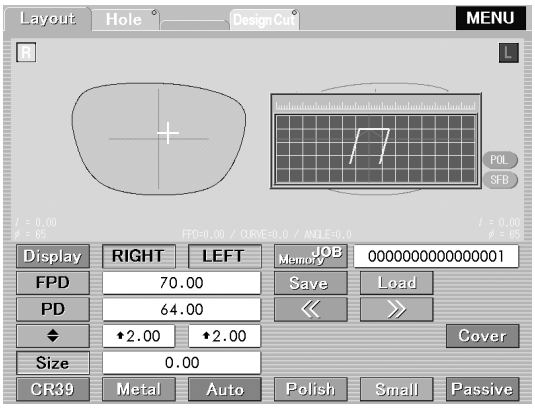
The lens is automatically fixed.

2) Lens shape measurement

The feelers come out and the front and rear surfaces of the lens are measured simultaneously.

3) Roughing

The simulation box is displayed.



4) Finishing

5) Polishing (Only when polishing is selected.)

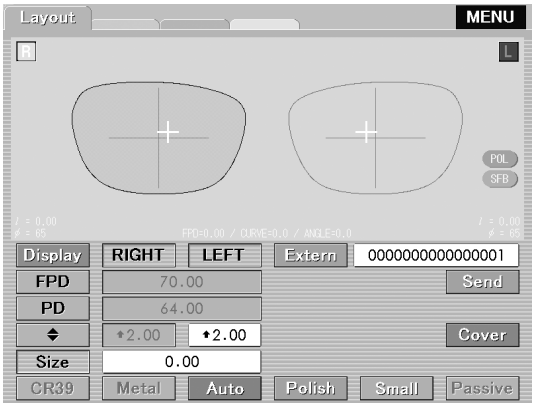
6) Safety beveling (Only when safety beveling is selected.)

7) Completion of processing

The processing chamber cover opens automatically.

* The processing order may change according to the lens material.

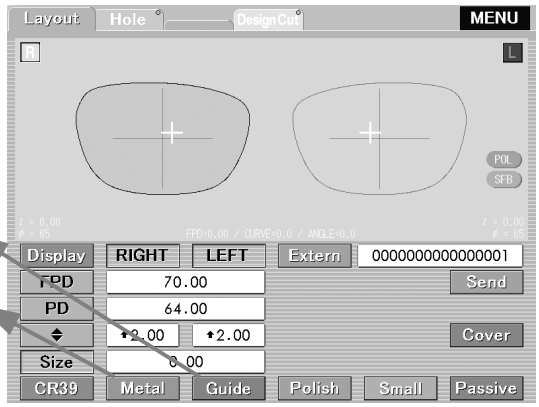
4 Press the [Chuck] key to release the lens chucking and remove the processed lens.



2.5.2 Guided processing

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

1 Check the processing conditions.



Select [Guide].

Select [Metal] or [Plastic] according to the frame material.

2 Set a lens to the adapter in the processing unit.

Insert the pliable cup fully into the adapter with the top mark facing up.

⚠ **CAUTION** • **Pressing the [Start] key closes the processing chamber cover automatically. Be careful not to get your hand caught.**

3 Start processing.

Press the [Start] key.

1) Lens chucking

The processing chamber cover closes automatically.

The lens is automatically fixed.

2) Lens shape measurement

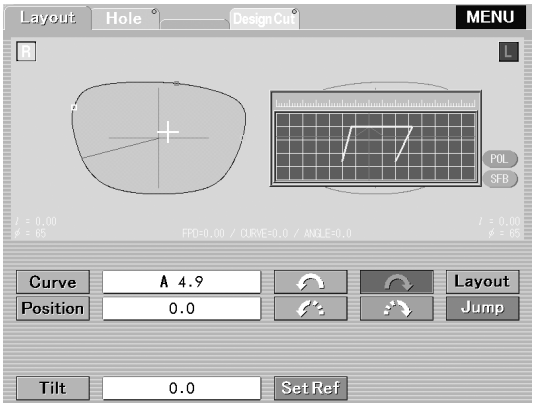
The feelers come out and the front and rear surfaces of the lens are measured simultaneously.

3) Suspension

The indicator of the [Start] key blinks.

The screen changes to the guided processing screen and the sectional view is displayed on the simulation box.

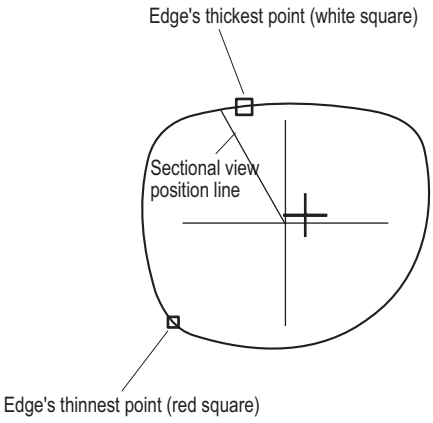
The bevel sectional view indicated by the sectional view position line on the shape is displayed on the simulation box.



4 Simulate the bevel section at each point of the shape.

Press the [Jump] button. ⇒

Every press changes the sectional view position line alternately between the edge's thinnest point (red □) and the edge's thickest point (white □).



Press ⌒ .⇒ The sectional view position line begins to rotate counterclockwise. Pressing this button again stops the rotation.

Press ⌒ .⇒ The sectional view position line moves counterclockwise in one increment. Depressing this button rotates the line counterclockwise repeatedly.

Press ⌒ .⇒ The sectional view position line begins to rotate clockwise. Pressing this button again stops the rotation.

Press ⌒ .⇒ The sectional view position line moves clockwise in one increment. Depressing this button rotates the line clockwise repeatedly.

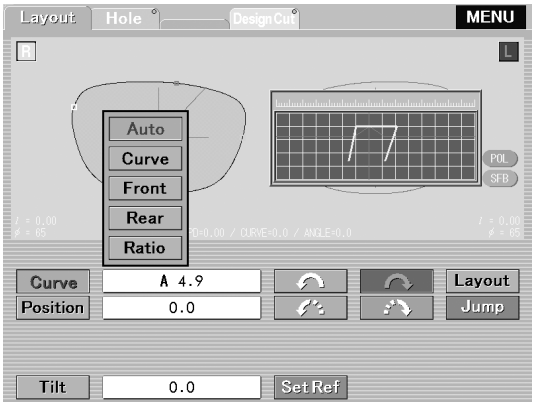
Pressing the [Layout] button while the guided processing screen is being displayed changes the screen to the layout screen that allows for confirming of the layout conditions. However, the layout cannot be changed.

Pressing the [Guide] button returns the screen to the guided processing screen.

Once processing is started, the screen cannot be changed.

5 Adjust the bevel position.

- (a) To change the bevel position only at the part that the edge is thick



1) Press the [Curve] button.

   The pop-up menu appears.

2) Select the desired curve from the menu.

   [Auto] ⇒ Computer-calculated curve (same curve as in auto processing)

   [Curve] ⇒ The numeric keypad appears. Enter the desired curve value.

   [Front] ⇒ Front base curve (curve profiling the front surface of a lens)

   [Rear] ⇒ Rear base curve (curve profiling the rear surface of a lens)

   [Ratio] ⇒The pop-up submenu of the ratio appears. Select the desired ratio.

Note

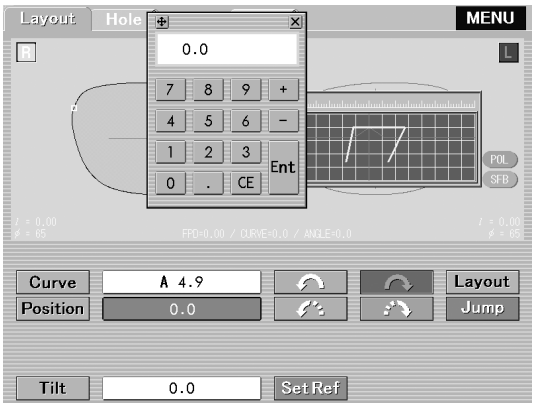
- The curve value with the "A" mark on the head shows that it is a computer-calculated value. This value produces the same bevel curve that is processed in the auto processing mode.
- The curve value can only be selected within a range that width of the lens edge allows.

- (b) To change the position of the whole bevel parallel to itself

1) Simulate the bevel sectional view at the edge's thinnest point (red □).

   Press the [Jump] button to move the sectional view position line to the edge's thinnest point.

2) Press the numeric button on the right of [Position].



   The numeric keypad appears.

3) Enter a value of the amount by which the bevel is moved forward or backward (mm).

   Entering a negative value ⇒

   The bevel moves toward the front surface.

   Example)Enter "-0.4" with the numeric keypad. ⇒ "← 0.4" is displayed on the right of [Position] and the bevel moves 0.4 mm toward the front surface.

   Entering a positive value ⇒ The bevel moves toward the rear surface.

   Example)Enter "0.8" with the numeric keypad. ⇒ "→ 0.8" is displayed on the right of [Position] and the bevel moves 0.8 mm toward the rear surface.

   The [Position] value with "←, →" mark to its left shows the direction that the bevel is moved.

Note

- In order to avoid the bevel being off the lens edge, be sure to watch the simulation at the thinnest position while changing the value.

  Distinct from changing the bevel curve value, it is possible to set the bevel tip point which produces a single-sided bevel.

Example) Curve: 5.0
Position: ← 0.4

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

6 Check the bevel section.

Check that the desired bevel is obtained in the same manner as Step 4.

7 Repeat Steps 4 to 6 until the desired bevel is obtained.

8 Start processing.

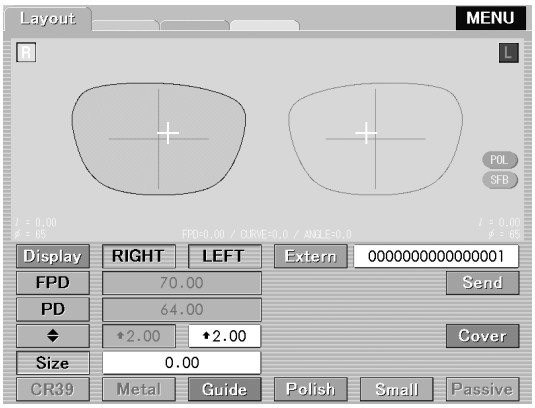
Press the [Start] key.

4) Roughing
5) Finishing
6) Polishing (Only when polishing is selected.)
7) Safety beveling (Only when safety beveling is selected.)
8) Completion of processing

The processing chamber cover opens automatically.

* The processing order may change according to the lens material.

9 Press the [Chuck] key to release the lens chucking and remove the processed lens.



2.5.3 EX lens processing

Since the surface of an EX lens is not even, the lens feelers get caught in the difference in level. Therefore, the lens shape cannot be measured in auto processing mode or guided processing mode. Process an EX lens in EX lens processing mode. In this mode, the shape is measured so that the lens feelers will not contact the difference in level and beveling which has the curve profiling the rear surface is performed.

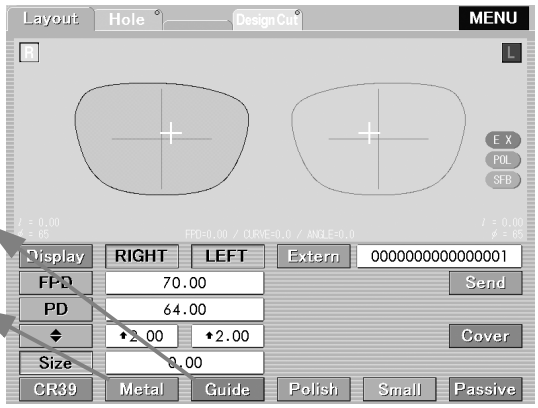
As for a cataract lens which has a large dilation on its front convex surface, also process a lens in EX lens processing mode when the lens cannot be processed in guided processing mode (rear base curve) due to the lens shape measurement error.

1 Check the processing conditions.

Select [EX].

[EX] is not displayed on the button but displayed to the right of the screen.

Select [Metal] or [Plastic] according to the frame material.



2 Set a lens to the adapter in the processing unit.

Insert the pliable cup fully into the adapter with the top mark facing up.

⚠ **CAUTION** • **Pressing the [Start] key closes the processing chamber cover automatically. Be careful not to get your hand caught.**

3 Start processing.

Press the [Start] key.

1) Lens chucking

The processing chamber cover closes automatically.

The lens is automatically fixed.

2) Lens shape measurement

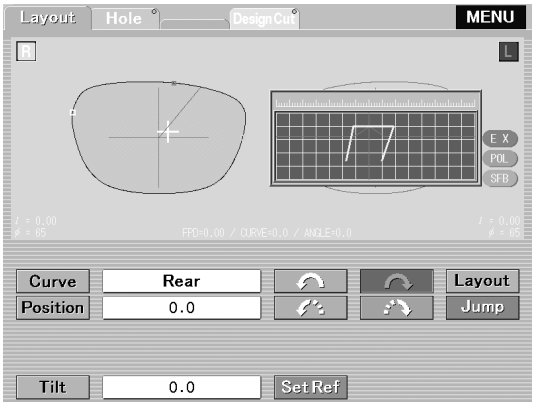
The feelers come out and the front and rear surfaces of the lens are measured simultaneously.

3) Suspension

The indicator of the [Start] key blinks.

The screen changes to the guided processing screen and the sectional view is displayed on the simulation box.

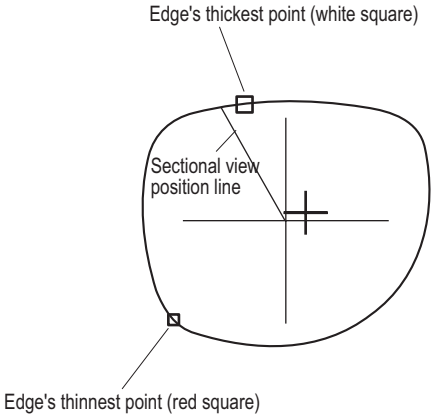
The bevel sectional view indicated by the sectional view position line on the lens shape is displayed on the simulation box.



4 Simulate the bevel section at each point of the shape.

Press the [Jump] button.⇒

Every press changes the sectional view position line alternately between the edge's thinnest point (red □) and the edge's thickest point (white □).



Press .⇒ The sectional view position line begins to rotate counterclockwise. Pressing this button again stops the rotation.

Press .⇒ The sectional view position line moves counterclockwise in one increment. Depressing this button turns the line counterclockwise repeatedly.

Press .⇒ The sectional view position line begins to rotate clockwise. Pressing this button again stops the rotation.

Press .⇒ The sectional view position line moves clockwise in one increment. Depressing this button rotates the line clockwise repeatedly.

- Changing the bevel position

Change the bevel position while checking the guided processing mode. (See page 51.)

Note

- As to the curve value, do not change it but leave it as the rear base curve (REAR).
  The set value, front base curve, or ratio is not appropriate for proper beveling.

5 Start processing.

Press the [Start] key.

4) Roughing

5) Finishing

6) Polishing (Only when polishing is selected.)

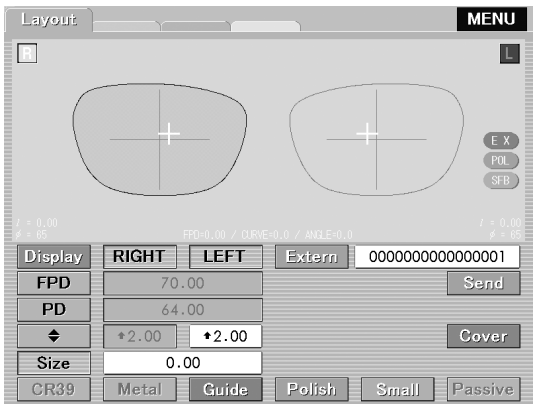
7) Safety beveling (Only when safety beveling is selected.)

8) Completion of processing

The processing chamber cover opens automatically.

* The processing order may change according to the lens material.

6 Press the [Chuck] key to release the lens chucking and remove the processed lens.

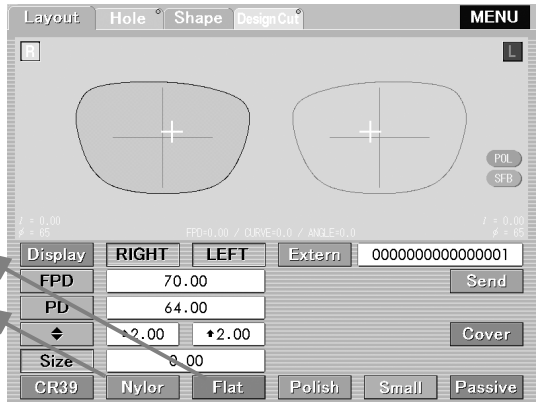


2.6 Flat (rimless) Edging

In addition to the basic flat edging, grooving for nylor frames can be performed continuously after flat edging. Drilling for two-point frames can also be performed continuously after flat edging.

2.6.1 Flat (rimless) edging

1 Check the processing conditions.



Select [Flat].

Select [TwoPoint] or [Nylor].

Note

- When size is entered with [TwoPoint] selected, FPD correction is performed. FPD correction is not performed with [Nylor] selected.

2 Set a lens to the adapter in the processing unit.

Insert the pliable cup fully into the adapter with the top mark facing up.

Top mark

⚠ **CAUTION**

- **Pressing the [Start] key closes the processing chamber cover automatically. Be careful not to get your hand caught.**

3 Start processing.

Press the [Start] key.

1) Lens chucking

   The processing chamber cover closes automatically.

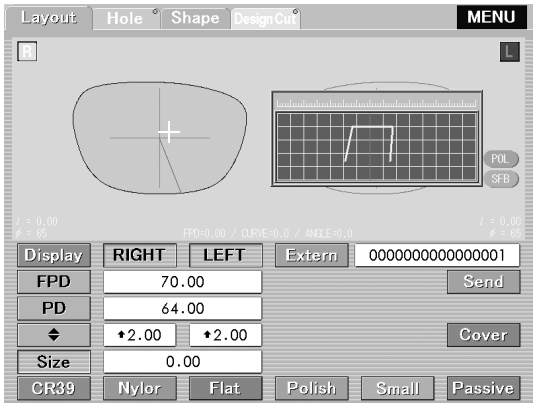
   The lens is automatically fixed.

2) Lens shape measurement

   The feelers come out and the front and rear surfaces of the lens are measured simultaneously.

3) Roughing

   The simulation box is displayed.



4) Finishing

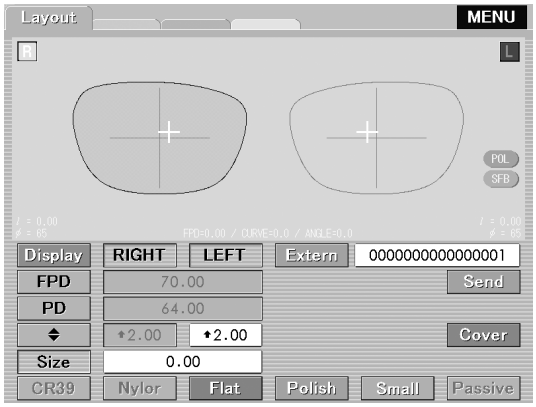
5) Polishing (Only when polishing is selected.)

6) Safety beveling (Only when safety beveling is selected.)

7) Completion of processing

   All processing are completed and the processing chamber cover opens automatically.

* The processing order may change according to the lens material.



4 Press the [Chuck] key to release the lens chucking and remove the processed lens.

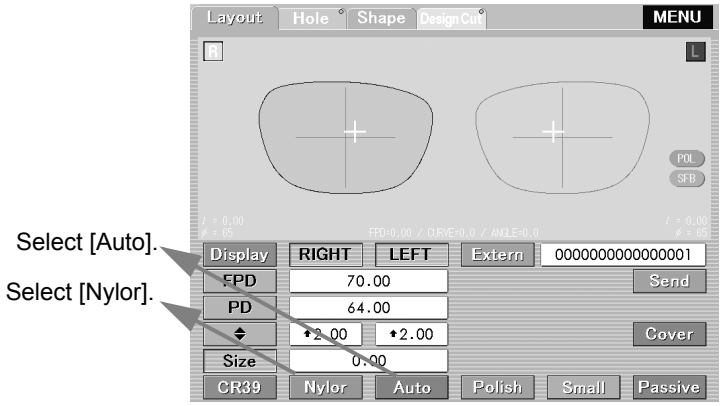
2.6.2 Auto grooving

This is the mode to groove lenses at the computer-calculated position and curve after flat edging.

Note

- In grooving mode, glass lenses cannot be processed.

1 Check the processing conditions.



2 Set a lens to the adapter in the processing unit.

Insert the pliable cup fully into the adapter with the top mark facing up.

⚠ **CAUTION** • **Pressing the [Start] key closes the processing chamber cover automatically. Be careful not to get your hand caught.**

3 Start processing.

Press the [Start] key.

1) Lens chucking

   The processing chamber cover closes automatically.

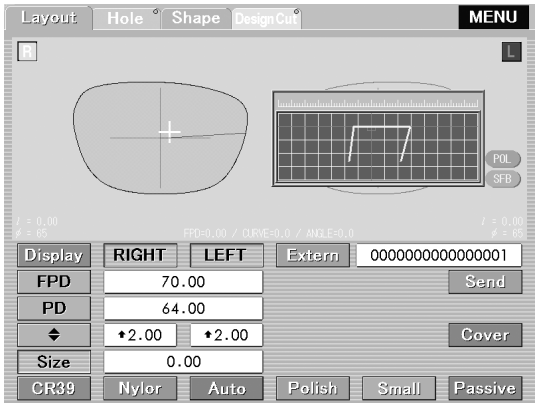
   The lens is automatically fixed.

2) Lens shape measurement

   The feelers come out and the front and rear surfaces of the lens are measured simultaneously.

3) Roughing

   The simulation box is displayed.



4) Finishing

5) Polishing (Only when polishing is selected.)

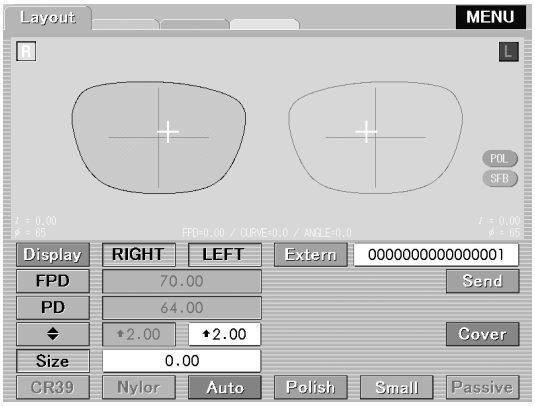
6) Grooving

7) Safety beveling (Only when safety beveling is selected.)

8) Completion of processing

   All processing are completed and the processing chamber cover opens automatically.

* The processing order may change according to the lens material.



4 Press the [Chuck] key to release the lens chucking and remove the processed lens.

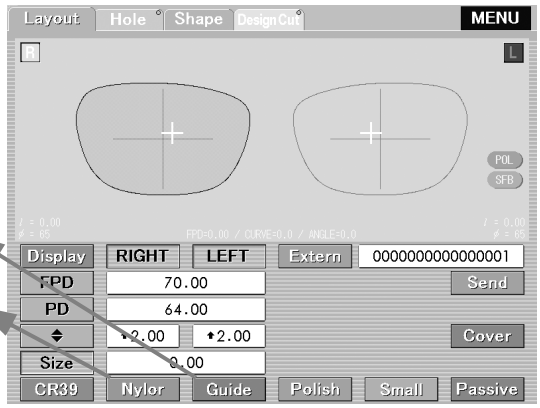
2.6.3 Guided grooving

This is the mode to groove lenses for nylor frames at the position and curve entered manually after the flat edging.

Note

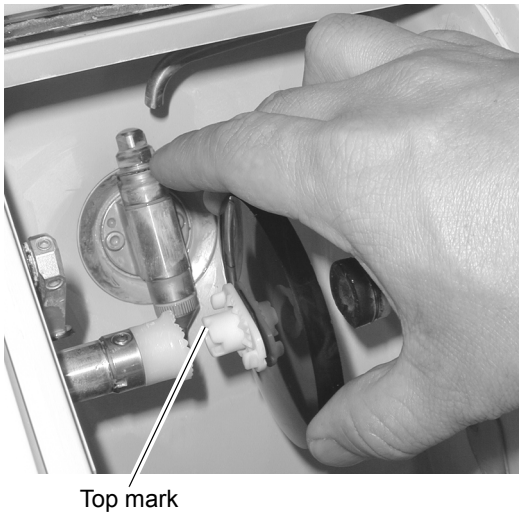
- In grooving mode, glass lenses cannot be processed.

1 Check the processing conditions.



2 Set a lens to the adapter in the processing unit.

Insert the pliable cup fully into the adapter with the top mark facing up.



⚠ CAUTION • **Pressing the [Start] key closes the processing chamber cover automatically. Be careful not to get your hand caught.**

3 Start processing.

Press the [Start] key.

1) Lens chucking

The processing chamber cover closes automatically.

The lens is automatically fixed.

2) Lens shape measurement

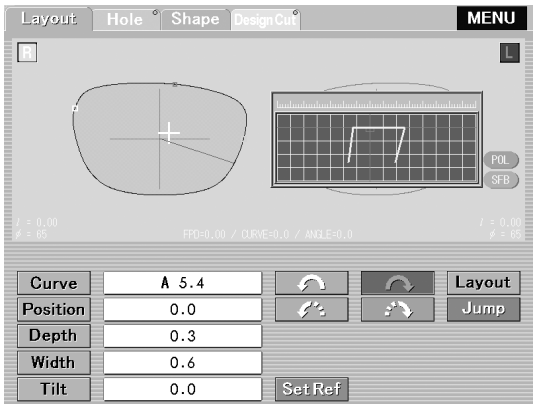
The feelers come out and the front and rear surfaces of the lens are measured simultaneously.

3) Suspension

The indicator of the [Start] key blinks.

The screen changes to the guided processing screen and the sectional view is displayed on the simulation box.

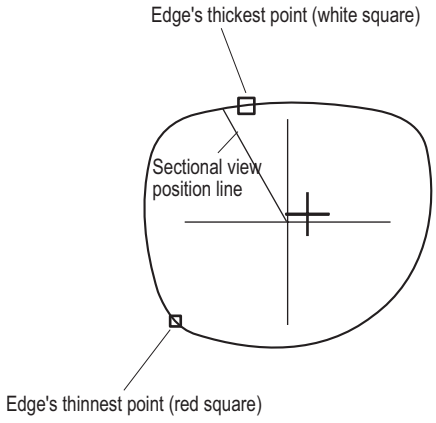
The bevel sectional view indicated by the sectional view position line on the lens shape is displayed on the simulation box.



4 Simulate the groove section at each point of the shape.

Press the [Jump] button. ⇒

Every press changes the sectional view position line alternately between the edge's thinnest point (red □) and the edge's thickest point (white □).



Press ⌒ .⇒ The sectional view position line begins to rotate counterclockwise. Pressing this button again stops the rotation.

Press ⌒ .⇒ The sectional view position line moves counterclockwise in one increment. Depressing this button rotates the line counterclockwise repeatedly.

Press ⌒ .⇒ The sectional view position line begins to rotate clockwise. Pressing this button again stops the rotation.

Press ⌒ .⇒ The sectional view position line rotates clockwise in one increment. Depressing this button rotates the line clockwise repeatedly.

Pressing [Layout] while the guided processing screen is being displayed changes the screen to the layout screen that allows for checking of the layout conditions. However, the layout cannot be changed.

Pressing [Guide] returns the screen to the guided processing screen.

Once processing is started, the screen cannot be changed.

5 Change the groove depth if necessary.

1) Press the numeric button on the right of [Depth].

   The numeric keypad appears.

2) Enter the desired groove depth with the numeric keypad (mm).

   [0 to 0.8 mm]

6 Change the groove width if necessary.

1) Press the numeric button on the right of [Width].

   The numeric keypad appears.

2) Enter the desired groove width with the numeric keypad (mm).

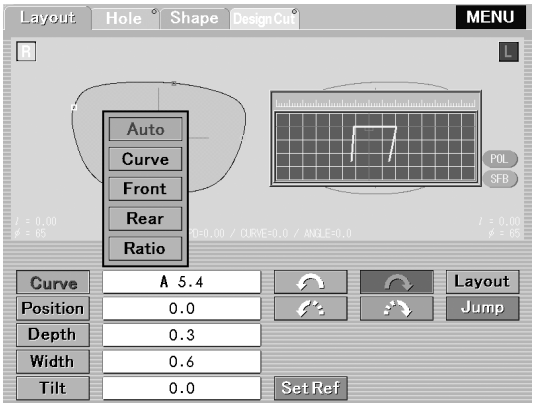
   [0.6 to 1.2 mm]

7 Adjust the groove position.

●(a) Changing the groove position at which the edge is thick

1) Press the [Curve] button.

   The pop-up menu appears.



2) Select the desired curve from the menu.

   [Auto] ⇒ Computer-calculated curve (same curve as in auto processing)

   [Curve] ⇒ The numeric keypad appears. Enter the desired curve value.

   [Front] ⇒ Front base curve (curve profiling the front surface of a lens)

   [Rear] ⇒ Rear base curve (curve profiling the rear surface of a lens)

   [Ratio] ⇒ The pop-up submenu of the ratio appears. Select the desired ratio.

Note

- The curve value with the “A” mark to its left shows that it is a computer-calculated value.
- The curve value can only be selected within a range that width of the lens edge allows.

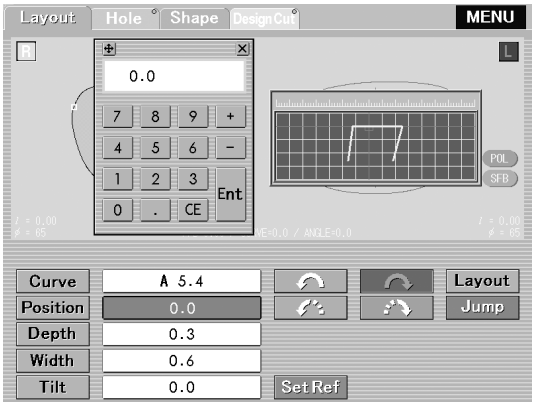
●(b) Changing the position of the whole groove parallel to itself

1) Simulate the bevel sectional view at the edge's thinnest point (□).

Press the [Jump] button to move the sectional view position line to the edge's thinnest point.

2) Press the numeric button on the right of [Position].

The numeric keypad appears.



3) Enter the value of amount by which the groove is moved forward or backward (mm).

Entering a negative value ⇒

The groove moves toward the front surface.

Example)Enter "-0.4" with the numeric keypad. "← 0.4" is displayed on the right of [Position] and the groove moves 0.4 mm toward the front surface.

Entering a positive value ⇒ The groove moves toward the rear surface.

Example)Enter "0.8" with the numeric keypad. ⇒ "→ 0.8" is displayed on the right of [Position] and the groove moves 0.8 mm toward the rear surface.

The curve value with "←, →" mark to its left shows the direction that the groove is moved.

Note

- In order to avoid the groove being off the lens edge, be sure to watch the simulation at the thinnest position while changing the value.

  Distinct from changing the groove curve value, the groove may be off the lens edge.

Example)Curve: 5.0
Position: ← 0.4

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

8 Check the groove section.

Check that the desired groove is obtained in the same manner as Step 4.

9 Repeat Steps 4 to 8 until the desired groove section is obtained.

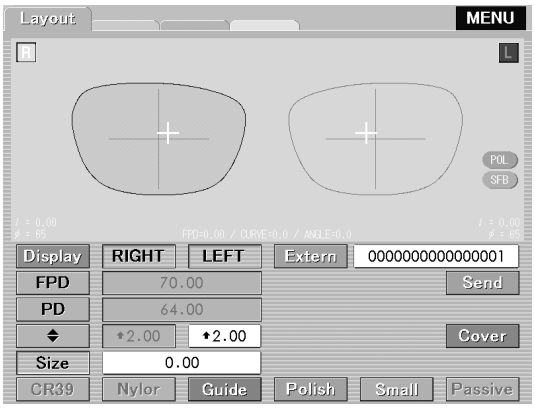
10 Start processing.

Press the [Start] key.

4) Roughing
5) Finishing
6) Polishing (Only when polishing is selected.)
7) Grooving
8) Safety beveling (Only when safety beveling is selected.)
9) Completion of processing

All processing are completed and the processing chamber cover opens automatically.

* The processing order may change according to the lens material.



11 Press the [Chuck] key to release the lens chucking and remove the processed lens.

2.6.4 EX lens grooving

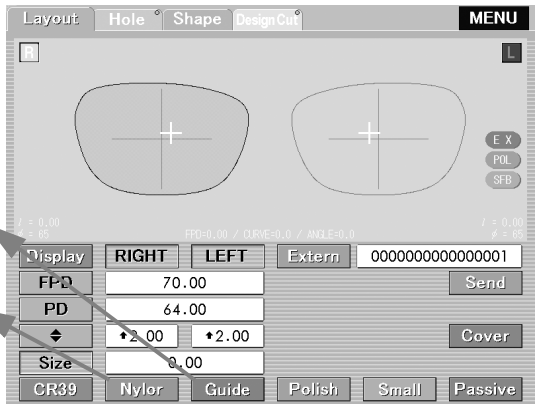
Since the surface of an EX lens is not even, the lens feelers get caught in the difference in levels. Therefore, the lens shape cannot be measured in flat edging mode, auto processing mode or guided processing mode. Process an EX lens in EX lens processing mode. In this mode, the lens shape is measured so that the lens feelers will not contact the difference in levels. Grooving is then performed using curve profiling the rear surface.
For a cataract lens which has a large dilation on its front convex surface, process the lens in EX lens guided grooving mode if the lens cannot be processed in guided grooving mode (rear base curve) due to lens shape measurement error.

1 Check the processing conditions.

Select [EX].
[EX] is not displayed on the button but displayed to the right of the screen.

Select [TwoPoint] or [Nylor].

Select [Nylor] for grooving.



2 Set a lens to the adapter in the processing unit.

Insert the pliable cup fully into the adapter with the top mark facing up.

⚠ **CAUTION** • **Pressing the [Start] key closes the processing chamber cover automatically. Be careful not to get your hand caught.**

3 Start processing.

Press the [Start] key.

1) Lens chucking

The processing chamber cover closes automatically.

The lens is automatically fixed.

2) Lens shape measurement

The feelers come out and the front and rear surfaces of the lens are measured simultaneously.

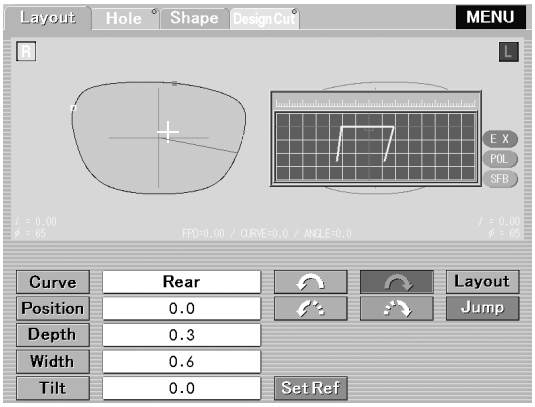
3) Suspension

The indicator of the [Start] key blinks.

The screen changes to the guided processing screen and the sectional view is displayed on the simulation box.

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

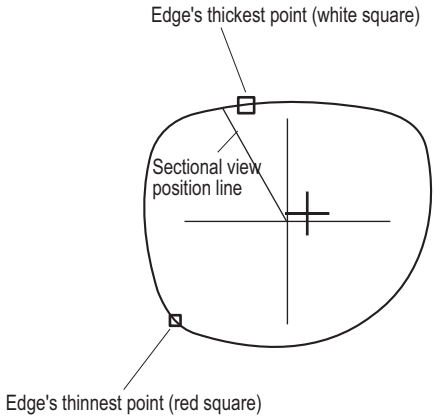
When the processing mode button is set to [Flat], the edger will not be suspended. Go on to 4) in Step 5.



4 Simulate the groove section at each point of the shape.

Press the [Jump] button. ⇒

Every press changes the sectional view position line alternately between the edge's thinnest point (red □) and the edge's thickest point (white □).



Press ↶ .⇒ The sectional view position line begins to rotate counterclockwise. Pressing this button again stops the rotation.

Press ↶ .⇒ The sectional view position line moves counterclockwise in one increment. Depressing this button rotates the line counterclockwise repeatedly.

Press ↷ .⇒ The sectional view position line begins to rotate clockwise. Pressing this button again stops the rotation.

Press ↷ .⇒ The sectional view position line moves clockwise in one increment. Depressing this button rotates the line clockwise repeatedly.

●Changing the groove position

Change the groove position while checking the guided grooving mode (see page 62).

Note

- As to the curve value, do not change it but leave it as the rear base curve (REAR).
  The specified value, front base curve, or ratio is not appropriate for proper grooving.

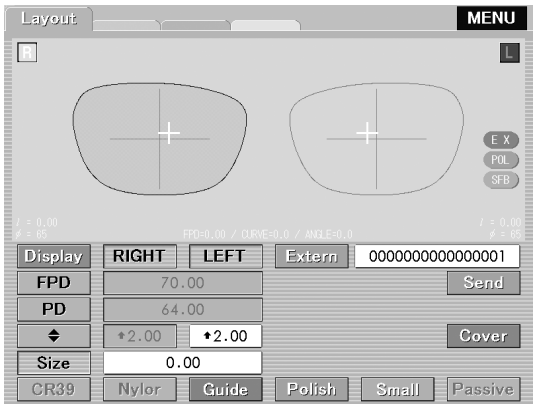
5 Start processing.

Press the [Start] key.

4) Roughing
5) Finishing
6) Polishing (Only when polishing is selected.)
7) Grooving (Only when the processing mode button is set to [Auto] or [Guide])
8) Safety beveling (Only when safety beveling is selected.)
9) Completion of processing

The processing chamber cover opens automatically.

* The processing order may change according to the lens material.



6 Press the [Chuck] key to release the lens chucking and remove the processed lens.

2.7 Other Processing

2.7.1 Drilling

This is the mode to drill holes for two-point frames or design for the lens surface after flat edging/beveling.

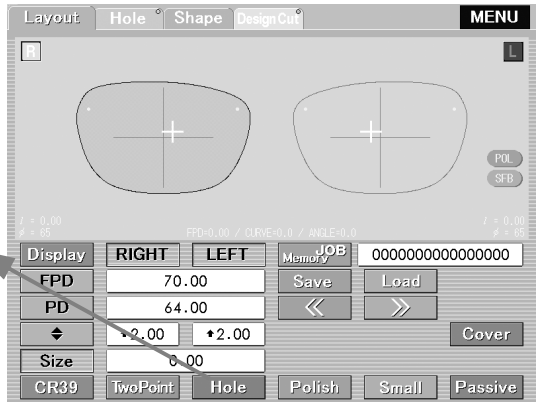
Note

- In drilling mode, glass lenses cannot be processed.

1 Check the processing conditions.

Select [Hole].

For beveling and flat edging for nylor frames, “Hole” is not displayed on the processing mode button. Hole positions are displayed on the layout screen.



* [Passive] is recommended for layout mode.

For setting the position of holes, see “2.3.4 Specifying the drilling process (Icon style)” (Page 33).

2 Set a lens to the adapter in the processing unit.

Insert the pliable cup fully into the adapter with the top mark facing up.

⚠ **CAUTION**

- **Pressing the [Start] key closes the processing chamber cover automatically. Be careful not to get your hand caught.**

3 Start processing.

Press the [Start] key.

1) Lens chucking

The processing chamber cover closes automatically.

The lens is automatically fixed.

2) Lens shape measurement

The feelers come out, and the front and rear surfaces of the lens are measured simultaneously.

3) Roughing

4) Finishing

5) Polishing (Only when polishing is selected.)

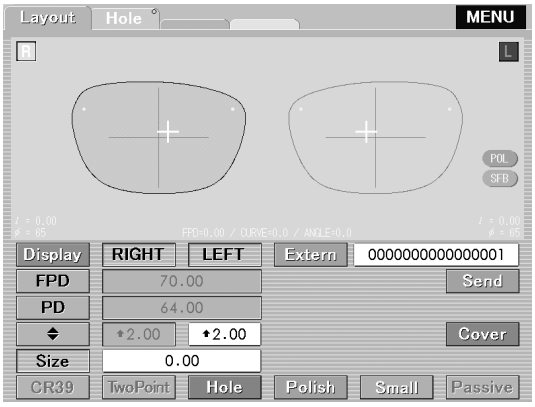
6) Drilling

7) Safety beveling (Only when safety beveling is selected).

8) Completion of processing

All types of processing are completed and the processing chamber cover opens automatically.

* The processing order may change according to the lens material.



4 Press the [Chuck] key to release the lens chucking and remove the processed lens.

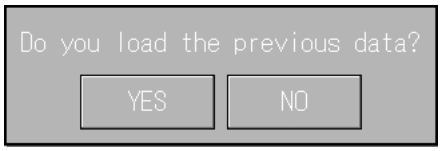
● Processing continuation function after drill breakage

When the drill breaks during drilling, the information of the processed lens can be restored after the drill is replaced and processing can be continued.

1) After stopping processing, replace the drill.

   See “3.6 Replacing the Drill” (Page 124).

   When the edger is turned on again, “Do you load the previous data?” is displayed.



2) Press [YES].

   The data for the lens processed right before the drill was replaced is called up and processing may continue.

   When the data does not need to be restored, press [NO] to erase the saved data.

3) To finish the processing of the lens set when the drill was broken, continue processing.

   See Steps 2 to 4 of “2.8.1 Checking the lens size” (Page 85).

2.7.2 Processing for frame changing

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

In frame changing mode, processing is performed 1.5 mm inside of the actual lens shape to prevent the feelers from detaching during lens shape measurement.

Note

- Before processing, make sure that the lens is large enough to be processed.
  In the frame changing mode, a bevel tip may be edged as the lens shape measurement is performed 1.5 mm inside from the actual lens shape.
- In frame changing mode, safety beveling cannot be performed as the actual lens shape is not measured.

1 Read a lens shape to be processed and enter layout data.

2 Select the frame changing mode.

1) Press the layout mode button.

   The pop-up menu appears.

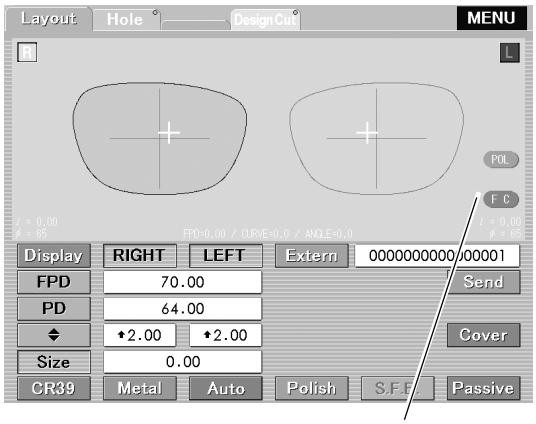
2) Select [F.C.] from the menu.

   [FC] is displayed to the right of the screen.

   Reopening the menu and pressing [F.C.] cancels the FC mode.

3 Block a lens and set the adapter.

4 Press the [Start] key to start processing.



[FC] is displayed.

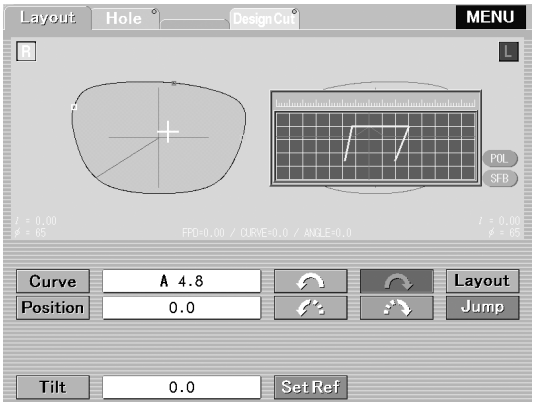
2.7.3 Tilt function

When the difference in width between the edge's thickest point and thinnest point is extreme, the mounted lens will not look nice. The appearance of the lens will improve if the bevel is tilted.
To use the tilt function, set the "Tilt function" parameter to "EXEC" on the Setting - Grinding screen (Others).

1 Select processing conditions, chuck a lens, and measure the lens shape.

After lens shape measurement, the screen changes to the guided processing screen, and the edger stops.

Steps 1 to 3 of "2.5.2 Guided processing" (Page 49), Steps 1 to 3 of "2.6.3 Guided grooving" (Page 60).



2 Adjust the bevel or groove.

1) Move the sectional view position line to the base position and check the bevel sectional view at that point.

   The most appropriate tilt base position is the thinnest point of the lens edge, or a diagonally opposite point (through the frame center) to where the bevel tip point to be moved.

2) Press [Set Ref] to set the tilt base position.

   The tilt base position mark (green □) moves to the end of the sectional view position line.

   After that, the line is automatically skipped to the diagonally-opposite point.

3) Press the numeric button on the right of [Curve] and enter the desired curve value with the numeric keypad.

   For a curve value with A, the bevel (or groove) position is calculated from Ratio. For a curve value without A, the bevel (or groove) position is calculated from the spherical curve of the lens.

   With the tilt function, the bevel (or groove) position is adjusted according to the spherical curve value of the lens as a base. For the reason, if the ratio curve value with A is set, the set tilt value may differ from the actual tilt amount of the bevel. As the difference between the ratio curve and spherical curve becomes wider, the difference in the tilt amount will substantially increase.

4) As necessary, press the numeric button on the right of [Position] and then enter a bevel or groove position with the numeric keypad.

   Negative value ⇒ The whole bevel moves toward the front surface parallel to itself.

   Positive value ⇒ The whole bevel moves toward the rear surface parallel to itself.

   ← next to the value shows that the bevel was moved forward, and → next to the value shows that the bevel was moved backward.

5) Press the numeric button on the right of [Tilt] and then the tilt amount of a bevel or groove with the numeric keypad.

   The Tilt value shows the tilt amount of the bevel tip point at the diagonally-opposite point to the tilt base position.

Negative value ⇒ The bevel moves toward the front surface of a lens.

Positive value ⇒ The bevel moves toward the rear surface of a lens.

6) Simulate the whole bevel or groove to see if the desired bevel or groove is obtained.

7) Repeat Steps 3) to 6) until the desired bevel or groove is obtained.

Press the [Stop] key to disable the set values for a bevel or groove and to stop the edger. All the set values are canceled and the screen returns to the layout screen.

3 Restart processing.

Press the [Start] key to restart processing.

After roughing and finishing, processing sequences are completed.

The screen returns to the layout screen.

4 Press the [Chuck] key to release the lens chucking and then remove the processed lens.

5 When the other lens is subsequently processed by switching R or L, the former setting for the lens is shown.

If one lens is processed with the tilt function, the Bevel simulation screen is automatically displayed after the other lens is processed by switching R or L.

The former values such as the tilt base position, bevel tilt amount, bevel curve and bevel tip point are initially displayed.

● Concrete example of the tilt function

The procedures of processing EX lenses with the tilt function are described.

An EX lens has the distance part on the upper half and the near part on the lower half as shown in the figure, and the difference between the top edge width and the bottom one is wide. In addition, since there is a difference in level between the distance part and near part, the appearance of the mounted lenses is not nice if the lens is processed in beveling (or grooving).

When processing an EX lens with the tilt function, the initial bevel curve value is not the rear base curve (REAR); The bevel (or groove) is calculated from the spherical curve which is the same as the auto-curve value. Then the EX lens will automatically be processed in guided processing mode.

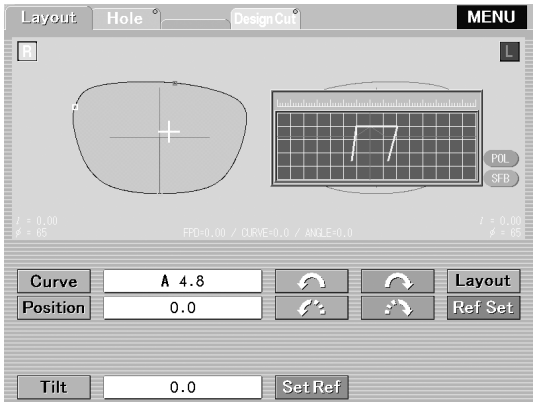
The figure by the dotted line illustrates the side view of the EX lens which is processed with the tilt function. As illustrated, the bevel (or groove) on the thick upper part of the lens is moved toward the front surface of the lens in the range that the bevel barely remains at the edge's thinnest point.

The following describes the procedures for processing an EX lens with a nice appearance by adjusting the bevel (or groove) position on the upper part to the front surface with the tilt function.

Figure of EX lens

1) Setting the tilt base position

Align the sectional view position line to the position adjacent to the straight down from the frame center as shown on the right-hand screen. Then move the bevel (or groove) position backward as much as possible. This is for tilting the bevel (or groove) on the upper edge as much as possible. If the lens edge is thick enough, it is not necessary to move the bevel position, but leave the bevel around the middle of the edge. After that, press the [Set Ref] button to set the position as a tilt base position.



2) Entering the tilt amount

The bevel (or groove) position has been moved backward in Step 1) though the upper part of the edge is thick.

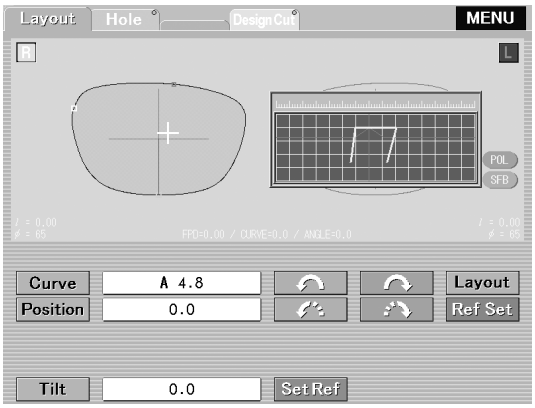
Move the bevel (or groove) forward by entering a minus value to [Tilt]. In doing so, always observe the bevel (or groove) on the boundary between the distance and near parts. In most cases, the edge's thinnest point is on the boundary. Adjust the tilt amount within a range that at least a bevel (or groove) on either front or rear side remains.

See the following to adjust the bevel position at each point.

To reset all the settings, reset [Tilt] and [Position] to 0.0, and put “A (automatically-calculated curve)” at the head of the curve value. This allows the operator to reset the bevel position and tilt amount from the beginning.

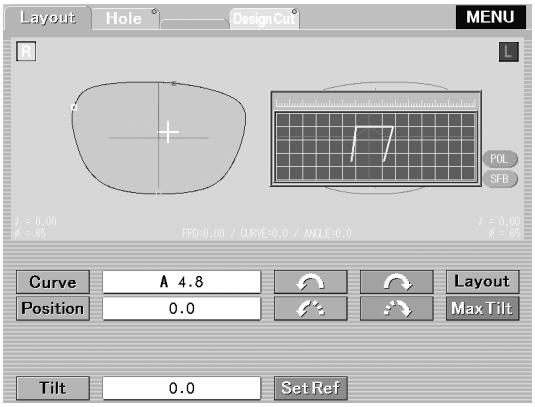
• Position adjacent to the point straight down from the frame center (tilt base position)

- If the lens edge is thin, change the bevel tip point to move the bevel backward as much as possible.
- If the lens has enough width, place the bevel tip point at 1/3 from the rear surface of the edge.
- Do not enter the tilt amount with [Tilt] set to 0.0.



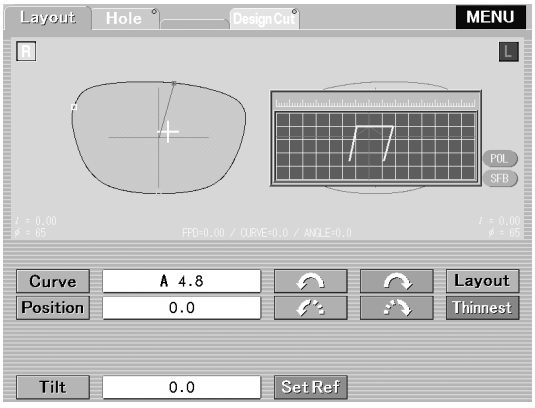
• Upper position (diagonally-opposite point to the tilt base point)

- Move the bevel position forward as much as possible in the range that the bevel on the edge thinnest point remains on the edge.
- Increase the tilt amount in the minus direction to tilt the bevel toward the front surface.



• Edge’s thinnest position (on the boundary between the distance part and near part)

- Move the bevel position on the upper part forward, observing that the bevel tip point at the edge’s thinnest point remains on the edge.
- Set such a tilt amount so that the tip of the bevel barely remains.

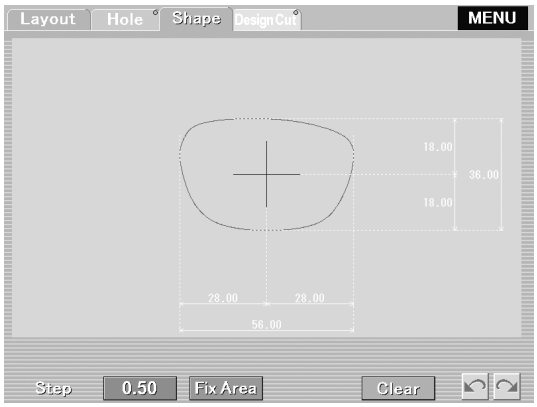


2.7.4 Shape change function

The shape change function changes lens shapes partially based on existing lens data. This function is available for two-point or nylor frames.

1 Press the [Shape] tab.

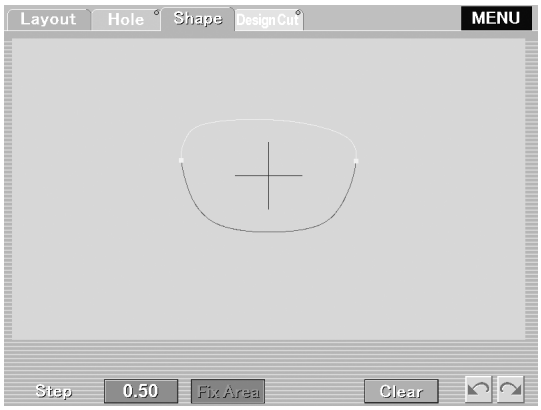
The shape change screen is displayed.



2 As necessary, specify the area that is not to be changed in shape.

1) Press the [Fix Area] button.

Fixed area specification mode is established. A section of the shape is fixed and displayed in yellow.



2) Drag[*1] the handles at the ends of the yellow line (yellow squares) to change the fixed area.

[Clear] button ⇒ Cancels the fixed area.

When the fixed area is not displayed, the fixed area may be specified by dragging the shape contour.

3) Pressing the [Fix Area] button to return to shape change mode.

Note

- When the fixed area is set, the shape can be changed only once. Changing the shape again automatically resets it to the initial form from which changes are then made.
- The numeric values that can be selected are limited by the shape set not to be changed by the fixed area function. Any values that cannot be selected are displayed in gray. Even for measurement values displayed in white, the shape cannot be changed if the changeable area is too small.
- The changing method varies according to whether a fixed area is specified or not. Therefore, similar changes to the same shape may have different results.

***1. Dragging is performed by pressing with the touch pen to select and moving its tip without lifting it from the display.**

3 Change the shape.

There are three methods to change the shape by the touch pen, +/- button and numeric key-pad.

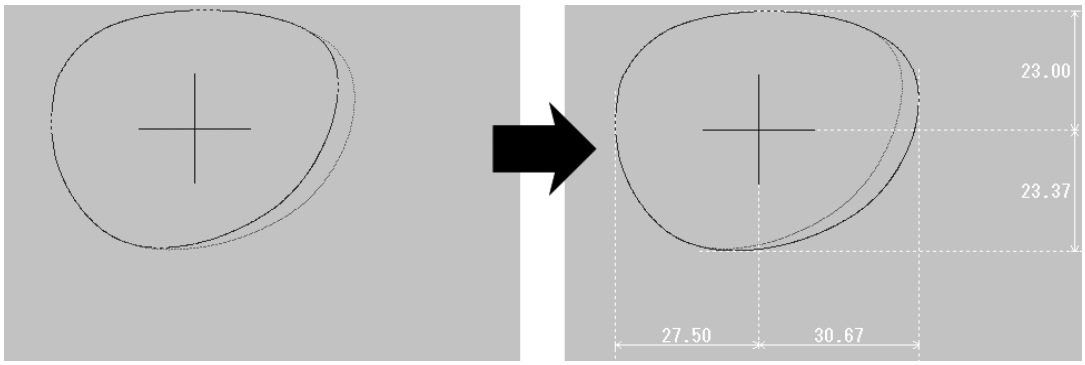
● Change using the touch pen

1) Press the area to be changed with the touch pen.

   The trail of the shape is displayed in red.

2) Drag the red line to the desired shape.

3) Lifting the touch pen from the display changes to the lens shape of a red line.

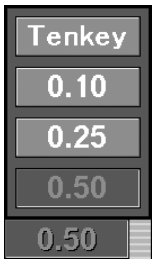


Blue line: Present shape
Gray line: Original shape

● Change using the +/- buttons

1) Press the Step button.

   The pop-up menu appears.

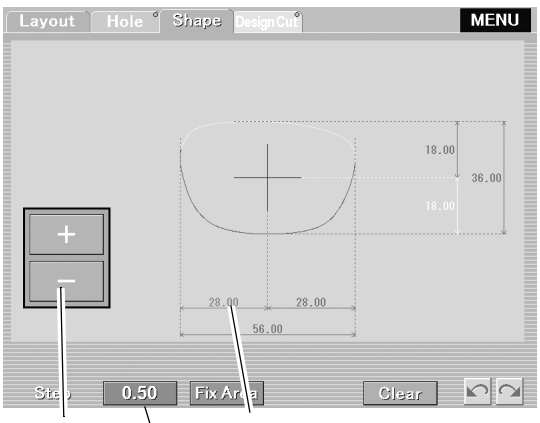


2) Select the desired step from [0.10], [0.25] or [0.50].

3) Press a numeric value to be changed.

   +/- buttons are displayed.

4) Increase or decrease the value specified in Step 3) with the [+] or [-] button.



+/- buttons
Numeric value specified in Step 3)
Step button

● Change using the numeric keypad

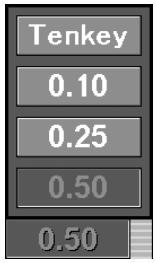
1) Press the Step button.

   The pop-up menu appears.

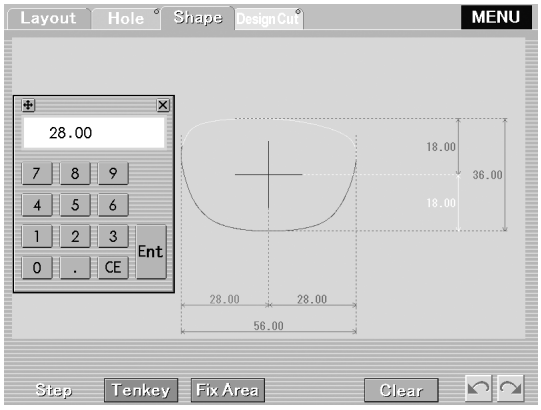
2) Select [Tenkey] from the menu.

3) Press a numeric value to be changed.

   The numeric keypad appears.



4) Increase or decrease the value specified in Step 3) with the numeric keypad.



button ⇒ Undoes the last change (up to three changes).
button ⇒ Redoes the change.
[Clear] button ⇒ Cancels all changes performed.

4 After the shape is changed, press the [Layout] tab to return to the layout screen.

Note

- Pressing the tab button confirms the shape change and cannot be canceled. To restore the data, import the data again.

2.7.5 Design cut function

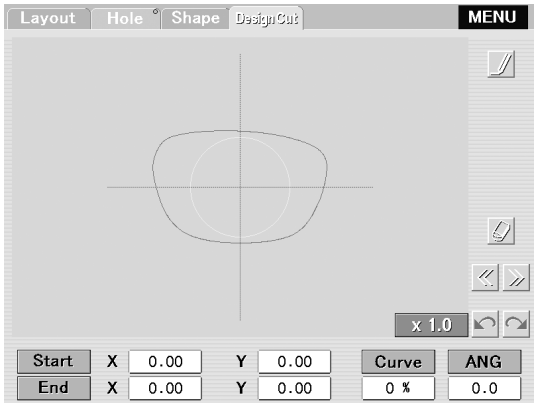
The design cut function processes a section of the lens into the desired shape with a drill.

Note

- On the design cut screen, enter a line to be cut on the right lens shape.
  Data used for design cut is mirrored on the left lens shape. Design cut different between the right and left cannot be performed.
- Glass lenses cannot be design-cut.
- The area displayed within the yellow circle cannot be design-cut.
- Extremely small design cut cannot be accomplished as entered due to drill diameter limitations.

1 Press the [DesignCut] tab.

The design cut screen is displayed.



2 In add mode, enter data of the design cut.

1) Press the add/edit button to enter add mode.

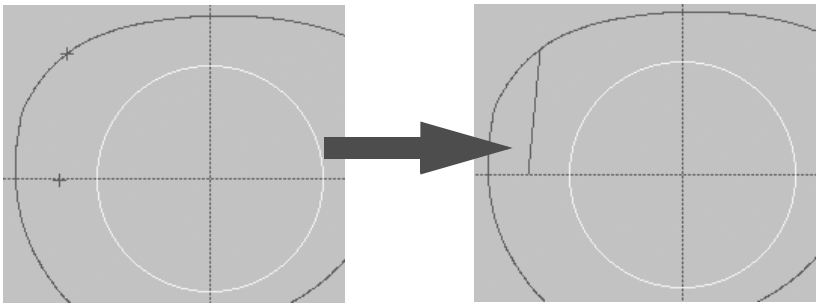
   The add/edit button becomes as displayed on the right.

2) Press the shape on the screen with the touch pen.

   The cursor is displayed.

3) Drag[*1] the pen.

   Lifting the touch pen sets the straight-line data connecting the starting point and endpoint dragged.



4) Repeat Steps 2) to 3) as necessary to add the required data.

***1. Dragging is the operation to select with the touch pen and move its tip without lifting from the screen.**

3 Press the add/edit button to enter edit mode.

The add/edit button becomes as displayed on the right.

In edit mode, three handles (yellow circles) are displayed for each data. The color of the handles at both ends indicates the following connection conditions:

Orange ⇒ Connected to the edge of the shape.
Blue ⇒ Connected to other data.

The selected data is displayed by a red line.

4 Edit the data entered in Step 2 into the desired design cut.

The design cut data can be edited either with the touch pen or by numeric value entry.

● Edit using the touch pen

1) Press data to be edited with the touch pen.

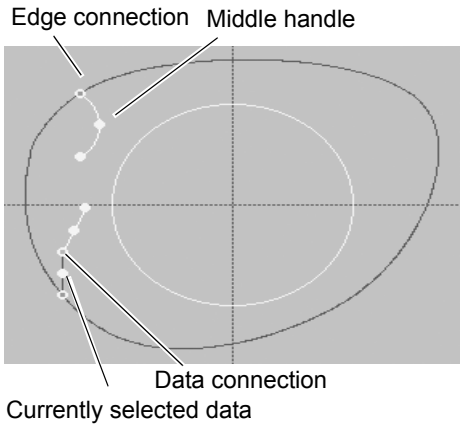
   The data is displayed as a red line.

2) Drag either of the handles at the ends to move the starting point or endpoint.

   When the handle at the end is moved close to the edge or the starting point or endpoint of other data, they are connected automatically.

   Connection to other data takes priority over edge connection.

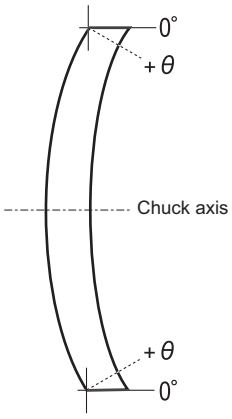
   Moving data connected to other data moves the connected other data as well.



3) Drag the middle handle to achieve the desired curve.

4) Pressing the numeric button of [ANG] displays the numeric keypad to enter the edge angle.

   The edge angle can be entered in the range of 0 to 30°. With 0°, they become parallel to the chuck axis. Entering a positive value tilts the axis in the direction of the chuck axis.



5) Repeat Steps 1) to 4) until all data is edited.

Note

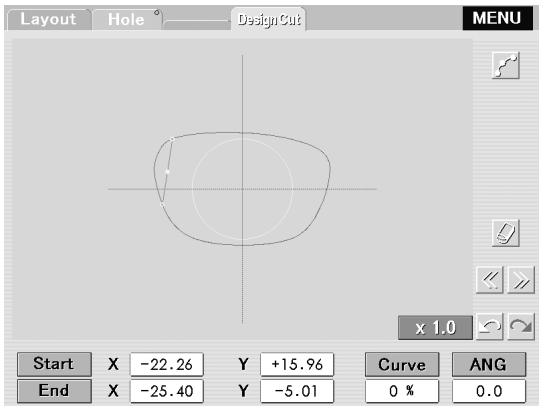
- Be sure to connect the end of data to other data or the shape edge.
  When the end of any data is not connected, edit mode is not completed.
- Connection among data cannot be disconnected.
  When data is mistakenly connected, press  to return to the previous state or delete either data.

● Edit using numeric values

1) Press data to be edited with the touch pen.

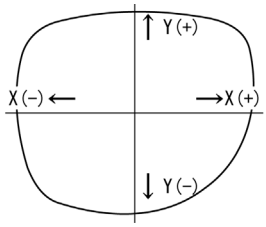
   The data is displayed as a red line.

   The [Start], [End], and [Curve] buttons show the starting point, endpoint, and curve value of the selected data.



2) Pressing the numeric buttons on the right of [Start] displays the numeric keypad. Enter the coordinates of the starting point.

   Coordinates are displayed relative to the boxing center. The left and upper are positive values and the unit is mm.

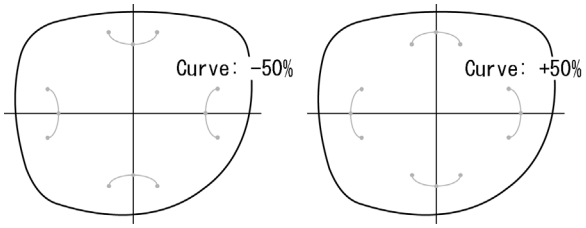


3) Pressing the numeric buttons on the right of [End] displays the numeric keypad. Enter the coordinates of the endpoint.

4) Pressing the numeric button at the bottom of [Curve] displays the numeric keypad. Enter the curve value.

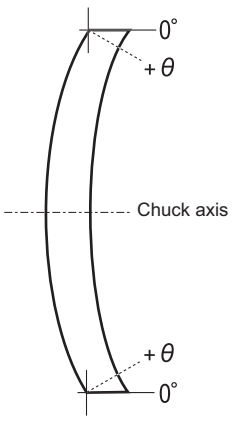
   -99 to +99% can be entered as the curve value.

   0% of the curve indicates a straight line. As the numeric value increases, it becomes close to a semi-circle. When +99% or -99% is entered, it becomes a semi-circle. The direction of the curve depends on the sign.



5) Pressing the numeric button of [ANG] displays the numeric keypad to enter the edge angle.

   The edge angle can be entered in the range of 0 to 30°. With 0°, they become parallel to the chuck axis. Entering a positive value tilts the axis in the direction of the chuck axis.



6) Repeat Steps 1) to 5) until all data is edited.

 button ⇒ Undoes the last change (up to five changes).

 button ⇒ Redoes the change.

 button ⇒ Deletes the selected data.

[<<] button ⇒ Selects the previous No. of data (entered order in add mode).

[>>] button ⇒ Selects the next No. of data (entered order in add mode).

[Changing magnification]

Each press of the magnification button switches the magnification in the order of [×1.0], [×1.5], [×2.0], and [×4.0].

The screen can be scrolled by touching the data prevention area in which data can not be set and dragging while the magnification is other than [×1.0].

5 When the edition of the design cut data is complete, press the [Layout] tab to return to the layout screen.

If there is a problem with the design cut such as that the starting point or endpoint is not connected, an error message is displayed and the data with the problem is selected. Check the message and correct the data.

2.7.6 Jewel hole drilling function

For drilling holes to embed jewel, multiple holes can be drilled in combination. Using the jewel hole drilling function, such drilling is easier by selecting the hole position and hole type after setting the hole shape in advance. Three types of shape can be set.

[When the hole edit screen is in the icon style]

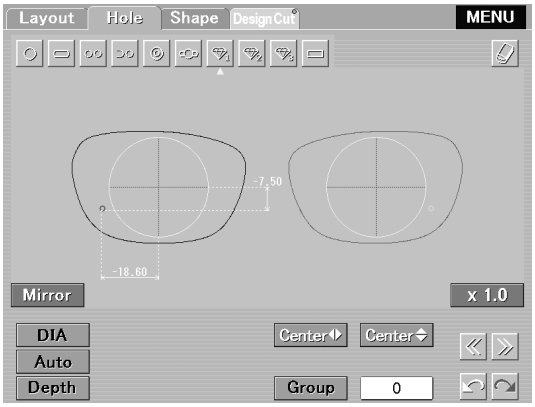
1 Press the desired jewel hole button (among  to ).

See " [Setting the jewel hole shape]" (Page 84) for the jewel hole shape setting procedures in the Jewel hole1 to Jewel hole3 parameters.

2 Press the rough position in which a jewel hole is drilled.

3 Release the add hole button pressed in Step 1 by pressing it again.

The hole position can be edited. The coordinates of the selected hole position are displayed on the shape display.



4 Enter the desired hole position by changing the numeric value displayed on the lens shape screen.

1) Press the numeric value for the horizontal position.

   The value turns red and numeric keypad appears.

2) After entering the X coordinate (horizontal position) of the hole with the numeric keypad, press the [Ent] button.

   [CE] ⇒ Clears one character entered last.

3) Enter the Y coordinate (vertical position) of the hole in the same manner.

Note

- The hole position can be also changed by dragging. Drag the selected hole displayed in red to change its position.
- After the hole position is changed by manually dragging it or by entering the coordinates using the numeric keypad,  and  become available. These buttons allow the operator to return the hole position to one of the five latest positions or redo the returned modification.

  It is possible to return the hole position back to one of the five latest positions.

  When the one of the add hole buttons or  is pressed,  is reset.

  If the hole position is additionally modified by manually dragging it or by entering the coordinates using the numeric keypad, only  is reset.

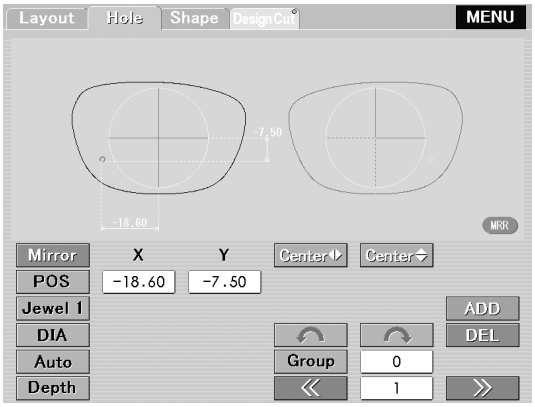
5 Drill holes in the same manner as the standard drilling process.

[When the hole edit screen is in the classic style]

1 Press the [ADD] button on the hole edit screen.

2 Press the rough position in which a jewelry hole is drilled.

3 Press the [HOLE] or [SLOT] button to select "Jewel 1", "Jewel 2", or "Jewel 3" from the pop-up menu.



See [Setting the jewelry hole shape] for setting the shape of jewelry holes to "Jewel 1", "jewel 2", and "Jewel 3".

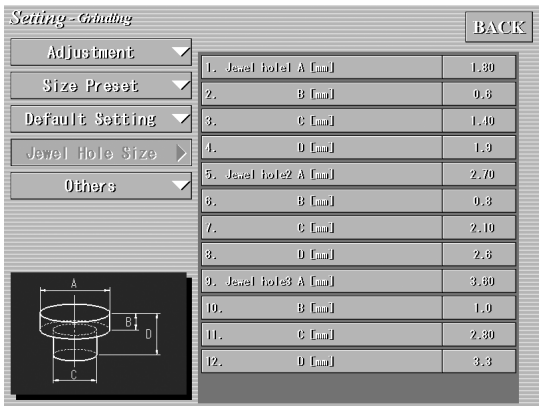
4 Specify the position of the jewel hole with the numeric buttons on the right of [POS].

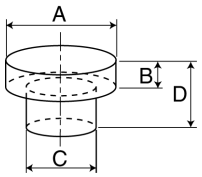
5 Drill holes in the same manner as the standard drilling process.

[Setting the jewel hole shape]

1) Press the [MENU] button on the layout screen to go to the Menu screen.
2) Press the [Setting - Grinding] button.
3) Press the [Jewel Hole Size] button.
4) Press each setting button.

   The numeric keypad appears.
5) Enter the desired size with the numeric keypad.





A≥C, D≥B must be met.

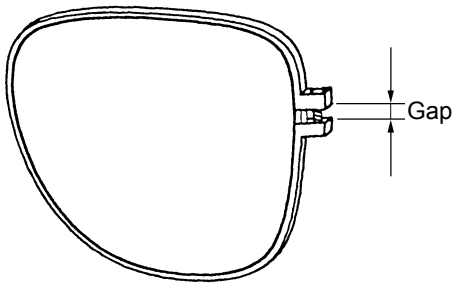
6) Repeat Steps 4) and 5) until each size of Jewel hole1 to Jewel hole3 is entered.
7) Press the [BACK] button to return to the Menu screen.
8) Press the [EXIT] button to return to the layout screen.

2.8 Checking the Lens Size

Check the lens size after finishing. If the lens is too large, retouch it to correct the size.

2.8.1 Checking the lens size

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



Note

- Do not remove the pliable cup.
  Retouching cannot be performed after the pliable cup is removed.

2.8.2 Retouching lenses

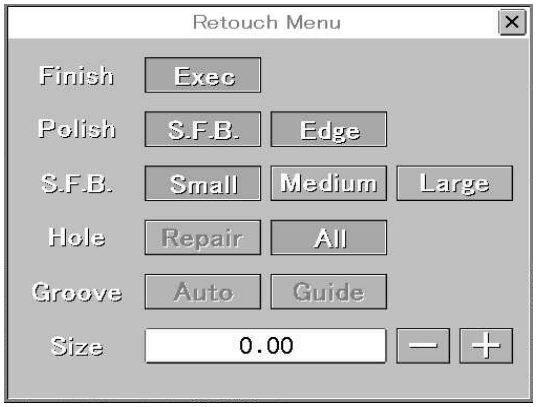
When the finished size of the lens is too large to fit into the rim, perform retouching.

1 Only when it is necessary to adjust the hole position and/or hole diameter precisely, change them on the hole edit screen.

1) Press the [Hole] tab.
   The hole edit screen is displayed.
2) Select any hole to be changed with the [<<] or [>>] button.
3) If necessary, change the hole position or hole diameter precisely.
   No change other than hole position or diameter precision can be made.
4) Return to the layout screen.

2 Set retouching.

1) Press the [Retouch] key.
   The Retouch Menu window is displayed.
2) If necessary, change the settings of retouching.
   Depressed buttons (white characters in green background) indicate that they are selected for retouching.
   Buttons that are grayed out cannot be selected.
   Buttons in white characters can be selected.



When [Repair] is selected for [Hole], only holes whose position or diameter was precisely changed are retouched. When [All] is selected, all holes are retouched.

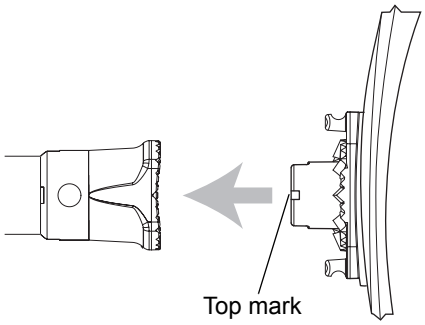
Press the numeric button on the right of [Size] to enter a value with the numeric keypad. [+] or [-] is also available to enter a value in 0.05 mm increments.

Reference guide for size correction: Subtract one-third of the gap at the rim joint from the Size value.

Example)For the gap of 1.2 mm:
1.2 (gap) ÷ 3 (circle ratio) = approx. 0.4 (mm)
Decrease the Size value by 0.4.

3 Set a lens to the adapter in the processing unit.

Reinsert the pliable cup fully into the adapter with the top mark facing up.



4 Press the [Start] key.

Retouching starts.

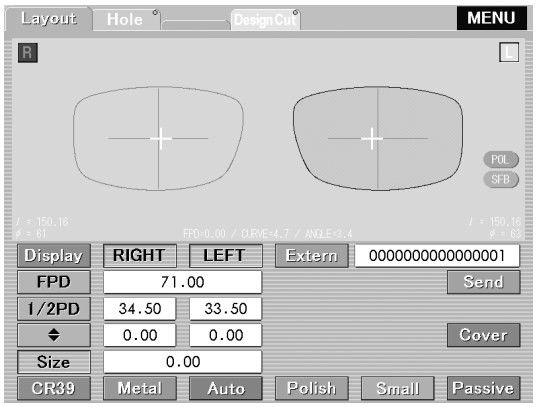
5 After the process, check the lens size again. If it is still large, retouch the lens again.

2.9 Processing the Other Lens

1 Switch the lens to be processed.

Press the [R/L] key.

The [R] or [L] button can also be used.



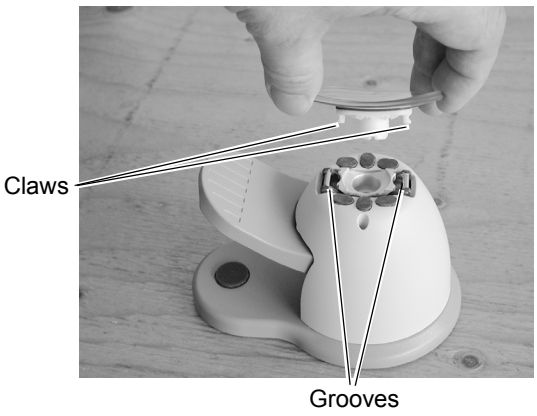
2 Process the other lens in the same manner.

2.10 Removing the Pliable Cup

To remove the pliable cup from a lens, use the supplied pliable cup remover.

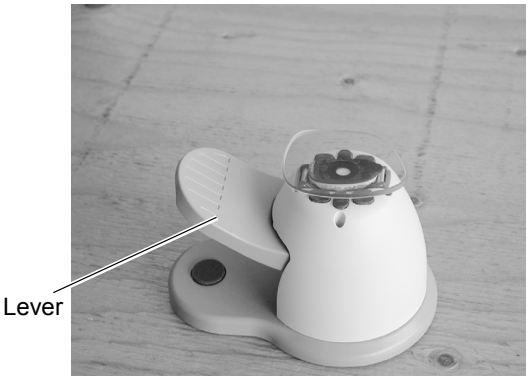
1 Set a lens with the pliable cup on the pliable cup remover.

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



2 Lower the lever slowly so that the pliable cup is removed downward.

The pliable cup may not be removed even if the lever is lowered to its lowest position, depending on the curve or coating of a lens. In such a case, remove the lens using your fingers with the lever at the lowest position.



Note

- The pliable cup is a consumable. When the double-coated adhesive tape becomes hard to remove from the pliable cup, replace it with a new one.
- Lightly wipe off any waste or moisture from the lens before setting it on the pliable cup remover.

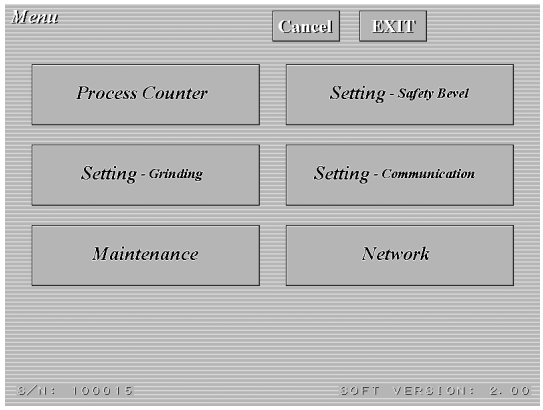
  If the processing waste or moisture gets inside, malfunction may result.

2.11 Process Counter

This function displays the number of lenses that have been processed since production for each lens material.

1 Call up the Menu screen.

Press the [MENU] button.



2 Call up the Process Counter screen.

Press the [Process Counter] button.

The process count for each material is displayed.

3 Check the process count for each wheel if necessary.

Press the [Wheel] button.

The process count for each wheel is displayed.

4 Return to the Menu screen.

Press the [BACK] button.

5 Return to the layout screen.

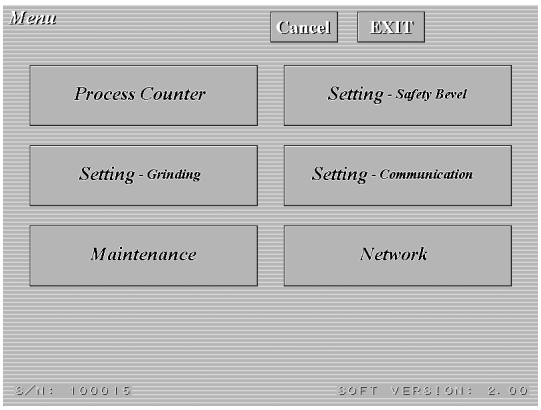
Press the [EXIT] button.

2.12 Calling Up Internal Data

The edger stores the ϕ45 (mm) and □45 (mm) internal data in its memory for the purpose of calibration.

1 Call up the Menu screen.

Press the [MENU] button.



2 Call up the Maintenance screen.

Press the [Maintenance] button on the Menu screen.

3 Call up the desired internal data.

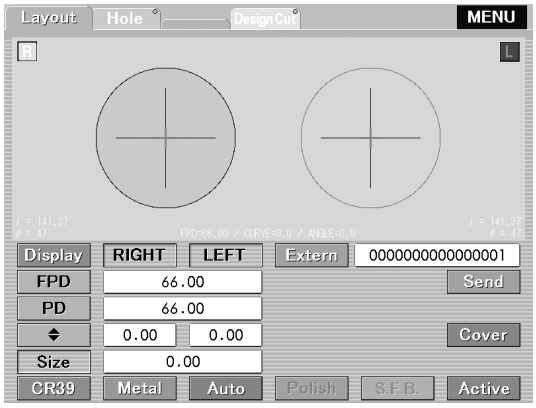
Circle 45 ⇒ Press the [DONE] button on the right of [Circle 45].

Square 45 ⇒ Press the [DONE] button on the right of [Square 45].

Rectangle 50 × 25 mm ⇒ Press the [DONE] button on the right of [Rectangle 50 × 25].

Drilling check shape data ⇒ Press the [DONE] button on the right of [Test Pattern].

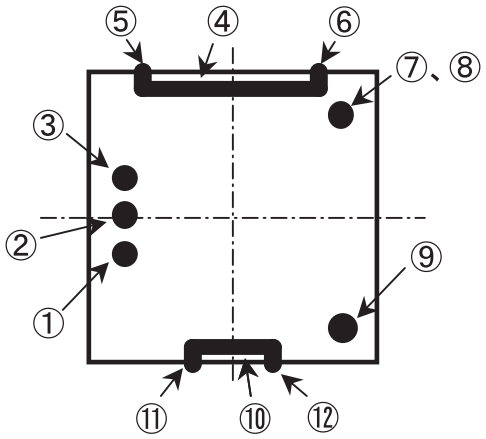
Hole depth adjustment shape data ⇒ Press the [DONE] button on the right of [Drill Adjustment Pattern (Depth)].



The internal data is called up to the layout screen.

[Explanation of drilling check shape data]

The drilling check shape data contains the following drilling data.



Hole No.	Hole position 1 (X,Y)	Hole position 2 (X,Y)	Hole diameter	Hole tilt	Hole depth
1	-18.50, -5.00	-	0.8	Auto	-
2	-18.50, 0.00	-	0.8	Auto	-
3	-18.50, +5.00	-	0.8	Auto	-
4	-9.60, +18.90	+9.60, +18.90	0.8	ANG 0.0	0.0 (drilled through)
5	-9.60, +21.00	-9.60, +18.90	0.8	ANGX-Y 0.0, 0.5	0.0 (drilled through)
6	+9.60, +21.00	+9.60, +18.90	0.8	ANGX-Y 0.0, 0.5	0.0 (drilled through)
7	+17.00, +17.00	-	0.8	ANG 0.0	0.0 (drilled through)
8	+17.00, +17.00	-	0.8	ANG 30.0	0.0 (drilled through)
9	+17.00, -17.00	-	2.0	Auto	0.0 (drilled through)
10	-4.00, -18.90	+4.00, -18.90	0.8	ANG 0.0	0.0 (drilled through)
11	-4.00, -21.00	-4.00, -18.90	0.8	ANGX-Y 0.0, 0.5	0.0 (drilled through)
12	+4.00, -21.00	+4.00, -18.90	0.8	ANGX-Y 0.0, 0.5	0.0 (drilled through)

● How to use the drilling check shape data

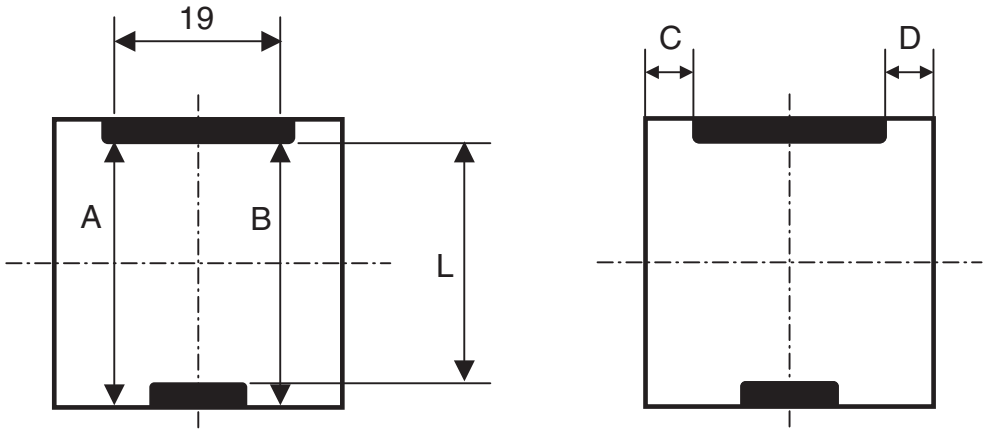
1) Call up the drilling check shape data and process a lens.

   Use the standard ϕ0.8 drill.

2) Check the hole depth with holes 1 to 3.

   It is normal that hole 3 is drilled and hole 2 is drilled slightly on the lens surface.

3) Measure the length of A, B, C, D, and L (see the figure below) with holes 4 to 6 and holes 10 to 12.



It is normal that the following results are obtained.

Difference between A and B: 0.1 mm or less

L: 37.0±0.1 mm

Difference between C and D: 0.1 mm or less

4) Check that holes 7 and 8 are drilled in the same position on the lens front surface.

5) Check that the diameter of hole 9 becomes ϕ2.0±0.1 mm.

6) If it is out of range, adjustment is needed. Contact NIDEK or your authorized distributor.

* To use the optional ϕ1.2 or 1.6 drill, follow the procedure below after checking that drilling can be performed normally with the standard ϕ0.8 drill in Steps 1) to 6) above.

a. Replace the standard drill with the optional one (see page 124).

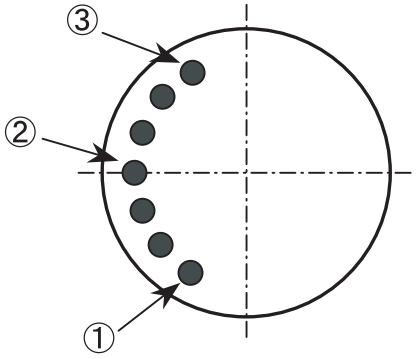
b. Enter the diameter of the attached drill in the “Drill bit diameter [mm]” parameter.

c. Call up the hole depth adjustment shape data, process a lens, and then check the hole depth. Enter a compensation value in the “Hole depth” parameter if necessary. See “3.15 Adjusting the Hole Depth” (Page 137).

d. Call up the drilling check shape data. Check that the diameter of hole 9 becomes ϕ2.0±0.1 mm.

[Explanation of hole depth adjustment shape data]

The hole depth adjustment shape data contains the following drilling data.



Hole 1
Hole depth: -0.3 mm, tilt: Auto
Hole 2
Hole depth: 0.0 mm, tilt: Auto
Hole 3
Hole depth: +0.3 mm, tilt: Auto

The hole depth of holes 1 to 3 increases from -0.3 mm to +0.3 mm in 0.1 mm increments.

Process a lens based on the above shape data and then check the number of drilled holes.

When three or four holes are drilled, the hole depth is proper.

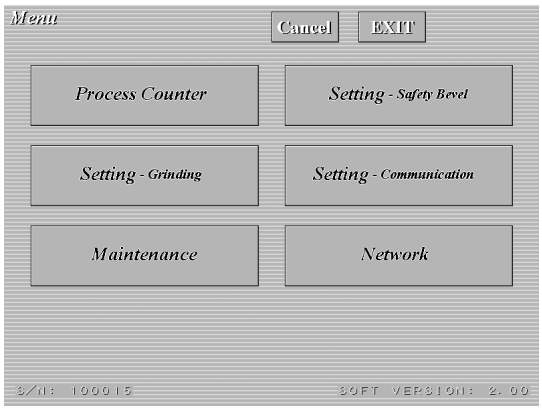
See “3.15 Adjusting the Hole Depth” (Page 137) for details.

2.13 Setting Parameters

Each parameter is used mainly for adjustments. See “3 MAINTENANCE” (Page 113).

1 Call up the Menu screen.

Press the [MENU] button.



2 Select the screen that includes the desired parameters.

Select from among [Setting - Grinding] - [Setting - Safety Bevel].

See “○Parameter items and setting contents” ((Page 94)) for parameters on each screen.

3 Press the list button on the left of the screen that includes the desired parameter items.

The selected button turns red and list of parameter items appears.

Press the button again to close the list.

4 Press a parameter item to be changed.

The selected parameter item turns red. The numeric keypad or pop-up menu appears.

5 Change the setting.

Numeric keypad ⇒ Enter a new value.

Pop-up menu ⇒ Select a new setting from the menu.

6 Return to the Menu screen.

Press the [BACK] button.

7 Return to the layout screen.

Press the [EXIT] button.

Pressing the [Cancel] button does not change the setting and the screen returns to the layout screen.

○ Parameter items and setting contents

* Parameters to be displayed depend on the edger type.

<Setting - Grinding screen (Adjustment)>

Parameters for processing are adjusted.

1 : Size: ±□.□□

Compensation value for the finished size of all lens materials. Increasing the value increases the finished lens size. See " <Setting - Grinding screen (Size Preset)>" for adjustment of the lens size according to the lens material and frame material.

2 : Axis: ±□.□□

Compensation value for the axis angle. Increasing the value tilts the axis to the lower right when viewed from the front surface (convex surface).

3 : Bevel position: ±□.□□

Compensation value for the desired bevel position in auto processing. Increasing the value shifts the bevel to the rear surface.

4 : Groove position: ±□.□□

Compensation value for the desired groove position in auto grooving. Increasing the value shifts the groove to the rear surface.

5 : Groove depth: ±□.□□

Compensation value for the groove depth. Increasing the value increases the groove depth.

6 : Hole diameter: ±□.□□

Compensation value for the hole diameter. Increasing the value increases the hole diameter.

7 : Hole depth: ±□.□

Compensation value for the hole depth. Increasing the value increases the hole depth.

8 : Drill bit diameter [mm]: □.□□

Entry box for the diameter of the drill attached to the spindle. unit: mm

9 : Flute length [mm]: □.□

Entry box for the flute length of the drill attached to the spindle. unit: mm

Enter the value that the nominal flute length of the drill is decreased by 0.5 mm.

<Setting - Grinding screen (Size Preset)>

The compensation values for the finished size according to the lens material and frame material can be set. Increasing the value increases the finished lens size.

Example)Increasing the value by 1.00 increases the finished lens size by 1.00 mm in diameter.

1 : Metal (CR39/Hi Index): ±□.□□

Compensation value for the beveled lens size when [Metal] is selected for the frame type and [CR39] or [HiIndex] for the lens material. Increasing the value increases the finished lens size.

2 : Plastic (CR39/Hi Index): ±□.□□

Compensation value for the beveled lens size when [Plastic] is selected for the frame type and [CR39] or [HiIndex] for the lens material. Increasing the value increases the finished lens size.

3 : Flat (CR39/Hi Index): ±□.□□

Compensation value for the flat-edged lens size when [CR39] or [HiIndex] is selected for the lens material. Increasing the value increases the finished lens size.

4 : Metal (Polyca./Acrylic/Trivex): ±□.□□

Compensation value for the beveled lens size when [Metal] is selected for the frame type and [Polyca.], [Acrylic], or [Trivex] for the lens material. Increasing the value increases the finished lens size.

5 : Plastic (Polyca./Acrylic/Trivex): ±□.□□

Compensation value for the beveled lens size when [Plastic] is selected for the frame type and [Polyca.], [Acrylic], or [Trivex] for the lens material. Increasing the value increases the finished lens size.

6 : Flat (Polycar./Acrylic/Trivex): ±□.□□

Compensation value for the flat-edged lens size when [Polyca.], [Acrylic] or [Trivex] is selected for the lens material. Increasing the value increases the finished lens size.

7 : Metal (Glass): ±□.□□

Compensation value for the beveled lens size when [Metal] is selected for the frame type and [Glass] for the lens material. Increasing the value increases the finished lens size.

8 : Plastic (Glass): ±□.□□

Compensation value for the beveled lens size when [Plastic] is selected for the frame type and [Glass] for the lens material. Increasing the value increases the finished lens size.

9 : Flat (Glass): ±□.□□

Compensation value for the flat-edged lens size when [Glass] is selected for the lens material. Increasing the value increases the finished lens size.

<Setting - Grinding screen (Default Setting)>

Sets the defaults of the layout screen.

1 : FPD [mm]: □□.□□

Default setting of the FPD.

2 : PD [mm]: □□.□□

Default setting of the PD.

3 : Optical center height [mm]: □□.□□

Default setting of the optical center height (⬍).

4 : Active side (R/L): R, L, RECEIVED

Selects either the right or left lens shapes that is displayed when data is read.

R: Right lens shape

L: Left lens shape

RECEIVED: Right lens shape (left lens shape when left eye traced data is received)

5 : Lens material: CR39, HI INDEX, POLYCA., ACRYLIC, TRIVEX, GLASS

Default setting of the lens material.

6 : Frame type: METAL, PLASTIC, TWO POINT, NYLOR

Default setting of the frame material.

7 : Polish mode: NONE, SFB, EDGE, EXEC

Default setting of the polishing process.

NONE: No polishing.

SFB: Polishing of the safety-beveled surface (not displayed when SFB Mode is set to “NONE”).

EDGE: Polishing of the edge (not displayed when SFB Mode is set to “NONE”).

EXEC: Polishing.

8 : SFB mode: NONE, SMALL, MEDIUM, LARGE

Default selection of the safety beveling process.

NONE: No safety beveling.

SMALL: Minor safety beveling of edge.

MEDIUM: Medium safety beveling of edge.

LARGE: Major safety beveling of edge.

9 : Layout mode: ACTIVE, PASSIVE, RECEIVED

Default selection of the layout mode.

ACTIVE: Active mode

PASSIVE: Passive mode

RECEIVED: Follow the layout mode of the read data.

10 : Groove depth [mm]: □.□

Default setting of the groove depth. In auto processing mode, a lens is grooved with this depth.

11 : Groove width [mm]: □.□

Default setting of the groove width. In auto processing mode, a lens is grooved with this width.

12 : FPD mode: FPD, DBL

Selects either the FPD or DBL (nasal width) as default.

13 : PD mode: PD, 1/2PD

Selects either PD or 1/2PD (monocular PD) as default.

14 : Optical center height mode: OCHT, PD, BT

Selects the default among OCHT (▲▼), PD (PD▲▼), and BT (BT▲▼).

OCHT (▲▼): Height of optical center as a basic point of frame center.

PD (PD▲▼): Height from the optical center straight down to the point on the shape.

BT (BT▲▼): Height from the point level with the optical center straight down to the lowest point on the shape.

15 : JOB mode: EXTERN, JOB MEM, PTN MEM

Default setting of the shape data import button.

EXTERN (external communication): Importing lens shape through external communication (importing data from the ICE-9000, etc).

JOB MEM (JOB Memory): Reading job data stored in the edger (including lens material and layout).

PTN MEM (PTN Memory): Reading pattern data (shape, FPD, hole position) stored in the edger.

16 : Display mode: NONE, TRACE, LAYOUT, ALL

Default setting of data displayed on the layout screen of the layout screen.

NONE: Shape

TRACE: Shape including frame information and minimum lens diameter

LAYOUT: Layout information and shape including frame information and minimum lens diameter

ALL: All

17 : Soft edging mode: NONE, EXEC, GLASS

Default setting of soft processing mode.

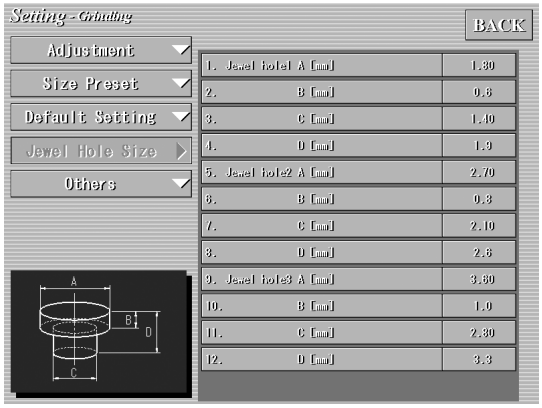
NONE: When pattern or job data is read from the built-in memory, the soft processing mode turns off.

EXEC: When pattern or job data is read from the built-in memory, the soft processing mode turns on.

GLASS: When [Glass] is selected for the lens material, the soft processing mode turns on automatically.

<Setting - Grinding screen (Jewel Hole Size)>

The jewel hole shape drilled by the jewel hole drilling function is set. Three types of holes (Jewel hole1 to Jewel hole3) can be set.



1 : Jewel hole1 A [mm]:□.□□

Sets the countersink hole diameter of Jewel hole1.

2 : B [mm]:□.□

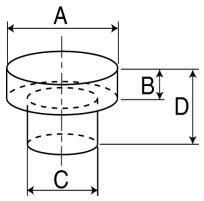
Sets the countersink hole depth of Jewel hole1.

3 : C [mm]:□.□□

Sets the countersink lower hole diameter of Jewel hole1.

4 : D [mm]:□.□

Sets the countersink lower hole depth of Jewel hole1.



A≥C, D≥B must met.

5 : Jewel hole2 A [mm]:□.□□

Sets the countersink hole diameter of Jewel hole2.

6 : B [mm]:□.□

Sets the countersink hole depth of Jewel hole2.

7 : C [mm]:□.□□

Sets the countersink lower hole diameter of Jewel hole2.

8 : D [mm]:□.□

Sets the countersink lower hole depth of Jewel hole2.

9 : Jewel hole3 A [mm]:□.□□

Sets the countersink hole diameter of Jewel hole3.

10 : B [mm]:□.□

Sets the countersink hole depth of Jewel hole3.

11 : C [mm]:□.□□

Sets the countersink lower hole diameter of Jewel hole3.

12 : D [mm]:□.□

Sets the countersink lower hole depth of Jewel hole3.

<Setting - Grinding screen (Others)>

1 : Extra size mode: NONE, EXEC

Factory setting: NONE

Selects how to apply a size value to the lens shape when the Size value is changed.

NONE: The shape remains unchanged but the size changes inconsistently.

EXEC: The shape changes according to the size value.

In retouching, the shape changes according to the size value regardless of the setting.

2 : Measurement after roughing: NONE, EXEC, AUTO

Factory setting: EXEC

Selects whether or not to measure the lens shape after roughing.

NONE: After roughing, the lens shape is not measured.

EXEC: Only when safety beveling is performed, the lens shape is measured after roughing.

AUTO: The lens shape is not measured after roughing only when the lens material is polycarbonate, acrylic, Trivex.

3 : Continuous edging protect: NONE, EXEC

Factory setting: EXEC

Selects whether or not to turn on the function in order not to process the same edge of lens (right or left).

NONE: The same edge of lens can be processed continuously.

EXEC: The same edge of lens cannot be processed continuously.

4 : Vacuum system: NONE, EXEC

Factory setting: NONE

5 : Vacuum delay time [s]: 1 to 300

Factory setting: 10

Setting for seconds to keep the vacuum system on after processing.

6 : Rough wheel type (Hi Index): PLA, GLS

Factory setting: GLS

Selects either the roughing wheel for plastic lenses (PLA) or roughing wheel for glass lenses (GLS) that is used when roughing high index plastic lenses. For lenses on which burrs are easily produced, select “GLS”.

When “GLS” is selected, the processing time is extended, and the glass roughing wheel becomes clogged easily.

7 : Wheel rotation speed (CR39): SPEED1 to SPEED6

Selects the wheel rotation speed when processing plastic lenses. The smaller the number, the slower the rotation speed becomes.

8 : Wheel rotation speed (Hi Index): SPEED1 to SPEED6

Selects the wheel rotation speed when processing high index plastic lenses. The smaller the number, the slower the rotation speed becomes.

9 : Wheel rotation speed (Trivex): SPEED1 to SPEED6

Selects the wheel rotation speed when processing trivex lenses. The smaller the number, the slower the rotation speed becomes.

10 : Edge minimum width: □.□□

Sets the required minimum edge thickness which remains after grooving.

If a lens whose edge thickness will be thinner than the set value tries to be grooved, a message indicating that the lens is too thin to process appears.

11 : Tilt function: NONE, EXEC

Factory setting: NONE

Selects whether or not to display the tilt function on the guided processing screen.

12 : Blocking X offset (Bifocal): ±□.□□ (outside with a negative value)

Factory setting: -5.00 [mm]

13 : Blocking Y offset (Bifocal): ±□.□□ (down with a negative value)

Factory setting: +5.00 [mm]

Sets the lens layout for blocking bifocal lenses. Set the shifted values from the top line center of the segment when blocking bifocal lenses.

When using the NIDEK Centering device, Model CE-1, leave the setting at the factory setting (5 mm outside, 5 mm up) and never change it.

14 : Auto passive mode: NONE, EXEC

Factory setting: NONE

Selects whether or not to switch the layout mode to passive mode automatically when the lens cup is placed to the end of the shape in active mode.

15 : Slot coordinate mode: CENTER, EDGE

Factory setting: CENTER

Selects the base points between CENTER and EDGE when entering the coordinate of slotted holes.

16 : Correct hole position: NONE, EXEC

Factory setting: EXEC

Selects whether or not to correct the hole position when the size value is changed.

See “[Hole position correction when the size value is entered]” ((Page 45)).

<Maintenance screen>

1 : Language: ENGLISH, JAPANESE, ITALIAN, FRENCH

Factory setting: ENGLISH

Selects the language to be displayed.

2 : Cover button: HIDE, SHOW

Factory setting: SHOW

Selects whether or not to display the [Cover] button which is used to open or close the processing chamber cover.

3 : Input interface (JOB/PIN code): TENKEY, KEYPAD

Factory setting: TENKEY

Selects either the numeric keypad or keypad to display when entering a job code.

4 : Hole editor type: NEW, PREVIOUS

Factory setting: NEW

Selects either the icon (NEW) or classic (PREVIOUS) style to display the hole edit screen.

5 : Maintenance message: PUMP, WHEEL, BOTH, NONE

Factory setting: BOTH

Selects whether (or how) to display a message that urges the user to replace the processing water and/or dress the wheel based on the process counter.

PUMP: Only processing water replacement message displayed.

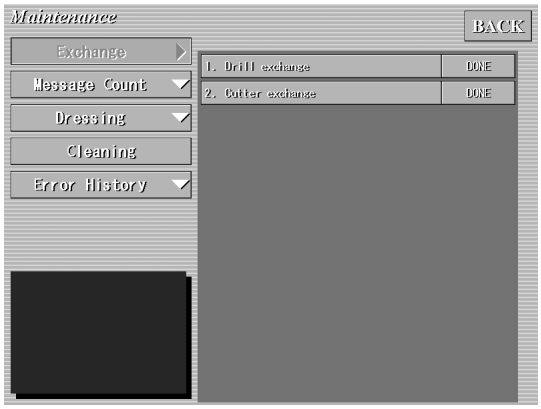
WHEEL: Only wheel dressing message displayed.

BOTH: Processing water replacement message and wheel dressing message displayed.

NONE: No message displayed.

* For “Circle 45”, “Square 45”, “Test Pattern”, and “Drill Adjustment Pattern (Depth)”, see “2.12 Calling Up Internal Data” (Page 89).

<Maintenance screen (Exchange)>

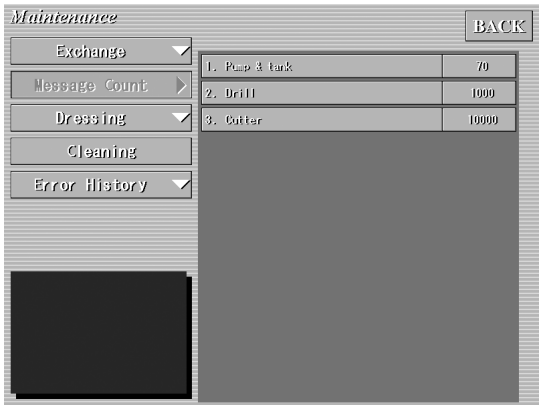


Replacement mode of the drill or cutter.

See “3.6 Replacing the Drill” (Page 124).

See “3.7 Replacing the Grooving Cutter” (Page 126).

<Maintenance screen (Message Count)>



1 : Pump & tank: □□□

Displays a message that urges the user to replace the processing water in the tank every after processing of the specified number of lenses.

2 : Drill: □□□

Displays a message that urges the user to replace the drill every after processing of the specified number of lenses.

3 : Cutter: □□□□□

Displays a message that urges the user to replace the cutter every after processing of the specified number of lenses.

<Maintenance screen (Dressing)>

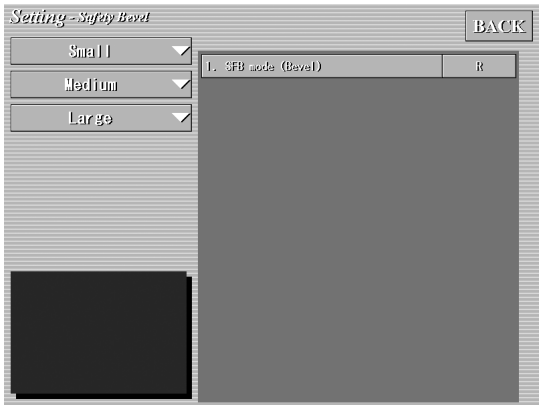
Sets the wheel dressing mode.

See “3.2 Wheel Dressing” (Page 114).

<Maintenance screen (Error History)>

An error history is displayed. The top is an error occurred last.

<Setting - Safety Bevel screen>



1 : SFB mode (Bevel): R, R&F

Factory setting: R&F

R&F: Safety beveling of both surfaces.

R: Safety beveling of the rear surface in beveling.

In flat edging, both front and rear surfaces are safety-beveled regardless of the setting.

<Setting - Safety Bevel screen (Small)>

Sets the small safety bevel amount.

1 : Rear size (Bevel): □.□

Guide setting for the safety bevel amount of the rear SFB when beveling.

2 : Front size (Bevel): □.□

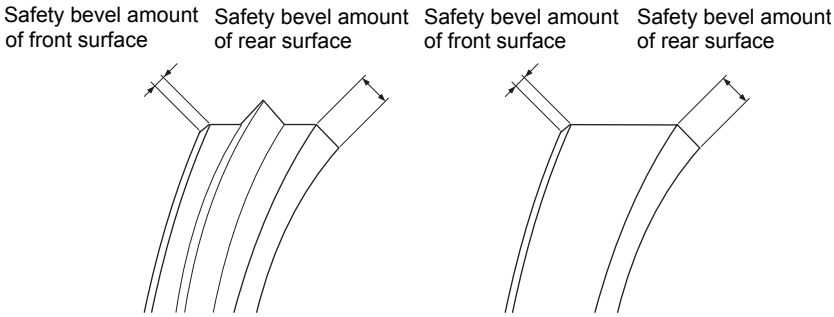
Guide setting for the safety bevel amount of the front SFB when beveling.

3 : Rear size (Flat): □.□

Guide setting for the safety bevel amount of the rear SFB when flat edging.

4 : Front size (Flat): □.□

Guide setting for the safety bevel amount of the front SFB when flat edging.



<Setting - Safety Bevel screen (Medium)>

Sets the medium safety bevel amount.

1 : Rear size (Bevel): □.□

Guide setting for safety bevel amount of the rear SFB when beveling.

2 : Front size (Bevel): □.□

Guide setting for safety bevel amount of the front SFB when beveling.

3 : Rear size (Flat): □.□

Guide setting for safety bevel amount of the rear SFB when flat edging.

4 : Front size (Flat): □.□

Guide setting for safety bevel amount of the front SFB when flat edging.

<Setting - Safety Bevel screen (Large)>

Sets the large safety bevel amount.

1 : Rear size (Bevel): □.□

Guide setting for safety bevel amount of the rear SFB when beveling.

2 : Front size (Bevel): □.□

Guide setting for safety bevel amount of the front SFB when beveling.

3 : Rear size (Flat): □.□

Guide setting for safety bevel amount of the rear SFB when flat edging.

4 : Front size (Flat): □.□

Guide setting for safety bevel amount of the front SFB when flat edging.

<Setting - Communication screen>

1 : My ID: □□

Sets a number which is not overlapped with that of other instruments. Do not change this setting usually.

2 : Host ID: □□

Do not change this setting usually.

<Setting - Communication screen (RS-232C)>

1 : Communication interface: NONE, STANDARD, LAN, VCA (PRESET), VCA (AUTO), VCA-B (PRE.), VCA-B (AUTO), TRACER

Factory setting: LAN

Sets the external communication type using the RS-232C connector (RS-232C).

NONE: No external communication.

STANDARD:NIDEK standard communication format. Used for the standalone type. Connected with the NIDEK ICE-9000.

LAN: LAN format

VCA (PRESET): VCA format (preset initialize). In VCA (OMA) communication, the circumference sent is used for processing.

VCA (AUTO): VCA format (auto initialize). In VCA (OMA) communication, the circumference sent is used for processing.

VCA-B (PRE.): VCA format (preset initialize). In VCA (OMA) communication, the circumference sent is not used but the 3-D circumference is recalculated from the frame curve for processing.

VCA-B (AUTO): VCA format (auto initialize). In VCA (OMA) communication, the circumference sent is not used but the 3-D circumference is recalculated from the frame curve for processing.

TRACER: When an external tracer such as the LT-900 is connected to the RS-232C connector (RS-232C) with this setting selected, the [Tracer] button is displayed on the layout screen.

2 : Baud rate: 9600, 38400

Factory setting: 38400

Bit transmission speed during communication.

3 : Server name: ICE-9000, RD-100, MINILAB, OTHERS

Factory setting: Blank

Sets the RS-232C/Ethernet button to the name of an instrument to be connected instead of [RS-232C].

<Setting - Communication screen (Ethernet)>

1 : Communication interface: NONE, LAN

Factory setting: NONE

Sets the external communication type using the Ethernet connector.

NONE: Disables the communication function of the Ethernet connector.

LAN: LAN format.

2 : Transport protocol: TCP, UDP

Factory setting: TCP

Sets the communication protocol.

Usually select “TCP”. When connecting the ICE-9000 using the Ethernet connector, select the same setting as the ICE-9000.

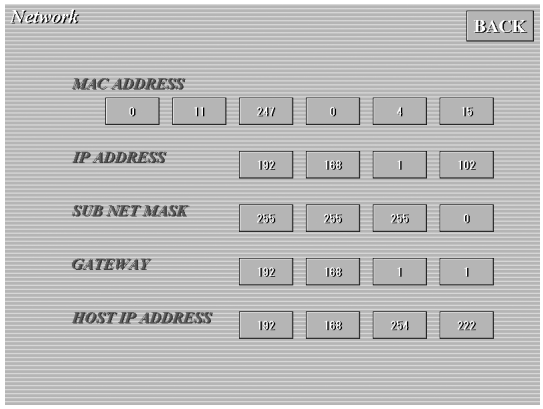
3 : Server name: ICE-9000, RD-100, MINILAB, OTHERS

Factory setting: Blank

Sets the RS-232C/Ethernet button to the name of an instrument to be connected instead of [Ethernet].

<Network screen>

Do not change settings on the Network screen.



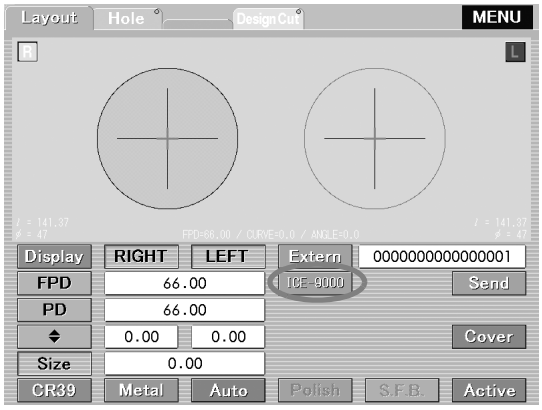
2.13.1 Changing the RS-232C/Ethernet button to another instrument name

Normally, the RS-232C/Ethernet button indicates that the instrument from which process data is read using the external communication function is connected to either the RS-232C connector or Ethernet connector.

Data is read from an instrument connected to the RS-232C connector: RS-232C

Data is read from an instrument connected to the Ethernet connector: Ethernet

Setting the name of the instrument from which data is read at the “Server name” parameter displays the instrument name instead of [RS-232C] or [Ethernet].



1 Call up the Menu screen.

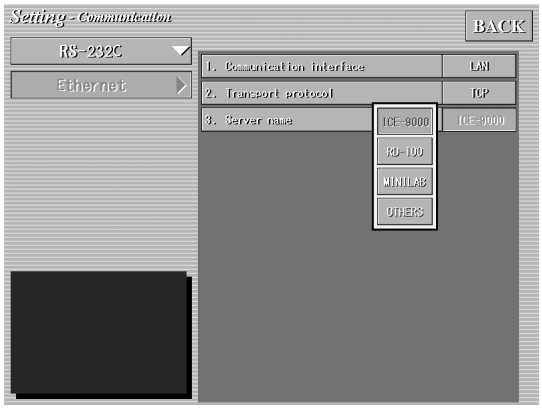
Press the [Menu] button.

2 Call up the Setting - Communication screen.

Press the [Setting - Communication] button.

3 Press the [RS-232C] button or [Ethernet] button.

To change the [RS-232C] indication, select the [RS-232C] button. To change the [Ethernet] indication, select the [Ethernet] button.



4 Press the button on the right of the “Server name” parameter and select the name of the instrument from which data is read.

5 Return to the Menu screen.

Press the [BACK] button.

6 Return to the layout screen.

Press the [EXIT] button.

[To set another name]

To change the instrument name to other than displayed in Step 4, follow the procedure below.

1) Select [OTHERS] in Step 4.

   The keyboard screen appears.

2) After entering the desired name (up to 9 characters), press the [Ent] button.

[To reset to the factory setting “RS-232C” or “Ethernet”]

To set the RS-232C/Ethernet button back to the factory setting [RS-232C] or [Ethernet:], follow the procedure below.

1) Select [OTHERS] in Step 4.

   The keyboard screen appears.

2) Delete all of the entered characters with the [BS] button or [Del] button.

2.14 Storing/Calling Up Pattern Data or Job Data

Pattern data or job data are saved in the built-in flash memory and can be called up when necessary. This function allows for storing and calling up data which are processed frequently as registered shape. Tracing for every processing is not necessary and the time required is reduced.

Note

- Pattern data and job data are separately saved.
- Total of 2000 sets of pattern data and job data can be saved.
  The capacity of data which can actually be saved depends on data size.

2.14.1 Saving pattern data or job data

1 Display shape data to be saved and perform layout if necessary.

2 Set the shape data import button to “PTN Memory” or “Job Memory”.

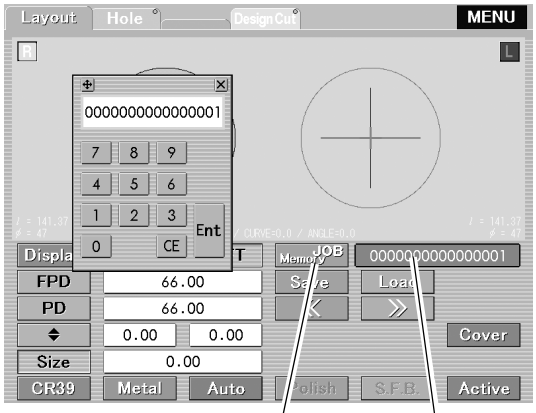
Pressing the shape data import button displays the menu. Select either to save pattern data or job data from the menu.

“PTN Memory” ⇒ Pattern data (shape, FPD, hole data) are saved.

“JOB Memory” ⇒ Job data (shape, processing conditions, layout) are saved.

3 Enter a pattern code or job code.

Pressing the job No. indication displays the numeric keypad. After entering a pattern code or job code, press the [Ent] button.



4 Press the [Save] button.

Pattern data or job data is saved.

When “Already file exist. Overwrite?” is displayed, the data has already been saved with the pattern code or job code. To change and resave the code, press the [NO] button. Pressing the [YES] button overwrites the data with the code and erases the previous data.

2.14.2 Calling up pattern data or job data

1 Set the shape data import button to [PTN Memory] or [JOB Memory] on the layout screen.

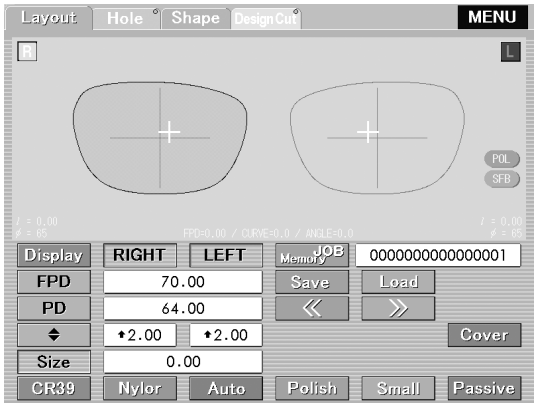
Pressing the shape data import button displays the menu. Select either to read pattern data or job data from the menu.

[PTN Memory] ⇒ Pattern data (shape, FPD, hole data) are called up.

[JOB Memory] ⇒ Job data (shape, processing conditions, layout) are called up.

2 Read pattern code or job code of data to be called-up with the barcode scanner (option).

The specified pattern data or job data is displayed.



When the barcode scanner is not available, follow the procedure below.

1) Press the job No. indication.

   The numeric keypad appears.

2) After entering a pattern code or job code, press the [Ent] button.

3) Press the [Load] button.

   The set pattern data or job data is displayed.

Pressing the [<<] or [>>] button calls up pattern data or job data in the entered order or reverse order.

2.15 After Use

1 Clean the processing chamber.

Put the edger into the cleaning mode and turn on the water.

[Entering the cleaning mode]

1) Press the [MENU] button to display the Menu screen.
2) Press the [Maintenance] button to display the Maintenance screen.
3) Press the [Cleaning] button to put the edger into cleaning mode.

[Stop] key⇒ The processing chamber cover can be removed. Pressing this key again opens the cover.

[Start] key⇒ Runs water into the processing chamber. Pressing this key again stops running.

[R/L] key⇒ Moves the chuck shaft and where water runs to the right.

[Retouch] key⇒ Moves the chuck axis and where water runs to the left.

[Chuck] key⇒ Takes the safety beveling wheel arm in and out.

Note

- Clean the processing chamber after every use each day.
  If the edger is left for several days after being used, processing waste becomes settled and hard to remove.

2 Turn the power off.

3 Perform check after use.

See “2.16.2 Check after use” (Page 110).

4 Store accessories.

Wipe the accessories and store them in a customary place to avoid possible loss or breakage.

2.16 Daily Checks

2.16.1 Check before use

Check the following before every use each day. It is recommended to prepare a checklist to make sure everything is checked.
Creating a checklist and writing down the check results is recommended.

A. Does the edger work properly?

1) Turn the power on.

2) Make sure that errors do not appear, but the layout screen appears.

B. Check visually that the processing wheels are not cracked.

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

1) Set dressing mode.

2) Press the [DONE] button on the right of the Wheel Dressing field to confirm that wash water and cooling water are following.

⚠ **CAUTION** • **Take care not to get spray into your eyes.**
Spray including processing waster may damage your eyes.

Take care not to get spray into If wash water or cooling water do not flow, confirm that the PUMP1 and PUMP2 hoses and the power cords are properly connected to the main unit.

2.16.2 Check after use

Check the following after every use each day.
Creating a checklist and writing down the check results is recommended.

A. Is the power turned off?

B. Is the processing chamber cleaned?

C. Is there any dirt or damage on the edger?

D. Are all the accessories there with no breakage?

Accessories:

Hexagonal driver, hexagonal wrench, wrench, dressing stick, pliable cup, pliable cup remover, touch pen

2.17 Regular Check

It is recommended to perform regular checks every two years in order to use the edger for a long time under normal conditions. In the regular check, performance check of the whole instrument and replacement of maintenance parts are performed.
Contact NIDEK or your authorized distributor if desired.

Regular maintenance item	Maintenance contents
Wheels	Check that there is no deterioration in the processing performance. Replace the wheel if the processing surface is frayed, which will be a problem in practical use.
Spindle unit	Apply more grease to the waterproof seal. Replace the waterproof seal if it is deteriorated.
Processing chamber	Check that the chamber has no problems such as cracks, fractures or deterioration. Replace the chamber if there is a problem.
Carriage	Apply more grease to the lens clamp axis, Y axis, and X axis, or lens rotating axis of the carriage.
Interior of the edger	Check that there is no waste inside of the edger. Clean the interior if waste is found.
Safety beveling unit, more grease of waterproof seal	Replace the wheel rotation belt. Apply more grease to the waterproof seal. Check that the processing performance of the safety beveling wheel is not deteriorated. Replace the wheel if the processing surface is frayed, which will be a problem in practical use.
Drilling&Grooving unit	Apply more grease to the waterproof seal. Check that the processing performance of the drill or grooving cutter is not deteriorated.
Feedwater/Drain pipes (including feedwater pipes in the edger)	Check that there are no cracks, deterioration, or clogging in the feedwater hoses and drain pipe visually and by touch. Replace the hose or pipe if there is a problem.

* The wheel must be replaced every two years or after processing 5,000 lenses. Contact NIDEK or your authorized distributor. However, the lens number referred to here is only a guide, so replacement at an earlier period may be needed under conditions such as hard lenses have been processed successively or numerous high-power minus lenses have been processed.

3. MAINTENANCE

3.1 Troubleshooting

In the event that the edger does not work normally, correct the problem according to the following table before contacting NIDEK or your authorized distributor.

Symptom	Remedies
The display does not appear even though the power is turned ON (|).	• Check that the power cord is connected to a wall socket. • Replace the fuses.
Processing does not start even though the [Start] key is pressed.	• Check that lens layout settings have been entered. • The edger intends to process the already-processed lens. Press the [R/L] key to switch the side of the lens to be processed.
A message that requests wheel dressing appears.	• Dress the wheel. “3.2 Wheel Dressing” (Page 114)
Error code 201 appears.	• Lens diameter is short. Pressing the [OK] button causes the outline of the insufficient part to blink in yellow. Replace the lens with one that has a larger diameter or change the layout.
Error code 203 appears.	• The feelers are lifted. The feelers may be caught in a cataract lens or bifocal lens. Process the lens in EX lens processing mode.
Error code appears and the edger stops.	• Abnormal conditions may have been encountered. Turn OFF the power switch and then back to ON to reset the edger. If the error code appears again, contact your authorized distributor.
Processing size is different between right lens and left lens.	• Traced data may be abnormal. Check the traced data.

* If the symptom cannot be corrected with the above actions, contact NIDEK or your authorized distributor.

3.2 Wheel Dressing

The loading of processing wheel causes processing to take longer and to make finished size inaccurate. It is necessary to dress the wheels.

⚠ WARNING

- **In dressing mode, the wheels turn while the processing chamber cover is left open. Great care must be taken while dressing.**
- **Be sure to wear protective glasses for wheel dressing.**
  Spray including processing waste may damage your eyes.
- **Be careful not to touch the drill or cutter for grooving.**
  The drill and cutter are sharp edged tools. You may be injured by touching.

⚠ CAUTION

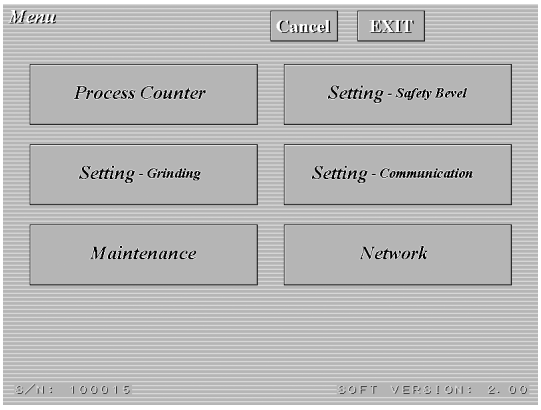
- **Be sure to select a proper dressing stick suited to the wheel type.**
  Using an improper dressing stick may damage the wheel and a lens may not be processed properly.
  Roughing wheel for glass lenses (except for Type PLB) ⇒ Use the dressing stick for the roughing wheel (orange) WA80K.
  Finishing wheel for plastic lenses ⇒ Use the dressing stick for the finishing wheel (white) WA320K.
  Finishing wheel for glass lenses (Type PLB-G only) ⇒ Use the dressing stick for the finishing wheel (white) WA320K.
  Polishing wheel ⇒ Use the dressing stick for the polishing wheel (light blue) WA4000.
  Safety beveling wheel ⇒ Use the dressing stick for the finishing wheel (white) WA320K.
- **Never dress the roughing wheel for plastic lenses.**
  It will damage the wheel for plastic lenses, and as a result, a lens may not be processed properly any longer.
- **Apply the end surface of the dressing stick to the wheel, not the corner or the edge.**
  Otherwise, the wheel may be damaged.
- **Hold the dressing stick with both hands.**
  If the stick is held with one hand, the stick cannot be held strongly enough, the corner of the stick may collide with the wheel and damage it.
- **Lightly touch the dressing stick.**
  Otherwise, the wheel may be damaged and correct processing may not be performed.

1 Put the dressing stick in water.

Leave the dressing stick for about five minutes.

2 Call up the Menu screen.

Press the [MENU] button.

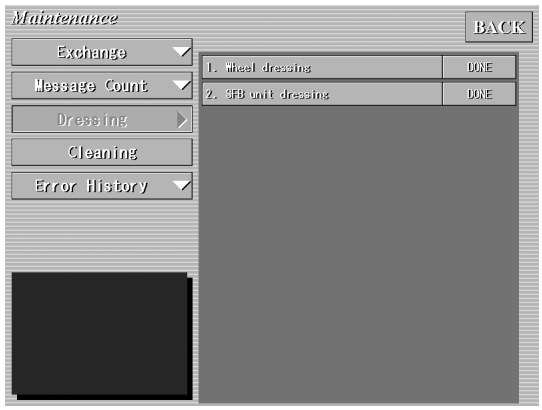


3 Call up the Maintenance screen.

Press the [Maintenance] button on the Menu screen.

4 Establish the dressing mode.

Press the [Dressing] button on the Maintenance screen.



5 Start dressing.

○Dressing the roughing wheel (Types PLB-G, PLB-2R) for glass lenses, finishing wheel for glass lenses (Type PLB-G), and finishing wheel for plastic lenses

1) Press the [DONE] button on the right of [Wheel Dressing].

   The wheel begins to slowly rotate.

   The cooling water runs.

2) Wet the dressing stick well with running water.

   Finishing wheel for plastic lenses, finishing wheel for glass lenses ⇒ Use the dressing stick for the finishing wheel.

   Roughing wheel for glass lenses ⇒ Use the dressing stick for the roughing wheel.

3) Press the [Stop] key to cut off the cooling water.

4) Lightly touch the dressing stick on the wheel.

   Keep applying it for about five seconds.

5) Release the dressing stick from the wheel.

6) Press the [Start] key.

   Run the cooling water to wash the wheel surface.

7) Repeat Steps 4) to 7) a few times.

8) Press the [STOP] button on the right of [Wheel Dressing] to exit from dressing mode.

○Dressing the polishing wheel

1) Press the [DONE] button on the right of [Wheel Dressing].

   The wheel begins to slowly rotate.

   The cooling water runs.

2) Wet the dressing stick for polishing wheel well with running water.

3) Press the [Stop] key to cut off the cooling water.

4) Lightly touch the dressing stick on the polishing wheel.

   Keep applying it for about five seconds.

5) Release the dressing stick from the wheel.

6) Press the [Start] key.

   Run the cooling water to wash the wheel surface.

7) Repeat Steps 4) to 7) a few times.

8) Press the [Start] key and [Stop] key simultaneously to cut off the cooling water and wash water.

9) Wipe water on the wheel surface with a dry and soft cloth or paper.

Note

- Do not run water on the wheel during compounding.
  Running water on the compound cancels its effect.

10) Apply a small amount of compound to a felt or soft cloth and polish the surface of the polishing wheel.

    Compound to be used: Commercial metal-coated compound (#200)

11) Repeat Step 11) a few times.

12) Press the [Start] key to wash away the compound on the wheel surface with the cooling water.

13) Press the [STOP] button on the right of [Wheel Dressing] to exit from dressing mode.

○Dressing the safety beveling wheel

When safety beveling glass lenses frequently, dress the safety beveling wheel.

Note

- Apply the dressing stick lightly.
  If the dressing stick is applied forcefully, it may affect the safety bevel amount.

1) Press the [DONE] button on the right of [SFB Unit Dressing].

   The safety beveling wheel comes out.

2) Press the [Start] key.

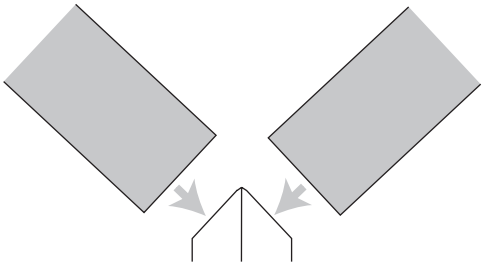
   The cooling water runs.

3) Wet the dressing stick for the finishing wheel well with running water.

4) Press the [Stop] key to stop the cooling water.

5) Lightly touch the dressing stick to the safety beveling wheel.

   Lightly touch the surface for safety beveling.



6) Release the dressing stick from the safety beveling wheel.

7) Press the [Start] key.

   The cooling water runs to wash the wheel surface.

8) Press the [STOP] button on the right of [SFB Unit Dressing] to exit from dressing mode.

6 Return to the Menu screen.

Press the [BACK] button.

7 Return to the layout screen.

Press the [EXIT] button.

3.3 Replacing the Water and Filter

The procedure differs depending on whether the optional FP-100 is equipped or not.

3.3.1 Replacing the processing water and stocking filter (when the optional FP-100 is equipped)

Replace the processing water and stocking filter in the tank regularly. It is recommended that the water be replaced for every 100 lenses processed.

Note

- Do not mix antifoam agents with the processing water since the filter at the bottom of the tank will be clogged, which prevents filtering.
- When “Please clean tank & pump” appears and the processing is stopped, replace the processing water and stocking filter, and remove the waste accumulated in the drain pipe connector.

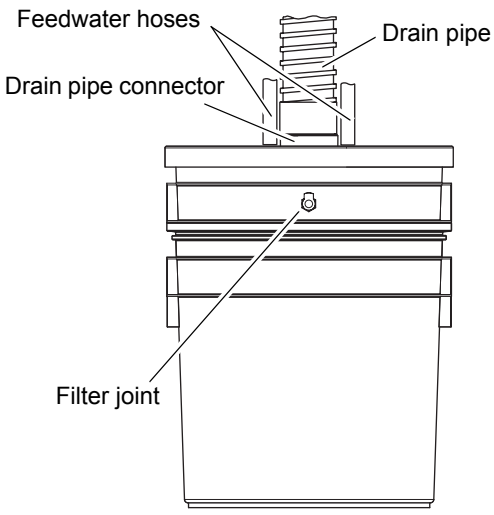
1 Take the tank out of the cabinet.

Open the cabinet and draw the tank toward you.

2 Disconnect the two feedwater hoses.

Press the gray button on the feedwater hose to disconnect.

3 Disconnect the drain pipe from the tank.

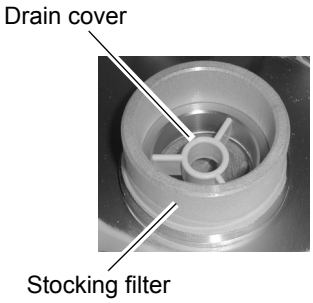


4 Drop the stocking filter into the tank.

1) Remove the drain cover from the drain pipe connector.

   Drop the waste accumulated on top of the drain cover into the tank.

2) Drop the stocking filter into the tank.



5 Remove the cover of the tank and put the waste in the stocking filter into the tank.

1) Remove the cover of the tank.

2) Rip the stocking filter with a cutter and remove the waste and put it into the tank.

Proper waste filtration cannot be performed with the waste in the stocking filter. Put the ripped stocking filter into the tank, as well.

6 Filter the processing water to separate the processing waste and water.

1) Connect the special hose of the FP-100 to the filter joint on the tank.

Press into the hose until you hear it click.

2) Set the function lever on the FP-100 to “FILTER”.

3) Turn ON (|) the power switch on the FP-100.

The processing water is filtered by the filter at the bottom of the tank and only water is sucked out into the FP-100.

All water will be sucked out from the tank in about one hour.

The timer turns off the power in one hour. (The time to turn the power off can be set by turning the dial.)

4) If the water is left in the tank, turn the power switch ON (|) again. After all water is sucked out from the tank, turn the switch OFF (○) .

Note

- For finer filtration, shake the tank up and down about 10 times and filter any excess water about five more minutes.

7 Dispose of the waste in the tank, following local governing ordinances.

Put a plastic bag over the tank and turn it upside down to remove the waste.

8 If the waste is stuck inside the tank, wash it out using a scrubber.

9 Throw away the filtered water in the FP-100.

1) Remove the hose of the FP-100 from the filter joint on the tank and bring it around the drain outlet.

Disconnect the hose while pressing the button on the joint.

2) Set the function lever on the FP-100 to “DRAIN”.

3) Turn ON (|) the power switch on the FP-100.

The filtered water is drained. It takes a few minutes to drain all water.

4) When all water is drained, turn the switch OFF (○) and put the hose away.

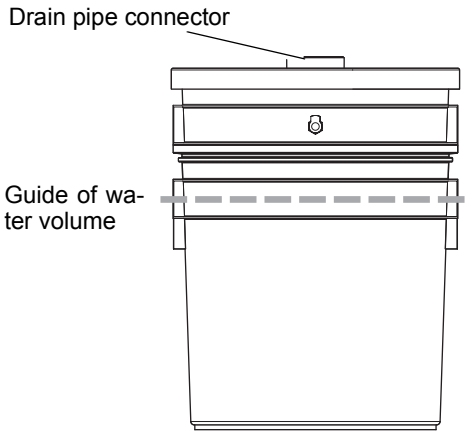
Note

- If glass lenses have not been processed, the filtered water can be reused.

  In such a case, put the hose disconnected from the filter joint in Step 1) into the tank and perform Steps 2) to 4) to put the filtered water back into the tank. Do not put the cover on the hose then. The FP-100 may be broken due to the bent hose weighted by the cover.

10 Put the water into the tank up to the position illustrated in the figure on the right.

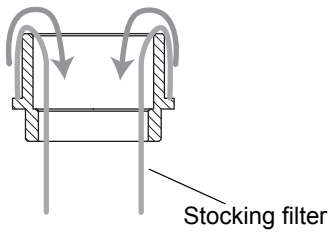
Even when the filtered water is reused, add required water.



11 Put the lid on the tank.

12 Attach a new stocking filter to the drain pipe connector.

Stocking filters cannot be reused. Use a new one.



13 Put the drain cover back in its position (see the figure in Step 4).

Place the drain cover in the drain pipe connector of the tank.

Place it with the larger diameter side up.

14 Put the tank back into the cabinet.

15 Connect the feedwater hoses and drain pipe.

Press into the feedwater hose until you hear it click.

Note

- As for both PUMP 1 and PUMP 2, be sure to connect the corresponding hoses.

3.3.2 Replacing the water and stocking filter (when the optional FP-100 is not equipped)

Replace the processing water and stocking filter in the tank regularly. It is recommended that the water be replaced for every 100 lenses processed.

Note

- When “Please clean tank & pump” appears and the processing is stopped, replace the processing water and stocking filter, and remove the waste accumulated in the drain pipe connector.

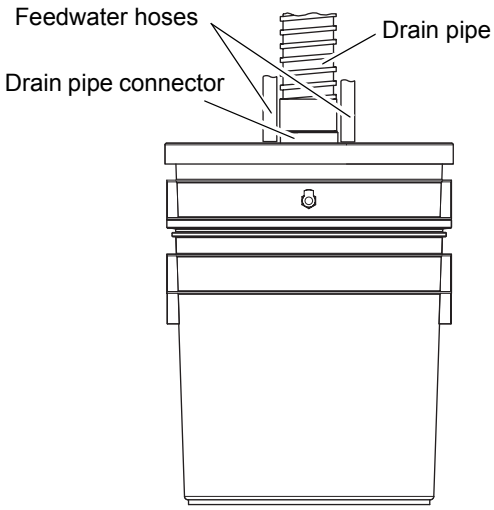
1 Take the tank out of the cabinet.

Open the cabinet and draw the tank toward you.

2 Disconnect the two feedwater hoses.

Press the gray button on the feedwater hose to disconnect.

3 Disconnect the drain pipe from the tank.

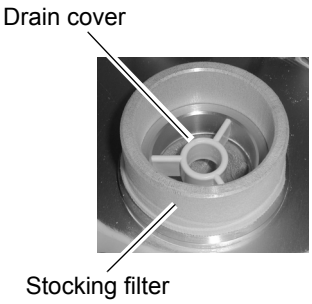


4 Drop the stocking filter into the tank.

1) Remove the drain cover from the drain pipe connector.

   Drop the waste accumulated on top of the drain cover into the tank.

2) Bind the opening of the stocking filter so that the waste will not come out and put it in the tank.

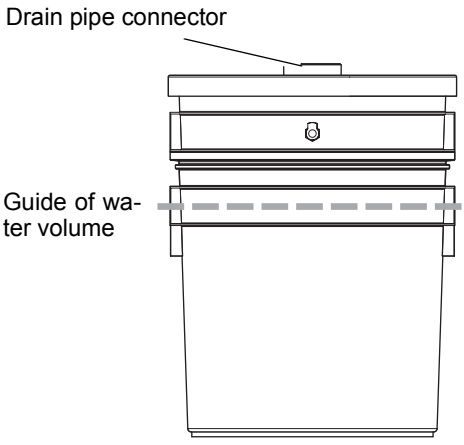


5 Remove the cover from the tank.

6 Remove the layer at the top from the tank.

7 Dispose of the waste in the tank, following local governing ordinances.

8 Put the water into the tank up to the position illustrated in the figure on the right.



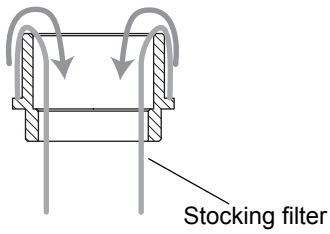
Note

- Do not put a plastic sheet in the tank.
  The pump fill may be blocked and it may cause malfunction.

9 Put the cover on the tank.

10 Attach a new stocking filter to the drain pipe connector.

Stocking filters cannot be reused. Use a new one.



11 Put the drain cover back in its position (see the figure in Step 4).

Place the drain cover in the drain pipe connector of the tank.

Place it with the larger diameter side up.

12 Put the tank back into the cabinet.

13 Connect the feedwater hoses and drain pipe.

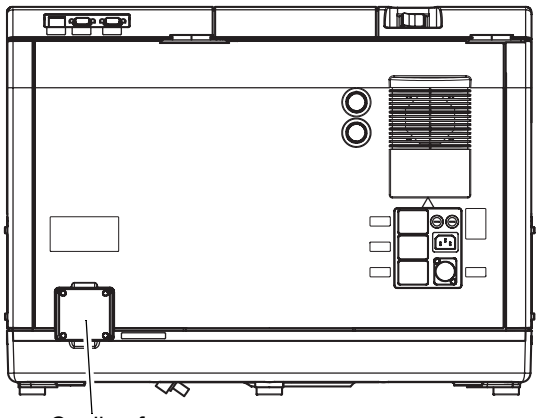
Press into the feedwater hose until you hear it click.

Note

- For both PUMP 1 and PUMP 2, be sure to connect the corresponding hoses.

3.4 Cleaning the Cooling Fan Filter

Regularly remove the filter of the cooling fan at the rear side of the main body and remove the dust stuck to the filter by the vacuum cleaner. If the filter is clogged with dust, the temperature in the main body rises and it may cause a malfunction.
If the filter is torn, replace it with a new one.



Cooling fan
Unscrew four screws to remove the filter.

3.5 Cleaning the Processing Chamber Cover

When the inside of the processing chamber cover becomes dirty, remove it to clean.

1 Set the condition that the processing chamber cover can be removed.

Depress the [Cover] button on the layout screen for 3 seconds.

Or press the [Stop] key in cleaning mode.

The processing chamber cover stops when it is almost closed.

2 Lift the processing chamber cover to remove.

3 Wash the removed cover with water and wipe the water out with a cloth.

4 Put the processing chamber cover back.

5 Press the [Cover] button.

The processing chamber cover opens.

Put the cover on so that the convex of the processing chamber cover is fitted into the concave of the frame.

⚠ CAUTION • **Be sure to put the processing chamber cover back after cleaning.**

If processing is performed with the processing chamber cover removed, spray including processing waste makes the surrounding dirty, damages your eyes, or result in instrument malfunction.

3.6 Replacing the Drill

When the drill is broken, replace it with a new one.

1 Press the [MENU] button.

The Menu screen is displayed.

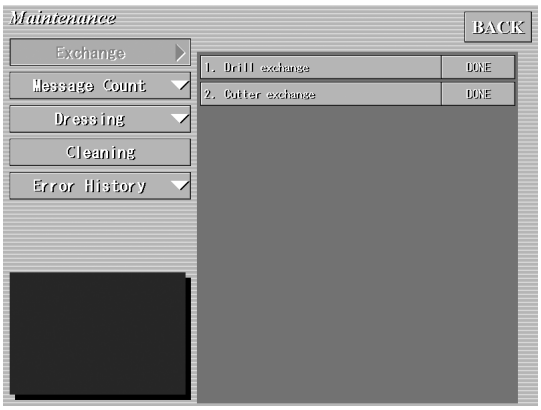
2 Press the [Maintenance] button.

The Maintenance screen is displayed.

3 Press the [Exchange] button.

4 Press the [DONE] button on the right of [Drill Exchange].

"When you exchange a drill or cutter, be sure to shut off a power supply" appears.



Note

- If the chuck remains closed, the "Please open the chuck and remove the lens" message appears. Since the lens may be broken, remove the lens following the message instructions.

5 Press the [EXEC] button.

The chuck shaft moves down and the spindle comes forward.

"SHUTDOWN THE MACHINE" appears.

6 Turn OFF (○) the power switch.

⚠ **WARNING**

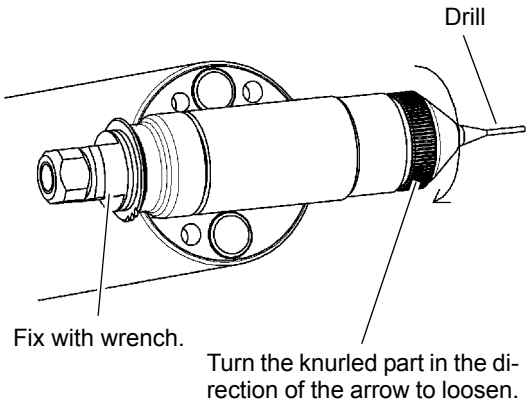
- **Turn the power switch OFF.**
  If the drill is replaced with the power on, the spindle or chuck shaft may move by mistake when the control panel or display is touched. It may cause injury or malfunction.
- **Be sure to put gloves on before replacing the drill.**
  The drill is a sharp edged tool. You may be injured with bare hands.

7 Loosen the knurled part to remove the drill.

Turn the knurled part while holding the end of the spindle with a wrench.

8 Insert the new drill as far as it goes and tighten the knurled part.

Turn the knurled part while holding the end of the spindle with a wrench.



9 Turn ON (|) the power switch.

After the edger is initialized, the layout screen is displayed.

“Do you load the previous data?” may appear. Select [YES] when you want to continue the processing due to the drill breakage. Select [NO] in other situations.

10 Adjust the hole depth.

See “3.15 Adjusting the Hole Depth” (Page 137).

3.7 Replacing the Grooving Cutter

When the cutting edge for grooving becomes blunt and it takes time to finish grooving, replace the cutter with a new one.

1 Press the [MENU] button.

The Menu screen is displayed.

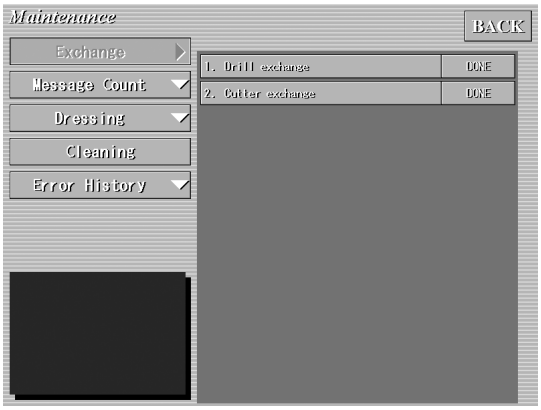
2 Press the [Maintenance] button.

The Maintenance screen is displayed.

3 Press the [Exchange] button.

4 Press the [DONE] button on the right of [Cutter Exchange].

"When you exchange a drill or cutter, be sure to shut off a power supply" appears.



Note

- If the chuck remains closed, the "Please open the chuck and remove the lens" message appears. Since the lens may be broken, remove the lens following the message instructions.

5 Press the [EXEC] button.

The chuck shaft moves down and the spindle comes forward.

"SHUTDOWN THE MACHINE" appears.

6 Turn OFF (○) the power switch.

⚠ **WARNING**

- **Be sure to turn the power off.**

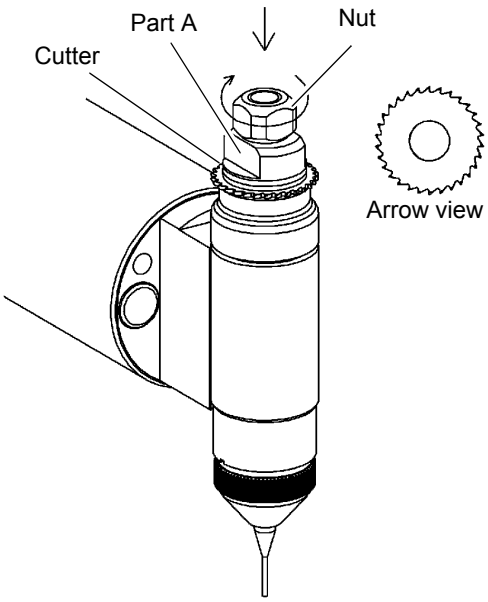
  If the grooving cutter is replaced with the power on, the spindle or chuck shaft may move by mistake when the control panel or display is touched. It may cause injury or malfunction.

- **Be sure to put gloves on before replacing the cutter.**

  The cutter is a sharp edged tool. You may be injured with bare hands.

7 Remove the nut.

Remove the nut with another wrench while fixing part A with a wrench.



8 Remove part A and remove the cutter.

9 Attach a new cutter.

The cutter must be attached in the correct direction. Attach the cutter in the direction as illustrated on the right.

10 Attach part A and tighten the nut securely.

Fix part A with a wrench and tighten the nut with another wrench.

11 Check that the cutter is securely attached.

12 Turn ON (|) the power switch.

After the edger is initialized, the layout screen is displayed.

13 Check that grooving can be properly performed.

The groove depth is not made as set. ⇒

Adjust the groove depth. See “3.13 Adjusting the Groove Depth” (Page 135).

3.8 Replacing Fuses

If the edger is not started even though the power switch is turned on, the fuses may be blown. Replace the fuses with spare ones.

⚠ **CAUTION**

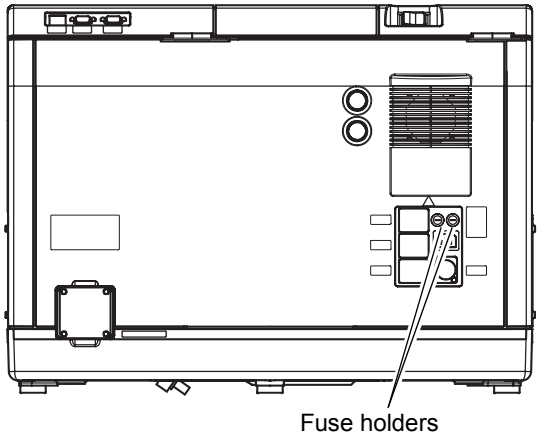
- **Be sure to turn OFF the power switch and pull out the power cable before replacing fuses.**
  Electric shock may result.
- **Use the specified fuses only. (AC 115 V~→ T 10 A 250 V) (AC 230 V~→T 6.3 A 250 V)**
  Fuses other than the specified ones may cause fire.
- **If fuses burn out frequently, do not touch the inside of the edger but contact NIDEK or your authorized distributor.**
  If you touch the inside of the edger, you may receive electrical shock.

1 Turn OFF (|) the power switch and disconnect the power cable from the wall outlet.

2 Turn the fuse holder on the rear side while pushing counterclockwise with a flatblade screwdriver.

3 Remove the fuse holder.

4 Remove the used fuses from the fuse holders and insert new fuses into the fuse holders.



5 Turn the fuse holder clockwise while holding with a flatblade screwdriver to fit.

3.9 Cleaning the Exterior

When the exterior of the edger such as covers or panels become dirty, clean them with a soft cloth. For stubborn stains, soak the cloth in a neutral detergent, wring well, and wipe. Finally dry with a soft, dry cloth.

Note

- Never use organic solvents such as a paint thinner to clean the exterior of the edger.
  It may ruin the surface of the edger.

3.10 Size Adjustment

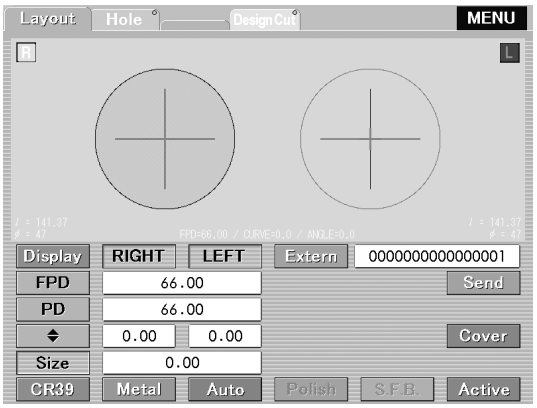
The finished size of lenses grows as processing is repeated many times, due to the wearing of the wheel. In such a case, measure the size of the finished lens in the following procedure, and adjust the size by changing the parameter values.

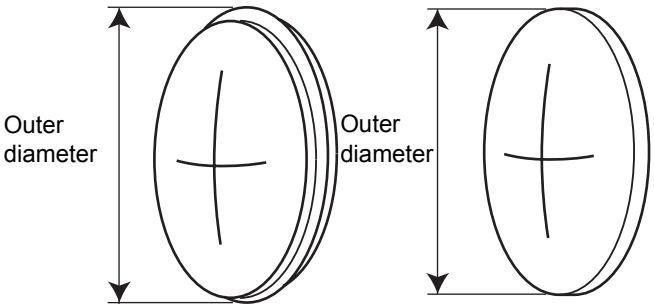
1 Check the finished lens size.

1) Call up the ϕ45 mm internal data (see page 89) and set [Size] to “0.00” and then start processing.

2) Measure the outer diameter of the finished lens.

   If the outer diameter is not within 45.00±0.05 (beveling) or 45.00±0.10 (flat edging), adjust the Size parameter.

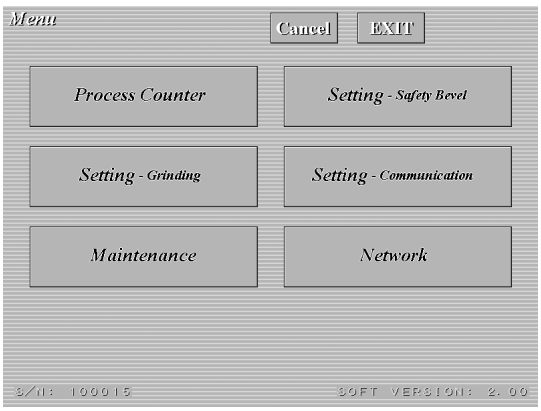




2 Adjust the size.

1) Call up the Menu screen.

   Press the [MENU] button.



2) Call up the Setting - Grinding screen.

Press the [Setting - Grinding] button.

3) Call up the Adjustment parameter.

Press the [Adjustment] button.

4) Press the numeric button on the right of [Size].

The numeric button turns red and numeric keypad appears.

5) Change the parameter value by difference between 45.00 mm and outer diameter.

After entering a value with the displayed numeric keypad, press the [Ent] button.

Example)If the diameter is ϕ45.10 mm, decrease the parameter value by 0.10.

3 Return to the Menu screen.

Press the [BACK] button.

4 Return to the layout screen.

Press the [EXIT] button.

5 Repeat Steps 1 to 4 until the outer diameter becomes ϕ45.00 ±0.05 (beveling) or ϕ45.00 ±0.10 (flat edging).

To adjust the size according to the lens material and processing method, change the Size Preset parameter in the same manner. See “ <Setting - Grinding screen (Size Preset)>” (Page 95).

3.11 Adjusting the Bevel Position

The auto-processed bevel position can be shifted forward or backward with adjustment.

1 Check the bevel position.

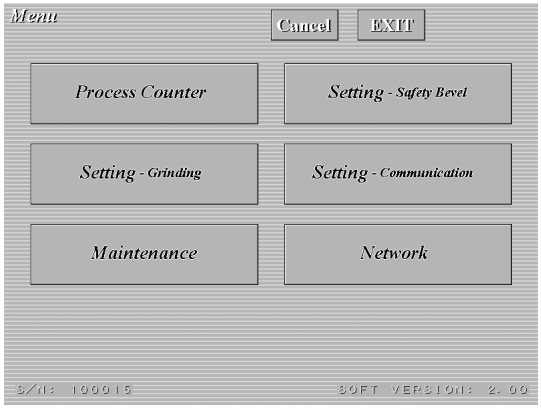
1) Call up the ϕ45 internal shape data (see page 89) and process a lens with frequently-used thickness in auto processing mode.
2) Check the bevel position of the processed lens.

   To shift the bevel position forward or backward, adjust the bevel position by the following procedure.

2 Adjust the bevel position.

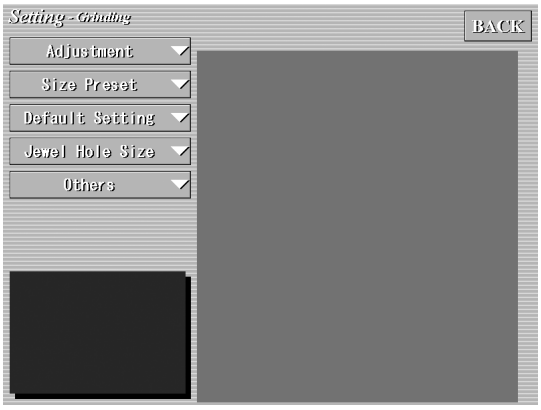
1) Call up the Menu screen.

   Press the [MENU] button.



2) Call up the Setting - Grinding screen.

   Press the [Setting - Grinding] button.



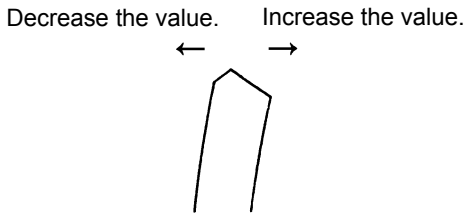
3) Call up the Adjustment parameter.

   Press the [Adjustment] button.

4) Press the numeric button on the right of [Bevel Position].

   The numeric button turns red and numeric keypad appears.

5) Change the parameter value.



After entering a value with the displayed numeric keypad, press the [Ent] button.

Decrease the numeric value. ⇒ The bevel moves toward the front surface.

Increase the numeric value. ⇒ The bevel moves toward the rear surface.

Example)To shift the bevel position 0.5 mm toward the front surface, decrease the parameter value by 0.50.

3 Return to the Menu screen.

Press the [BACK] button.

4 Return to the layout screen.

Press the [EXIT] button.

5 Repeat Steps 1 to 4 until the bevel is placed in the desired position.

3.12 Adjusting the Axis Shift

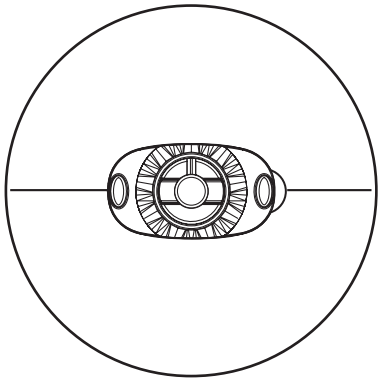
If the axis angle of finished lenses is shifted from the designated angle, adjust it as follows.

1 Check the axis shift.

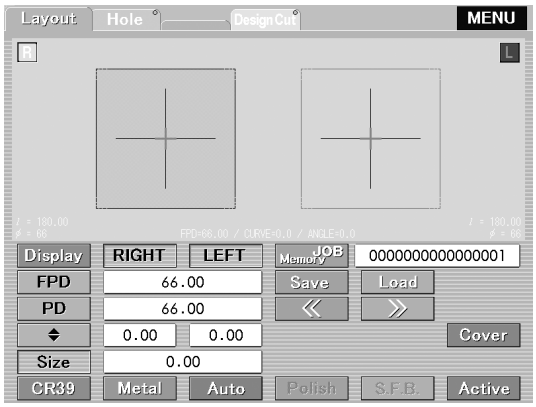
1) Mark a horizontal line on the lens.

   Mark a horizontal line along the middle of the lens using a knife or such.

2) Block the lens with the pliable cup aligning the line to the horizontal direction.



3) Call up the Square 45 internal shape data or Rectangle 50 × 25 internal shape data (see page 89) and then process a lens.
4) Place the processed lens on the graph paper and align the lens edge with the square.
5) Measure the angle between the horizontal line of the graph paper and the marked line made on the lens using a protractor.



   If the angle is not within ±0.5º, adjust the axis angle.

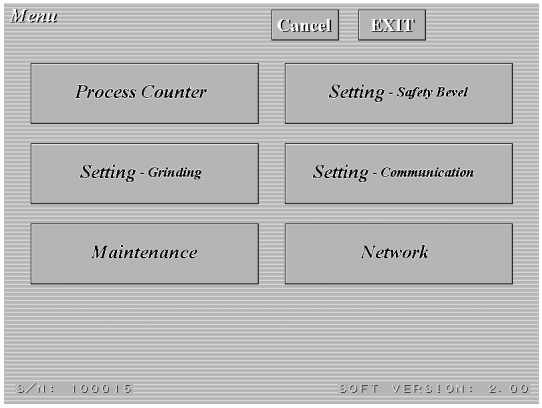
2 Adjust the axis angle.

1) Call up the Menu screen.

   Press the [MENU] button.

2) Call up the Setting - Grinding screen.

   Press the [Setting - Grinding] button.



3) Call up the Adjustment parameter.

   Press the [Adjustment] button.

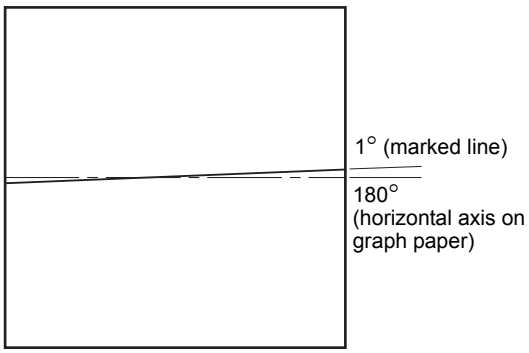
4) Press the numeric button on the right of [Axis].

   The numeric button turns red and numeric keypad appears.

5) Change the parameter value.

   After entering a value with the displayed numeric keypad, press the [Ent] button.

   Change the parameter value by the shifted axis angle. If the marked line is shifted to the upper right when viewed from the lens front, increase the parameter value.



Example)If the line on the lens is shifted 1º in the upper-right direction, increase the parameter value by +1.00.

3 Return to the Menu screen.

Press the [BACK] button.

4 Return to the layout screen.

Press the [EXIT] button.

5 Repeat Steps 1 to 4 until the axis shift becomes ±0.5º.

3.13 Adjusting the Groove Depth

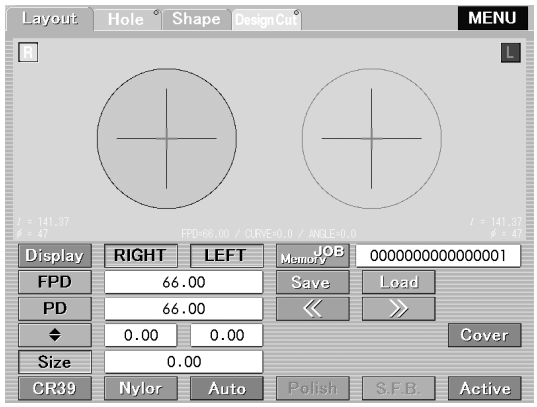
If the groove depth is not made as designated, adjust the groove depth.

1 Check the groove depth.

1) Call up the ϕ45 internal data (see page 89) and process a lens at the depth of 0.0 mm in guided grooving mode.

   Lens: CR39, –3 to –5D

2) Check that the groove depth is slightly made on the processed lens (depth: 0.10 mm or less).



2 Change the Groove Depth parameter to obtain the correct groove depth.

1) Call up the Menu screen.

   Press the [MENU] button.

2) Call up the Setting - Grinding screen.

   Press the [Setting - Grinding] button.

3) Call up the Adjustment parameter.

   Press the [Adjustment] button.

4) Press the numeric button on the right of [Groove Depth].

   The numeric button turns red and numeric keypad appears.

5) Change the parameter value.

   After entering a value with the displayed numeric keypad, press the [Ent] button.

   To make the groove depth shallower, enter a negative value.

6) Return to the Menu screen.

   Press the [BACK] button.

7) Return to the layout screen.

   Press the [EXIT] button.

8) Repeat Steps 1) to 7) until the groove depth becomes proper.

3.14 Adjusting the Groove Position

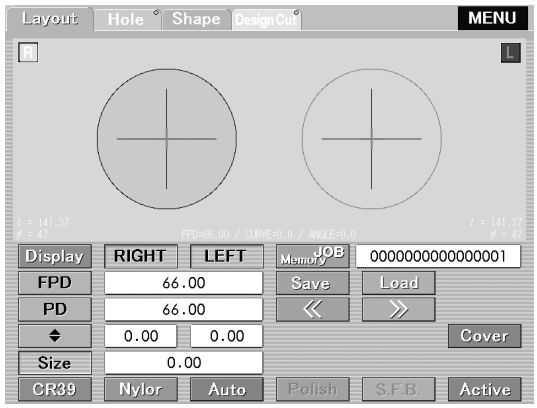
The auto-processed groove position can be shifted forward or backward with adjustment.

1 Check the groove position.

1) Call up the ϕ45 built-in data (see page 89) and process a lens at 5 : 5 of position in guided grooving mode.

   Lens: CR39, –3 to –5D

2) Check that the groove is made in the middle of the lens edge.



2 Change the Groove Position parameter to obtain the correct groove depth.

1) Call up the Menu screen.

   Press the [MENU] button.

2) Call up the Setting - Grinding screen.

   Press the [Setting - Grinding] button.

3) Call up the Adjustment parameter.

   Press the [Adjustment] button.

4) Press the numeric button on the right of [Groove Position].

   The numeric button turns red and numeric keypad appears.

5) Change the parameter value.

   After entering a value with the displayed numeric keypad, press the [Ent] button.

   To move the groove toward the front surface, enter a negative value.

6) Return to the Menu screen.

   Press the [BACK] button.

7) Return to the layout screen.

   Press the [EXIT] button.

8) Repeat Steps 1) to 7) until the groove is made in the desired position.

3.15 Adjusting the Hole Depth

If the hole depth is not made as set in drilling, adjust the hole depth.

1 Check the hole depth.

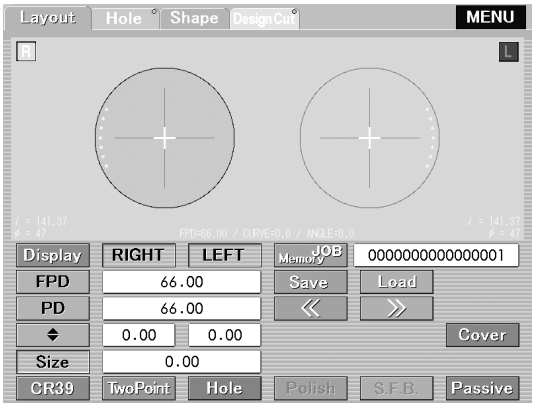
1) Call up the hole depth adjustment shape data (see page 89) and process a lens with 0.0 mm of hole depth.

   Lens: CR39, –3 to –5D

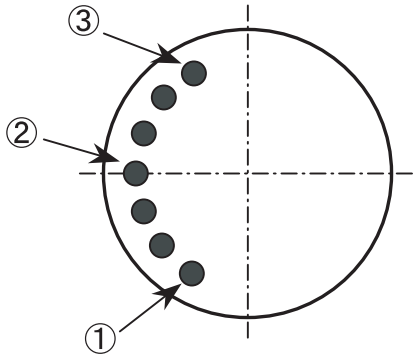
2) Check the number of holes drilled in the lens.

   When three or four holes are drilled, the hole depth is proper.

   If the number of holes is more than or less than the above, adjust the hole depth by the following procedure.



Hole depth adjustment internal data



Hole 1
Hole depth: -0.3 mm, tilt: Auto
Hole 2
Hole depth: 0.0 mm, tilt: Auto
Hole 3
Hole depth: +0.3 mm, tilt: Auto

The hole depth of holes 1 to 3 increases from -0.3 mm to +0.3 mm in increments of 0.1 mm.
It is the best condition that three holes are drilled and hole 2 is slightly made on the surface.

2 Adjust the “Hole Depth” parameter until the hole depth becomes proper.

1) Call up the Menu screen.

   Press the [MENU] button.

2) Call up the Setting - Grinding screen.

   Press the [Setting - Grinding] button.

3) Call up the Adjustment parameter.

   Press the [Adjustment] button.

4) Press the numeric button on the right of [Hole Depth].

   The numeric button turns red and numeric keypad appears.

5) Change the parameter value.

   After entering a value with the displayed numeric keypad, press the [Ent] button.

   Increase the parameter value according to the number of holes, referring to the following table.

Number of holes	Compensation value guide
7	-0.3
6	-0.2
5	-0.1
4	0.0
3	0.1
2	0.2
1	0.3
0	0.4

6) Return to the Menu screen.

   Press the [BACK] button.

7) Return to the layout screen.

   Press the [EXIT] button.

8) Repeat Steps 1) to 2) until the hole depth becomes proper.

3.16 Setting the Safety Beveling Mode and Safety Bevel Amount

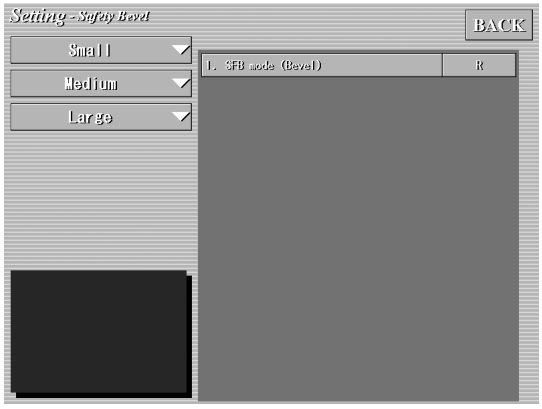
Set each safety bevel amount of small, medium, and large on the Setting - Safety Bevel screen (see page 102).

1 Call up the Menu screen.

Press the [MENU] button.

2 Call up the Setting - Safety Bevel screen.

Press the [Setting - Safety Bevel] button.



3 Select a safety beveling mode for beveling.

1) Press the numeric button on the right of [SFB Mode (Bevel)].

   The pop-up menu appears.

2) Select a safety beveling mode from the menu for beveling.

   R&F: Safety beveling of both front and rear edges.

   R: Safety beveling of the rear edge only.

   * In flat edging, both front and rear edges are safety-beveled regardless of this setting.

4 Enter a small safety bevel amount.

1) Press the [Small] button.

   The safety bevel amount parameters are displayed.

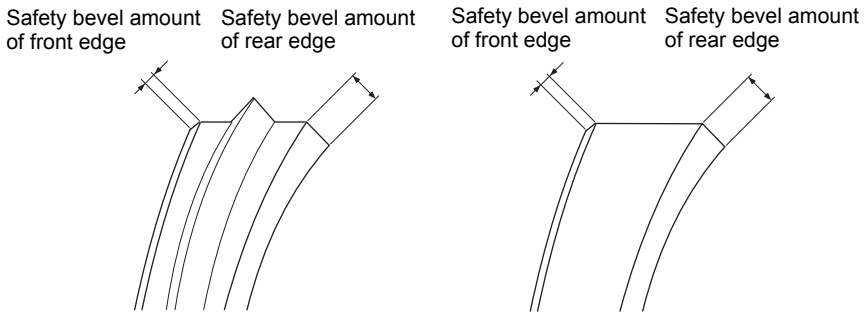
2) Press the numeric button on the right of [Rear Size (Bevel)].

   The numeric button turns red and numeric keypad appears.

3) Enter a small safety bevel amount of the rear edge for beveling.

   After entering a value with the displayed numeric keypad, press the [Ent] button.

4) In the same manner, enter safety bevel amounts of the rear surface for flat edging, front surface for beveling, and front surface for flat edging.



5 Enter a medium safety bevel amount.

1) Press the [Medium] button.
2) Enter each safety bevel amount in the same manner as 2) to 4) of Step 4.

6 Enter a large safety bevel amount.

1) Press the [Large] button.
2) Enter each safety bevel amount in the same manner as 2) to 4) of Step 4.

7 Return to the Menu screen.

Press the [BACK] button.

8 Return to the layout screen.

Press the [EXIT] button.

3.17 List of Consumable

Item	Order Number	Remarks
Dressing stick for polishing wheel	40140-M610	
Dressing stick for finishing wheel	41002-M611	
Dressing stick for roughing wheel	41002-M612	
Stocking filter	40377-M061	
Drill	40350-M372	ϕ0.8 L6.5 (1 set: 10 units)
Drill (option)	40360-M101	ϕ1.2 L6.5 (1 set: 10 units)
Drill (option)	40360-M102	ϕ1.6 L7.1 (1 set: 10 units)
Drill (option)	40360-M103	ϕ1.0 L6.5 (1 set: 10 units)
Cutter	40350-M364	
Fuse (115 V~)	804-02-02060	
Fuse (230 V~)	804-02-02152	
Cooling fan filter	40350-M132	
Double-coated adhesive tape for pliable cup	40370-M087	1 set: 100 pieces
Pliable cup	40370-M085	

4. SPECIFICATIONS AND ACCESSORIES

4.1 Safety Features

To ensure safe use, the edger is provided with the following features.

[Motorized processing chamber cover]

At the time of processing, the processing chamber cover closes automatically to prevent users from touching the processing wheel or getting processing waste into their eyes accidentally.

[Self-diagnosis function]

The operation state is always checked by this function during operation of the system. When abnormalities arise to the system, while stopping operation immediately, the error which shows the contents of abnormalities is displayed.

4.2 Specifications

○ Processing system

- Processing mode
  Beveling Auto processing: Computer-calculated beveling
  Guided processing
  Flat (rimless) edging
  Polishing mode
  Safety beveling
  Grooving
  Drilling
- Processable lenses
  TYPE PLB
  Plastic (CR-39)
  High index plastic
  Polycarbonate
  Acrylic resin
  Trivex
  TYPE PLB-G, TYPE PLB-2R
  Plastic (CR-39)
  High index plastic
  Polycarbonate
  Acrylic resin
  Trivex
  Glass
- Processing range
  Periphery processing
  Max. lens size: ϕ90 mm
  Min. lens size: flat edging ϕ32 × 19 mm (vertical), beveling ϕ33 × 20 mm (vertical)
  Safety beveling
  Max. lens size: ϕ86 mm (including eccentricity)
  Min. lens size: flat edging ϕ32 × 25 mm (vertical), beveling ϕ34 × 26 mm (vertical)
  Grooving
  Max. lens size: Same as periphery processing
  Min. lens size: Same as periphery processing
- Adjustable range
  FPD: 30.00 to 99.50 mm (0.01 mm increments)
  PD: 30.00 to 99.50 mm (0.01 mm increments)
  1/2PD: 15.00 to 49.75 mm (0.01 mm increments)
  Vertical layout: 0 to ±15.00 mm (0.01 mm increments)
  Size adjustment: 0 to ±9.95 mm (0.05 mm increments)
  Bevel position: 0 to ±10.0 mm (0.1 mm increments)
- Processing pressure
  Approx. 2.5 to 6 kg
  (automatic selection of optimum pressure according to lens material and processing conditions)

- Wheels

TYPE PLB
Roughing wheel for plastic lenses: 100 mm in diameter, 22 mm in width
Finishing wheel: 100 mm in diameter, 17.5 mm in width
Polishing wheel: 100 mm in diameter, 17.5 mm in width

TYPE PLB-G
Roughing wheel for plastic lenses: 100 mm in diameter, 17 mm in width
Roughing wheel for glass lenses: 100 mm in diameter, 13 mm in width
Finishing wheel for glass lenses: 100 mm in diameter, 12 mm in width
Finishing wheel for plastic lenses: 100 mm in diameter, 17.5 mm in width
Polshing wheel: 100 mm in diameter, 17.5 mm in width

TYPE PLB-2R
Roughing wheel for plastic lenses: 100 mm in diameter, 17 mm in width
Roughing wheel for glass lenses: 100 mm in diameter, 17 mm in width
Finishing wheel for plastic lenses: 100 mm in diameter, 17.5 mm in width
Polishing wheel: 100 mm in diameter, 17.5 mm in width

* Type of lens material and whether to polish depending on the processing wheel composition

Type	Processable lenses	Polishing mode
PLB	Plastic, high index plastic, polycarbonate, acrylic resin, and trivex lenses	Flat edging, beveling, and safety beveling
PLB-G	Glass, plastic, high index plastic, glass, polycarbonate, acrylic resin, and trivex lenses	Flat edging, beveling, and safety beveling (except for glass lenses)
PLB-2R	Glass, plastic, high index plastic, glass, polycarbonate, acrylic resin, and trivex lenses	Flat edging, beveling, and safety beveling (except for glass lenses)

- Lens chucking

Chucking method: Electric system
Chucking pressure: 30 kgf (pre-operation)
Changeable in five levels between 30 and 60 kgf (during operation)

- Processing accuracy

Beveling size accuracy: ±0.05 mm (dia.)
The above accuracy indicates an error after beveling with ϕ45 internal shape data.
Flat edging size accuracy: ±0.07 mm (dia.)
The above accuracy indicates an error after flat edging (normal/nylor) with ϕ45 internal shape data.
Axis angle: ±1°

○ Other functions

- Layout: Layout settings are entered with the control panel. They can also be entered with the blocker (ICE-9000).
- Layout entry item: FPD, PD (1/2PD), Vertical layout (frame center, PD, BT)
- Retouching function: Available
- Interface function: RS-232C 1 port built-in
  Ethernet 1 port built-in
- Control outlet: 2 units for pumps
  1 unit for vacuum

○ Power specifications

- Power supply voltage AC 100 - 115 V 50/60 Hz or AC 230 V 50/60 Hz (depends on models)
- Power consumption 1.5 kVA

○ Dimensions and weight

- Dimensions 620 (W) × 600 (D) × 465 (H) mm
- Weight 70 kg (main body only)

○ Environmental conditions (during use)

- Installation location Indoors
- Temperature +5 to +40ºC
- Humidity Relative humidity does not exceed 50% at a maximum temperature
- Altitude Up to 1000 m at sea level

○ Environmental conditions (during transport and storage)

- Temperature -25 to +70ºC
- Humidity Relative humidity does not exceed 50% at a maximum temperature
  (The conditions above indicate the state of the instrument packed.)

4.3 Standard Configuration

4.3.1 Standard accessories

• Pliable cup	10 units
• Double-coated adhesive tape for pliable cup	1 set (100 sheets)
• Pliable cup remover	1 unit
• Touch pen	1 unit
• Hexagonal screwdriver (2.5 mm)	1 unit
• Hexagonal wrench (3 mm)	1 unit
• Hexagonal wrench (5 mm)	1 unit
• Wrench (8×9)	2 units
• Drill (ϕ0.8, L6.5)	10 units
• Drain hose adapter set	1 set
• Power cord	1 unit
• Dressing stick for glass roughing wheel (WA80)	1 unit (except for Type PLB)
• Dressing stick for finishing wheel (WA320)	1 unit
• Dressing stick for polishing wheel (WA4000)	1 unit
• Spare fuse	2 units
• Accessory case	1 unit
• Operator’s manual	1 volume

4.3.2 Optional accessories

- Cabinet
- Barcode scanner
- Circulation pump and tank
- INTELLIGENT BLOCKER (ICE-9000)
- SATELLITE TRACER (LT-900)
- LENS EDGER DEODORIZER (LED-200)
- Drill (ϕ1.0, L6.5)
- Drill (ϕ1.2, L6.5)
- Drill (ϕ1.6, L7.1)
- Calibration jig
- Rimless designer (RD-100)
- Mini cup

5. GLOSSARY

- 3-D lens circumference

  Length assumed that groove of the frame is stretched straight.

- Active mode

  Blocking a lens with the pliable cup at the optical center.

- Auto processing mode

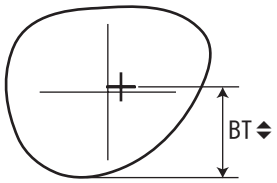
  In this mode, the lens edge is beveled or grooved according to the computed data.

- Beveled edge polishing mode

  After beveling, the beveled edge is polished. It saves your time required to buff the bevel.

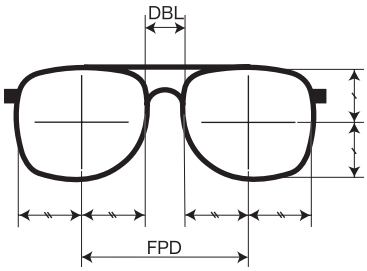
- BT ⇕

  Distance between the optical center and the bottom of the shape.



- DBL

  Distance between the right lens and left lens (nasal side).



- Design cut function

  Processing a section of the lens into the desired shape with a drill.

- Dragging

  Dragging is performed by pressing with the touch pen to select and moving its tip without lifting it from the display.

- Ethernet

  Ethernet is the standard on wirings, and access to the wirings to allow mutual accessing of several information process terminals. The ME-1000 transmits and receives data through the 10BASE-T converter (FA-10).

- EX lens processing mode

  This mode serves to process EX lenses. In this mode, the bevel (or groove) curve follows the rear surface

- Flat edge polishing mode

  After flat edging, the flat edge is polished. It saves your time required to buff the bevel.

- FPD

  Distance between right and left frame centers. This edger uses the boxing system to calculate the rim centers.

- Guided processing mode

  The bevel (or groove) curve and/or bevel (or groove) position can be set manually.

- LAN

  Abbreviation for Local Area Network.

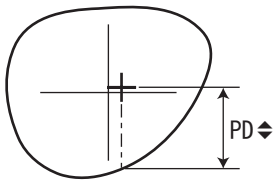
  LAN means intracompany network in factories or offices within the limited area. Instruments on LAN can communicate with each other.

- Passive mode

  Blocking a lens with the pliable cup at the frame center.

- PD ⬍

  Distance between the optical center and the straight down point of the shape.



- Zero fill

  Unused digit fields are filled with zeroes.

6. INDEX