NIDEK

INTELLIGENT BLOCKER

Model ICE-1000

OPERATOR'S MANUAL

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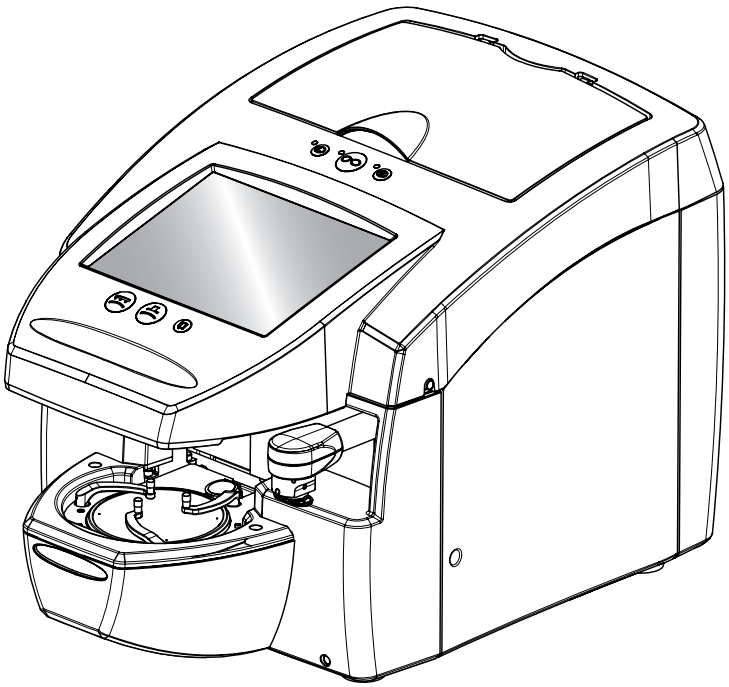

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Use this instrument properly and safely.

⚠ BEFORE USE, READ THIS MANUAL.

This operator's manual includes operating procedures, safety precautions, and specifications for the ICE-1000. IEC standards are applied in this manual.

For correct use, this manual is needed. Especially, the safety precautions and operating procedures must be thoroughly understood before using the instrument.

Keep this manual handy for verification whenever necessary.

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

Safety precautions

In this manual, a Signal Word is used to designate the degree or level of safety alert. The definition is as follows.

⚠ **CAUTION** • Indicates a potentially hazardous situation which may result in bodily injury or damage to instrument.

Even situations that are labeled "⚠CAUTION" may result in serious injury under certain conditions. Safety cautions must be followed strictly at all times.

Use precautions

Before Use

⚠ **CAUTION**

- **Do not use the instrument for other than the intended purpose.**
  NIDEK is not responsible for accidents or malfunctions caused by careless use.
- **Never disassemble nor touch the inside of the instrument.**
  This may result in electric shock or malfunction.
- **Install the instrument in an environment that meets the following conditions. The following conditions must be maintained during use.**
  Use conditions:
  Temperature: +5 to +45 ºC
  Humidity: Relative humidity must not exceed 50% at a maximum temperature of 40ºC
  Atmospheric pressure: 700 to 1060 hPa
  A place with low dust
  A place with little external light
  A place free of vibration and impact
- **Do not store the instrument in an area that contains contaminants such as corrosive gases, acid or salt.**
  Corrosion damage or malfunction of the instrument may result.
- **Install the instrument in a location with an adequate operating area in front of the instrument as illustrated on Page V.**
- **Be sure to use a wall outlet which meets the power specification requirements.**
  If the line voltage is too high or too low, the instrument may not perform properly. Malfunction or fire may occur.
- **Connect the power plug to a ground outlet. Or connect a grounding wire to a ground terminal.**
  Electric shock or fire may occur in the event of malfunction or power leakage.
- **Completely insert the power plug into the outlet as far as the prongs will go.**
  Fire may occur if the instrument is used with a loose connection.
- **Do not place heavy objects on the power cord.**
  The damaged power cord may cause fire or electric shock.
- **Before connecting the cable, turn the power switch off and disconnect the power cord from an outlet.**
  Failure of the instrument may result.
- **Hold the base with both hands when carrying the instrument to another location.**
  Accidental dropping of the instrument may cause damage to the instrument and/or cause bodily injury.

⚠ **CAUTION** • **Use the special packing materials when transporting the instrument to protect from impact of dropping.**

Excessive vibration or impact to the instrument may cause malfunction.

During Use

⚠ **CAUTION** • **Connect the cable to the interface connector securely, maintaining the correct orientation of the cable connector.**

Data transmission is not performed properly.

- **In the event of smoke or strange odors, immediately turn off the instrument and disconnect the power plug from the outlet. After you are sure that the smoke has stopped, then contact NIDEK or your authorized distributor.**

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

- **Immediately replace the power cord if the internal wires are exposed, the instrument turns on or off when the power cord is moved, or the cord and/or plug are too hot to be held with hands.**

  This may result in electric shock or fire.
  In the event of malfunction, disconnect the power cord from the outlet. Never touch the inside of the instrument and contact NIDEK or your authorized distributor.

- **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 in lens processing with a lens edger.

- **Do not press the Block button on the condition that no lens is placed on the lens table.**

  Doing so could cause contact of the cup holder to pins of the lens table.

- **Do not touch the touch screen with anything other than the tip of a touch pen. Keep magnetic objects away from the LCD touch screen.**

  The instrument may be damaged.

- **Do not operate the LCD touch screen with wet hands.**

  Water seeping may result in failure of the instrument.

- **When connecting and disconnecting the USB flash drive, be sure not to touch the terminal area directory and not to touched to metal.**

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

- **To protect data loss or corruption due to damage to a USB flash drive, back up data onto other media.**

  NIDEK is not responsible for data loss or corruption due to lack of back-up.

After Use

⚠ **CAUTION**

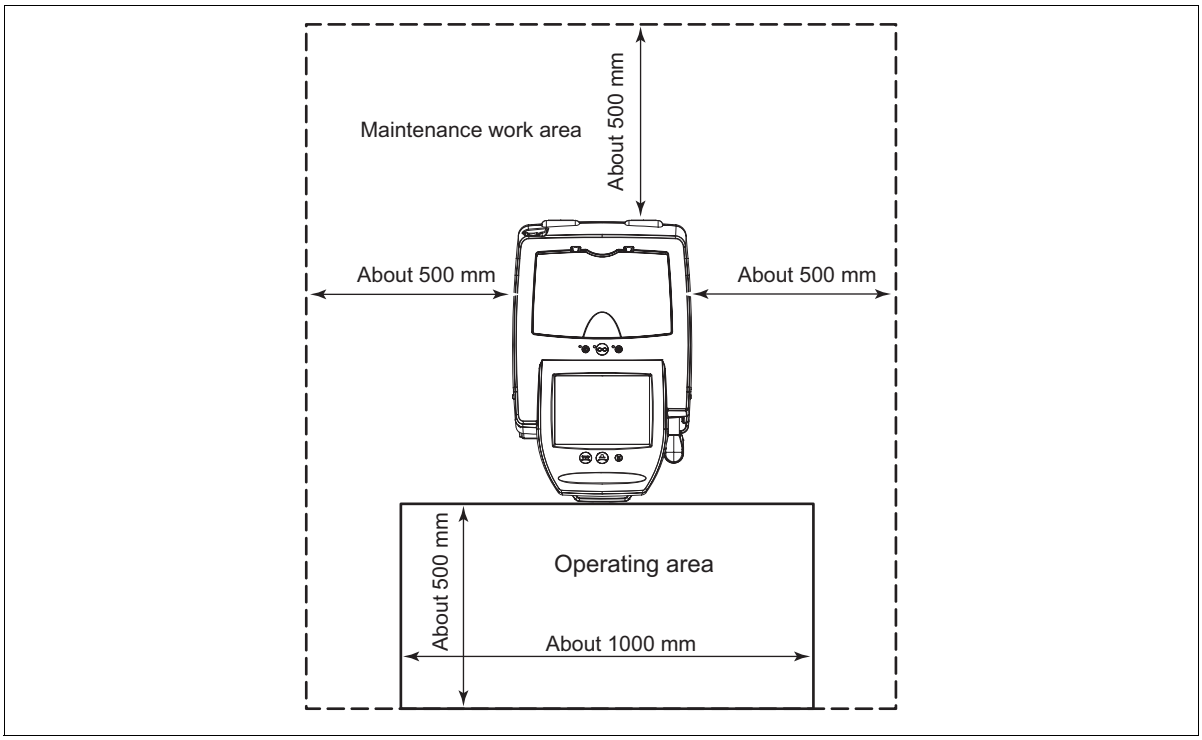
- **If the instrument will not be used, turn the power off and close the tracing unit cover.**
  Settled dust may affect the measurement accuracy.
- **Do not yank the power cord to disconnect it from a wall outlet but hold the plug.**
  This can damage the metal core of the cord and may result in electric shock, short circuit, or fire.
- **Occasionally clean the prongs of the power plug with a dry cloth.**
  If dust settles between the prongs, the dust will collect moisture, and short circuit or fire may occur.
- **If the instrument will not be used for a long time, disconnect the power cord from the wall outlet.**
  Fire may occur.
- **Maintain the surrounding temperature and humidity at the following range during transport and storage of the packed instrument.**
  Environmental conditions:
  Temperature: –25 to +70 ºC
  Humidity: 10 to 95% (Non-condensing)
  A place with low dust
  A place not exposed to direct sunlight
- **To transport the instrument, use the special packing materials to protect the instrument from shock or impact.**
  Excessive vibration or impact to the instrument may cause malfunction.

Maintenance

⚠ **CAUTION**

- **Be sure to perform check before 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.
- **When performing maintenance work, secure a sufficient maintenance space. (See Page V.)**
  Maintenance work in an insufficient space may result in injury.
- **Use the specified fuses to replace the old ones.**
  If not, fire may result.

[Operating area and maintenance work area]



Disposal

⚠ **CAUTION**

- **Follow local governing ordinances and recycling plans regarding disposal or recycling of the components.**

  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.**

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Table of Contents

1. BEFORE USE

1.1 Outline of the Instrument

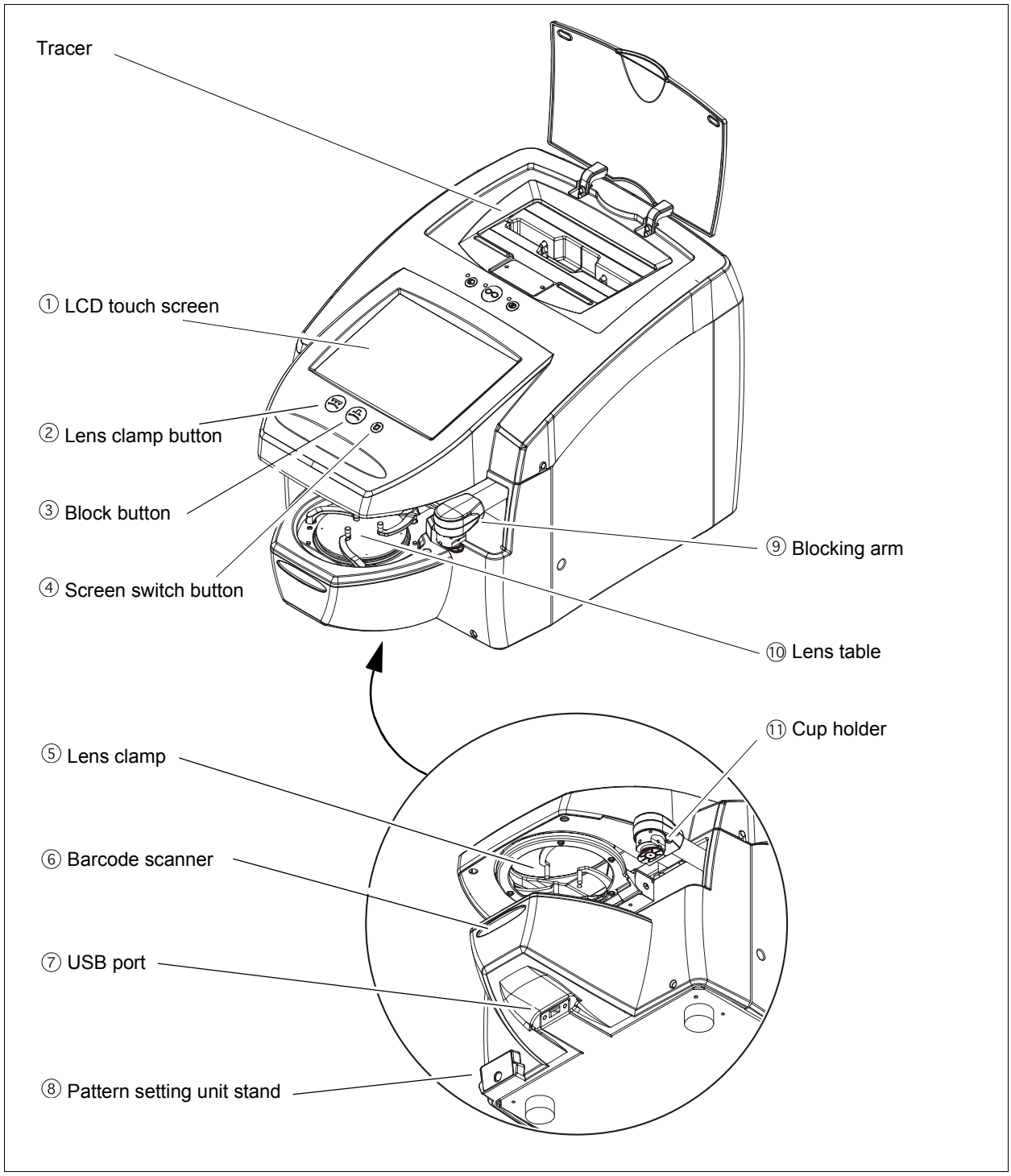
NIDEK Intelligent blocker, ICE-1000 blocks the lens with a lens cup. The lens is blocked with a lens cup properly at a detected position (the optical center, cylinder axis angle, segment position of bifocal lenses, and marking). This ICE-1000 has the following features:

- The built-in tracing unit allows efficient processing of lenses, from tracing through blocking.
- The ICE-1000 is equipped with the Auto Lensmeter (ALM)[*1] function. This function allows the operator to block a single vision lens without marking the optical center of the lens, which was necessary with previous lensmeters.
- Blocking of the lens with the lens cup is performed with the optimum blocking pressure with a simple button operation.
- The motorized alignment function in the X-, Y- and θ-axis directions allows the operator to accurately block the lens simply by placing the lens at the approximate center of the lens table.
- An uncut lens outline obtained by the built-in CMOS camera and the lens shape image obtained by the built-in tracing unit are displayed simultaneously on the LCD screen. This diameter verification of the uncut lens allows the operator to check if the uncut lens diameter is sufficient for the lens shape prior to processing. Then the operator can proceed with blocking.
- Switching between active and passive modes can be performed easily by button operation without moving the lens.
- The high resolution CMOS camera facilitating blocking by providing clear images of the printed eye point for far vision of the progressive power lenses or lens markings.

***1. The Auto Lensmeter (ALM) function is for obtaining the optical center and cylinder axis required for blocking. Do not use this function for measuring lenses since it is different from a lensmeter.**

1.2 Configuration

○ Front view



①LCD touch screen

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

②Lens clamp button

Lowers the lens clamp to hold the lens.

Press this button to lower the lens clamp and hold the lens temporary. Align the lens and press the button again to fully tighten the lens for blocking.

③Block button

Blocks the lens.

The necessary data for processing is saved in the USB flash drive during blocking.
According to the setting, the data can be transmitted to external instead of saving the data in the USB flash drive.

④Screen switch button

Switches the Blocking screen and Layout screen.

⑤Lens clamp

Holds the lens.

⑥Barcode scanner (Optional)

Scans the barcode (JOB#) of job ticket.

⑦USB port

Connects the USB flash drive saving the JOB data and PTN data.

USB device other than USB flash drive cannot be connected.

⑧Pattern setting unit stand

Mounts the pattern setting unit while not in use.

⑨Blocking arm

The blocking arm is moved to left, right, back, forth, up, and down to block a lens with a lens cup. In addition, the arm rotates the cup holder for aligning the axis (AXIS) of the lens.

The blocking pressure is 3 kgf.

⑩Lens table

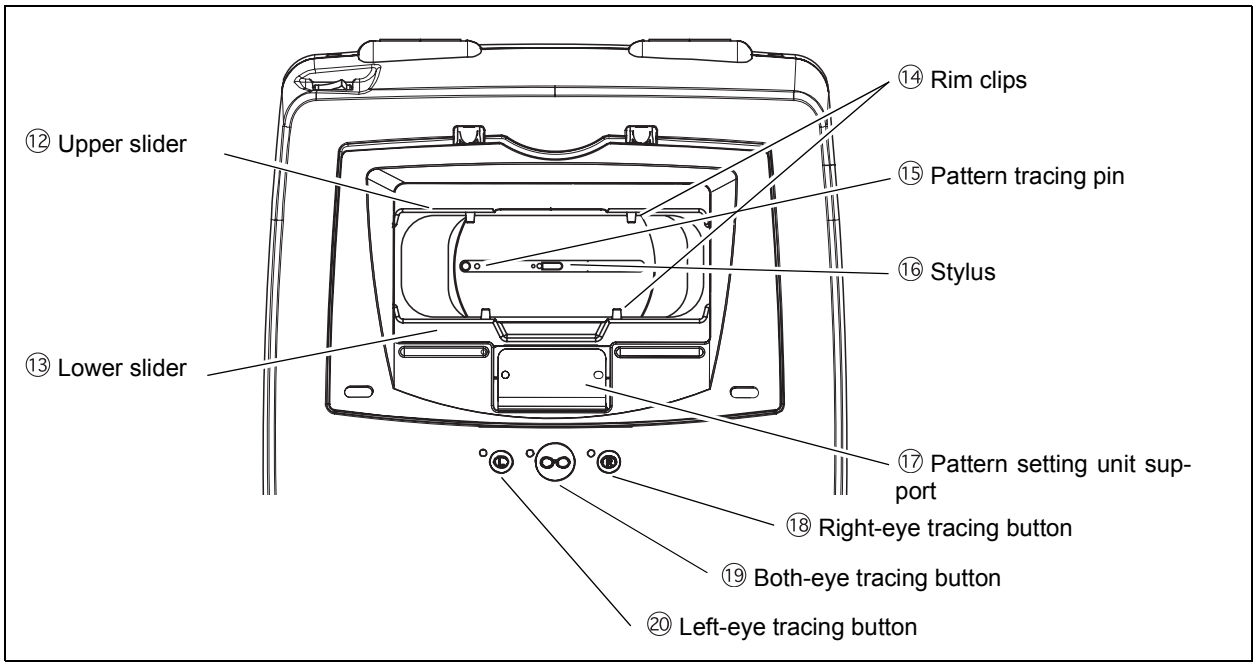
This part holds the lens with the convex side facing up.

⑪Cup holder

This part holds the lens cup.

The top mark on the lens cup should be in the back (instrument side). The lens cup must be inserted securely.

○ Tracing unit



⑫Upper slider

⑬Lower slider

Frames are fastened between these sliders.

⑭Rim clips

Hold the rims of frames.

Each upper and lower slider has two clips.

⑮Pattern tracing pin

Traces a pattern or demo lens to measure its shape.

Normally, this pin is stored in the tracing unit.

⑯Stylus

Traces a frame groove to measure its shape.

⑰Pattern setting unit support

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

⑱Right-eye tracing button

Starts right-eye tracing.

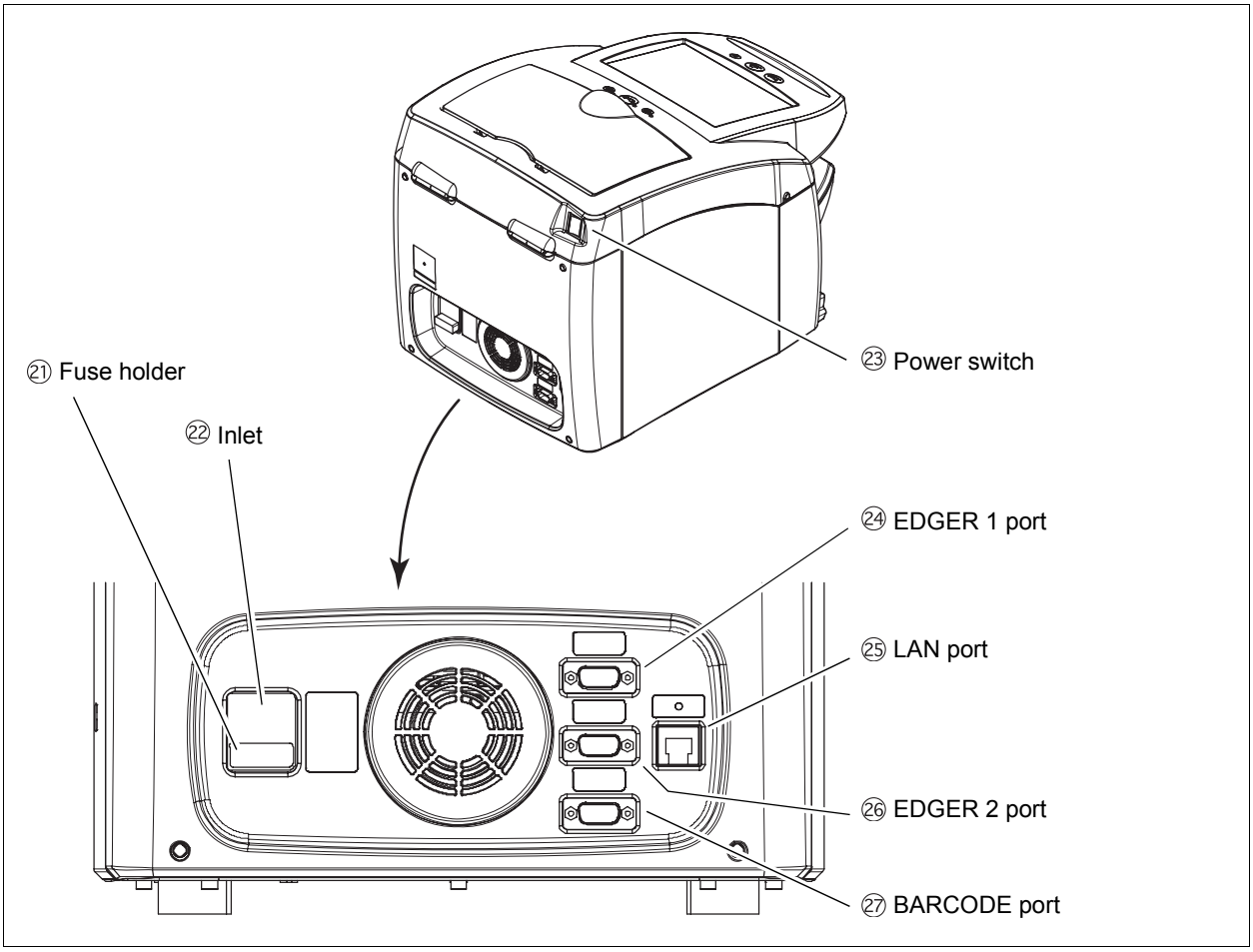
⑲Both-eye tracing button

Starts both-eye tracing.

⑳Left-eye tracing button

Starts left-eye tracing.

○ Rear view



㉑Fuse holder

The fuse holder contains two fuses (T 1.6 A 250 V).

㉒Inlet

This is for connecting the detachable power cord. The inlet incorporates the fuse holder.

㉓Power switch

Used to turn on and off the instrument.

㉔EDGER 1 port

Used to connect a lens edger.

㉗LAN port

Used to connect a LAN cable when comprising the Blocker LAB system, Entry LAB system or Extended LAB system on a LAN of ETHERNET[*1]. Use the LAN port when connecting three or more LEX-1000s in the Mini LAB system configuration.

***1. Ethernet: Standards on wirings, and access to the wirings to allow mutual accessing of various information processing terminals to the LAN. The ICE-1000 transfers and receives data through the 10BASE-T.**

㉕EDGER 2 port

Used to connect the second lens edger.

The system configuration for the EDGER 2 port can be set by the corresponding parameter.

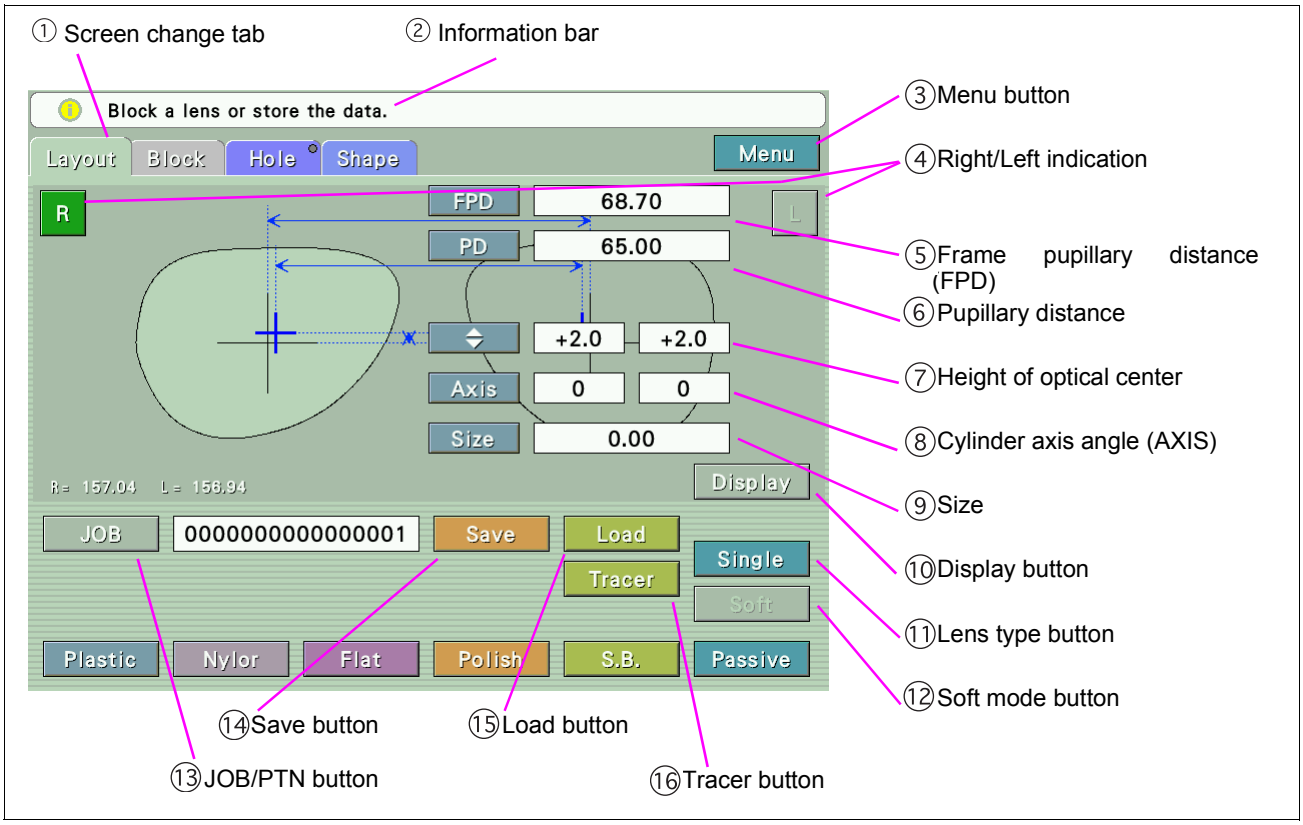
㉖BARCODE port

Used to connect an optional barcode scanner.

1.3 Display

1.3.1 Layout screen

This is the screen to enter the each data of lens layout and processing conditions.



①Screen change tab

Changes the screen from among Layout screen, Blocking screen, Hole Edit screen, and Shape Editor screen.

②Information bar

Displays current operation or next operation.

③Menu button

Displays a pop-up menu selecting the Initial screen save, Data screen display, and Parameter screen display.

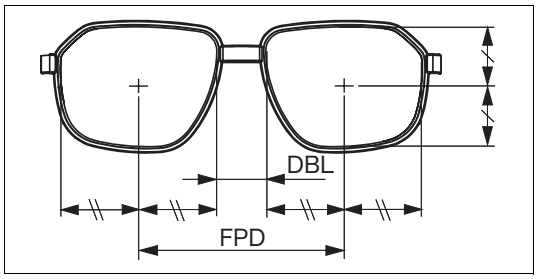
④Right/Left indication

This shows the left-eye or right-eye lens (Right/Left).

⑤Frame pupillary distance (FPD)

This shows the distance between the right and left frame centers.

The frame center is calculated by the boxing system.
Range: [30.00 to 99.50 mm (in increments of 0.01 mm)]
The width between the nasal ends of the left and right frames (DBL) can be entered for the FPD value.
Range: [1.00 to 30.00 mm (in increments of 0.01 mm)]



⑥Pupillary distance (PD)

This shows the prescribed pupillary distance, which is entered manually.

Range: [30.00 to 99.50 mm (in increments of 0.01 mm)]
The monocular PD (1/2PD) may be entered.
Range: [15.00 to 49.75 mm (in increments of 0.01 mm)]

⑦Height of optical center (⬍)

This indicates the height of the optical center from the frame center (boxing center), which is entered manually.

Range: [-15.0 to +15.0 mm (in increments of 0.1 mm)]

PD ⬍ and BT ⬍ can also be entered for the height of the optical center.

⑧Cylinder axis angle (AXIS)

This shows the prescribed cylinder axis angle, which is entered manually.

Range: [0 to 180º (in increment of 1º)]

⑨Size

This shows the enlarged or reduced lateral size from an imported lens shape.

This is for enlarging or reducing the shape data of the pattern while maintaining a similar form.
Range: [-10.00 to +10.00 mm (in increments of 0.01 mm)]

⑩Display button

Switches the layout value indication between on and off.

⑪Lens type button

Specifies the lens type [Single (single vision lens), Multi (bifocal lens), Progressive (progressive power lens), Manual].

⑫Soft mode button

Switches soft mode processing ON (shown in blue: soft mode processing is ON) and OFF (shown in gray: soft mode processing is OFF).

⑬JOB/PTN button

A JOB code (JOB#) or pattern code (PTN#) for storing or loading data is displayed.

In addition to a numeric keypad (or keyboard), the code can be entered with an optional barcode scanner.
The JOB# and PTN# are made up of a 16-digit alphanumeric code.

⑭Save button

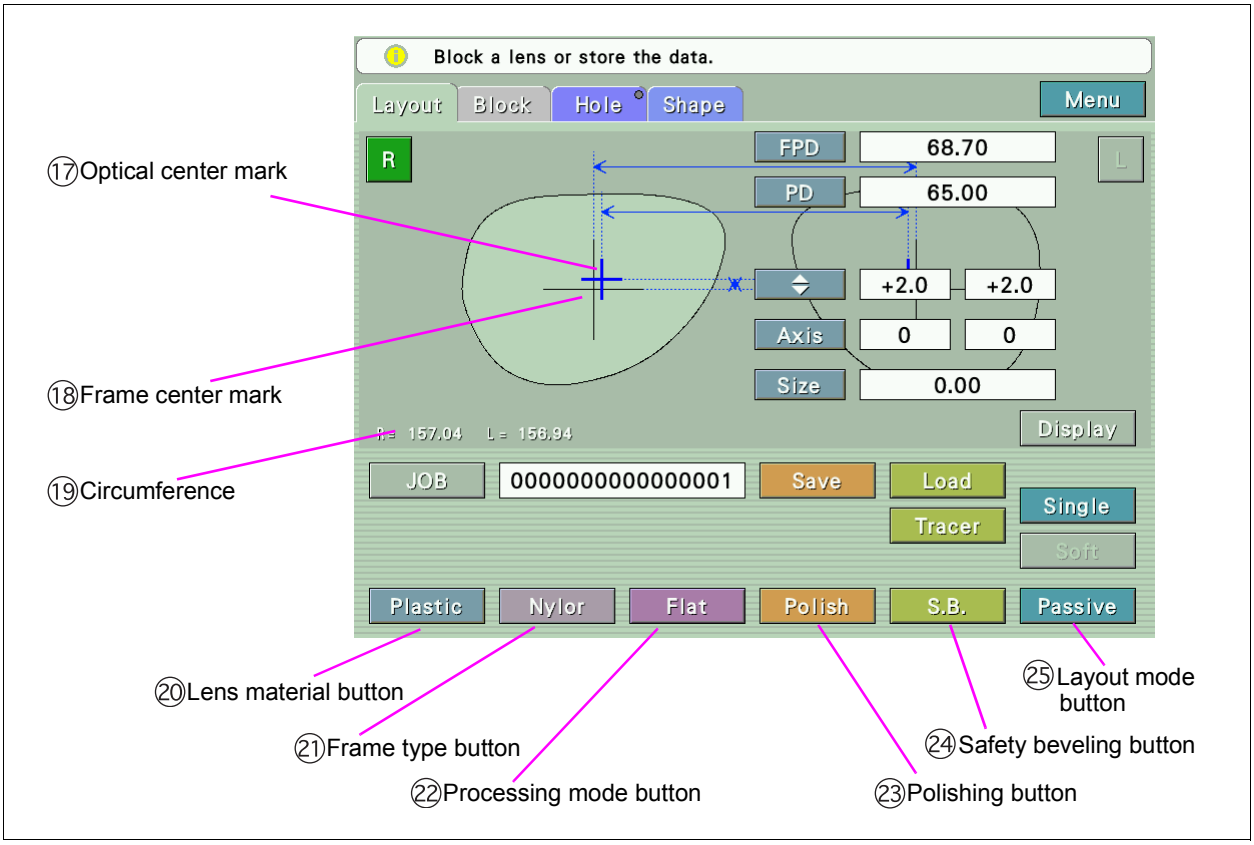
Saves the entered JOB data (or PTN data) into the USB flash drive.

⑮Load button

Loads the JOB data (or PTN data) saved in the USB flash drive to display it on the LCD touch screen.

⑯Tracer button

Displays data measured by the tracer on the LCD touch screen.



⑰Optical center mark

This indicates the position of the optical center of the lens.

⑱Frame center mark

This indicates the center of the lens shape (frame center).

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

⑲Circumference

Displays the circumference of the traced outline.

⑳Lens material button

Specifies the lens material [Plastic, HiIndex, Polyca., Acrylic, Trivex, Glass].

㉑Frame type button

Specifies the frame type [Metal, Plastic, TwoPoint, Nylor].

㉒Processing mode button

Selects the processing conditions.

Metal, Plastic	Guide/Auto	Bevel guided processing mode ON/OFF
TwoPoint	Hole/Flat	Drilling ON/OFF
Nylor	Groove/Flat	Grooving ON/OFF

㉓Polishing button

The selectable options depend on the connected lens edger. Set them with the Polish/S.B Setting parameter.

When the Polish/S.B Setting parameter is set to LEX:

The options are with polishing (Polish: polishing is on) and without polishing (None: polishing is off).

The Polish option can not be selected for glass lenses.

When the Polish/S.B Setting parameter is set to SE/ME:

The selectable options depend on whether safety beveling is on or off.

When safety beveling is on, the options are Polish, Pol (EDG), Pol (SB), and None (shown in gray).

When safety beveling is off, the options are Polish and Non-Pol (None).

The Polish option can not be selected for glass lenses.

㉔Safety beveling button

The selectable options depend on the connected lens edger. Set them with the Polish/S.B Setting parameter.

When the Polish/S.B Setting parameter is set to LEX:

The options are with safety beveling (S.B.: safety beveling is on), or without safety beveling (None: safety bevel is off).

When the Polish/S.B Setting parameter is set to SE/ME:

The options are Small, Middle, Large, Special, and None (safety beveling is off).

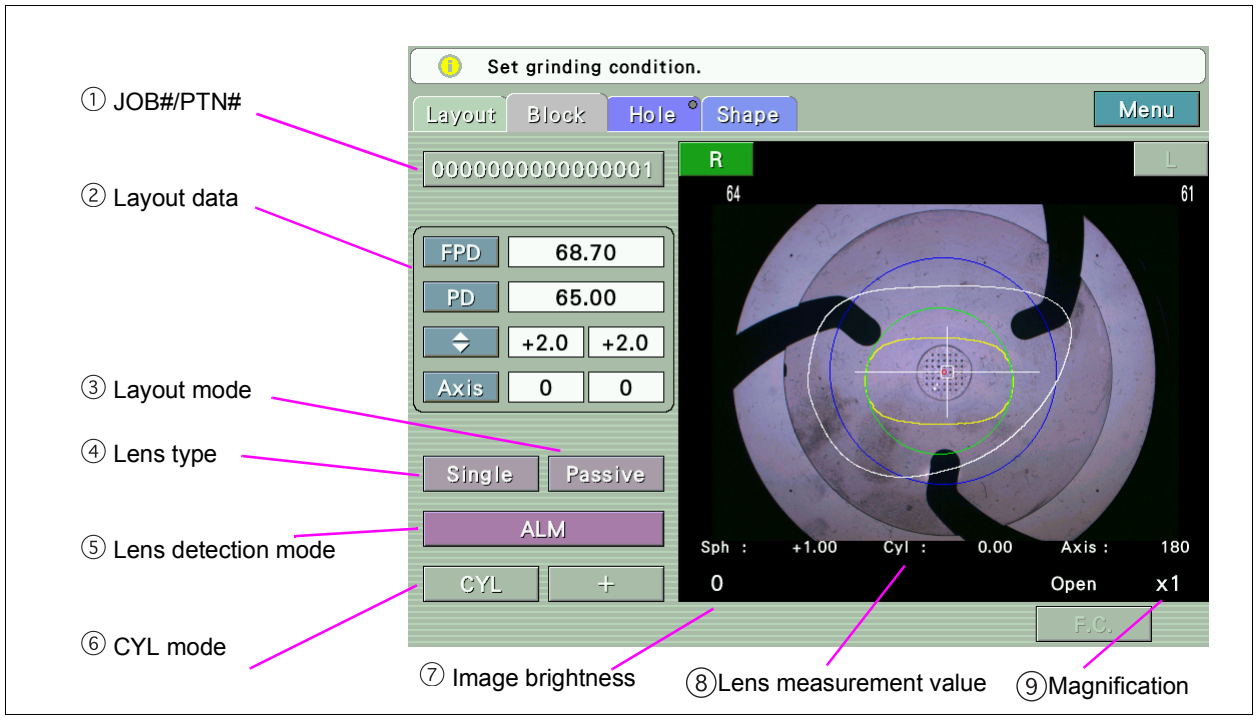
㉕Layout mode button

Indicates the layout mode (Active or Passive).

The layout mode can be switched between Active and Passive without changing the lens layout data.

1.3.2 Blocking screen

This is a screen to block lenses.



①JOB#/PTN#

Displays JOB# specified in the Layout screen.

②Layout data

Displays layout data specified in the Layout screen.

③Layout mode

Indicates the layout mode (Active or Passive).

④Lens type

Specifies the lens type [Single (single vision lens), Multi (bifocal lens), Progressive (progressive power lens), Manual, Demo (demo lens)].

⑤Lens detection mode

Selects the lens detection criteria corresponding to the single vision lens and progressive power lens.

Single	ALM/Mark
Progressive	Full auto/Semi auto/ Mark

⑥CYL mode

Switches to CYL reading mode (CYL mode) when using ALM function for single vision lens.

⑦Image brightness

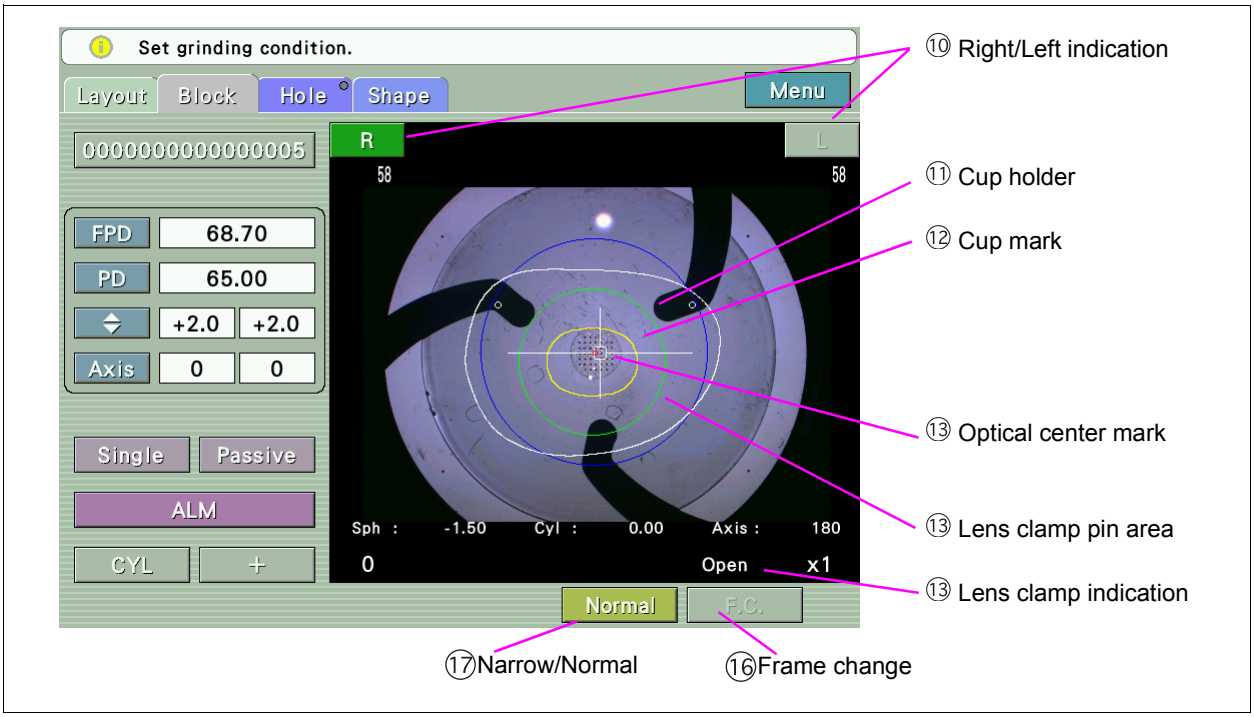
Displays image brightness setting and pressing here displays the Setting button.

⑧Lens measurement value

Displays the lens measurement value.

⑨Magnification

Displays magnification of the displayed image and pressing here switches the magnification between ×1 (actual size) and ×2.



⑩Right/Left indication

This shows the left-eye or right-eye lens (Right/Left).

Under this button, a minimum lens diameter is displayed.

⑪Cup holder

This mark indicates the cup holder's position. Arrange the lens so that this mark is inside the ⑭ Lens clamp pin range.

⑫Cup mark

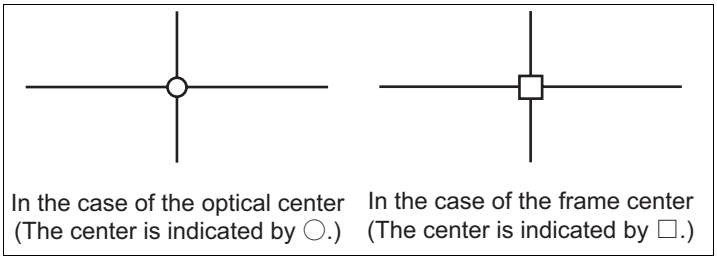
Indicates the outer shape of the lens cup to be blocked.

Set the cup mode on the Parameter 2 screen depending on the specifications of the lens edger used. The parameter has three options: STD (Standard), Pliable, Mini, and Nano.
When STD is selected, set the outer dimensions of the lens cup respectively for the standard lens cup (hard cup) and the cup (hard cup) for half-eye lens. The shape of the lens cup for half-eye lens changes to an oblate ellipse depending on the lens shape size and lens layout data.

⑬Optical center mark

This indicates the position of the optical center of the lens, and cylinder axis angle.

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



⑭Lens clamp pin area

Displays the area where not touched to the lens clamp pin.

⑮Lens clamp indication

Indicates the lens clamp condition.

Open	The lens is not clamped.
Temp.	The lens is temporary tightened.
Clamp	The lens is clamped.

⑯Frame change

Pressed when blocking the lens to be changed the frame. By pressing this button, blocking can be performed with the lens clamp is not used.

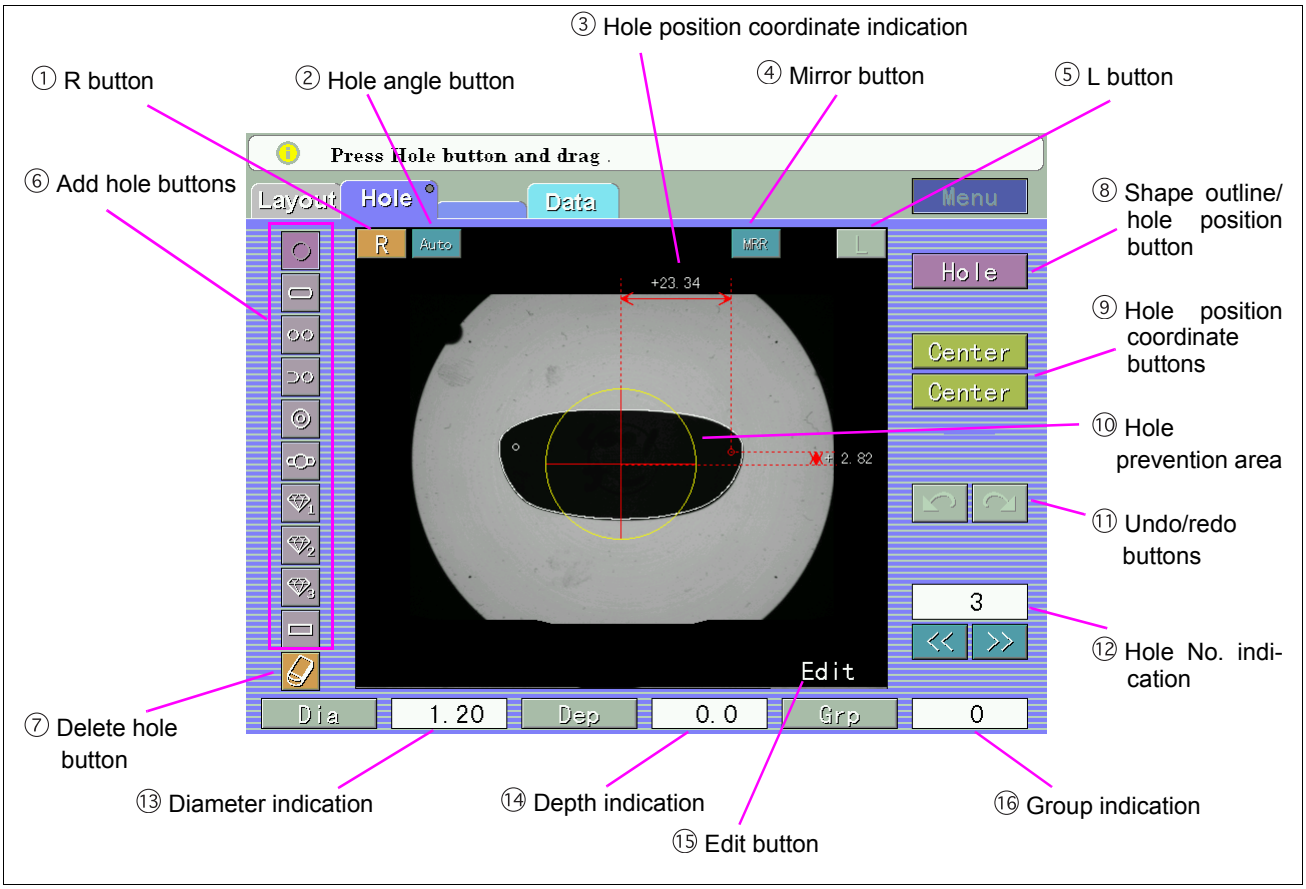
For the blocking method of frame change, see “2.9.1 Blocking with frame change holder” (Page 79).

⑰Narrow/Normal

Selects opening of the lens clamp pin. When the lens diameter is small or the lens is thin, select Narrow.

1.3.3 Hole Edit screen

This is a screen to edit hole position, detect demo lens and hole position.



①R button

Specifies the lens for right eye.

②Hole angle button

Sets the hole angle.

Select the setting among Auto, Angle, x-y, and, X Auto.

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

Only Auto or Angle is selectable when the pair or notched holes are selected.

③Hole position coordinate indication

Displays the coordinates of the hole position displayed with a red line.

Press the coordinate indication value to display the numeric keypad and change the hole position.

④**Mirror button**

Turns the mirror function on or off.

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

⑤**L button**

Specifies the left lens.

⑥**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.

The selected type holes can be added successively until the selected button is pressed again or another button is pressed.

⑦**Delete hole button**

Deletes the currently selected hole(s).

⑧**Shape outline/hole position button**

Displays the lens outline and hole position detection screen.

⑨**Hole position coordinate buttons**

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

The method can be selected according to each hole.

Horizontal reference position

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

⑩**Hole prevention area**

Indicates the area in which hole positions cannot be set.

Holes cannot be specified within the displayed circle.

⑪**Undo/redo buttons**

Undo the last change or restore the change by undo.

⑫**Hole No. indication**

Displays the hole No. of the currently selected hole. The hole can be changed with the [<<] or [>>] button next to the hole No. indication.

⑬Diameter indication

Displays the set hole diameter.

Press the numeric button to display the numeric keypad and change the hole diameter.

Hole type	Numeric button
Simple hole, slotted hole, pair hole, notched hole, counterbored hole, rectangular hole	Depth
T screw, Jewel hole1 to Jewel hole 3	Not displayed

* Each hole diameter of Jewel hole 1 to Jewel hole 3 depends on the connected ME-1000 and LEX-1000 settings.

⑭Depth indication

Displays the set hole depth (or rotation angle).

Press the numeric button to display the numeric keypad and change the hole depth (or rotation angle).
An indication of “0.0” means a through hole.

Hole type	Numeric button
Simple hole, slotted hole, pair hole, notched hole, counterbored hole, rectangular hole	Depth
T screw	Rotation angle
Jewel hole1 to Jewel hole 3	Not displayed

* Each hole depth of Jewel hole 1 to Jewel hole 3 depends on the connected ME-1000 and LEX-1000 settings.

⑮Edit button

Switches to the Adjust screen.

The displayed screen name is indicated in the button.

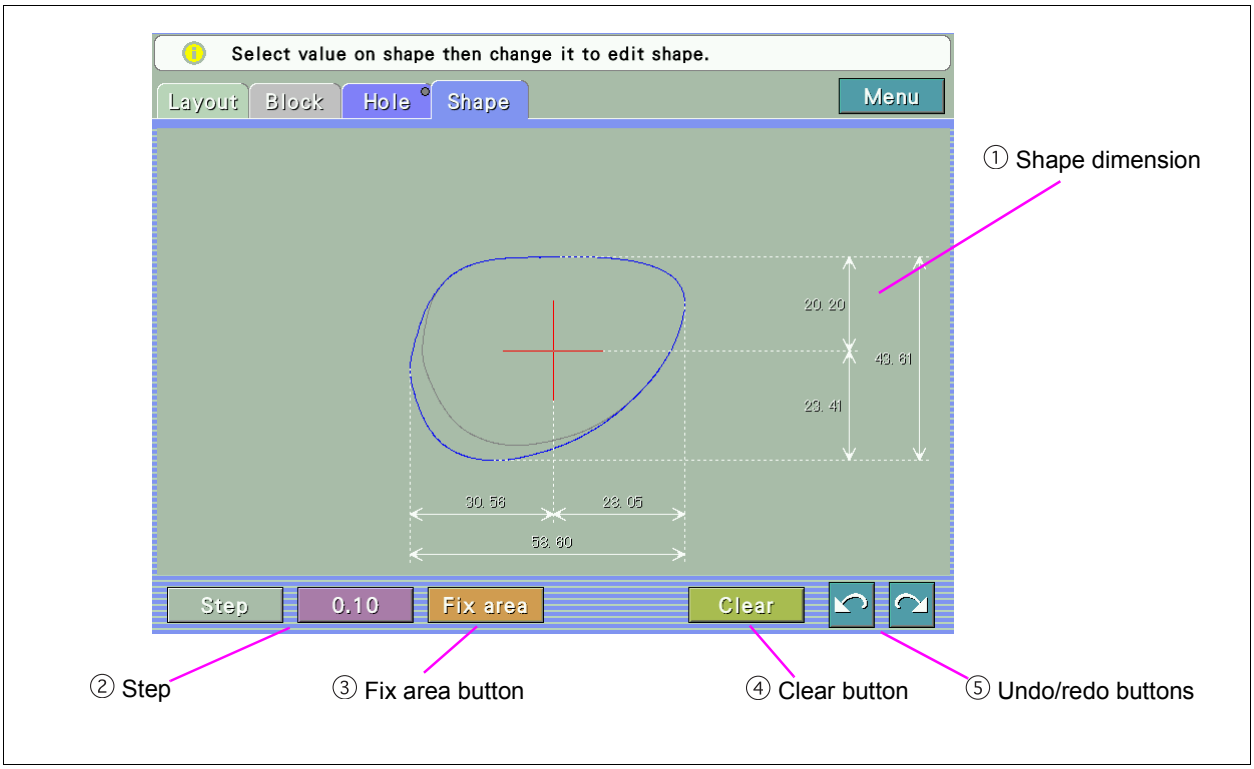
⑭Group indication

Displays the group number of the currently selected hole.

Press the numeric button to display the numeric keypad and enter a group number.
An indication of 0 means that the hole is not set by group.
Up to two holes can be set the same group number for single eye.

1.3.4 Shape Editor screen

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



①Shape dimension

Displays the value of the shape horizontal diameter and vertical diameter.

Pressing the coordinate displayed part displays the +/- input button (or numeric keypad) and specify the value to change the hole position.

②Step

Select the dimension change step from 0.10/0.25/0.50 with +/- input button. Or when selecting the numeric keypad, the value can be input with the numeric keypad.

③Fix area button

Specify the part where the shape is not changed.

④Clear button

Cancels the entered contents and displays the original shape data.

⑤Undo/redo buttons

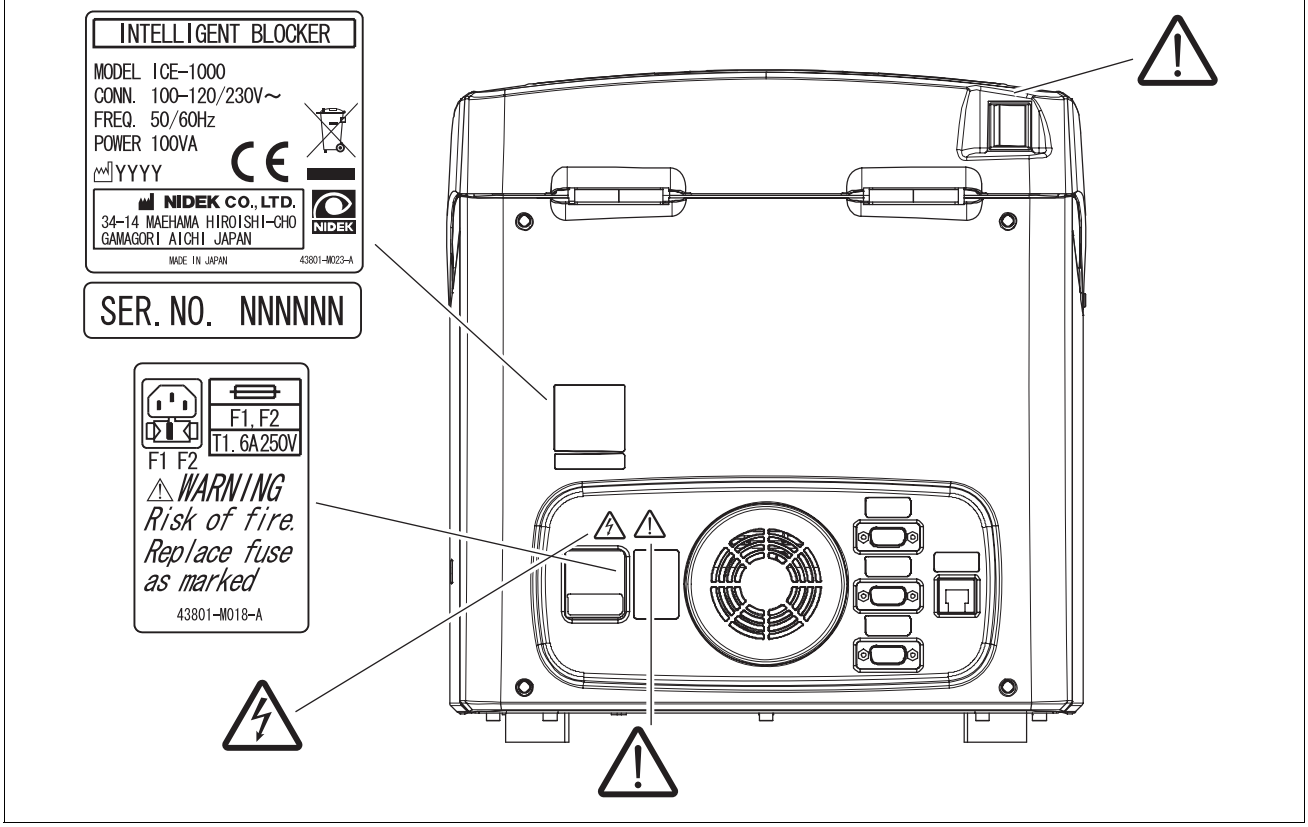
Undo the last change or restore the change by undo.

1.4 Labels

Cautionary labels are provided on the ICE-1000. If labels are curling up or characters fading and becoming barely legible, contact NIDEK or your authorized distributor.

⚠	Indicates that caution must be taken. Refer to the operator's manual before use.
○	The state of the power switch. If the symbol side of the switch is flipped down, the power is not supplied to the blocker.
|	The state of the power switch. If the symbol side of the switch is flipped down, the power is supplied to the blocker.
~	Indicates that the blocker must be supplied only with alternating current.
▭	Indicates the fuse rating.
	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.

[Rear view]



1.5 Checking Contents

Unpack the contents from the shipping carton and check them.

The following are included in the standard configuration.

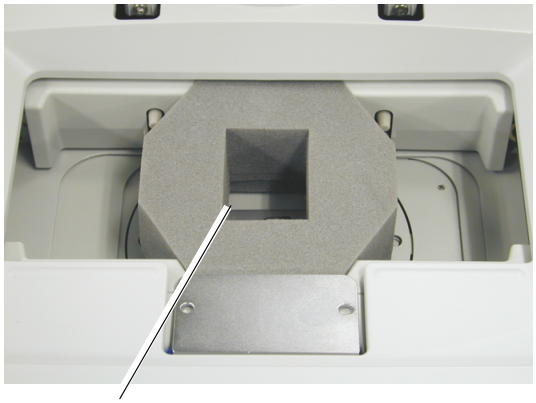
- Main body
- Pattern setting unit
- Standard frame
- Standard pattern
- Frame change holder
- Power cord
- Touch pen
- Communication cable
- Blower
- Spare fuse (2 units)
- USB flash drive
- Accessory case
- Operator's manual (this book)

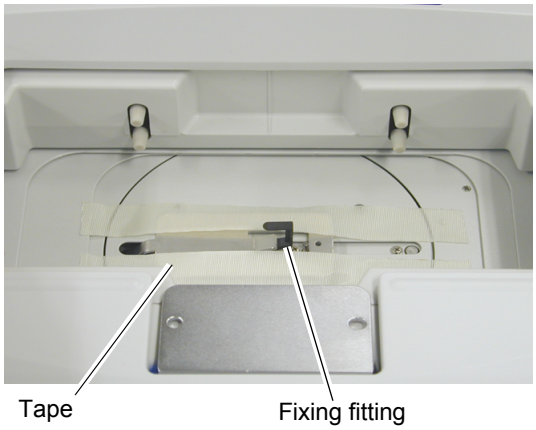
1.6 Before First Use

Place the blocker on a stable table and connect the power cord.

1 Place the main body on a stable table.

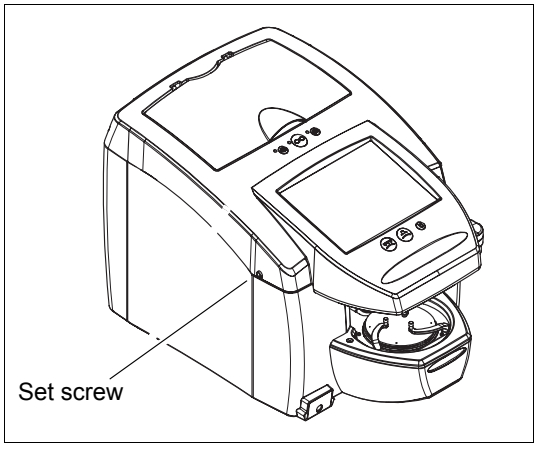
2 Open the cover of the tracing unit and remove the cushion, tape, and fixing fitting retaining the inside of the tracing unit.



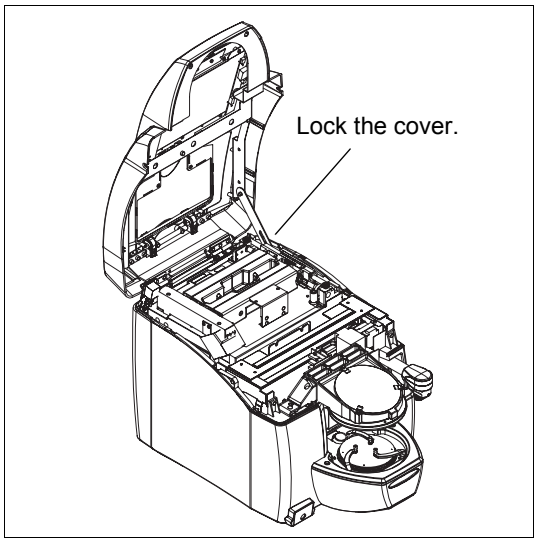


3 Release the lens clamp fixation.

1) Loosen the right and left top cover set screw.

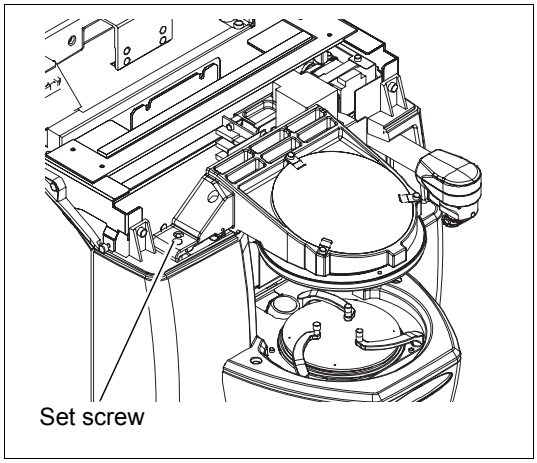


2) Open the top cover and lock the cover.



3) Remove the lens clamp set screw.

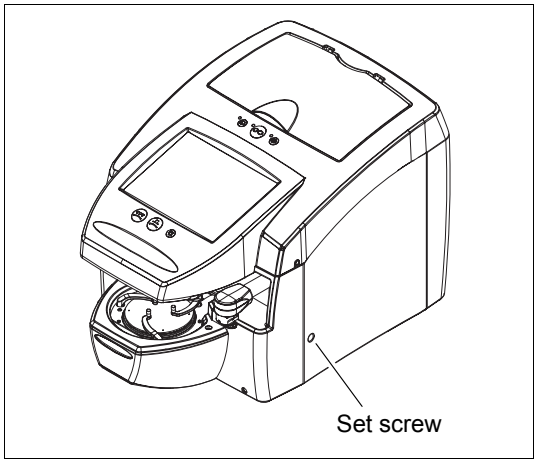
Keep the removed screws in storage because they are used for repacking the ICE-1000.



4) Close the top cover and fix with the screw.

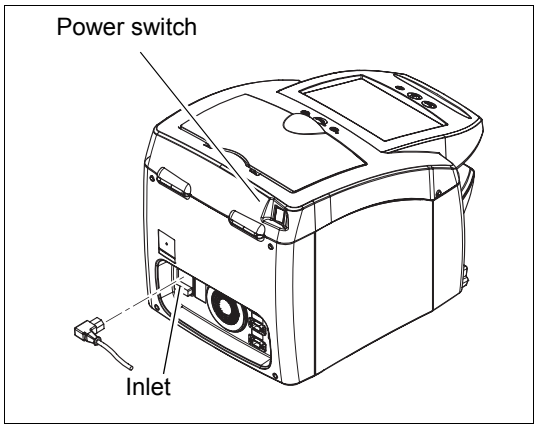
4 Remove the blocking arm set screw from the hole of right side cover.

Keep the removed screws in storage because they are used for repacking the ICE-1000.



5 Connect the power cord to the inlet.

6 Confirm that the power switch is turned OFF (○) and plug the power cord in the wall outlet

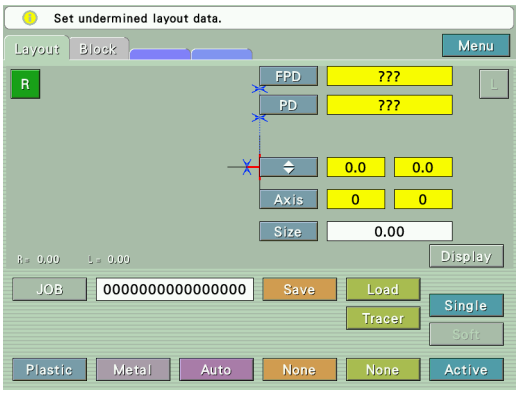


⚠ **CAUTION** • **The electrical outlet must have a grounding terminal.**
Electric shock or fire may occur in the event of malfunction or power leakage.

7 Turn the power switch ON (|).

The initial screen is displayed on the LCD touch screen and the ICE-1000 is initialized.

8 Check that the layout screen is displayed after the ICE-1000 is initialized.



This is all you have to do before use.

Note

- Set the parameters to suit your needs or preferences.
  See “4.1 Setting Parameters” (Page 89) for the parameters and their setting methods.
- See “4.2 Connection” (Page 96) for the connecting method of a lens edger, communication cable or such.

1.6.1 Tracing unit calibration

Perform calibration of the tracing unit using the supplied standard frame and standard pattern.

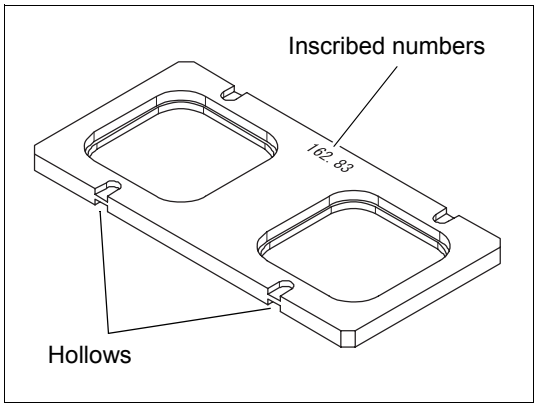
Standard frame	For calibration of frame tracing by the stylus
Standard pattern	For calibration of pattern tracing by the pattern tracing pin

This calibration will be performed by service persons at the time of installation.
It is recommended to perform the tracking unit calibration to ensure high tracing accuracy before tracing frames or patterns. In addition, when a measured circumference involves an error, perform the tracing unit calibration.

1 Perform calibration with the standard frame.

1) Turn on the ICE-1000 and input a desired JOB# on a layout display.
2) Set the supplied standard frame (☐ 45) to the tracing unit.

   Set the standard frame with the surface with the inscribed numbers up so that the rim clips are set over eight semicircular hollows on both surfaces of the frame.



3) Press the Ⓡ button while depressing the Ⓛ button.

   The lamp of the ∞ button blinks.

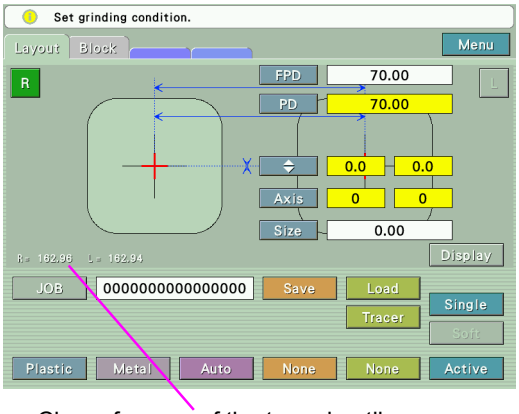
4) Press the ∞ button.

   The calibration is performed.

5) After the calibration is complete, start tracing the standard frame with the ∞ button.
6) Press the Tracer button.
7) Check the traced data (circumference) on the layout display.

   When it is not within 162.83 ± 0.05 mm, perform calibration with the standard frame again.

8) Remove the standard frame.



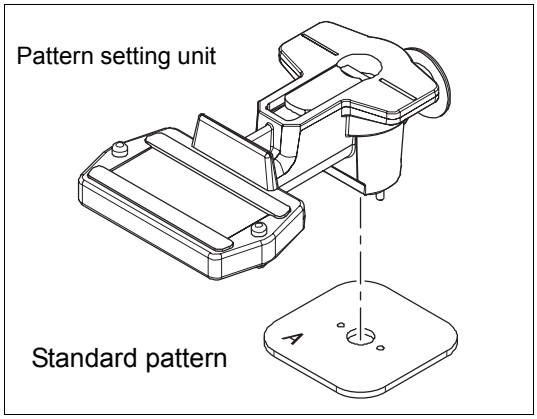
Circumference of the traced outline

2 Perform calibration with the standard pattern.

1) Set the supplied standard pattern into the tracing unit.

   Fit the standard pattern with the surface with the inscribed “A” facing the Pattern setting unit.

   See Steps 1 to 2 of 2.4.2 Pattern tracing for the method of setting a pattern.



2) Press the Ⓡ button while depressing the Ⓛ button.

   The lamp of the ∞ button blinks.

3) Press the ∞ button.

   The calibration is performed.

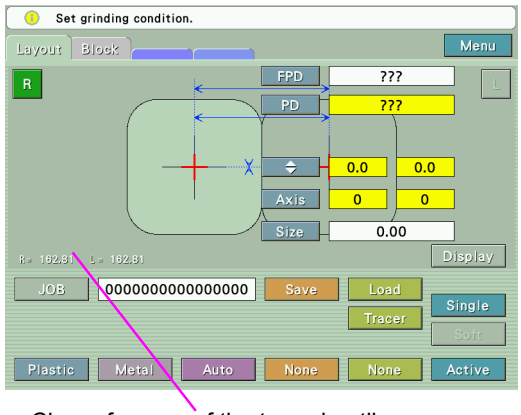
4) After the calibration is complete, start tracing the standard pattern with the Ⓛ button (or the Ⓡ button).

5) Press the Tracer button.

6) Check the traced data (circumference) on the layout display.

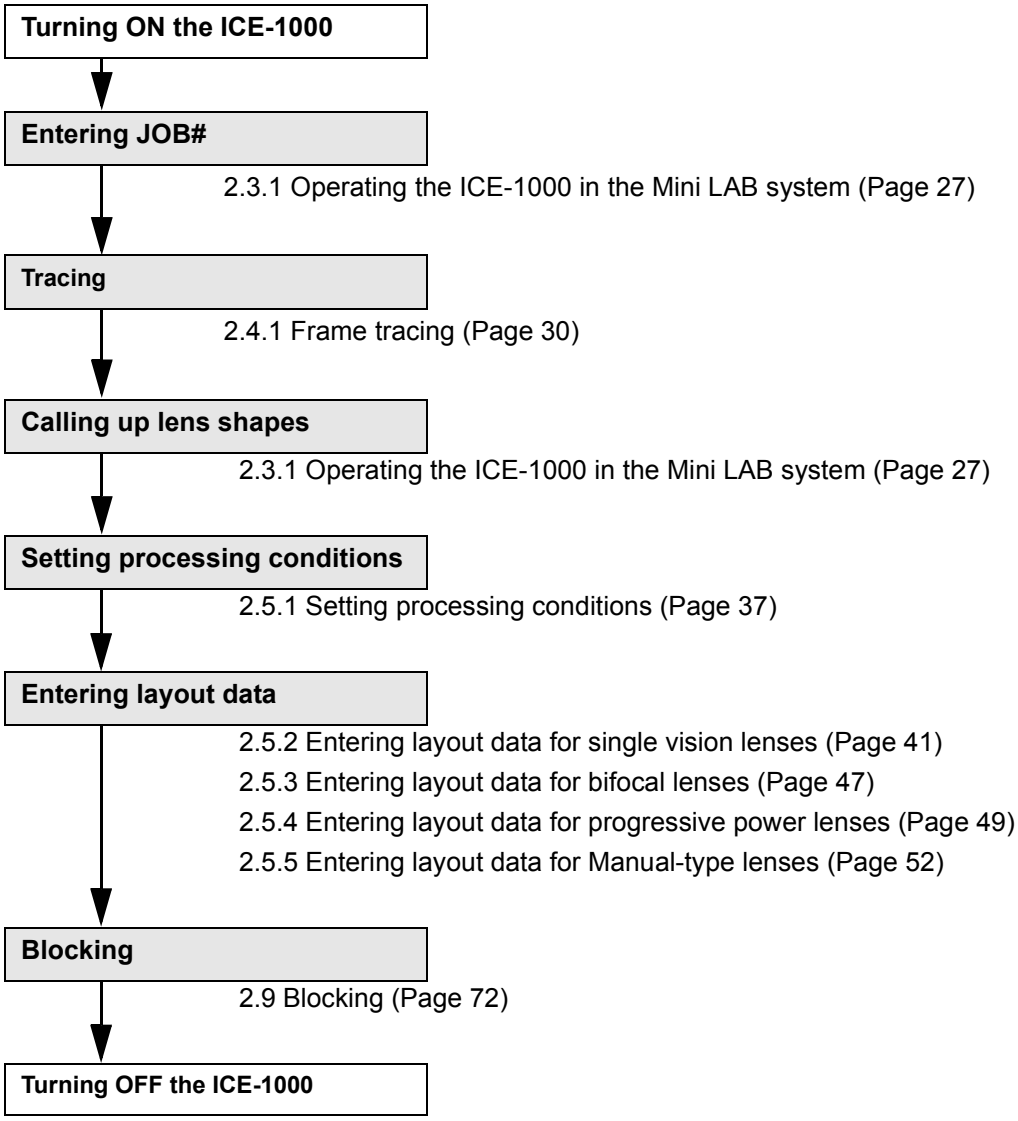
   When it is not within 162.83±0.10 mm, perform calibration with the standard pattern again.

7) Remove the standard pattern.



2. OPERATING PROCEDURES

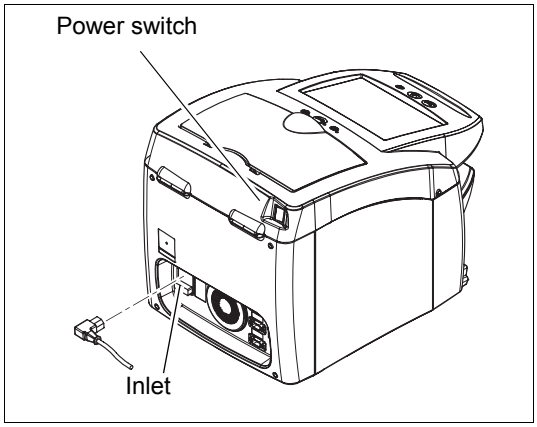
2.1 Operation Flow



2.2 Start-up

1 Connect the power cord to the inlet.

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



Note

- The electrical outlet must have a grounding terminal.
  Electric shock or fire may occur in the event of instrument failure or electric leak.
- Never overload the electrical outlet.
  A branch outlet that is concurrently used with other instruments may cause overheating and fire.

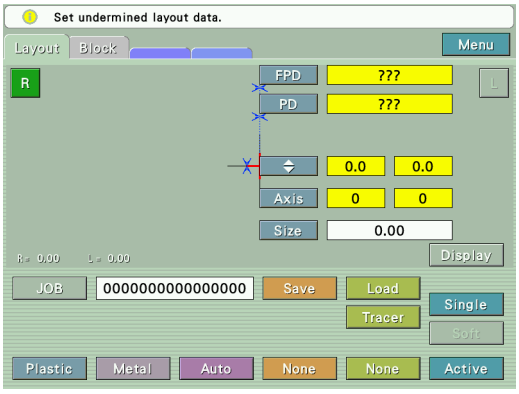
3 Confirm that the cables from the connected instruments are securely connected to the ICE-1000, and the power for each instrument is turned ON.

See “4.2 Connection” (Page 96) for the connecting method.

4 Check that lens is not placed on the lens table.

5 Turn ON (|) the power switch.

1) The blocker starts to initialize, and "ICE-1000" is displayed on the LCD touch screen
2) Subsequently, the measurement LED lights up and the measuring unit and blocking mechanism sets their origins.
3) The layout screen is displayed



Note

- The indications on the layout screen just after power-up can be customized according to the operator’s preferences.
  See “2.12 Initial Layout Screen Save Function” (Page 84) for the setting method.

The ICE-1000 is now ready for use.

2.3 Operating Procedures

The following operating procedures are described in the method using the numeric keypad when entering the JOB# and PTN#.
Selecting KEYPAD in the parameter JOB Code Input Interface or PTN Code Input Interface displays the keyboard instead of the numeric keypad.

2.3.1 Operating the ICE-1000 in the Mini LAB system

In the Mini LAB system, the ICE-1000 manages data as a data server.
The ICE-1000 and the LEX-1000 comprise the system.

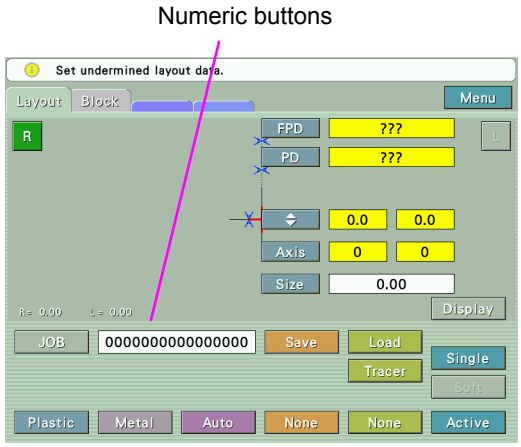
1 Turn the power switch ON (|) to start the ICE-1000.

See “2.2 Start-up” (Page 26) for the ICE-1000 startup procedure.

2 Set to JOB# mode and enter the JOB#.

Pressing the numeric button on the right of the JOB button displays the numeric keypad. After entering the JOB#, press the Ent button.

When the barcode scanner is connected, read the barcode.



Note

- JOB# can be entered in any timing before blocking or saving the data.

3 Perform tracing.

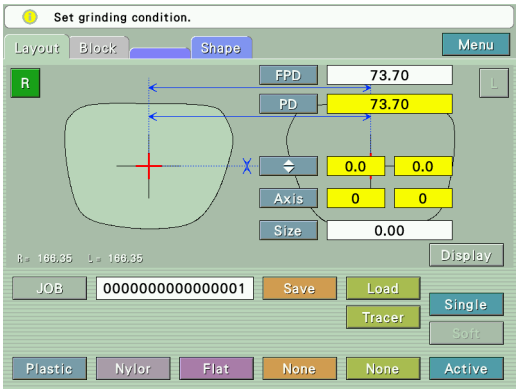
Trace frames or patterns.

See “2.4 Tracing” (Page 30) for the tracing method.

See “2.10 Data control” (Page 80) when using registered shape data without tracing frames or patterns.

4 Press the Tracer button to read the lens shape data.

The shape is displayed in actual size on the screen. When both frames are traced in both-eye tracing, the FPD value is also displayed.



Note

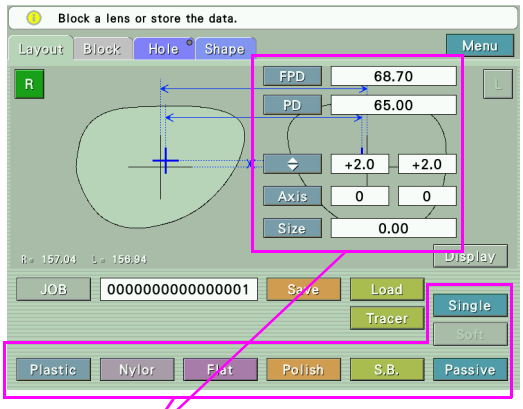
- When reading and blocking PTN data, specify PTN# in PTN# mode and press "Load" button.

5 Enter processing conditions.

See “2.5.1 Setting processing conditions” (Page 37) for the method of entering processing conditions.

6 Enter the lens layout data for the both-eye lens.

See “2.5.2 Entering layout data for single vision lenses” (Page 41) for the method of entering lens layout data.



Processing conditions and Lens layout data

Note

- When blocking a left-eye lens only, press the LEFT button to switch the screen to the layout display for the left-eye lens.
- When the ICE-1000 is connected to the ME-1000, LEX-1000, or SE-9090 Express and AHM-1000 system, set the grooving and drilling specifications as necessary.

  See “2.7 Grooving Settings” (Page 58) for grooving specifications.

  See “2.8 Drilling Settings” (Page 61) for drilling specifications.

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

See “2.9 Blocking” (Page 72) for the blocking method.

Each data of the shapes, processing conditions, and layout for the both-eye lenses is saved in the JOB# simultaneously with blocking.

8 Block the left-eye lens.

Each data of shapes, processing conditions, and layout for the both-eye lenses is saved again in the same JOB# simultaneously with blocking.

Note

- It is impossible to set processing conditions independently for the left- and right-eye lenses to be saved in the same JOB#.

  The processing conditions saved simultaneously with the last blocking are finally saved in the JOB#.
- The layout and shape data already used for the previous blocking are protected from reuse for successive blocking.

9 Store the blocked lenses in a tray etc. with the JOB# on it.

Clearly mark the left- or right-eye lens on the tray etc. when saving the lens.

Note

- When repeatedly blocking lenses without processing them, go back to Step 2. Be careful not to enter the same JOB# again with which lenses have not yet been processed.

  Entering the same JOB# will overwrite the JOB data and the former JOB data will be deleted.

This is all you have to do with the ICE-1000.

The operations after data transfer will be performed with a lens edger.

10 Import the processing data from the ICE-1000 to the LEX-1000.

1) Scan the JOB# with the barcode scanner connected to the LEX-1000 in the standby status (which is not processing nor tracing).

   A request for data transfer will be sent to the ICE-1000.

Note

- When not using the barcode scanner connected to the LEX-1000, enter the JOB# to the JOB area and quickly press the (DATA SET) button.

2) The ICE-1000 transfers the data corresponding to the JOB# to the LEX-1000.
3) The data is displayed on the LEX-1000.

Note

- Import JOB data for processing lenses after blocking the lenses with the lens cups.

11 Process the lens with the LEX-1000.

As required, enter the size compensation value, bevel curve value, bevel tip point, etc. prior to processing.

When processing both-eye lenses, process them continuously.

Note

- When the other-eye lens has not been blocked yet, go back to Step 6. Then import the same processing (JOB) data again from the ICE-1000 and process the lens.

2.4 Tracing

After entering a JOB# on a layout display, perform tracing. The following tracing methods are selectable. Select the most appropriate method of tracing in each case.

Frame tracing (Both eyes)	Traces the both eyes of general frames.
Frame tracing (Single eye)	Traces the left- or right-eye of a general frame.
Semiauto tracing	When the stylus is not automatically set in the groove at the start of frame tracing.
Goggle type frame tracing	When the stylus comes off the groove of the sharply warped frame during tracing. Hold by hand the frame not being traced.
Pattern tracing	Traces the patterns of Two-point or Nylor frames etc.
Demo lens tracing	Traces mounted lenses in the same manner as the pattern tracing.

2.4.1 Frame tracing

Note

- For rims with low stiffness such as thin rim frames, only perform demo lens tracing.
  Distortion may occur and correct measurement can not be obtained from rims with low stiffness.

○ Both-eye tracing

This is the procedure to measure the frame shapes for both eyes as well as the FPD (Frame Pupillary Distance).

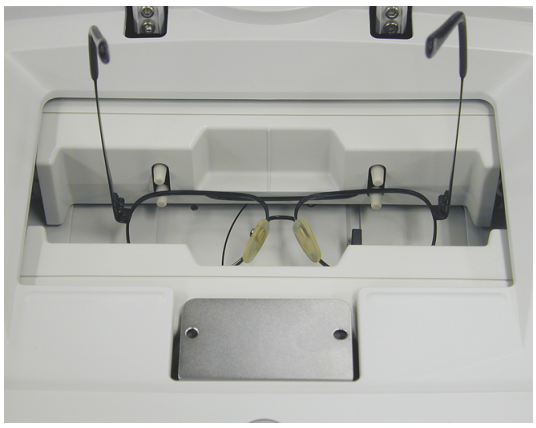
1 Set frames into the tracing unit.

1) Open the cover of the tracing unit.
2) Set the top of the frames.

   Pull forward the lower slider and fasten the frame top between the rim clips on the upper slider.
3) Set the bottom of the frames.

   Slowly release the lower slider, placing the frame bottom between the rim clips on the lower slider.

4) Move the frames left or right to bring them to the approximate center of the tracing unit.



2 Start both-eye tracing.

Press the Both-eye tracing button ⓞⓞ.

Tracing is completed when the frames are released.

3 Pull the lower slider forward to remove the frames.

4 Call up the traced data.

Press the Tracer button on the LCD touch screen.

The lens shape and FPD value are displayed on the LCD touch screen.

Note

- If there is a mismatch of 1 mm or more in circumference between the left- and right-eye frames, a tracing error occurs (tracing is automatically performed again and the Ⓛ and Ⓡ buttons blink for several seconds) and traced data is not able to be read even thought the Tracer button is pressed. In such cases, perform single-eye tracing.

○ Single-eye tracing

This is the procedure to trace the frame for either eye.

1 Set frames into the tracing unit.

See Step 1 of "○ Both-eye tracing (Page 30)".

2 Press either the Right-eye tracing button Ⓡ or Left-eye tracing button Ⓛ.

For tracing the left-eye frame	Press the Left-eye tracing button Ⓛ.
For tracing the right-eye frame	Press the Right-eye tracing button Ⓡ.

Note

- The FPD (Frame Pupillary Distance) cannot be measured in single-eye tracing.
  Enter the FPD value manually on the layout display.
- In single-eye tracing, pressing the Tracer button calls up the shape data which is same in both eyes (The data of the side not traced is mirrored).

○ Semiauto tracing

This is the procedure to fit the stylus into the groove by hand before tracing for the frame whose stylus is not automatically set in the groove.
This is for frames, especially plastic ones, whose grooves are not in the middle of the edges.

1 Set frames into the tracing unit.

See Step 1 of “Both-eye tracing” (Page 30).

2 Press the Both-eye tracing button ⓞⓞ for three seconds.

The stylus moves and pauses in the start position of tracing. The ⓞⓞ button blinks.

In single-eye tracing, press the Right-eye tracing button Ⓡ or Left-eye tracing button Ⓛ for three seconds in stead of the ⓞⓞ button.

3 Fit the stylus into the groove by hand.

4 Start tracing.

Press the Both-eye tracing button ⓞⓞ.

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

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

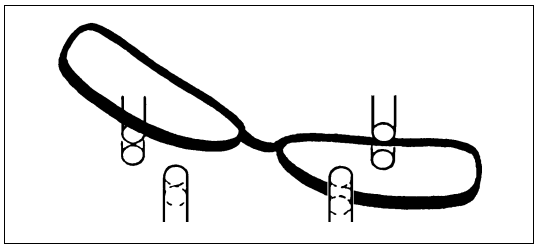
○ Goggle type frame tracing

When the frames are sharply warped, the stylus may come off the groove. In such a case, fasten only the one frame between the rim clips and perform single-eye tracing.
This tracing is available in both left and right frames. The procedure for tracing the right eye frame is described here.

1 Set the right frame in the tracing unit so that the frame becomes level.

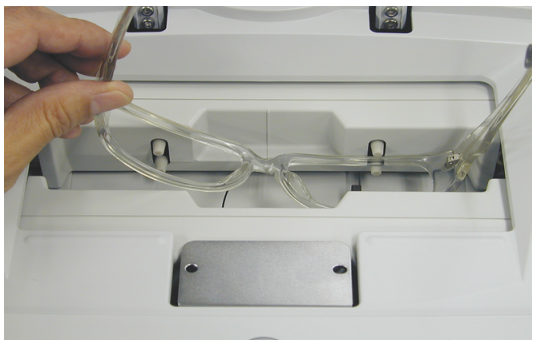
Do not fasten the left frame between the rim clips.

Hold the left temple to maintain the right frame level.



2 Start tracing.

Press the Right-eye tracing button ®.



Note

- The rim clips fasten the right frame. However, do not release the left frame until tracing is completed.
  When the frame moves, tracing is not performed accurately.

3 Remove the frames from the tracing unit.

4 Call up the traced data on the display.

Press the Tracer button on the LCD touch screen.

The lens shape is displayed.

Note

- The FPD (Frame Pupil Distance) can not be measured in goggle type frame tracing.
  Enter the FPD value manually on the layout screen.

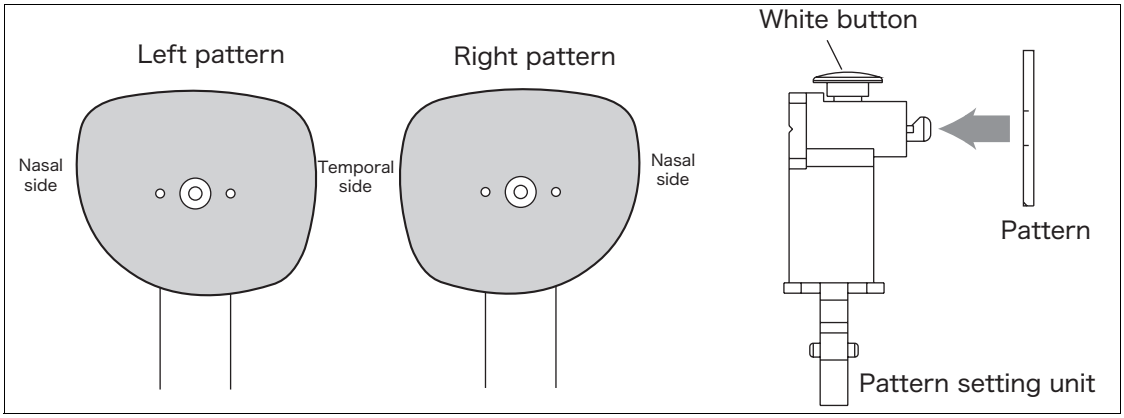
2.4.2 Pattern tracing

This is the procedure to trace the patterns of two-point frames etc.

1 Set a pattern onto the pattern setting unit.

1) Set a pattern while pressing the white button on the pattern setting unit.

   Push the pattern as far as it will go. The pattern is attached as follows:



2) Release the white button to lock the pattern.

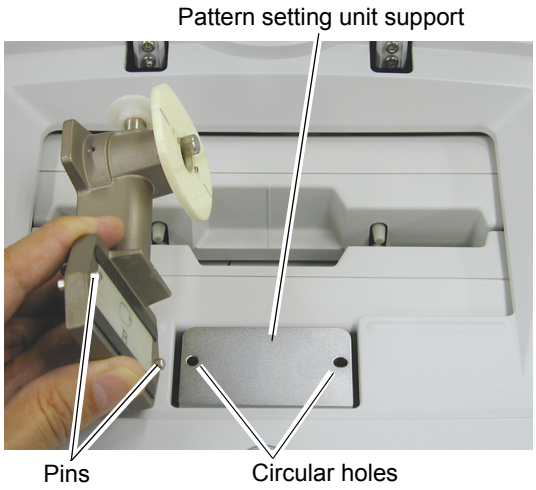
2 Set the pattern setting unit to the tracing unit.

1) Open the cover of the tracing unit.
2) Set the pattern setting unit to the tracing unit.

   Pull the lower slider forward and set the pattern setting unit onto the pattern setting unit support.

   Align the two pins of the pattern setting unit to the circular holes on the pattern setting unit support.

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



3 Press either the Right-eye tracing button Ⓡ or Left-eye tracing button Ⓛ.

For tracing the right-eye pattern	Press the Right-eye tracing button (R).
For tracing the left-eye pattern	Press the Left-eye tracing button (L).

The tracing pin comes out and then tracing starts.

4 When the tracing is completed, remove the pattern setting unit.

When the tracing is completed, the tracing pin is automatically stored.

Lifting the left side first makes removing the pattern setting unit easier.

Note

- The FPD (frame pupil distance) can not be measured in pattern tracing.
  Enter the FPD value manually on the layout screen.

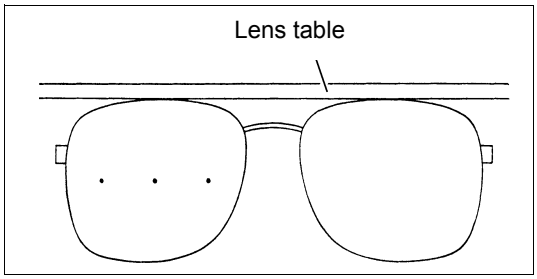
2.4.3 Demo lens tracing

This is the procedure to trace the lenses that have already been processed and mounted into the frames in the same manner as the pattern tracing.

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

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

   At this time, the frame must be contacted with the lens table while the demo lens is mounted in the frame.

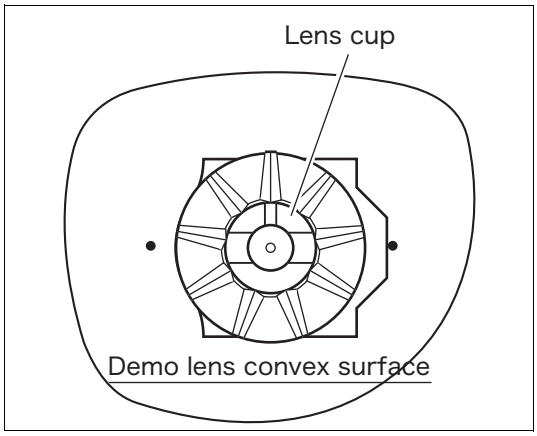


2) Affix the double-coated adhesive tape to the lens cup.

3) Block the convex surface of the demo lens with the lens cup, using the centering device.

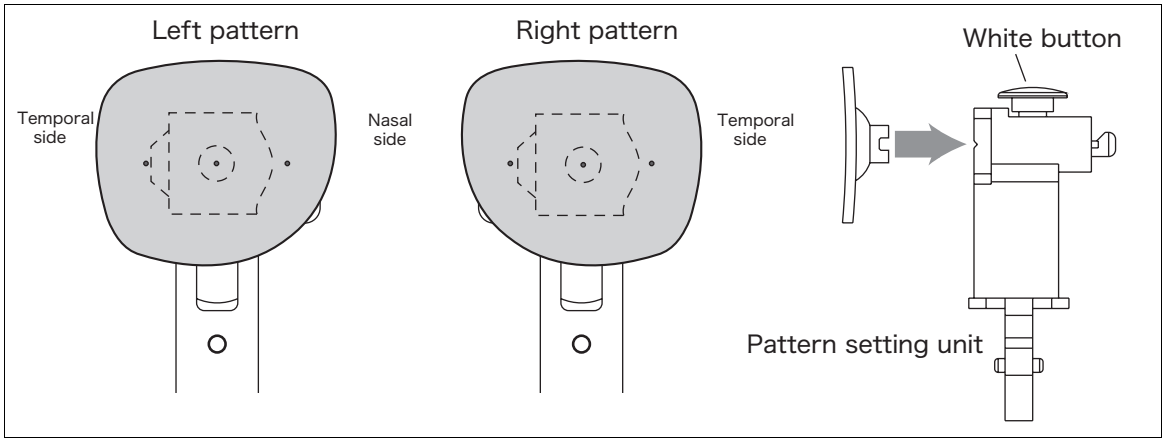
   Block the lens so that the markings on the demo lens are aligned to the groove orientation of the lens cup.

   When blocking the lens with the ICE-1000, set the lens type to Demo.



2 Fit the lens cup into the pattern setting unit.

Fit the lens cup while pressing the white button of the pattern setting unit.



3 Start tracing as same as Step 2 to Step 4 of “2.4.2 Pattern tracing” (Page 34). Press theLeft-eye tracing button Ⓛ for the right eye or the Right-eye tracing button Ⓡ for the left eye in demo lens tracing.

For tracing the right-eye lens	Press the Left-eye tracing button Ⓛ.
For tracing the left-eye lens	Press the Right-eye tracing button Ⓡ.

Note

- The FPD (Frame Pupil Distance) can not be measured in demo lens tracing.
  Enter the FPD value manually on the layout screen.

2.4.4 Stopping tracing

Follow the following procedures to stop tracing.

○ Stopping frame tracing

1 Press the Both-eye tracing button ∞.

The stylus returns to its original position and the frames are released.

○ Stopping pattern or demo lens tracing

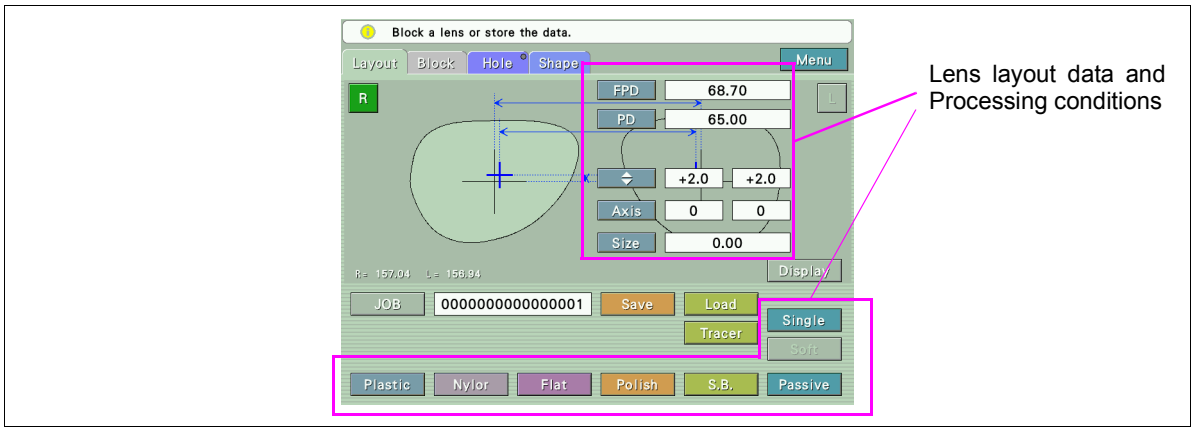
1 Press the Both-eye tracing button ∞.

2 Remove the pattern setting unit.

The pattern tracing pin is stored.

2.5 Setting Processing Conditions and Entering Layout Data

Perform tracing or import traced data before setting processing conditions and entering layout data.



2.5.1 Setting processing conditions

As processing conditions, set the lens material, lens type, frame type, whether or not to polish lenses, whether or not to safety bevel lenses, and soft processing mode.

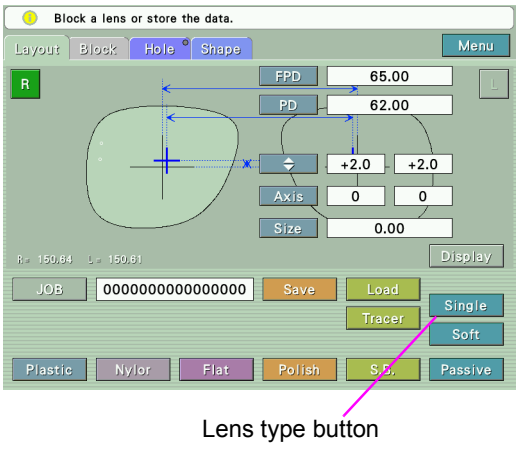
○ Lens type

Select the lens type.

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

- Single (Single vision)
- Multi (Bifocal)
- Progressive (Progressive power)
- Manual

Select Manual for the EX and prism lenses. Manually align lenses using the marking on the lenses as a guide.



Note

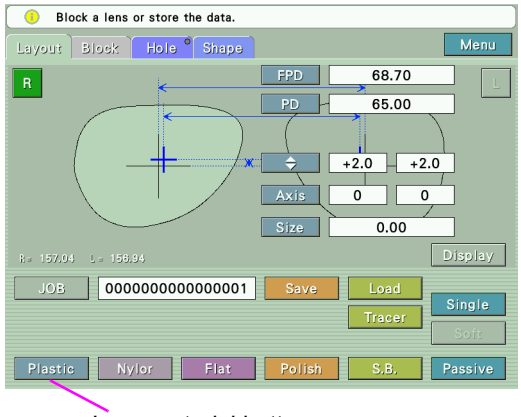
- When setting the lens type to Demo, perform setting in the Blocking screen.

○ Lens material

Select the lens material.

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

- Plastic (Generic plastic lens)
- HiIndex (Plastic lens with high refractive index)
- Polyca. (Polycarbonate lens)
- Acrylic (Acrylic lens)
- Trivex (Trivex, a plastic that tends to melt during processing)
- Glass



⚠ CAUTION • **Be sure to select the correct lens material.**
Failure to do so could shorten the useful life of the processing wheel.

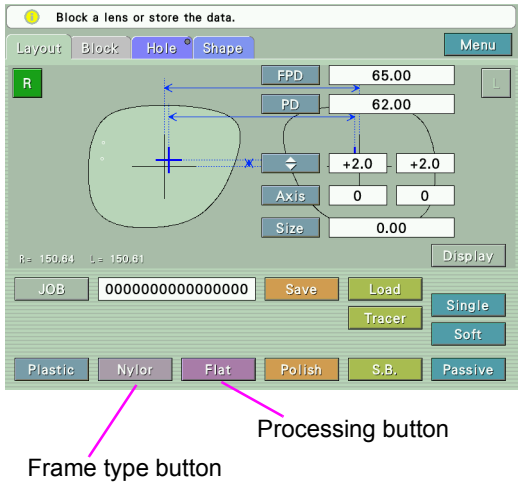
○ Frame type

Select the frame type.

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

- Metal
- Plastic (celluloid frame)
- Two-point
- Nylor

Two-point, Nylor	Flat edging
Metal, Plastic	Beveling



Specify processing

Specify processing contents for each frame type with the Processing button on the right of Frame button.

Frame type	Display of Processing button	Processing contents
Metal Plastic	Guide	Guided beveling mode is ON
	Auto	Guided beveling mode is OFF
Two-point	Hole	Drilling is ON
	Flat	Drilling is OFF

Nylor	Groove	Grooving is ON
	Flat	Grooving is OFF

Note

- Setting this mode applies guided beveling automatically during lens processing. This prevents the lens from being processed in auto mode.
- For guided beveling in the ICE-1000, the software version of the lens edger must be compatible.

○ Polishing

Select whether the lens edge is polished.
The selectable options depend on the connected lens edger.

When the Polish/S.B Setting parameter is set to LEX:

Each press of the Polish button switches polishing ON and OFF.

Polish	Polishing is ON
None	Polishing is OFF

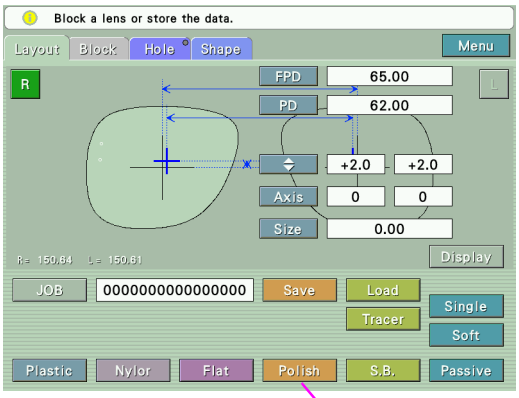
When the Polish/S.B Setting parameter is set to SE/ME:

The selectable options depend on whether safety beveling is ON or OFF.

When safety beveling is ON:

Pressing the Polish button displays the pop-up menu.
Select the button of a desired polishing type

- None (Polishing is OFF)
- Polish
- Pol (EDG)
- Pol (SB)



Polish button

Note

- Turning safety beveling OFF automatically changes the polish setting to Polish even though Pol (SB) is selected.
- Turning safety beveling ON automatically changes the polish setting to Polish even though Pol (EDG) is selected.

When safety beveling is OFF:

Each press of the Polish button switches polishing ON and OFF.

- None (Polishing is OFF)
- Polish

○ Safety beveling

Select whether the lens edge is safety-beveled.
The selectable options depend on the connected lens edger.

When the Polish/S.B Setting parameter is set to LEX:

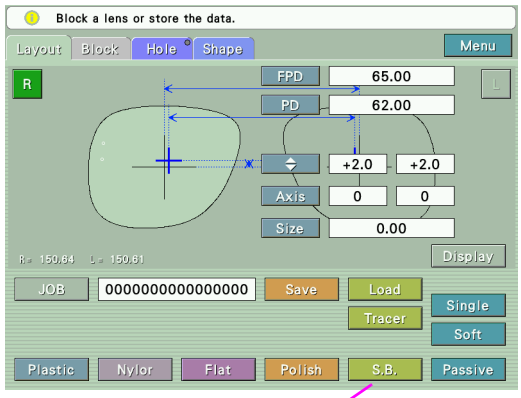
Each press of the S.F.B. button switches safety beveling ON and OFF.

S.B.	Safety beveling is ON
None	Safety beveling is OFF

When the Polish/S.B Setting parameter is se to SE/ME:

Pressing the S.B. button displays the pop-up menu. Select the button of a desired safety bevel type.

- None (Safety beveling is OFF)
- Small
- Medium
- Large
- Special



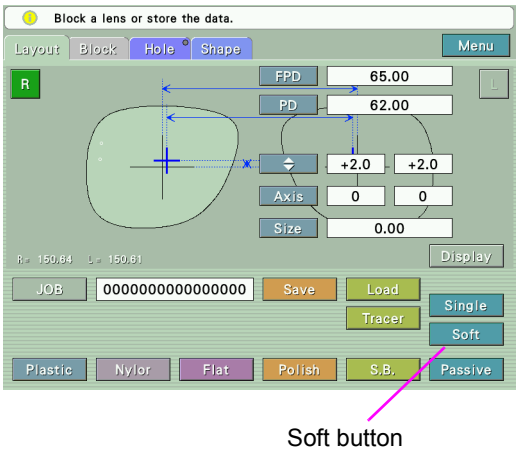
S.B. button

Note

- See “4.1 Setting Parameters” (Page 89) for the setting procedure of the Polish/S.B. Setting parameter.
- Refer to the SE-9090 or ME-1000 operator's manual for the details of the polishing and safety beveling settings when the Polish/S.B. Setting parameter is set to SE/ME.

○ Soft processing mode

The Soft button activates soft processing mode.



Each press of the Soft button switches the mode ON and OFF.

Soft button displayed in blue	Soft processing mode is ON
Soft button displayed in gray	Soft processing mode is OFF

Note

- For soft processing in the ICE-1000, the software version of the lens edger must be compatible.
- Setting this mode applies the soft processing automatically during lens processing.
  Soft processing is not available depending on the lens material. See the operator's manual of the connected lens edger for details.

2.5.2 Entering layout data for single vision lenses

According to prescription, enter lens layout data (FPD, PD, height of the optical center, and AXIS).
In addition, enter arbitrary value in the Size field if necessary.
The layout data is displayed in the numeric button next to each item button. Pressing the numeric button displays the numeric keypad.

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

See the following explanations for the details of lens layout data:

○ Items to be entered in lens layout data

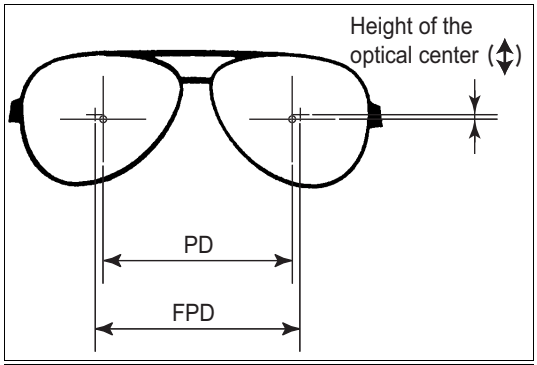
1) FPD (or DBL)

Press the FPD (or DBL) numeric button to display the numeric keypad. Enter any value and press the Ent button.

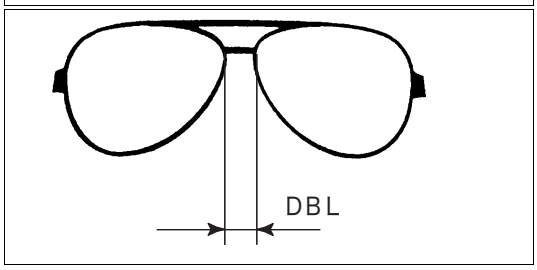
The range of the FPD value is 30.00 to 99.50 mm in increments of 0.01 mm.

Pressing the CE button clears the entered value. When no value is entered or the value is not changed, this button closes the numeric keypad.

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



The DBL (width between the nasal ends of the left and right frames) can also be entered instead of the FPD.



Pressing the FPD button displays the pup-up menu. Press the DBL button to enter the DBL value.

The range of the DBL value is 1.00 to 30.00 mm in increments of 0.01 mm.

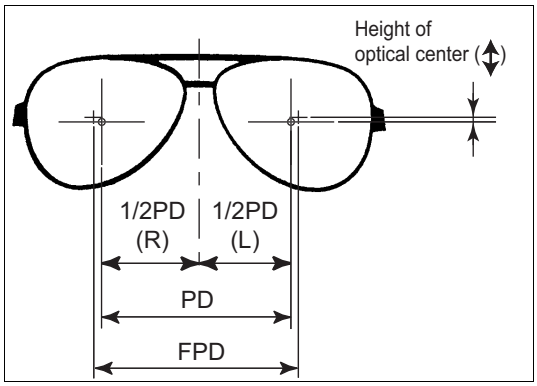
2) PD (or 1/2PD)

Press the PD (or 1/2PD) numeric button to display the numeric keypad. Enter any value and press the Ent button.

The range of the PD value is 30.00 to 99.50 mm in increments of 0.01 mm.

The monocular PD (1/2PD) can also be entered instead of the PD.

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



Pressing the PD button displays the pop-up menu. Press the 1/2PD button to enter the monocular PD value

The range of the monocular PD value is 15.00 to 49.50 mm in increments of 0.01 mm.

3) Optical center height

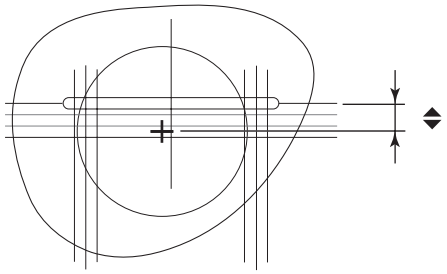
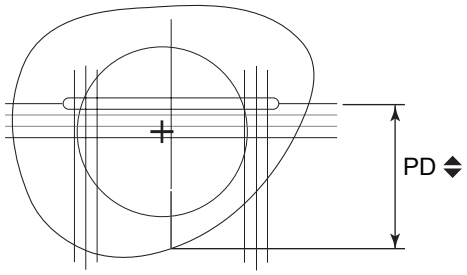
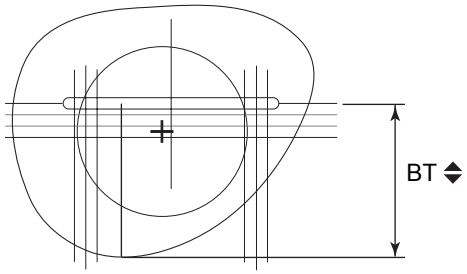
Enter the optical center height for the left- and right-eye lenses respectively.

Press the ⬍ (or PD⬍, BT⬍) numeric button to display the numeric keypad. Enter any value and press the Ent button.

The range of each height is -15.0 to +15.0 mm in increments of 0.1 mm.

It is also possible to enter the height from the lowest point of the lens shape (PD⬍ or BT⬍).

Pressing the ⬍ button displays the pop-up menu. Press the PD⬍ or BT⬍ button to change the entry method.

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

4) Size (Enlarged or reduced lateral size of a lens shape)

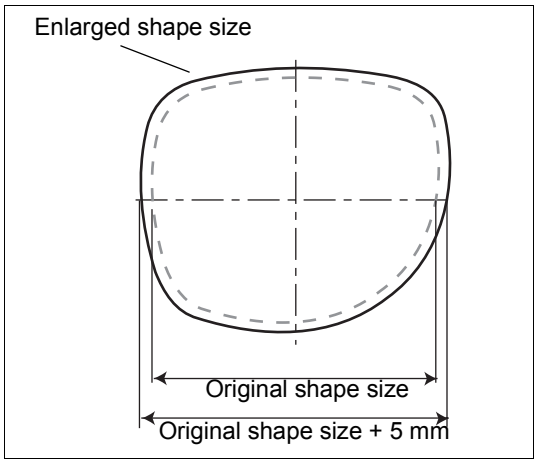
Enter arbitrary value in the Size field if necessary.

Press the Size numeric button to display the numeric keypad. Enter any value and press the Ent button.

The range of the Size value is -9.95 to +9.95 mm in increments of 0.01 mm. The minus mark indicates that the lens shape is reduced and the plus mark indicates that the lens shape is enlarged.

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

For example to the right: Size = +5 mm:



Note

- This function allows one pattern to be used for several different-sized patterns.
- Changing the shape to a different form is also possible.
  See “2.6 Shape Change Function” (Page 54) for details.
- Leave the Size value at 0.00 mm when tracing frames. The value is different from the size compensation value of the lens edger.

5) Axis (Only when blocking single vision astigmatic lenses in ALM mode)

Enter the cylinder axis angle (Axis) independently for the left- and right-eye lenses.
Press the numeric button of Axis to display the numeric keypad. Enter any value and press the Ent button.

The range of the Axis value is 0 to 180° in increment of 1°.

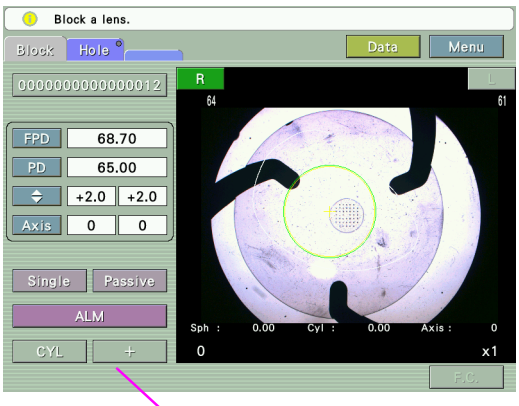
The cylinder reading polarity of the axis (mixed, +, or – reading) must match the prescription.

○ CYL reading mode

To change the setting, press the CYL mode button to display the pop-up menu and select the desired CYL mode.

When changing the CYL mode temporary during blocking, press the CYL button.

The CYL button is displayed in red to show that CYL reading mode is highlighted.



CYL mode button

6) Active/Passive (Layout mode)

Selects whether to block the lens with a lens cup at optical center or at the frame center.
Each press of Active (or Passive) button switches the layout mode between Active and Passive.

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

Note

- When the ALM (Auto Lensmeter) function does not work for dark sunglass lenses which only allow a small amount of rays of light to pass through, block the lenses with manual mode.

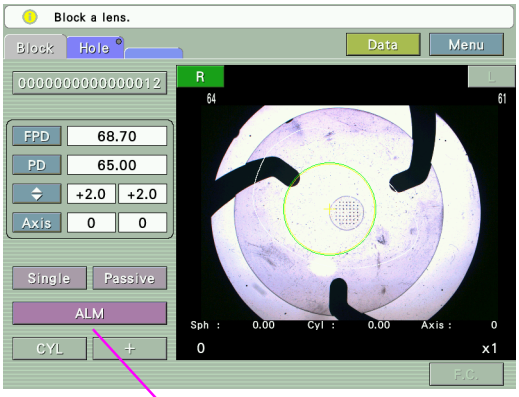
  When marking astigmatic lenses, align the cylinder axis angle to that on the prescription.
- Low-power single vision lenses may produce a dispersion in data measured by the ALM function during measurements. In this case, mark the lenses with a lensmeter and block them with mark mode.

  For the lenses whose spherical and cylindrical power is about ±1 D or less, be careful that measured data is stable.

○ Detection mode of the single lens

Sets criteria of the single vision lens detection.
The setting is performed with the single vision detection mode button.

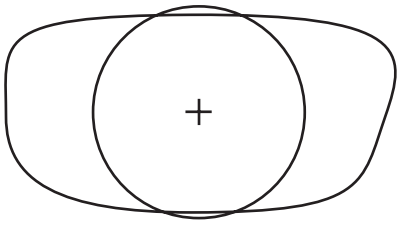
ALM	In this mode, the ICE-1000 blocks the lens by detecting the optical center and cylinder axis angle of the lens.
Mark	In this mode, the ICE-1000 blocks the lens by detecting the marking on the lens marked using the lensmeter in accordance with prescription.



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

When the lens shape contacts the circle of the cup mark, the circle changes into an oblate ellipse.

The oblate ellipse shows the minimum lens size with a lens cup for half-eye lens.



Half-eye lens whose vertical diameter is smaller than the one of the cup mark.

If the standard lens cup (hard cup) is continued to be used, the adapter or lens clamp may contacts the processing wheel because the distance between the blocking point and lens edge is short.

Note

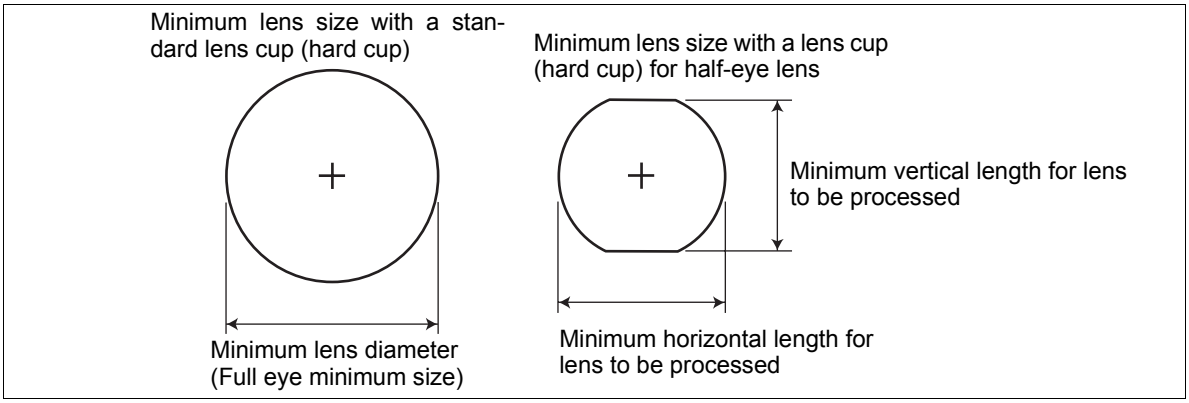
- When the Cup Mode parameter is set to Pliable, Mini, or Nano, the displayed cup mark is constant in size. In addition, the settings of the Full eye Minimum Size, Grind Minimum Size (H), and Grind Minimum Size (Y) parameters become disabled

  See “4.1 Setting Parameters” (Page 89) for the parameter setting procedure.

When the cup mark changes into the oblate ellipse, block the lens with a lens cup for half-eye lens.

Set the cup mark size with the corresponding parameter(s) depending to the lens edger.

See “4.1 Setting Parameters” (Page 89) for the setting method.



Minimum lens diameter for processing with the lens edger

Lens edger	Minimum lens diameter for the lens cup (hard cup)	Minimum horizontal length for lens to be processed	Minimum vertical length for lens to be processed
LE-9000 (Flat edging)	ø28 mm	ø21 mm	ø19 mm
LE-9000 (Beveling)	ø30 mm	ø22 mm	ø20 mm
SE-9090	ø29 mm	ø26 mm	ø23 mm

Minimum lens diameter for processing with the ME-1000

Processing type		Minimum horizontal length for lens to be processed	Minimum vertical length for lens to be processed
Circumference processing Grooving	Flat edging	ø32 mm	ø19 mm
	Beveling	ø33 mm	ø20 mm

Safety beveling	Flat edging	ø32 mm	ø25 mm
	Beveling	ø34 mm	ø26 mm

Note

- When the lenses have an excessively short vertical diameter that the processing wheels may come in contact with the lens cup, even when using a lens cup for half-eye lenses, the yellow cup mark changes to red to warn the operator of a possibility of contact.

  In such a case, change the layout mode to Passive and then block the lens. It is unnecessary to change the lens layout data.

2.5.3 Entering layout data for bifocal lenses

The ICE-1000 automatically blocks bifocal lenses by detecting the segment base point (top line center of segment).
According to prescription, enter lens layout data (FPD, near PD, and height of the optical center).
As the layout mode for the bifocal lenses, select passive (PAS) mode.

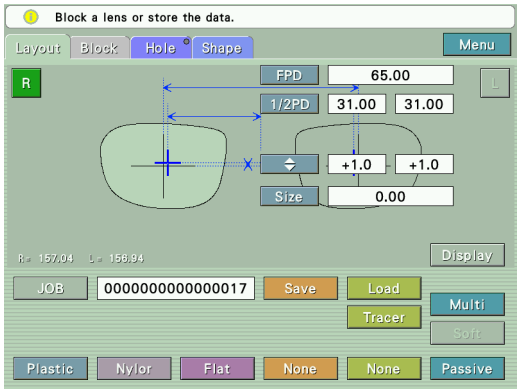
Note

- If the lenses have a specific segment in shape (e.g. circular segment), the segment position cannot be detected and the lenses cannot be blocked. Manually block such lenses (with manual mode).

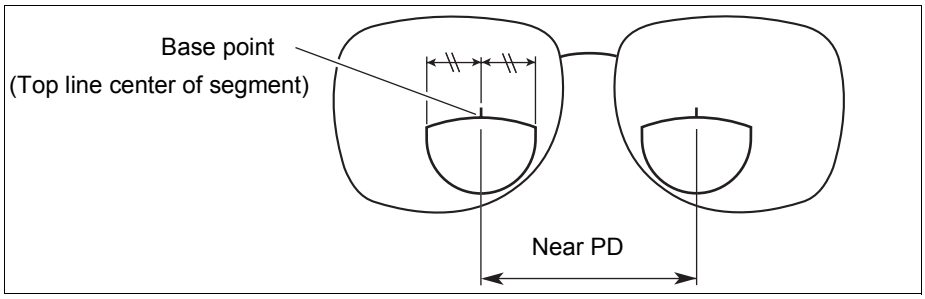
  In such cases, mark the lenses using the lensmeter, and set the lens type to Manual.

1 Set the lens type to Multi (bifocal lens).

2 Enter the FPD (or DBL).



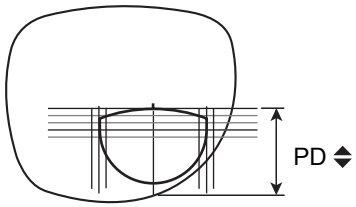
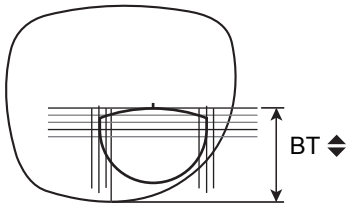
3 Enter the prescribed near PD (PD for the segment) at the PD (or 1/2 PD) field.



4 Select a method to enter the optical center height.

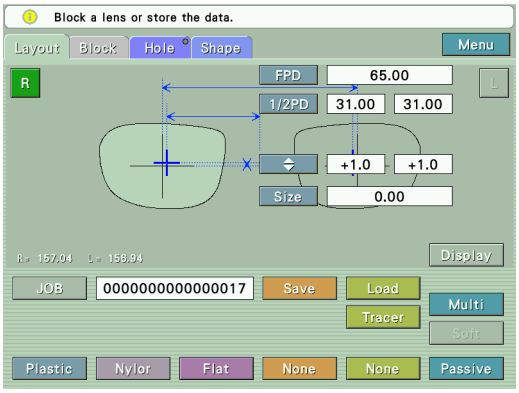
Pressing the ⬍ button displays the pop-up menu. Press the PD ⬍ or BT ⬍ button to select the entry method.

Select either of the following.

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

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

Press the PD ⬍ (or BT ⬍) numeric button to display the numeric keypad. Enter any value and press the Ent button.

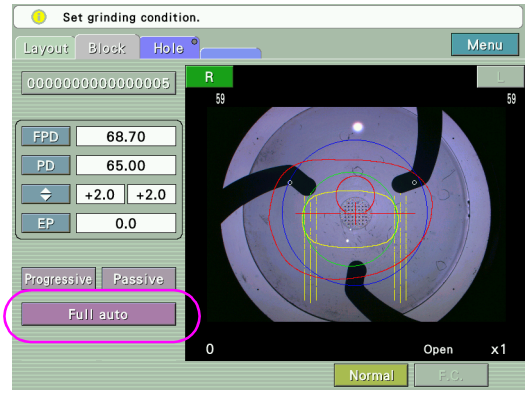


2.5.4 Entering layout data for progressive power lenses

Block the progressive power lenses aligning to the optical center (eye point for far vision).
According to prescription, enter lens layout data (FPD, PD, height of the optical center, and EP).
The layout mode for the progressive power lenses is selectable between active and passive.
For the alignment method of the eye point for far vision, select either of the following three methods.

Full auto	The ICE-1000 automatically detects the printed eye point mark for far vision and horizontal line and blocks the lens in accordance with the detected marks. Only the "+" and " ⊥ " marks can be detected automatically as the eye point mark for far vision.
Semi auto	The ICE-1000 detects the horizontal reference line of the lens and compensates for the inclination of the lens. Manually align the lens with the eye point mark for far vision and block the lens.
Mark	The ICE-1000 detects the marked laser marks of the lens and automatically blocks the lens.

The selection is performed in the Blocking screen.

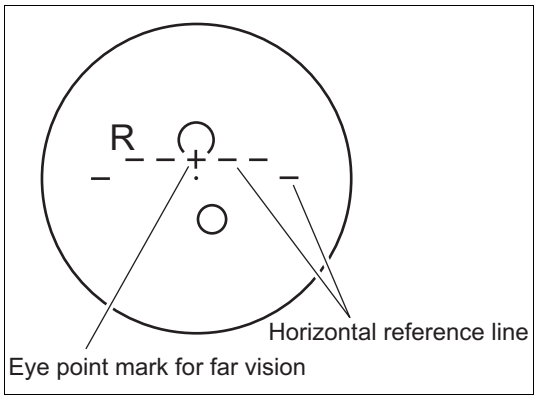


○ Full auto mode

Enter lens layout data using the printed eye point for far vision on the lens.

During blocking, the lens is blocked with the lens cup at the center of the distance part of the lenses detected from the printed eye point mark for far vision and horizontal reference lines.

Before blocking the lens, erase marks on the lens other than the printed eye point for far vision and horizontal reference lines.



○ Semi auto mode

Enter lens layout data using the printed eye point for far vision on the lens.

The inclination of the lens is automatically compensated for with respect to the horizontal reference lines. To block the lenses, manually align the lens using the eye point mark for far vision.

Before blocking the lenses, erase marks on the lens other than the printed eye point for far vision and horizontal reference lines.

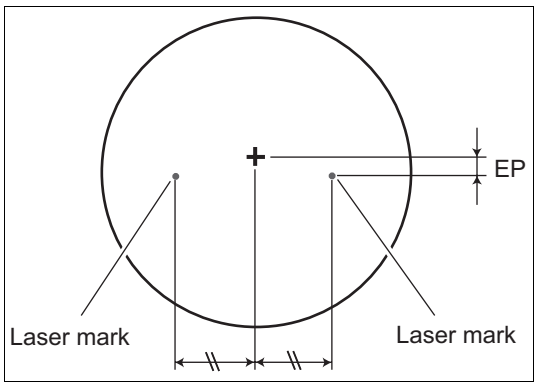
○ Mark mode

Enter lens layout data by specifying a desired eye point for far vision by the height from the laser marks (EP).

Measure the EP value in advance:

1) Mark the laser marks with a pen.
2) Determine a desired eye point for far vision, and measure the height from the laser marks (EP).

   The range of the EP value is 0.0 to + 6.0mm in increments of 0.1mm.



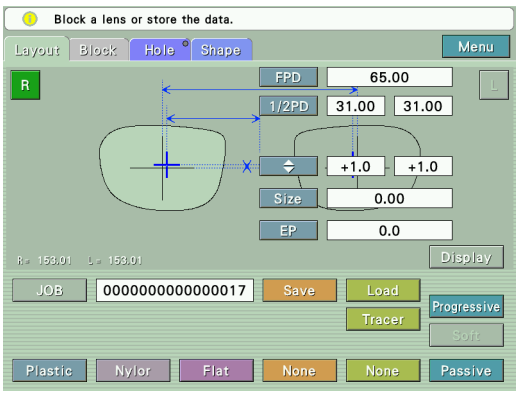
The ICE-1000 automatically detects the marked laser marks of the lens and blocks the lens.

○ Entering lens layout data

1 Set the lens type to Progressive (progressive power lens)

2 Enter the FPD (or DBL).

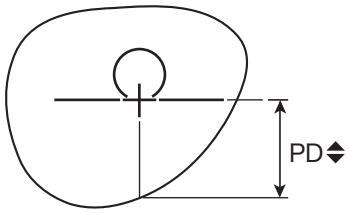
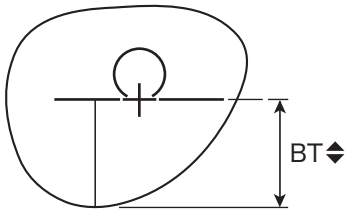
3 Enter the prescribed PD (or 1/2PD) at the PD (or 1/2PD field).



4 Select a method to enter the optical center height.

Pressing the ⬍ button displays the pop-up menu. Press the PD⬍ or BT⬍ button to change the entry method.

Select either of the following.

PD ⬍	Enter the distance between the eye point for far vision and straight down point of the lens shape.	
BT ⬍	Enter the distance between the eye point for far vision and the lowest point of the lens shape.	

5 Enter the height of the eye point.

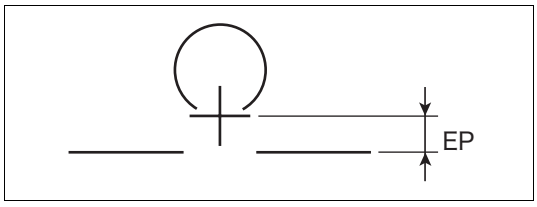
Pressing the numeric button next to the PD ⬍ or BT ⬍ button displays the numeric keypad. Enter any value and press the Ent button.

6 When blocking the lens with Mark mode, enter the EP value.

Pressing the numeric button next to the EP button displays the numeric keypad. Enter any value and press the Ent button.

The range of the EP value is 0.0 to +6.0 mm in increments of 0.1 mm.

As soon as the EP value has been entered, the eye point mark for far vision changes as shown in the figure.



Note

- The Prog. EP input parameter allows the operator to choose whether to enter EP values for each individual JOB data or to use the displayed EP value for blocking with Mark mode.

  It is strongly recommended to set the Progressive. EP input parameter to Necessary to avoid omitting a modification to EP values when it is necessary to change the EP values for each individual JOB data. See “4.1 Setting Parameters” (Page 89) for the details on the setting method.
- The EP value serves in the same manner as with Full-auto mode and with Semi-auto mode.

  It is allowed to shift the eye point mark for far vision as shown in the above figure for easy alignment. In Full-auto or Semi-auto mode, enter a desired EP value because the value has no effect on layout and blocking.

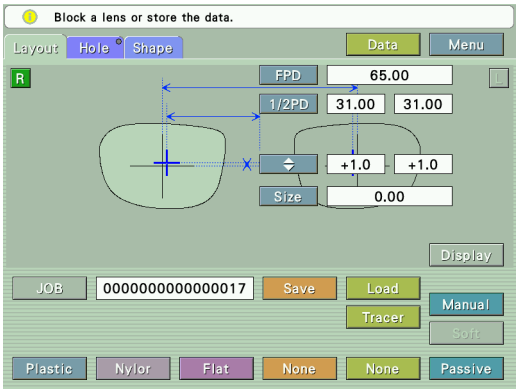
7 Select the layout mode between active (ACT) and passive (PAS).

Pressing the Passive (or Active) button changes the setting.

2.5.5 Entering layout data for Manual-type lenses

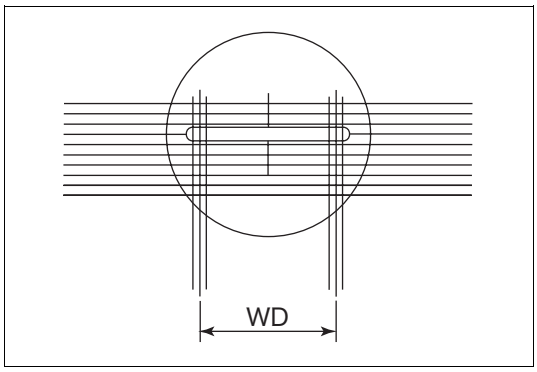
When the lens type is set to Manual (EX lenses or prism lenses etc.), mark the lens using a lensmeter in accordance with prescription. Then manually align the lens using the marking on the lens and block the lens.

The method of entering lens layout data is the same as that for the single vision lenses.
See “2.5.2 Entering layout data for single vision lenses” (Page 41).



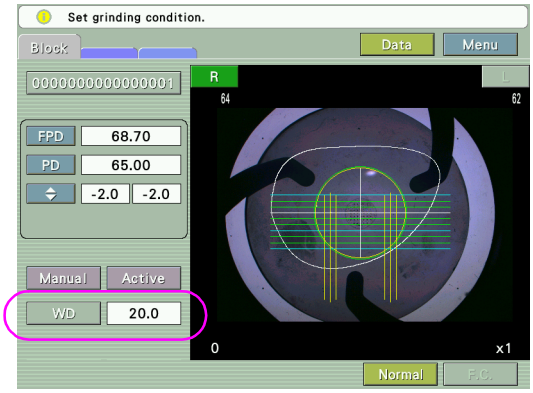
O Setting WD

The WD represents the distance between the longest vertical lines in the middle on the left and right. Set the WD value depending on the space between the markings on the lens.



It is also possible to set the WD just before placing the lens on the lens table and blocking the lens.

The WD is set on the blocking screen.

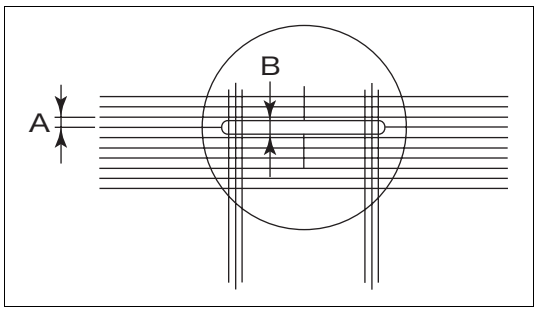


O Setting alignment scale

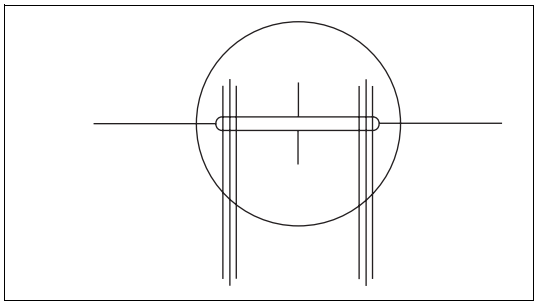
The height of the horizontally long ellipse and the spacing between the horizontal lines of the alignment scale can be changed by the corresponding parameters.

Manual Mode scale: (A in the figure)

Select the spacing between horizontal lines: 0 mm, 1.0 mm, 2.0 mm, or 3.0 mm.

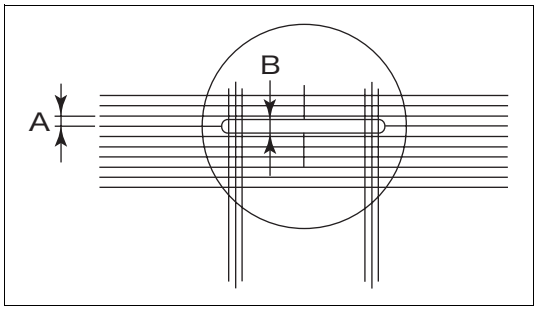


When 0 mm is selected, the horizontal lines are not displayed

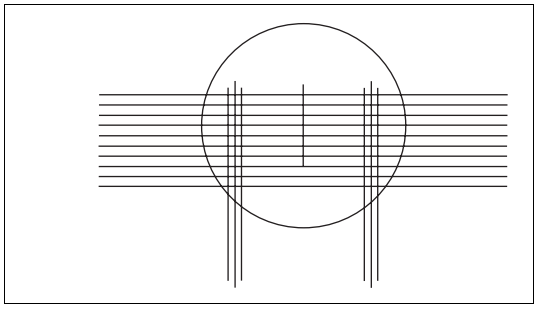


Alignment mark V size: (B in the figure)

Select the height of the alignment mark (horizontally ling ellipse): 0 mm, 1.0 mm, or 2.0 mm.



When 0 mm is selected, the horizontal long ellipse becomes a straight line.



Note

- Automatic or manual alignment is the difference between the Mark mode for Single vision lens and Manual.

  For special-purpose lenses, the blocked cup position may become shifted despite exact alignment on the screen due to the optical characteristics of these lenses. In such cases, compensate for the decentering by shifting the lens off the center using on-screen scales as guidelines and then block the lens.

2.6 Shape Change Function

This function changes the loaded lens shape data into the desired shape.
There are two entering methods for changes.

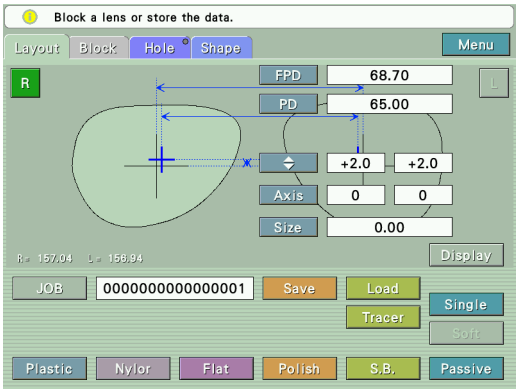
- Changes in shape by changing the horizontal and vertical numeric values.
- Changes in shape by dragging the lens shape with the touch pen.

There is also a method to determine the area that is not to be changed and other area that can be changed.

Note

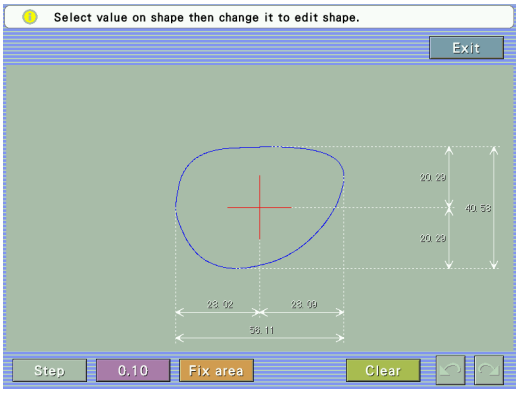
- Lens shapes are displayed in actual size.

1 Display the original shape data on the layout screen.



2 Press the Shape tab.

The Shape Editor screen is displayed.



3 Select a step to be applied when changing each length.

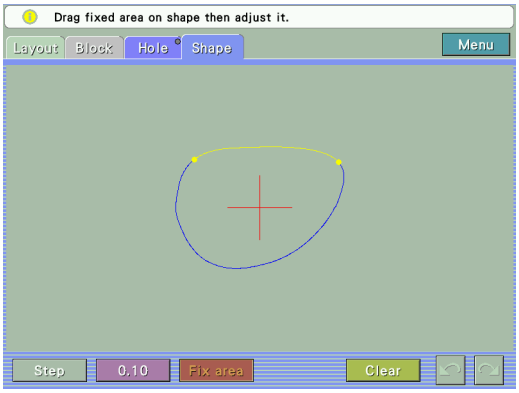
When the Step numeric button is pressed, the pop-up menu is displayed.

Select the desired step button from Tenkey, 0.10, 0.25, or 0.50.

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

1) Press the Fix area button to switch to fixed area specification mode.

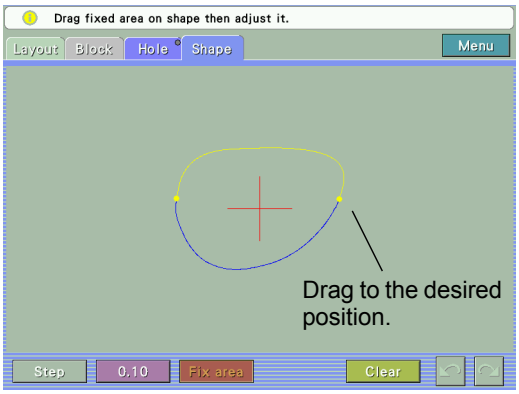
   Numeric values disappear and a section of the lens shape is displayed in yellow. At the ends of the yellow line, handles (yellow circles) are displayed.



2) Drag the handle with the touch pen to change the fixed area.

   The fixed area can be changed at both ends.

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



3) After setting, press the Fix area button to finish the fixed area entry.

   The screen returns to the numeric values condition and the set fixed area is displayed in yellow.

Note

- The numeric values for any area set not to be changed by the fixed area function are displayed in gray. Even in areas whose numeric values are not fixed, the numeric value may not be changed if the area is too small.

  The +/- buttons or numerical keypad are not displayed even if the numeric value displayed in gray is pressed.
- To cancel the fixed area, press the Clear button with the Fix area button selected.

  The area displayed in yellow is canceled, and the whole shape is displayed in blue.
- 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.

5 Change the lens shape.

The lens shape can be changed by entering numeric values or dragging.

After the shape change, the whole shape is displayed in blue and the pre-change shape is displayed in black.

Note

- When the fixed area is set, the shape can be changed only once.

  Dragging or value change can be performed only once. Repeating the changes cancels the previous change.
- Pressing the Clear button cancels the entered contents and displays the original shape data.

Shape change with numeric values

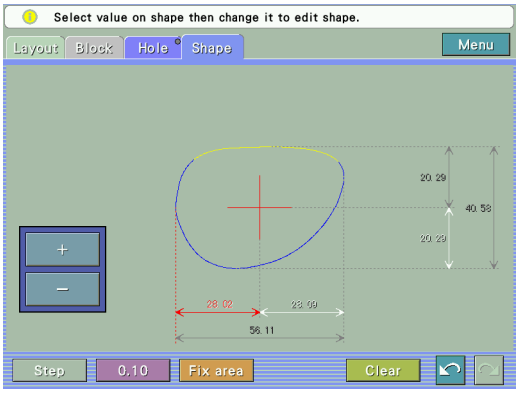
1) Select a step to be changed from the pop-up menu displayed by pressing the Step button.

   Select the desired step button from Tenkey, 0.10, 0.25, or 0.50.

2) Press a numeric value to be changed.

   The +/- buttons or tenkey are displayed.

   The numeric value that is being changed is displayed in red.



3) Enter the desired value.

+/- buttons	Pressing this button increases or decreases the numeric value in the selected step.
Numeric keypad	Enter the desired value and press the Ent button.

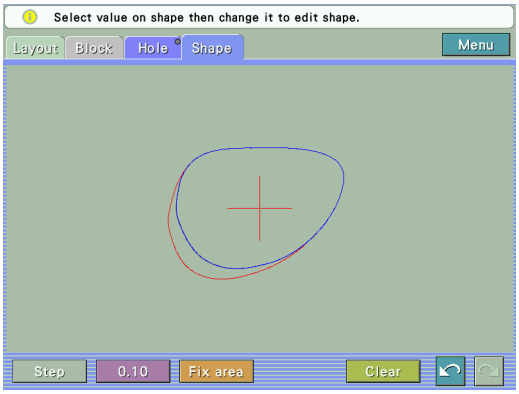
4) Check the post-change shape on the screen.

Shape change by dragging

1) Click the area to be changed with the touch pen and change it to the desired shape.

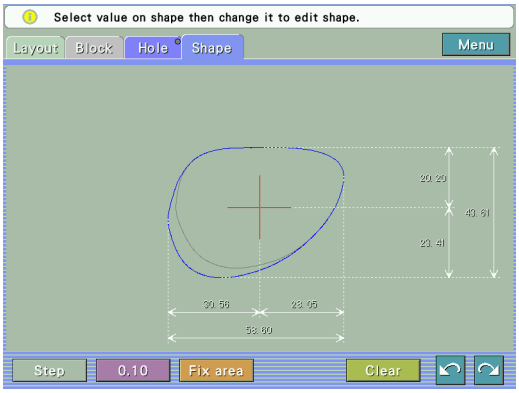
   When dragging starts, the numeric values disappear and the changed shape is displayed in red.

   Change is performed so that the other areas are connect to the maximum point dragged in a smooth curve.



During dragging

2) Lifting the touch pen from the screen after dragging confirms the shape change and displays the post-change numeric values.



3) Check the post-change shape on the screen.

Note

- The cross in solid lines represents the frame center of the original shape data. Once the shape is changed, it is updated but the frame center (cross) is not be updated.
  The frame center is updated after the changed shape data is saved.

6 After inputting is completed, press the Layout tab to return to the Layout screen.
The changed shape is not saved without pressing the Save button or blocking.

○Hole positions after shape change

When lens shapes are changed, the set hole positions are changed under the following conditions:

Horizontal direction	Calculates the pre-change H-edge hole positions and moves so that the H-edge ratios are preserved.
Vertical direction	Fixes the position to the frame center determined before the change. When the Shape Editor screen is displayed after the change, the coordinates from the center moved by the change are displayed.

○Buttons on the Shape Editor screen

Step	Increases or decreases with the +/- buttons.
Undo 	Undoes the last change (undo function). Up to three changes can be restored.
Redo 	Restores the change by undo (redo function). Undo operation can be canceled.
Clear	Cancels all changes performed in shape change mode.

Note

- Saving the shape data changed with the shape change function rewrites the original data.
  At the same time, the shape data is recalculated and the circumference displayed on the screen is rewritten.
- The layout data is not changed. However, only the FPD or DBL value is recalculated with the new shape data and rewritten.
  When the frames type is set to TwoPoint, the DBL value is fixed but the FPD one is recalculated.
  For the other types of frames, the FPD value is fixed but the DBL one is recalculated.

2.7 Grooving Settings

Grooving specifications can be set.
The grooving data is transferred to the lens edger together with the normal processing data; it is unnecessary to set the grooving specifications in the lens edger.

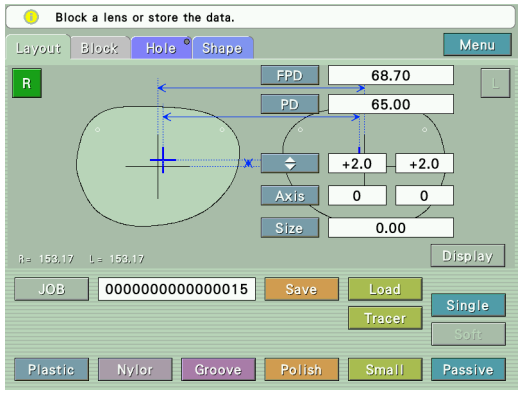
Note

- The setting is possible only when the ICE mini is connected to equipment having the grooving function in the Mini LAB system (ME-1000 or SE-9090 Express/AHM-1000 system).
  The systems other than Mini LAB and LE-9000 series are not available.

1 Display the original shape data on the layout screen.

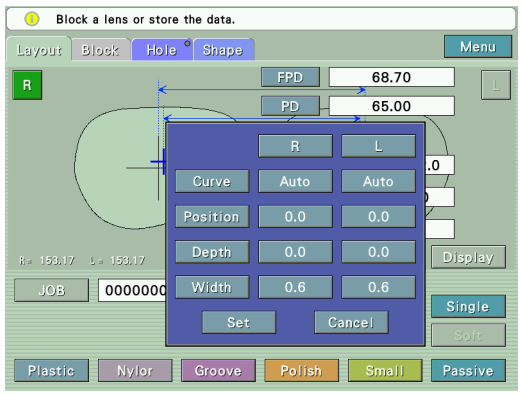
2 Select Nylor for the frame type.

Groove (or Flat) is displayed on the right of the Frame type button.



3 Press the Groove button.

The grooving setting screen is displayed on the upper part of the Groove button.



Note

- Press the Groove button again to cancel grooving. The color of the background of the Groove button is turned back to gray, indicating that grooving is not specified.

4 Enter the curve, groove position, depth, and width individually for the left- and right-eye lens on the grooving setting screen.

• Curve

1) Press the Curve button.

   The pop-up menu is displayed.

2) Select the desired curve from the menu.

Auto	Computer-calculated curve
Guide	Sets guided grooving to be automatic when processing.
Curve	Manually enter the desired curve. Pressing the numeric button displays the numeric keypad. Enter the desired value.
Front	Front base curve (curve profiling the front surface of a lens)
Rear	Rear base curve (curve profiling the rear surface of a lens)
Ratio	Select the groove position on the edge by the ratio. Pressing the numeric button displays the pop-up submenu. Select the desired ratio.

• Position

Change the position of the whole groove parallel to itself.

1) Press the Position numeric button to display the numeric keypad.
2) Enter a value of the amount by which the groove is moved forward or backward (unit: mm).

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

• Depth

1) Press the Depth numeric button to display the numeric keypad.
2) Enter the groove depth and press the Ent button (unit: mm).

   The depth value range is 0.0 to 0.8 mm.

Note

- The default displayed in the Depth numeric button can be specified by setting the Groove Depth parameter.

• Width

1) Press the Width numeric button to display the numeric keypad.
2) Enter the groove width values and press the Ent button (unit: mm).

   The width range is 0.6 to 1.2 mm.

Note

- The default displayed in the Width numeric button can be specified by setting the Groove Width parameter.

5 After specifying all the grooving conditions for the left- and right-eye lenses, press the Set button.

The grooving entry screen is closed and the specifications are saved.

Note

- When the Curve setting is other than Auto or when the groove position has been changed, ensure that desired groove specifications are displayed by checking the simulated groove section in the lens edger before processing lenses.

  In the ICE-1000, the groove specifications are set without measuring the lens curve. Therefore, the set specifications may the groove to be off the lens edge.

2.8 Drilling Settings

It is possible to enter the specifications related to the drilling from the ICE-1000. Lens outline and hole position can be read from the demo lens.
The drilling data is transferred to the lens edger together with the normal processing data; it is unnecessary to set the grooving specifications in the lens edger.

Note

- The setting is possible only when the ICE-1000 is connected to an edger (ME-1000 or SE-9090 Express/AHM-1000 system) having the grooving function in the Mini LAB system.
  The systems other than Mini LAB are not available.
- It is possible to set the drilling process in all frame types (Metal, Plastic, Two Point, and Nylor).

2.8.1 Reading from demo lens

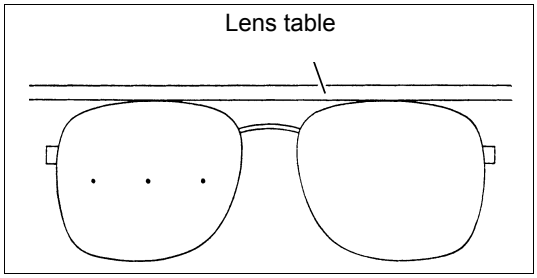
○Preparation for demo lenses

Mark a demo lens with a lensmeter to indicate its horizontal reference line.

1 Mark the demo lens horizontally.

Set the demo lenses mounted in the frames with the frames in contact with the lens table to mark the lenses.

Mark the lens so that the middle marking point is at the center of the demo lens.

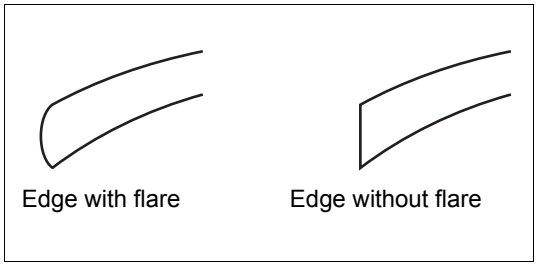


2 Trace the demo lens.

3 Remove the bridge.

4 For the demo lens without flare in edge, perform safety beveling of about 0.5 mm width to the front side.

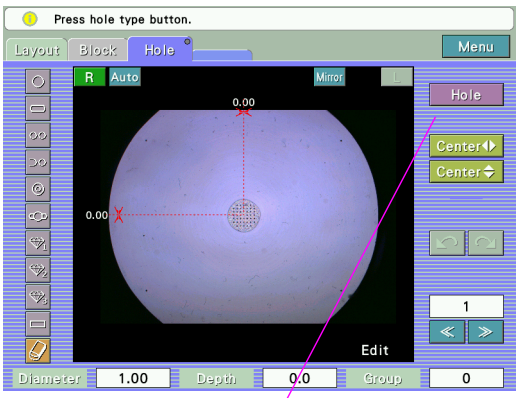
When safety beveling is not performed, the edge is not reflected clearly and the shape is not detected correctly. It may result in unevenness in the processed lens edge.



2.8.2 Measuring demo lenses

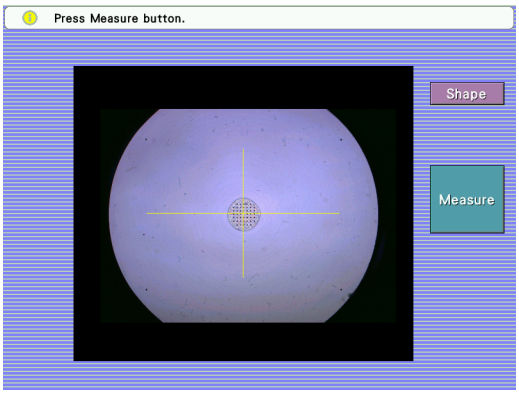
1 Press the Hole tab to display Hole Edit screen.

The Hole tab is displayed only when the mode is passive.



Hole/Shape button

2 Press the Hole /Shape button to display the Lens shape screen.



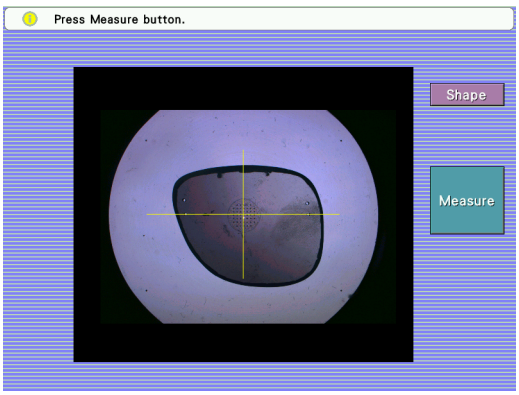
3 Clean the lens table and the demo lens edge with a blower brush.

Note

- When there is dust in the edge of the lens table and the demo lens, it may result in undetectable of the lens shape.

4 Set a demo lens on the lens table with its front surface facing up.

Place the demo lens so that the markings are parallel to the horizontal line of the cross on the screen.



5 Press the Measure button

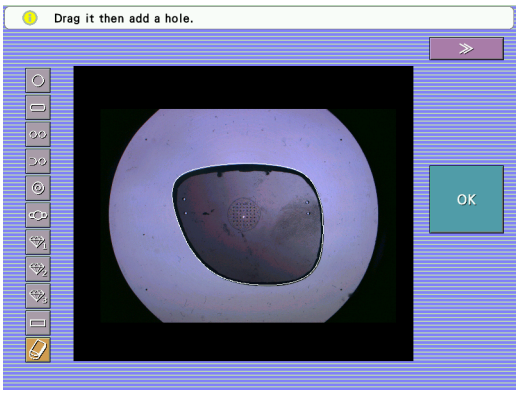
The “Please select the side to measure. R/L” message is displayed.

6 Press the R or L button to specify the left eye or right eye lens

Specifying R or L starts measurement.

It takes about 20 seconds for measurement. “Detecting...” is displayed during measurement. Wait for a while without touching the instrument.

7 When the measurement is complete, the detected outline and frame center (cross) are displayed in white on the screen.



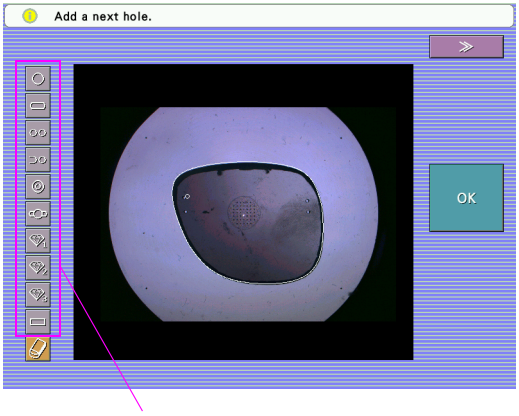
8 Select the desired hole type among the add hole buttons and specify the hole position with the touch pen.

A red circle (or symbol corresponding to the hole type) is displayed in the specified position.

Rough positioning is acceptable because it will be precisely aligned later.

For slotted and rectangular holes, specify the start point of the hole and drag to the end point.

Pressing and dragging across the screen moves the circle (or symbol).

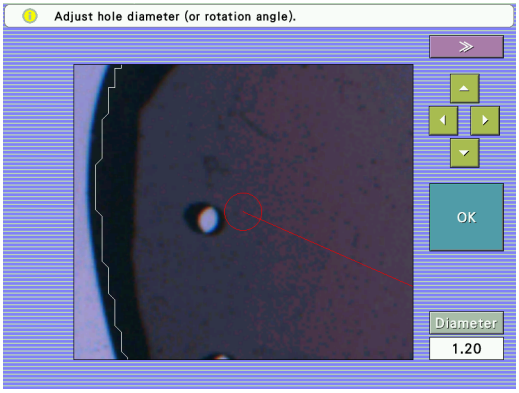


Press the Delete hole button  to delete the circle (or symbol) displayed in red.

9 After specifying the hole position, press the OK button.

The status changes from the hole position addition to the hole position precise setting.

Hole number 1 and its surroundings are enlarged.



10 Specify the precise hole position and hole diameter.

Drag the hole indication to the hole on the demo lens image. For pair or notched holes, align also the distance between the holes by dragging.

Match the hole position and diameter displayed in red with the image.

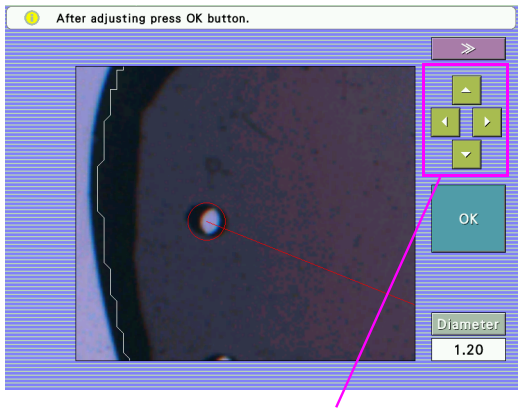
1) Drag (or click) the red circle with the touch pen to align it with the hole position of the demo lens

   The displayed image can be moved with the Move image button.

2) Adjust the hole diameter.

   Press the Diameter numeric button to display the numeric keypad. Enter any value and press the Ent button.

   For the T-screw, specify angle.



Move image buttons

Note
- A value smaller than that set by the Drill bit diameter parameter cannot be set.

3) For pair or notched holes, adjust the distance between the holes.

   Drag the pair (or notched) hole position displayed in green.

Note
- The value on the Diameter numeric button is also applied to the diameter of the paired hole or notch width.

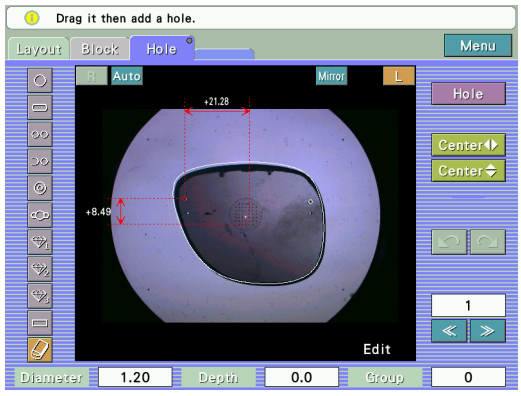
4) Specify the position, diameter, and depth of all holes in the same manner.

⚠ CAUTION • **Do not move the lens after selecting one or more hole positions.**

Note
- The hole type cannot be changed. To change the hole type, return to the Hole screen, delete the hole, and add a new hole.

11 After all holes are specified, press the OK button.

The Hole screen appears and the X and Y coordinates of hole number 1 are displayed.



12 Perform hole position and hole setting condition change with the Hole Edit screen.

○Hole type selection and position specification

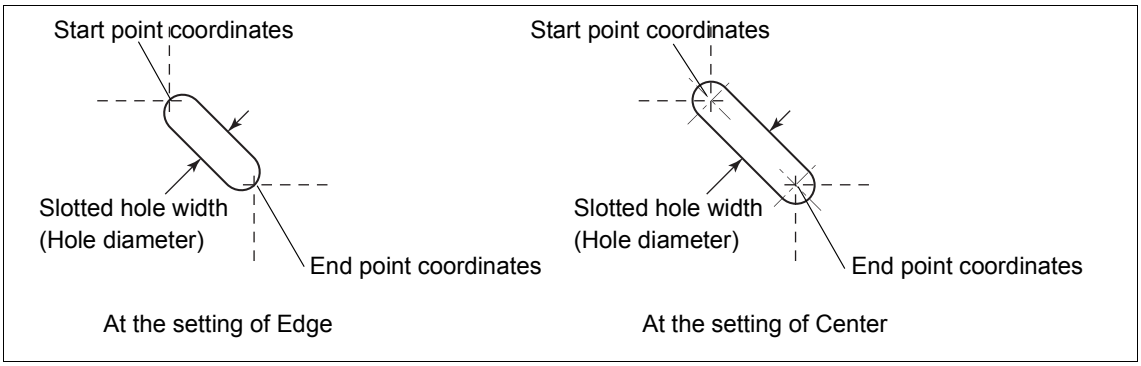
Select the hole type among the ten add hole buttons.

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
 Counterbored hole	Counterbored hole. Specify the diameter and depth separately for the hole and counterbore. Specify the hole center position.	Diameter	Diameter of the hole and counterbore
		Depth	Depth of the hole and counterbore
 T screw	Combination of a simple hole and groove (counterbore 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 Hole 1 parameter in the ME-1000 or LEX-1000. Specify the hole center position.	Diameter	—
		Depth	—
 Jewel hole 2	Hole for embedding a jewel. Set with the Jewel Hole 2 parameter in the ME-1000 or LEX-1000. Specify the hole center position.	Diameter	—
		Depth	—
 Jewel hole 3	Hole for embedding a jewel. Set with the Jewel Hole 3 parameter in the ME-1000 or LEX-1000. Specify the hole center position.	Diameter	—
		Depth	—
 Rectangular hole	Square-cornered slotted hole. Specify the start and end points of the hole.	Diameter	Rectangular hole width
		Depth	Rectangular hole depth

Note

- Each hole shape of Jewel hole 1 to Jewel hole 3 depends on the setting of the ME-1000 or LEX-1000 that drills holes.
  The version of the ME-1000 must be compatible with the jewel hole drilling function.

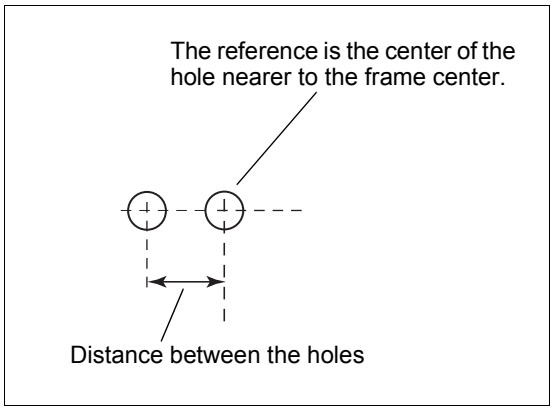
Slotted hole



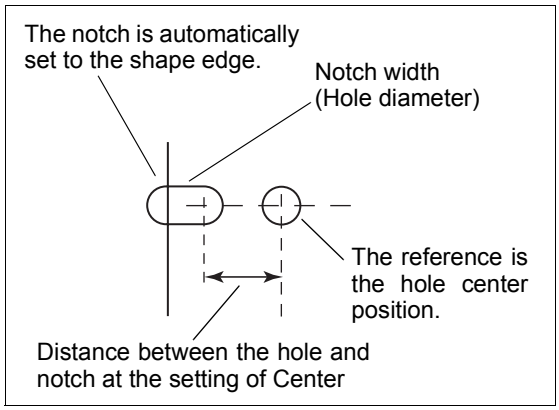
Note

- The coordinate specification method of the start and end points is selectable between Center and Edge with the Slot coordinate mode parameter.

Pair holes



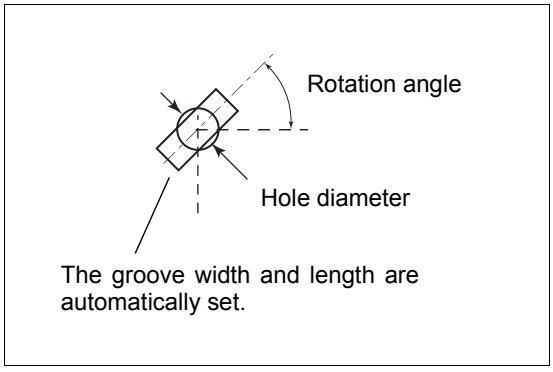
Notched holes



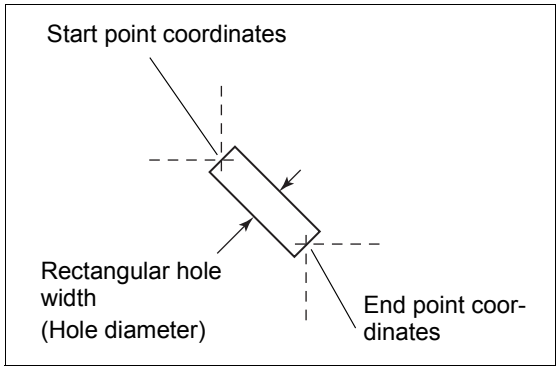
Note

- For pair or notched holes, setting the hole diameter and depth when the reference hole is selected (displayed in red) applies the settings to the paired hole (or notch).
  Change the paired hole (or notch) settings by selecting it (displayed in red) with the hole number.
- The coordinate specification method of notched holes is selectable between Center and Edge with the Slot coordinate mode parameter.

T screw



Rectangular hole



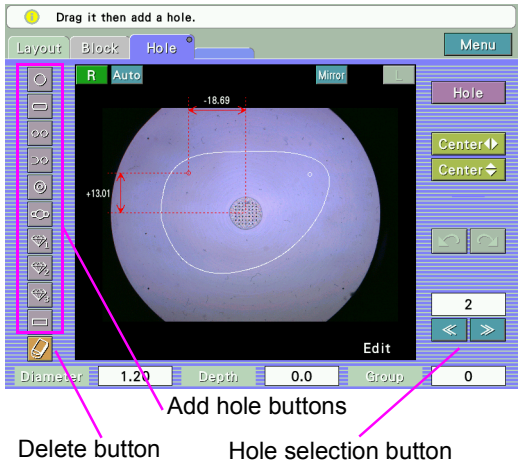
For other holes (simple hole, counterbored hole, Jewel holes 1 to 3), the hole center position is specified.

2.8.3 Setting input in the Hole Edit screen

For the added hole, various settings other than position can be added.
In the Hole Edit screen, hole addition and deletion can be performed to the displayed lens shape.

○Hole addition

After selecting the hole type with the Add hole button, press the hole position with the touch pen.



○Deleting specified holes

After selecting the hole No. with the Hole selection button, press the Delete button.

The hole displayed in red is the selected hole.

○Hole diameter, hole depth, and rotation angle

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

"Rotation angle" is displayed when T-screw.

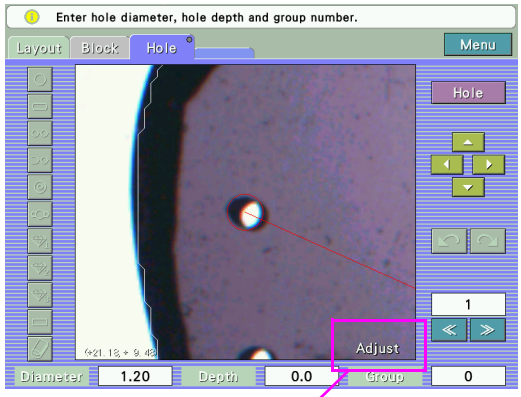
○Hole position coordinate

Change the value with the numeric keypad displayed by pressing each values.

Place the demo lens on the lens shape display and magnified display to align the hole position.

Pressing the Edit on the lower right of the image to display Adjust screen.

Pressing "Adjust" returns to the Edit screen.



○Hole angle

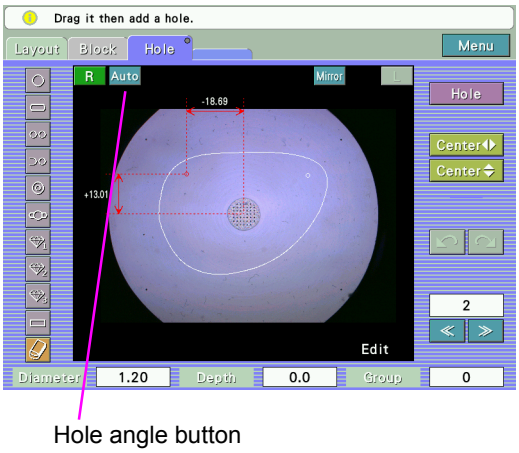
Set the angle with the hole angle button

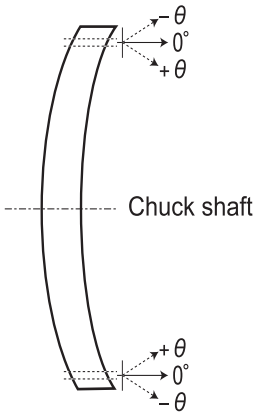
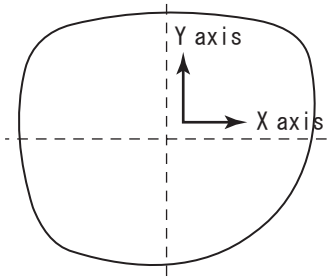
Each press of the button toggles the setting in the following order.

- Auto
- Angle
- x-y
- X Auto

Only Auto or Angle is selectable when the pair or notched holes are selected.

Press the numeric button to display the numeric keypad and enter the angle.



Auto	A hole is drilled in the lens front perpendicular to the hole position.
Angle	Enter the tilt angle. With 0°, it becomes parallel to the clamp shaft. Entering a positive value tilts in the direction of the clamp axis. 
x-y	Enter the tilt angle of the X axis (horizontal direction) and Y axis (vertical direction). In the Y axis (vertical) direction, the hole becomes parallel to the clamp axis with 0°. Entering a positive value tilts the hole upward and downward in the direction of the clamp axis. In the direction of the X axis (horizontal) direction, the hole becomes parallel to the clamp axis with 0°. Entering a positive value tilts the hole to the left and right in the direction of the clamp axis. 
X Auto	The tilt angle in the Y axis (vertical) direction is specified. In the X axis (horizontal) direction, the hole is tilted by 90° with respect to the lens front. In the Y axis (vertical) direction, the hole becomes parallel to the clamp axis with 0°. Entering a positive value tilts the hole upward and downward in the direction of the clamp shaft.

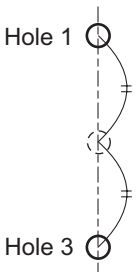
○Group

Specify the group number to drill multiple parallel holes.

Press the Group numeric button to display the numeric keypad. Enter the group No. and press the Ent button.

When the group number is entered, the holes entered with the same group number are drilled parallel.

With the hole angle button set to Auto, those holes are drilled in the lens front at right angles to the middle point of the same group of holes.



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

Note

- “0” in the Group numeric button indicates that the hole is not set by group.
- Up to two holes can be specified in the same group number.
  The pair, notched, and counterbored holes are set as the group.

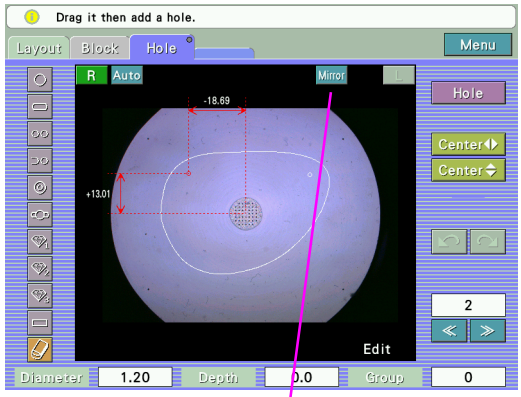
○Mirror

When drilling symmetric positions in the right and left lenses, enable the mirror function.

Pressing the mirror button turns ON or OFF the function for each hole.

When the MRR characters are displayed in light blue, holes are automatically specified in mirrored positions on the other shape.

The hole No. of the other shape is automatically set to the set hole No. + 1.



Mirror button

Note

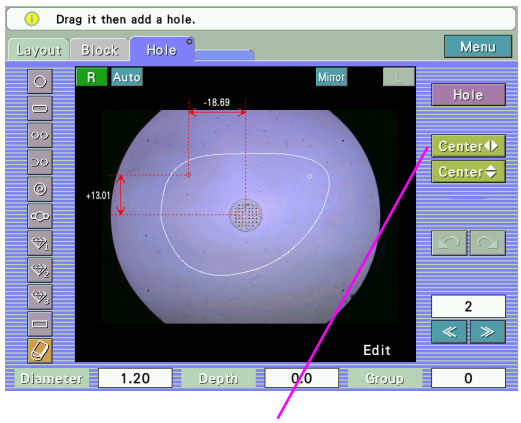
- Holes entered by the mirror function are simultaneously changed or deleted as right and left pairs.

○Display method of hole position coordinates

There are six types of coordinate displays available by selecting the horizontal and vertical reference positions.

Select the horizontal reference position from among Center ◆▶ , B-Edge ◆▶ , and H-Edge ◆▶ .

The reference position is automatically selected between the temporal side (outside) and nasal side (inside) of the shape according to the hole position when B-Edge ◆▶ or H-Edge ◆▶ is selected.

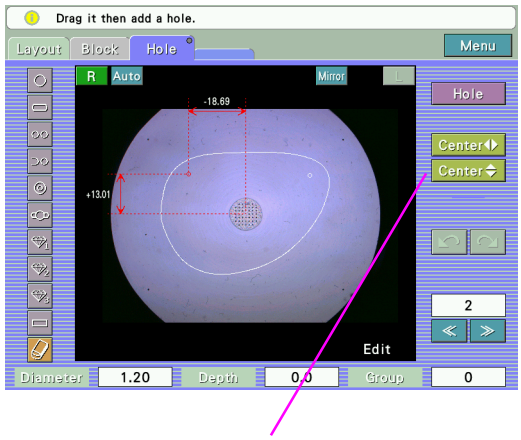


Horizontal reference position button

Horizontal reference position

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

Select the vertical reference position from among Center ◆▲ and B-Edge ◆▲ .



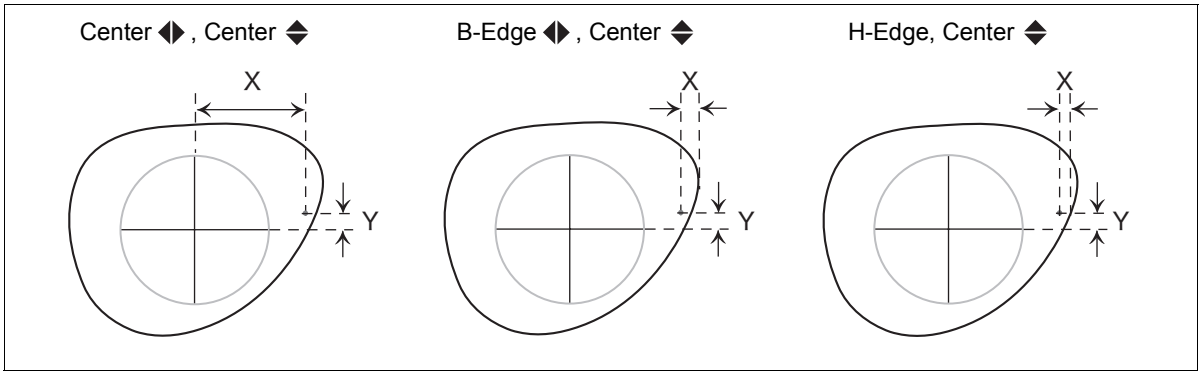
Vertical reference position button

Vertical reference position

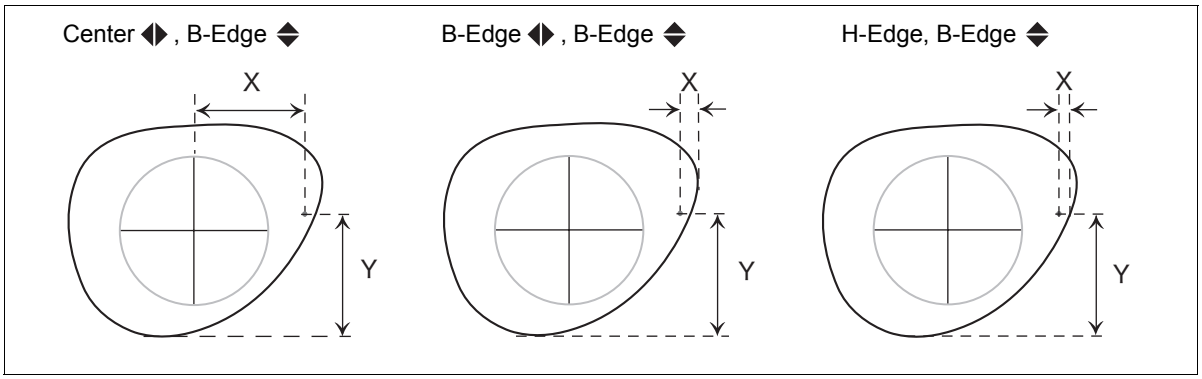
Center ◆▲	The frame center is regarded as the reference position.
B-Edge ◆▲	The lowest point of the lens shape is regarded as the reference position.

○Coordinate display methods

When the vertical reference position is set to Center ◆



When the vertical reference position is set to B-Edge ◆



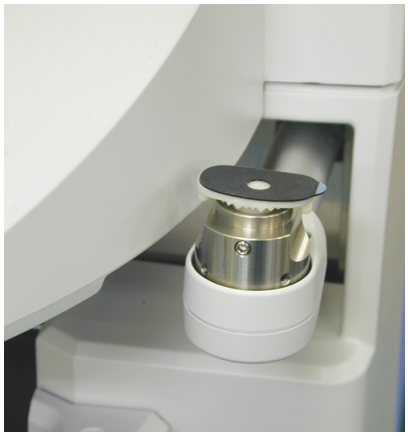
2.9 Blocking

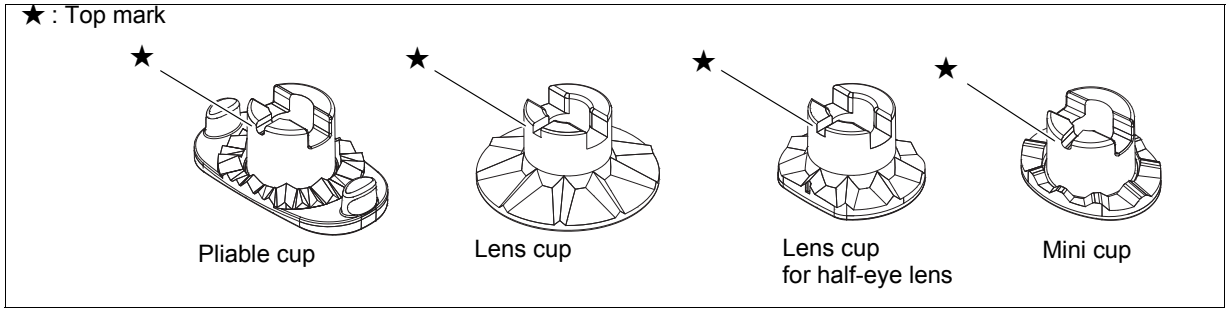
Before blocking, perform tracing or import traced data, set processing conditions and enter lens layout data.

1 Set the lens cup with the double-coated adhesive tape into the cup holder.

Insert the lens cup as far it will go orienting the top mark to the back (ICE-1000) side.

When the displayed cup mark is oblate ellipse, be sure to use the lens cup for half-eye lens.



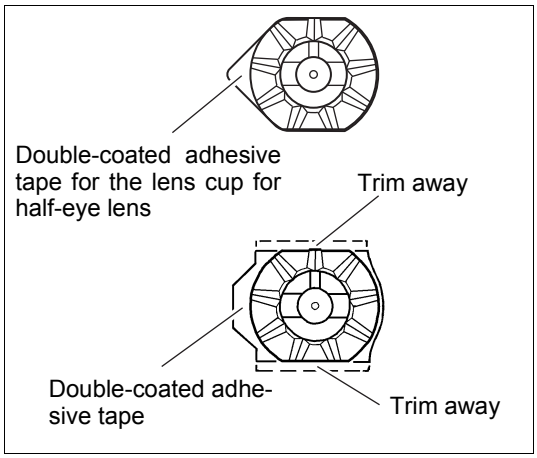


Note

- Suction cups are not available. Use only the lens cups (with adhesive tapes).

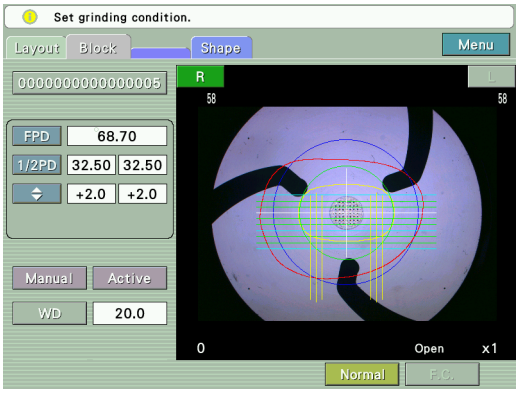
To use the lens cup for half-eye lenses, the double-coated adhesive tape for the lens cup for half-eye lens is necessary.

When using normal double-coated adhesive tape, trim away the excess part along the edge of the cup.



2 Press the screen switch button to switch to the Blocking screen.

Or press the Block tab to switch to the Blocking screen.

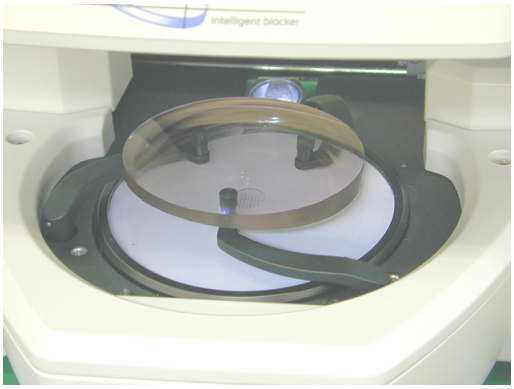


3 Place the lens on the lens table with convex side up.

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

When the optical center mark, segment mark, or eye point mark for far vision is detected, the mark changes from red blinking to solid white. (The optical center mark displays in red until it is moved inside the blocking area.)

When the mark in red is blinking, the lens can not be blocked.



For bifocal lenses, place the lens with its segment forward (toward the operator).

For progressive power lenses, place the lens so that its horizontal reference line (or markings of the laser marks) is roughly horizontal.

On the screen, the lens outline, segment shape, and printed eye point for far vision for the progressive power lenses are displayed.

Place the lens so that the cup holder mark is in the lens chuck pin area.

Note

- The operator can judge if the lens outline is sufficient for the shape on the LCD touch screen on condition that the data for the lens layout is entered.

  Unless the lens shape is displayed within the outline, replace the lens with a larger one.

  When the lens size is insufficient for processing for frame changing (if a part of the lens shape overlaps lens outline), change the lens layout data so that the shape is moved inside the outline. This operation, however, does not follow the prescription.

- When the SPH and/or CYL values on the layout screen in Single: ALM mode become red, it indicates that the optical center and cylinder axis values may be unstable because the lens power is low.

  For a lens whose SPH and/or CYL values are displayed in red, it is recommended to block the lens after marking it with a lensmeter.

- Place bifocal lenses on the lens table with its segment forward (toward the operator), keeping the angle of decentering within ±5°.

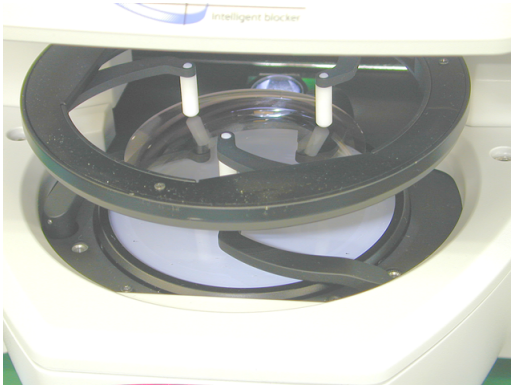
  If the angle of decentering exceeds ±5°, the segment mark changes to red and blocking becomes prohibited.

Note

- Place the progressive power lenses on the lens table, keeping the amount of tilting of the horizontal reference line (or markings on the laser marks) within ±10°.

  If the amount of tilting exceeds ±10°, the eye point mark for far vision changes to red and blocking becomes prohibited.

4 Press the lens clamp button to temporary clamp the lens.



5 Align the lens.

Align the single vision lens so that the square frame indicating the blocking area changes from red to green. When the mark is red and blinking, the lens can not be blocked.

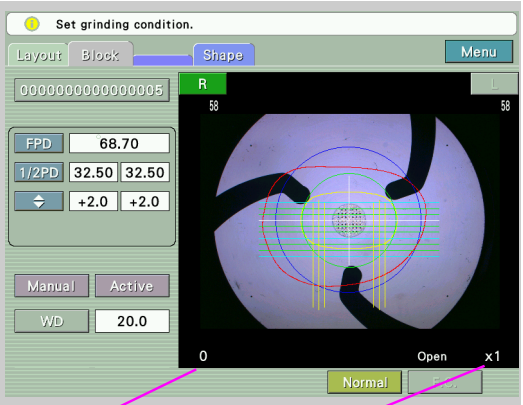
For dual-tone colored lenses, be sure the correct side is facing up before blocking. Place the lens so that the colored lines are horizontal.

Note

- Pressing the magnification display double displays the screen.

  The larger view simplifies the alignment process.

  Blocking is possible with the magnified display.
- Pressing the brightness display changes the camera image brightness.

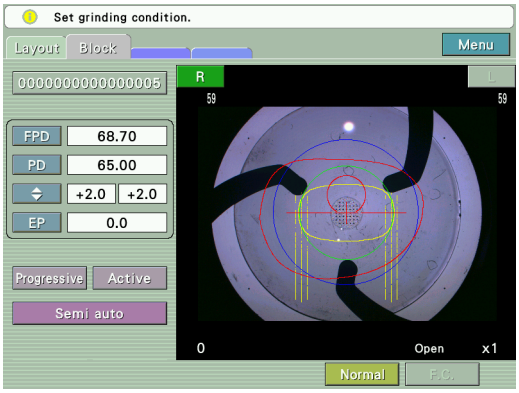


When the lens type is one of the following, manual and exact alignment of the lens is needed.

- Progressive power lens (Progressive) with Semi auto mode

Align the projected, printed eye point for far vision of the lens with the eye point mark for far vision.

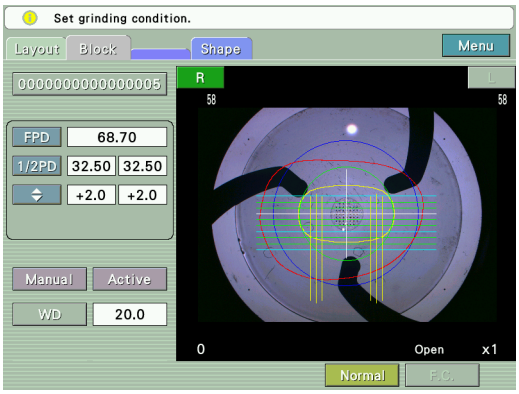
Confirm that the amount of tilting of the horizontal reference line is within ±10° during the alignment.



• Manual

Align the middle marking with the center of the alignment scale.

Ensure that the markings are level.



Note

• Prism prescription lenses cannot be blocked as the Single lens type. After marking the lens using a lensmeter, set the lens type to Manual and block it.

6 Press the lens clamp button to fully tighten the lens.

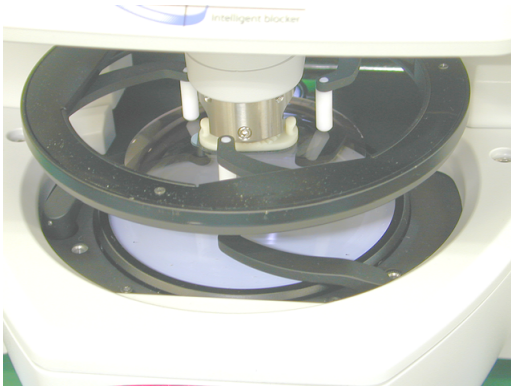
7 Block the lens.

1) Press the Block button .

Before pressing the button, confirm that the lens cup is set in the cup holder.

2) The blocking arm moves to the front and center, then downward to block the lens.

Keep your fingers away from the area between the cup holder and lens.



Note

• It is possible to set the time that the blocking arm descends with the Lens Holding Time parameter.

3) The blocking arm returns to the original position.

Note

- For the JOB data containing both-eye data, the shape data is automatically switched to the one for the remaining eye as soon as one lens has been blocked.

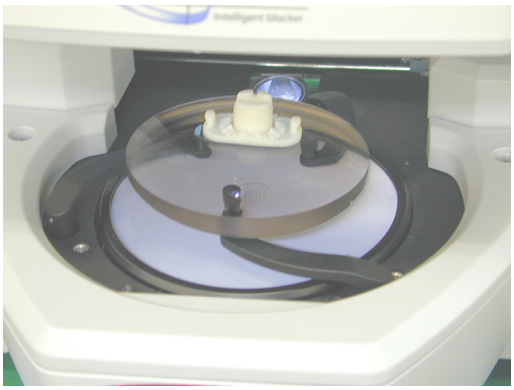
The following will be performed simultaneously with blocking:

•The processing conditions and the lens layout data that were entered will be saved with the shape data.

8 Take the lens OFF the lens table

1) “Please remove the lens” message is displayed in the screen.
2) Remove the lens.
3) Press the Blocking button or press the OK button in the message.

The message closes and the lens detection criteria is measured.



Note

- Be sure to close the message after removing the lens as the lens detection criteria when message is closing influences the blocking accuracy.

9 Store the blocked lens in a tray etc. with the JOB# on it.

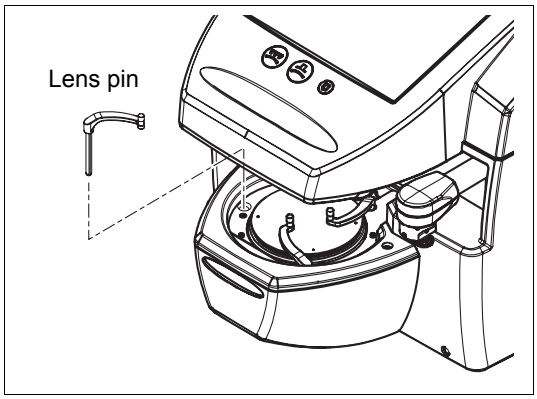
Clearly mark the left- or right-eye lens on the tray etc. when storing the lens.

10 To block the other lenses subsequently, change the JOB# before tracing them.

2.9.1 Blocking with frame change holder

Use the provided holder when the lens can not be held with the three pins on the lens table because the lens diameter is small as for when lenses are being reused in different frames.

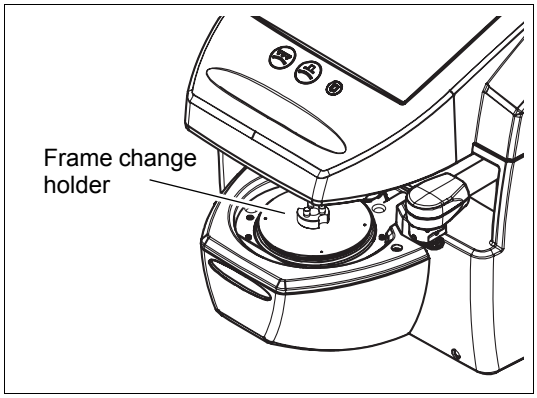
1) Press the F.C. button in the blocking screen.
2) Pullout the lens pin on the lens table with hands.



3) Place the frame change holder on the center of the lens table.

   The orientation of the frame change holder is as shown to the right.
4) Place the lens on the frame change holder and block it.

   Block the lens while holding it by hand without the lens clamp.



⚠ **CAUTION**

- **When blocking, be sure not to touch blocking arm and lens cup to hold lens.**
- **When attaching the lens pin to the lens table, align the pin direction to insert.**
  When the direction is different, it is not possible to insert.

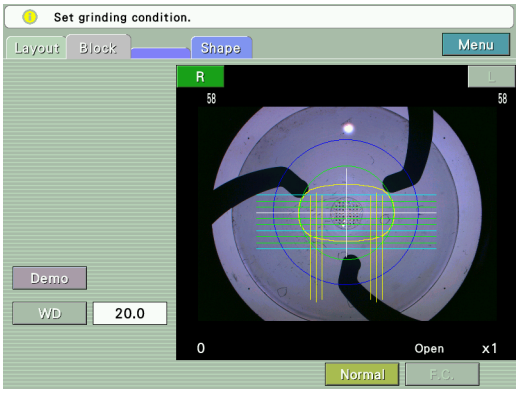
2.9.2 Blocking demo lenses

When blocking demo lenses to trace them, mark the lenses with a lensmeter in advance.

See “2.4.3 Demo lens tracing” (Page 35) for details.

When blocking demo lenses, it is unnecessary to call up lens shapes, enter processing conditions and lens layout data.

1 Set the lens type to Demo.



2 Set the lens cup with the double-coated adhesive tape into the cup holder.

See Step 1 of “2.9 Blocking” (Page 72).

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

4 Align the lens.

Align the middle marking with the center of the alignment scale.

Ensure that the markings are level.

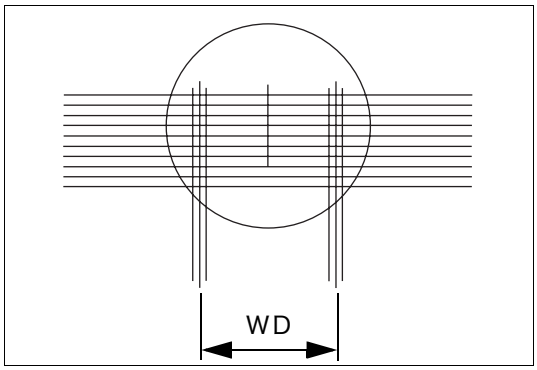
5 Block the lens.

The subsequent steps are the same as those in “2.9 Blocking” (Page 72).

- Setting WD

The WD represents the distance between the longest vertical lines in the middle on the left and right. Set the WD value depending on the space between the markings on the lens.

It is also possible to set the WD just before placing the lens on the lens table and blocking the lens.



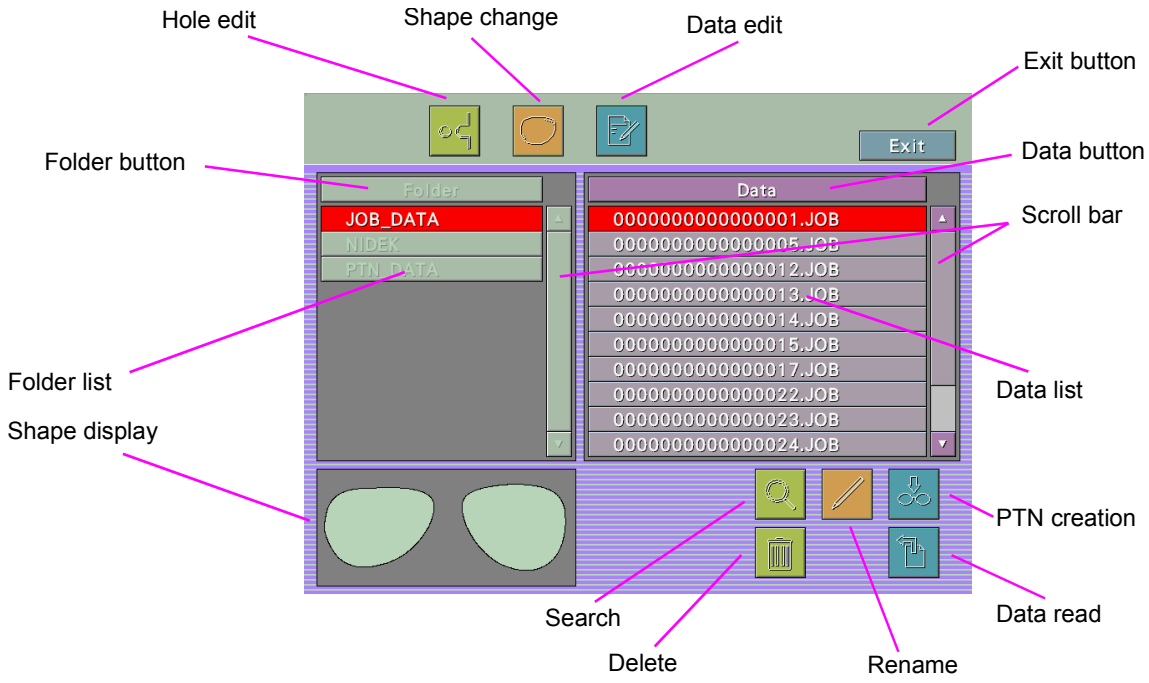
○ Error messages when of the blocking error

The cause of the blocking error is displayed with the error message.

Error message	Action
Blocking position is out of range.	The blocking position is out of the blockable range. In the modes other than Manual, move the lens position or switch the layout mode between active and passive. In Manual mode, switch the layout mode between active and passive.
Optical center is out of range.	The optical center detected in Single: Optical center mode is out of the blockable range. Move the lens so that it is within the blockable range.
There is undetermined layout data.	Determine the layout data.
Blocking protection is ON.	The lens of either eye side is going to be blocked with the same (already-used) traced data. To block the lens, press the LEFT or RIGHT button for two seconds or more. The blocking protection is released.
Detection Error	The lens is not detected or the measurement is unstable. Check the following: • The lens is placed on the lens table. • The lens and lens table are clean. • No interference lights
Axis Error (5 degrees)	The segment axis of the bifocal lens exceeds 5°. Rotate the lens so that the segment axis is within 5°.
Please clamp a lens.	The lens is not fully tightened with the lens clamp. Press the Lens clamp button to tighten the lens.

2.10 Data control

The data saved in the USB flash drive is deleted and changed the file name in the Data screen.
The Data screen is displayed by pressing the Data button in the Layout screen.



Exit button	Returns to the Layout screen.
Folder button	Pressing the button sorts the folders in ascending order or descending order.
Data button	Pressing the button sorts the data in ascending order or descending order.
Scroll bar	Pressing the ▲ (or ▼) button moves the list up or down one. Pressing the margin of the up/down scroll bar moves the screen list up or down by one page.
Hole edit	Displays the Hole edit screen.
Shape change	Displays the Shape Editor screen.
Data edit	Displays the Data edit screen.
Search	Searches data (or folders). The keyboard (or numeric keypad) is displayed. Enter a data (or folder) name and press the [Ent] button to select the specified data (or folder) (displayed in red). If the applicable data (or folder) does not exist, a beep sounds.
Rename	Changes data (or folder) names. The keyboard (or numeric keypad) is displayed. Enter a new data (or folder) name and press the [Ent] button.
PTN creation	Create the new PTN data. After tracing, Pressing the PTN creation button displays the keyboard (or numeric keypad) and enter PTN#. When PTN# is entered, the data is saved.
Delete	Deletes the selected data (or folders). Note that deleted folders cannot be recovered.

Data read 	Displays the layout screen. When copying the JOB data, display Layout screen and after changing JOB#, save the data.

○ Cautions in changing a folder name and data name

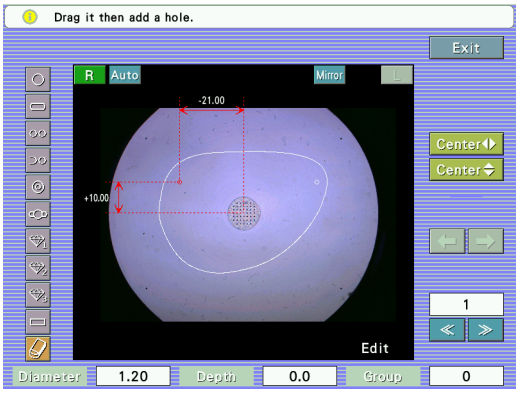
When a folder name is changed, the manufacturer name is also changed.
When changing the data name, if "Maker name" is changed, “Folder name is different. Copy/Move/Cancel“ message is displayed and data movement, copy, or operation cancel can be selected.

When there is no folder of entered maker name, move the data creating new folder.

Hole Edit screen

The displayed button function is same as the screen displayed in the Hole tab.

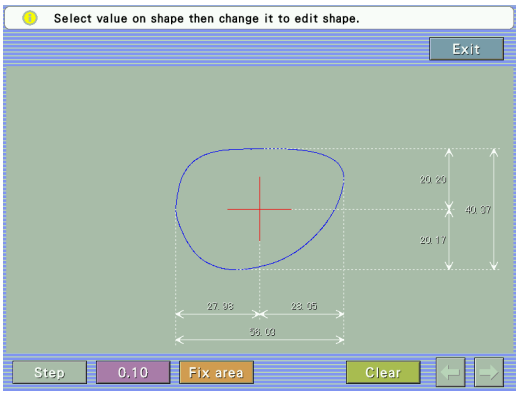
Pressing the Exit button displays the message “Do you save the data? Yes/No” and pressing Yes (or No) button returns to the Data screen.



Shape Editor screen

The displayed button function is same as the screen displayed in the Shape tab.

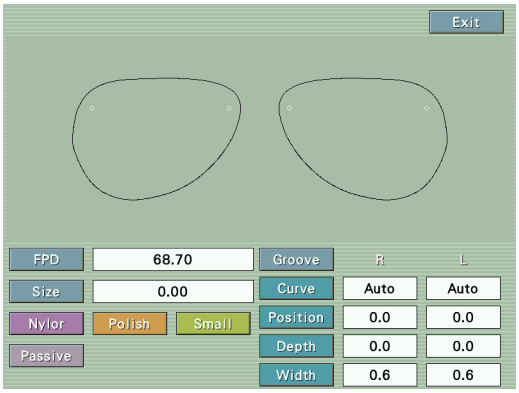
Pressing the Exit button displays the message “Do you save the data? Yes/No” and pressing Yes (or No) button returns to the data screen.



Data Edit screen

The displayed button function us same as the screen displayed with the Layout tab.

Pressing the Exit button displays “Do you save the data? Yes/No” and pressing Yes (or No) button returns to the Data screen.



Note

- The JOB number (or PTN number) is specified with “(Manufacturer) - (File number)”.Up to 16 digits are specified including hyphens (-).
- JOB_DATA and PTN_DATA folder is automatically creating folder when JOB or PTN is saved and the data without maker name is saved.
- At least one alphabet letter needs to be entered in “Manufacturer”.
- The name of the “Manufacturer” folder can be up to a maximum of 12 characters.

2.11 Check After Use

Check the following before and after every use each day.
It is recommended that a checklist is prepared and the check results are recorded.

O Check before use

1) Are there any apparent deformations or dirt which might interfere with proper operation? Especially confirm that there are no foreign substances and dirt on the lens table.
2) Does the layout screen appear when the instrument is started?
3) Does values reads “0.0”, and are they stable (when the layout display is set to “Single: ALM mode”)?
4) Does the blocking arm move properly when the Block button ⏏ is pressed?
5) It is recommended to calibrate the tracing unit.

   See “1.6.1 Tracing unit calibration” (Page 23) for the calibration procedure.

O Check after use

1) Is the power turned OFF?
2) Is the cover of the tracing unit closed?
3) Is the ICE-1000 dirty or damaged?
4) Are all the accessories accounted for and free from damege?

   Accessories; Pattern setting unit, Standard frame, Standard pattern

2.12 Initial Layout Screen Save Function

This function sets the items on the layout screen displayed when the power is turned on.
When the factory settings on the layout display differ from those ordinally used, it is possible to change and save the items to be displayed on the initial layout screen upon system activation.

<Items to be saved>

All items except for numerics displayed on the screen can be saved.

- Right, Left
- FPD, DBL
- PD, 1/2PD
- Height of the optical center (⬍ , BT ⬍ , PD ⬍)
- Layout mode (Active, Passive)
- Lens material (Plastic, HiIndex, Polyca, Acrylic, Glass, Trivex)
- Lens type (Single, Multi, Progressive, Manual)
- Frame type (Metal, Plastic, Two Point, Nylor)
- Polishing mode
- Safety beveling mode
- Soft processing mode (ON, OFF)

In addition, as exceptions, the EP value on the layout display for progressive power lenses (Progressive) and WD value on the layout display for Manual-type lenses can also be saved as default settings.

Note

- The setting between Right and Left selects the lens eye side that is initially displayed when traced data for both-eye lenses is imported.
- The Layout preset parameter allows the default of the height of the optical center to be set.

See “4.1 Setting Parameters” (Page 89) for the setting procedure.

<Procedures>

1 Change the settings.

Enter the desired value in each item on the layout screen.

Note

- The processing conditions and lens layout items set here take effect throughout all the layout screens. It is impossible to set them individually for each layout screen.

2 Save the settings.

1) Press the Menu button shortly.

   A pop-up menu is displayed.

2) Press the Mem. Screen button.

   The “Do you want to save the initial screen?” message, which ask the operator whether or not to save the settings on the screen as default, appears.

3) Press the Yes button to save the settings.

3. MAINTENANCE

3.1 Troubleshooting

In the event that the ICE-1000 does not work correctly, then troubleshoot with the following table before contacting NIDEK or your authorized distributor.

Symptom	Action
The ICE-1000 does not work at all.	• Confirm that the power cord is properly connected. • Confirm that the voltage applied to the outlet is within the range specified. • Check the fuses. If the fuses are blown, replace them with new ones. See ““3.2 Replacing Fuses” (Page 86)” for fuse replacement.
The measured data of the lens is unstable.	• Wipe dirt off on the lens table (grid plate). • Keep the instrument away from direct illumination.
The following error message is displayed during startup of the blocker. • Optical Initialization Error	• A grid detection error occurred during power-up. • Remove foreign substances and soiling from the lens table and turn the blocker on again. • Detach the lens table and turn the blocker on again. When the blocker is restarted successfully, attach the lens table.
One of the following message is displayed: • X Movement Error • Y Movement Error • R Movement Error • Reverse Movement Error • Block Movement Error • Clamp Error • Upper Pin Operation Error • Lower Pin Operation Error	• The blocking mechanism is abnormal. After checking the error message, shut down the ICE-1000 and contact NIDEK or your authorized distributor.

If the symptom cannot be corrected with the above actions, contact NIDEK or your authorized distributor.

3.2 Replacing Fuses

If the ICE-1000 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 the power off and disconnect the power cord from the outlet before replacing the fuses.**
  Electric shock may occur.
- **Only the specified fuses (T 1.6 A 250 V) must be used.**
  Any fuses other than the specified ones may cause fire.

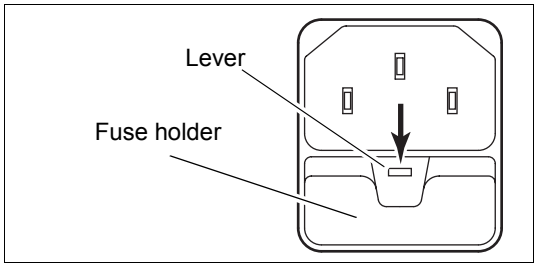
1 Turn off (○) the power switch.

2 Disconnect the power cord from the outlet.

3 Unplug the power cord from the inlet.

4 Pull out the fuse holder under the inlet.

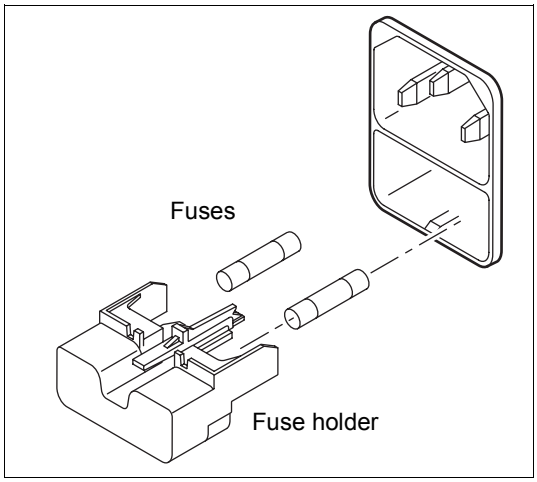
Pull out the fuse holder while pushing the lever in the arrow direction.



5 Take out the fuses and put in new ones.

Fuse rating: T 1.6 A 250 V

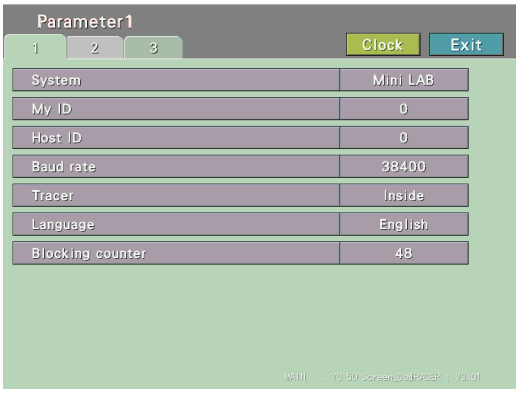
6 Put the fuse holder back into its original position.



3.3 Setting Time and Date

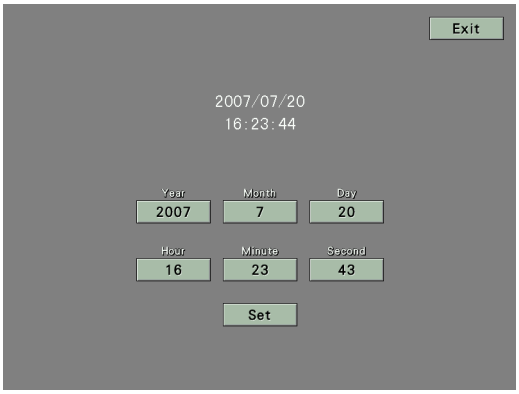
1 Display the Parameter 1 screen.

Press the Menu button on the layout screen and press the Parameter button from the displayed pop-up menu.



2 Press the Clock button twice to display the Clock screen.

The present year, month, day, time and change buttons are displayed on the time setting screen.



3 Press each change button to display the numeric keypad and enter the desired value.

4 After all changes, press the Set button.

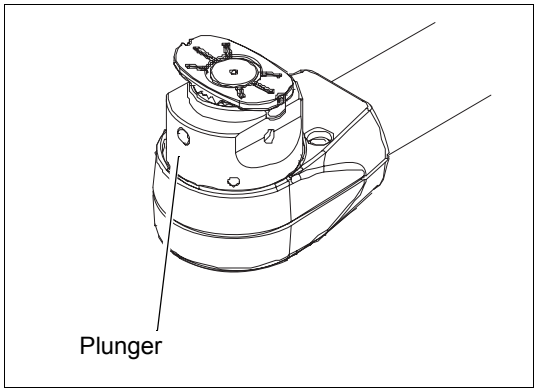
Pressing the Set button updates to the set time.

5 Press the Exit button to return to the layout screen.

3.4 Adjusting the Cup Holder

If the plunger inside the cup holder becomes loose or worn out, the cup holder may not hold the lens cup securely.
To tighten the plunger, insert the hexagonal-head wrench into the hole at the front of the cup holder, and turn the plunger so that the cup holder can securely hold the lens cup, and that the lens cup can be detached or inserted smoothly.

Turn the plunger clockwise to increase the holding power of the lens cup.



3.5 Cleaning

When the covers or panels of the ICE-1000 becomes dirty, wipe with a soft cloth. For severe dirt, immerse the cloth in a neutral detergent, wring well, and wipe. Finally wipe with a dry and soft cloth.

⚠ **CAUTION**

- **Never use an organic solvent such as paint thinner.**
  This may ruin the surface of the instrument.
- **Lightly wipe the exterior of the LCD touch screen with a soft cloth. Do not press the LCD touch screen using an object with a hard tip. In addition, keep magnetic objects away from the LCD touch screen.**
  Scratches or failure of the LCD touch screen may result.
- **Never use a sponge or cloth soaked in water.**
  The water may leak into the inside of the instrument and cause instrument failure.

3.6 List of Replacement Parts

Part name	Part number	Note
Fuse	80402-02150	T 1.6 A 250 V 5 X 20 mm.

* After replacing consumables, restock them.

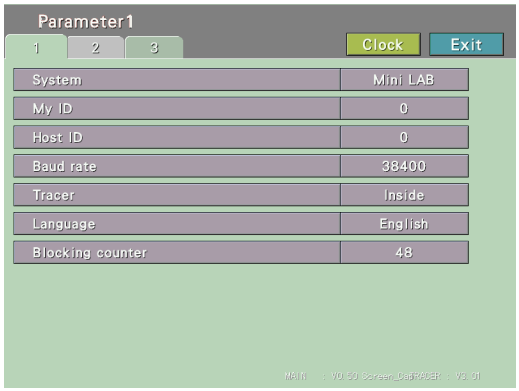
4. CONNECTION AND SETTINGS

4.1 Setting Parameters

The parameters can be changed according to the needs of the operator.

1 Display the Parameter 1 screen.

Press the MENU button on the layout screen and press the parameter button from the pop-up menu.



2 Press the button of the desired parameter to select and change the setting.

The parameter setting is shown next to the button.

For the provided parameters and the description of each parameter, see the explanation following the parameter setting procedure.

IFor the parameters whose settings must be selected from the provided options, the pop-up menu appears.

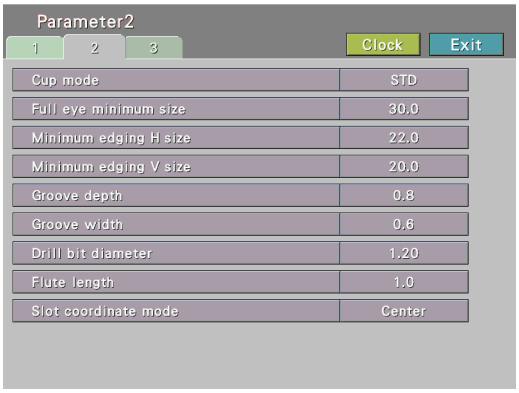
1) Press the button for the desired parameter setting.
2) The entry is confirmed and the pop-up closes.

IFor the parameters whose settings must be specified by values, the numeric keypad is displayed.

1) Enter a value with the numeric keypad.
2) Press the Ent button to confirm the entry.

   To cancel the entry, press the CE button.
3) The numeric keypad closes.

3 Press the Screen change tab to switch to the Parameter 2 screen or Parameter 3 screen and change the setting contents in the same way.



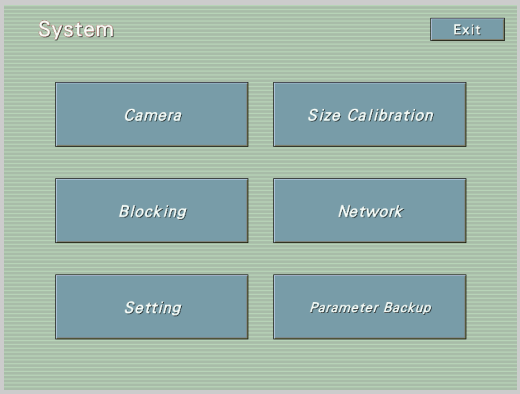
4 Press the Exit button to return to the layout screen.

Note

- Quickly press the Exit button. Depressing the button displays the System 1 screen.

  When the System 1 screen is displayed, press the Exit button quickly. The screen returns to the layout display.

  Do not change the parameter settings on the System 1 screen as they are provided for compensation purposes.



[Parameter description: Parameter 1 screen]

1) System: Mini LAB, Blocker/LAB, Entry/LAB, Extended/LAB, Blocker/LE, Blocker/VCA

Factory setting: Mini LAB

This parameter sets the system configuration where the ICE-1000 is connected.

Blocker/LAB and Blocker/LE should be selected when the ICE-1000NT (with no tracing unit equipped) is used.

Blocker/VCA should be selected for special models.

2) ID No.: 0 to 9999

Factory setting: 32

This parameter sets the ID No. for multiple ICE-1000 units in a network. Set any number from 0 to 9999 as an identification number.

3) Server No.: 0 to 9999

Factory setting: 32

This parameter sets the ID No. for the host device that is the server on a network. Set any number from 0 to 9999.

4) Baud rate: 38400, 9600

Factory setting: 38400

This parameter sets the communication speed (Baud rate) for data communication using EDGER 1 and EDGER 2 ports.

5) Tracer: Inside, Outside

Factory setting: Inside

This parameter sets the tracer from which shape data is imported.

Ordinarily, never change the parameter setting from Inside. Outside is only for the ICE-1000NT (without the tracing unit equipped). Setting the parameter to Outside disables the operator from loading shape data from the built-in tracing unit.

6) Language: Japanese, English, French

Factory setting: English

This parameter sets the language displayed. Select from Japanese, English, or French.

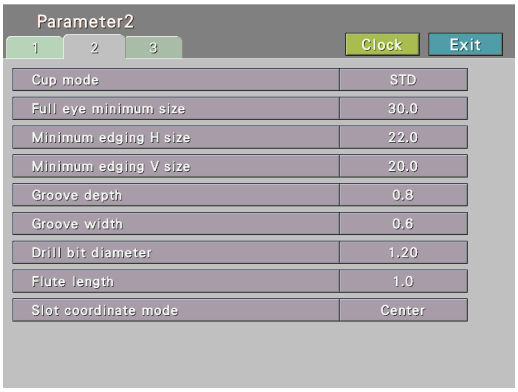
7) Blocking counter: Numeric value

Factory setting: 0

This parameter shows the numbers of blocked lenses.

To clear the number of blocked lenses, select the Clear or Cancel button of the “Do you want to clear a clocking counter?” message that is displayed by pressing the corresponding setting button to the Blocking counter parameter.

[Parameter description: Parameter 2 screen]



8) Cup Mode: STD, Pliable, Mini, Nano

Factory setting: STD

This parameter sets the lens cup.

Selecting STD makes the following two functions available:

- The cup mark can be changed in shape by setting the Full eye minimum size, Minimum edging H size and Minimum edging V size parameters.
- The cup mark is automatically switched between the standard cup mark and that for half-eye lenses in accordance with lens layout data.

When Nano, Mini, or Pliable is selected, the displayed cup mark does not change in size. In addition, the above three parameter settings do not take effect.

9) Full eye minimum size: 25.0 to 35.0 mm

Factory setting: 30.0 mm

This parameter sets the minimum diameter of the lenses (when the standard cup is used) that can be processed by a lens edger. Set any value from 25.0 to 35.0 mm (in increments of 0.1 mm) according to the lens edger.

10) Minimum edging H size: 15.0 to 30.0 mm

Factory setting: 22.0 mm

This parameter sets the minimum horizontal length of half-eye lenses that can be processed by a lens edger. Set any value from 15.0 to 30.0 mm (in increments of 0.1 mm) according to the lens edger.

11) Minimum edging V size: 15.0 to 30.0 mm

Factory setting: 20.0 mm

This parameter sets the minimum vertical length of half-eye lenses that can be processed by a lens edger. Set any value from 15.0 to 30.0 mm (in increments of 0.1 mm) according to the lens edger.

12) Groove Depth: 0 to 0.8 mm

Factory setting: 0.3

This parameter is for setting the default groove depth displayed when the Depth numeric button is pressed.

Set any value from 0 to 0.8 mm (in increments of 0.1 mm).

13) Groove Width: 0.6 to 1.2 mm

Factory setting: 0.6

This parameter is for setting the default groove width displayed when the Width numeric button is pressed.

Set any value from 0.6 to 1.2 mm (in increments of 0.1 mm).

14) Drill Bit Diameter: 0.5 to 5.0 mm

Factory setting: 0.8

This parameter is for setting the default diameter of holes when the DIA numeric button is pressed to use the hole position edit function.

Set the parameter in accordance with the diameter of the drill of the lens edger to obtain the hole of the minimum diameter.

Set any value from 0.5 to 5.0 mm (in increments of 0.1 mm).

15) Flute Length: 1.0 to 10.0 mm

Factory setting: 6.0

This parameter is for setting the maximum hole depth when the hole position edit function is used.

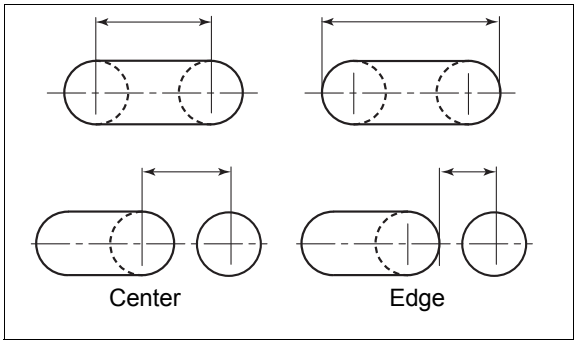
Set the parameter in accordance with the length of the drill of the lens edger.

Set any value from 1.0 to 10.0 mm (in increments of 0.1 mm).

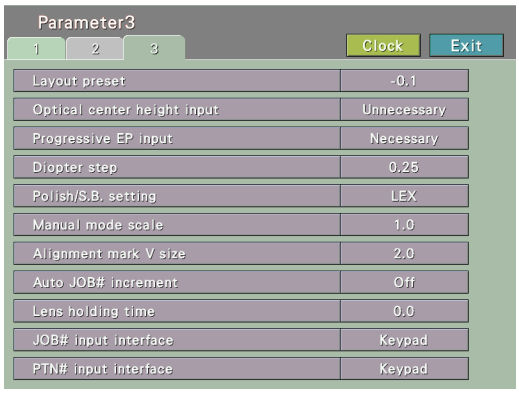
16) Slot coordinate mode: Center, Edge

Factory setting: Center

Selects the reference points either from center or edge when entering the coordinates of slotted holes or the distance between the hole and notch.



[Parameter description: Parameter 3 screen]



17) Layout preset: –5.0 to 5.0mm

Factory setting: 2.0 mm

This parameter sets the default of the height of the optical center. Set any value from –5.0 to 5.0mm (in increments of 0.1 mm).

18) Optical center height input: Necessary, Unnecessary

Factory setting: Necessary

This parameter sets whether the height of the optical center value should be fixed or not when the ICE-1000 imports traced data on condition that the ICE-1000 displays no layout data on the screen.

When the parameter is set to Necessary, it is necessary to modify the height of the optical center value after traced data is imported from a tracer (the corresponding button is displayed in yellow).

When the parameter is set to Unnecessary, it is unnecessary to modify the height of the optical center value (the corresponding button is displayed in green).

19) Prog. EP input: Necessary, Unnecessary

Factory setting: Necessary

This parameter sets whether or not to let the operator confirm an EP value when entering layout data for progressive power lenses with Point Mark mode.

When the parameter is set to Necessary, the data is shown by a numeric button on a yellow background except when JOB data is imported from built-in memory. Unless the EP value on the yellow background is modified or confirmed, the intelligent blocker prohibits the operator from blocking or saving the JOB data.

To set EP values for each individual JOB data, set the parameter to Necessary. This prevents an error in position of a blocked lens cup caused by not modifying or confirming the EP value.

20) Diopter step: 0.01, 0.12, 0.25

Factory setting: 0.25

This parameter sets the increments of SPH and CYL among 0.01, 0.12, and 0.25 D.

The setting of 0.01 is only for adjustment. Do not select it for normal use.

21) Polish/S.B setting: LEX, SE/ME

Factory setting: LEX

This parameter sets whether the lens edge is polished and/or safety-beveled with the lens edger. Select LEX or SE/ME according to the lens edger to be used.

The selectable options for polishing and safety beveling differ depending on this parameter setting:

Setting	Polishing	Safety beveling
LEX	Non-Pol, Polish	Non-S.B, S.B
SE/ME	When safety beveling mode is designated: Non-Pol, Polish, Pol (EDG), Pol (S.B)	Non-S.B, Small, Middle, Large, Special
	When safety beveling mode is not designated: Non-Pol, Polish	

22) Manual Mode Scale: 0.0, 1.0, 2.0, 3.0

Factory setting: 2.0

Select the spacing between horizontal lines of the alignment scale from among 0, 1.0 mm, 2.0 mm, and 3.0 mm that is displayed on the layout screen with the MANUAL designated. When 0 mm is selected, the scale is not displayed.

23) Alignment mark V size: 0.0, 1.0, 2.0

Factory setting: 2.0

Select the height of the alignment scale (horizontally long ellipse), displayed on the layout screen when MANUAL is selected, from 0 mm, 1.0 mm and 2.0 mm. When 0 mm is selected, the horizontally long ellipse becomes a straight line.

24) Auto JOB# Increment: EXEC, NONE

Factory setting: EXEC

This parameter is effective only on the ICE-1000NT (without the tracking unit equipped).

25) Lens Holding Time: 0.0 to 5.0 sec.

This parameter is for setting the time period for the holder arm to remain at rest at the lowest position in the range of 0.0 to 5.0 seconds.

This parameter allows the operator who are holding the lens with hands during blocking to release hands from the lens at the lowest position by stopping the holder arm with the lens blocked with the lens cup.

In the case of the setting of 0.0 to 3.0 seconds:

The holder arm returns to the original position after it has stopped for the set period of time.

In the case of the setting of 3.1 seconds or longer:

The parameter is set to “STOP”

After blocking, the holder arm remains at rest at the lowest position.

Press the on-screen UP button or Block button to return the holder arm to the original position.

26) JOB Code Input Interface: TENKEY, KEYPAD

This parameter is for selecting TENKEY (numeric keypad) or KEYPAD (keyboard) to enter the JOB#.

KEYPAD must be selected to enter both alphabetic and numeric characters as the JOB#.

27) PTN Code Input Interface: TENKEY, KEYPAD

This parameter is for selecting TENKEY (numeric keypad) or KEYPAD (keyboard) to enter the PTN#.

KEYPAD must be selected to enter both alphabetic and numeric characters as the PTN#.

Note

- To use the JOB# or PTN# including alphabets, all connected instruments must be updated for this function.

4.2 Connection

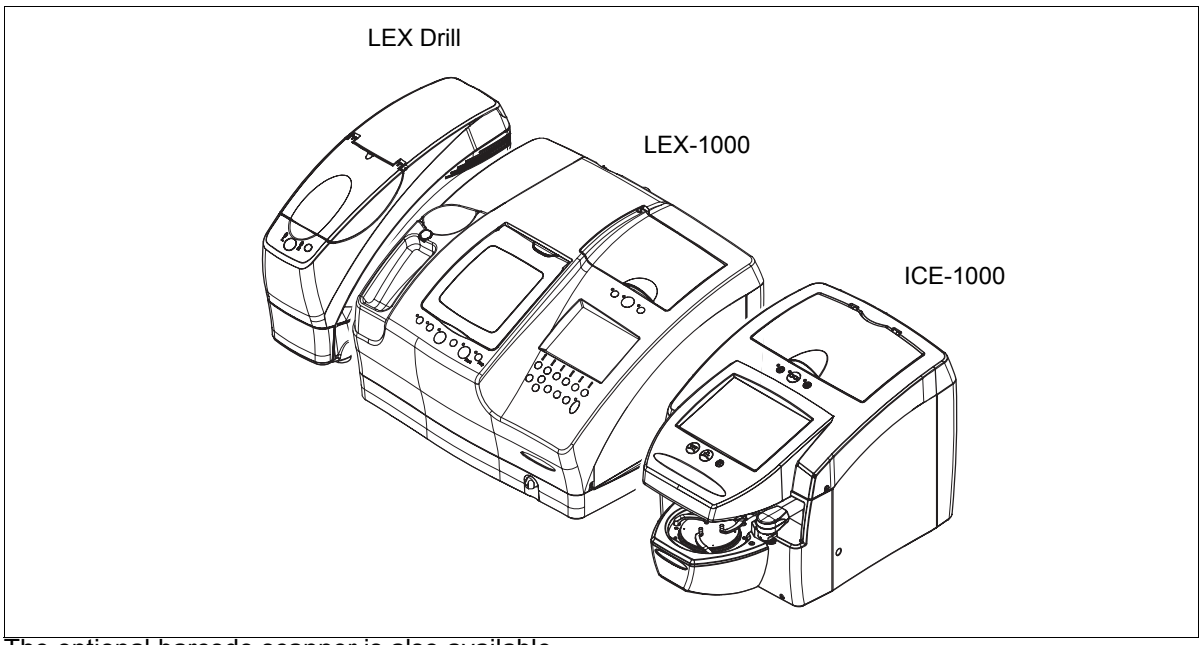
4.2.1 Connection samples

Connect a lens edger and/or LAN cable etc. to the ICE-1000.

⚠ CAUTION **• Confirm that all instruments are turned off before connecting them to the ICE-1000.**

○ Mini LAB system

In this small- or middle-scale system, the ICE-1000 serves as a data server. Tracing is performed with the ICE-1000.

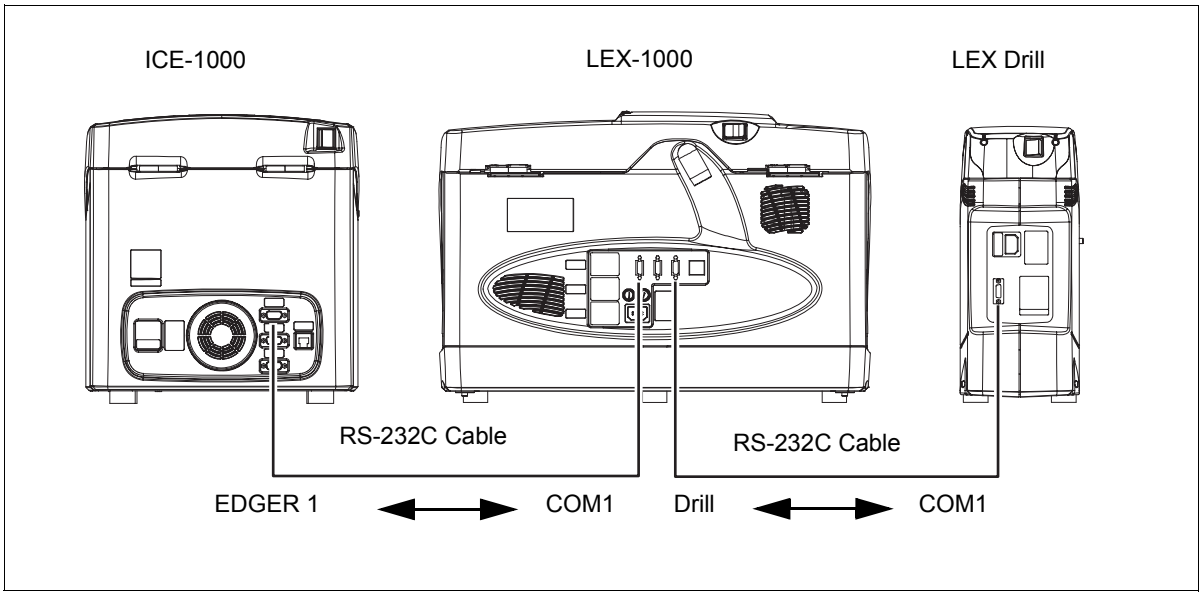


The optional barcode scanner is also available.

Note

• In the Mini LAB system, the ICE-1000 can set the grooving specifications when the ME-1000 or SE-9090 Express/AHM-1000 system is connected as a lens edger.

Method of connection to the ICE-1000:



4.2.2 Setting the ICE-1000

Set the ICE-1000 according to the system configuration as:

Parameter	Mini LAB		RS232	Entry LAB Extended LAB
	Edger port	LAN port		
ID No.	ID No. of the ICE-1000: 32		–	ID No. of the ICE-1000: (Any number except for the Server No.)
Sever No.	ID No. of the ICE-1000: 32		–	ID No. of the server: 32
Baud rate	38400	–	38400	–
Mac Address*1	–	Never change the factory setting.*2	–	Never change the factory setting.*2
IP Address*1	–	Set the parameter uniquely for each individual ICE-1000.*3	–	Set the parameter uniquely for each individual ICE-1000.*3
Host IP Address*1	–	–	–	Set the parameter uniquely for each individual ICE-1000.*3 (IP Address of the server)
Sub Net Mask*1	–	Set the parameter uniquely for each individual ICE-1000.*6	–	Set the parameter uniquely for each individual ICE-1000.*3
Gate Way*1	–	–	–	Set the parameter uniquely for each individual ICE-1000.*3
Host Port No*1	–	–	–	55555*4

*1: Set the parameter on the Network screen of the ICE-1000.

*2: Never change the factory setting of Mac Address that had been set uniquely for each individual ICE-1000 before shipment.

*3: Set these parameters in accordance with the network to which the ICE-1000 is connected.

*4: When the NIDEK-produced PC server software is used, set the host port No. to “55555”. When the other server software is used, set the host port No. to the port No. of the used software.

5. SPECIFICATIONS AND ACCESSORIES

5.1 Safety Features

To ensure safe use, the ICE-1000 is provided with the following features.

<Blocking pressure detection function>

Even if fingers are caught between the cup holder and the lens, a blocking pressure higher than the specified pressure is never applied against the fingers to protect them from injury.

<Blocking arm stopping function>

Even if the Block button is pressed and the cup holder arm is advanced without a lens on the lens cup, the holder arm will be stopped at the specified position by a sensor to protect the ICE-1000 from damage.

5.2 Specifications

○ Lens Measuring Unit

- Method: Imaging of reflected image (Lens outline imaging)
  Imaging of projected image (ALM function)
- Maximum lens diameter
  80 mm diameter
- Camera: CMOS color camera (Lens outline imaging)
  CMOS black and white camera (ALM function)
- Display: 8.4-inch Color Liquid Crystal Display, 800 × 600 pixels
- Layout mode: Single, Multi, Progressive
- Items of lens layout: FPD (or DBL)
  PD (or 1/2PD)
  Axis (Cylinder axis angle of the lens)
  EP (Height of the eye point for far vision (for progressive power lenses)
  Size (Size compensation value)
  Lens material (Plastic lens, plastic lens with high refractive index, glass lens, polycarbonate lens, and acrylic lens)
  Frame type (Metal frame, celluloid frame, nylor frame, and two-point frame)
  Designations in processing (Polishing and/or safety beveling modes)
  Job code (JOB#)
- Range of data for lens layout
  - FPD: 30.0 to 99.50 mm (in increments of 0.01 mm)
  - PD: 30.0 to 99.50 mm (in increments of 0.01 mm)
  - 1/2PD: 15.0 to 49.75 mm (in increments of 0.01 mm)
  - Height of optical center
    0 to ±15.0 mm (in increments of 0.1 mm)
  - SIZE: 0 to ±10.00 mm (in increments of 0.01 mm)
- ALM function
  - Range of power measurement
    SPH: -10 D to +10 D, CYL: 0 D to ±6 D
  - Accuracy of measured optical center
    ±0.5 mm (when SPH is 1 D or more with the CYL+ and CYL– modes)
  - Accuracy of measured cylinder axis (axis)
    ±1° (when CYL is 1 D or more)
- Blocking
  - Blocking method
    Motorized blocking method
  - Blocking pressure
    3 kgf

○ Tracing Unit

- Tracing method Automatic 3-D binocular tracing
- Traceable size
  - Frame ø18 to ø92 (vertically ø18 to ø66)
  - Pattern ø18 to ø92 (vertically ø14.5 to ø66)
- FPD measurement function
  Available
- Setting of stylus
  Switchable between automatic and semiautomatic
- Measurement accuracy
  - Frame tracing ±0.05 mm (circumference error with □45 standard frame)
  - Pattern tracing ±0.1 mm (circumference error with □45 standard pattern)
- Measuring time
  Automatic tracing of both-eye lenses
  30 seconds
  - Pattern tracing 20 seconds

○ Other Functions

- Frame memory function
  Folder number : 500
  Data in the folder : 1000
  * Depends on the capacity of the connecting USB flash drive.
- Interface function Three built-in RS-232C ports
  - PORT 1 For connection with a (first) lens edger
  - PORT 2 For connection with a (second) lens edger
  - PORT 3 For connection with a barcode scanner
  - LAN One built-in LAN (10BASE-T) port

○ Dimensions and Weight etc.

- Dimensions 325 (W) ×510 (D) × 345 (H) mm
- Weight Approx. 23 kg (main body of ICE-1000 only)
- Power source AC100 to 120V ± 10%, 200 to 240V ± 10%, 50/60 Hz
- Power consumption 100 VA

○ Environmental Conditions (in use)

- Temperature +5 to +45ºC
- Humidity +5 to +31ºC : 30 to 80%
  +31 to +40ºC : 30% at the minimum and 80% (+31ºC) to 50% (+40ºC) changes linearly at the maximum
- Atmospheric pressure
  700 to 1060 hPa
- Altitude Up to 1000 m at sea level

○ Environmental Conditions (in transport and storage)

- Temperature –25 to +70ºC
- Humidity 10 to 95%
- Atmospheric pressure
  700 to 1060 hPa

5.3 Standard Configuration

5.3.1 Standard accessories

• Lens table for frame changing	1 unit
• Pattern setting unit	1 unit
• Standard frame	1 unit
• Standard pattern	1 unit
• Frame change holder	1 unit
• Power cord	1 unit
• Touch pen	1 unit
• RS-232C cable	1 unit
• Blower	1 unit
• Spare fuses	2 units
• USB flash drive	1 unit
• Accessory case	1 unit
• Operator's manual	1 volume

5.3.2 Optional accessories

- Barcode scanner
- RS-232C cable

6. INDEX