Mr Orange
ESSILOR DIGITAL SYSTEM

essilor

User Manual

Contents

INTRODUCTION

To take full advantage of all the functions of your digital system, documentation is available to you in:

- The quick start guide, supplied upon installation
- The user manual, present on the CD-ROM

I. FIRST STEPS

This chapter contains all the information you need the first time you use the digital system:
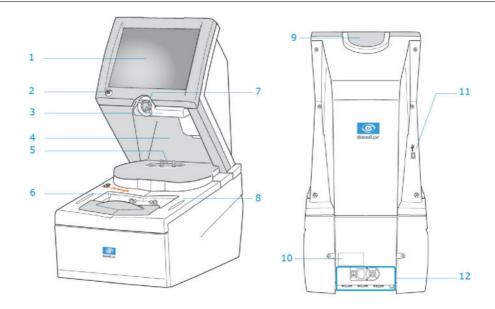
- Description of the tracer and the edger *(☞ p.10)*
- Using the machine *(☞ p.14)*

1. Descriptive diagrams

This section consists of descriptions and accessory lists:

- Tracer *(☞ p.10)*
- Edger *(☞ p.12)*
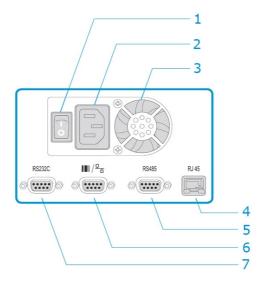
a. Tracer

1. *Screen*

2. *ON / OFF button*

3. *Blocking arm*

4. *Centering chamber*

5. *Tripod*

6. *Tracing table*

7. *Blocking head*

8. *Stylus rest*

9. *Tripod rest*

10. *Manufacturer plate*

11. *USB port*

12. *Connectors*

Connectors

1. *Main switch*

2. *Power socket*

3. *Fan*

4. *Ethernet port*

5. *RS485 port*

6. *Barcode reader port*

7. *Serial port*

Accessories

- Protective cover
- Pattern holder
- Bag of 22 mm posiblocks
- Bag of 18x14 mm posiblocks
- Transport wedges to be kept

Use accessories

- Stylus
- Standard tripod
- High-base tripod
- Recut lens accessory
- Small B-dimension wedges (quantity 2)
- White felt tip marker
- Roll of 22 mm pads
- Roll of 18x14 mm pads

Servicing accessories

- Calibration posiblock
- Pattern gauge (metal)
- Frame gauge (black, numbered)
- CD-ROM of calibration gauge data

Options
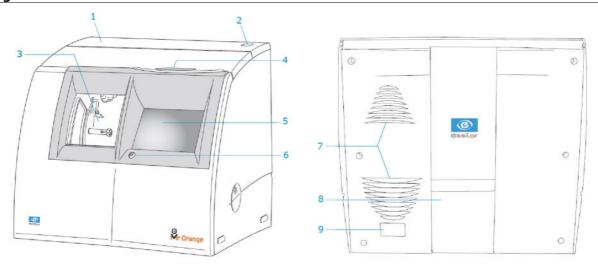
- Barcode reader
- Roll of barcode labels

Connection accessories

- Mains cable
- RJ45 cable for the tracer-edger connection
- Essibox connection cable
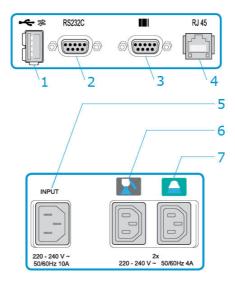
b. Edger

1. *Connector hatch*

2. *Main switch*

3. *Trough*

4. *Stylus rest*

5. *Screen*

6. *ON / OFF button*

7. *Fans*

8. *Cable cover*

9. *Manufacturer plate*

Connectors

1. *USB port*

2. *Serial port*

3. *Barcode reader port*

4. *Ethernet port*

5. *Power socket*

6. *Solenoid valve socket*

7. *Pump socket (tank + pump) / Solenoid valve socket (town)*

Edger accessories

- Protective cover
- Transport wedges to be kept

Use accessories

- Stylus
- 22 mm posiblock holder
- 18x14 mm posiblock holder
- 22 mm stop
- 18x14 mm stop
- Unblocking clamp
- Ø 1.0 mm drill bit (mounted on the module)
- Ø 0.8 mm drill bit
- Ø 20 mm grooving wheel (mounted on the module)
- Chamfering wheel (mounted on the module)

Servicing accessories

- Orange dressing stone for glass roughing wheel
- White dressing stone for finishing wheel
- Square dressing stone for polishing wheel
- Drill bit changeover tool
- Open-ended spanners for tool changeover (quantity 2)

Options

- Barcode reader
- Roll of barcode labels
- Open or closed circuit spraying kit
- Recovery tank

Connection accessories

- Mains cable
- RJ45 cable for the tracer-edger connection
- Essibox connection cable
- Wastewater evacuation pipe with attachment ring

2. First use of the digital system

In this section, you will find all the information concerning the following:

- Switching on *(☞ p.14)* and turning off *(☞ p.14)* the digital system,
- Using the touch screen and keypads *(☞ p.15)*,
- The description of the work screen of the tracer *(☞ p.17)* and edger *(☞ p.18)*.

a. Switching on the digital system

1 Before you switch on the tracer, make sure the tracing table is empty.

2 To switch on the tracer, press the main switch located at the rear of the machine.

> The tracer may be switched on independently if you only want to do successive tracings.

3 To switch on the edger, press the main switch located on the top of the machine.

4 Press the ON/OFF buttons located under the touch screens.

> The tracer and edger boot up.

5 On the edger screen, press the icon to complete the initialisation phase.

> A beep indicates that the initialisation was successful.

The digital system is ready to be used when the initial screens are displayed.

b. Switching off the digital system

1 Before switching off the edger:

- Check that there is no glass in the trough
- Check that the lens clamp shafts are loosened and that the trough door is open
- Select the edging screen

2 Do a short press on the ON/OFF buttons located under the touch screens.

Do not press on the ON/OFF button for several seconds. This would result in the shut-down of the machine and an error message would be displayed at the next switch-on.

> A confirmation message is displayed on each screen.

3 Press ✓ to confirm.

> The tracer and edger switch off.

Extended period of non-use

During an extended period of non-use (a few days), it is preferable to switch off the digital system via the main switches.

c. Using the touch screen and keypads

Using the touch screen

On the touch screens, use the styluses supplied with the tracer and edger.

After each use, you can rest the stylus on one of the stylus rests, represented by oval stickers.

You can also use a finger.

- If the screen is not sensitive enough to finger pressure, press lightly with a fingernail.
- If the response area does not correspond to the position of the key, you need to calibrate the touch screen. For further information, refer to the following section: Maintenance and servicing > Checks and calibration > Calibrating the touch screen *(☞ p.149)*.

- Never press hard on the screen as this could break it.
- Never press on the screen with sharp objects such as pens, scissors, pliers, etc.
- Screen breakage is not covered by the guarantee.

On each screen, press the icon-buttons to access the desired menus and functions.

Using the keypads

When you need to input or modify data, two types of keypads are automatically displayed, according to the information to be input.

- The numeric keypad is displayed for the input of values.

- Reset the fields

- Back

- Confirm

- Cancel and go back to the work screen

- The alphanumeric keypad is displayed to save or search for jobs.
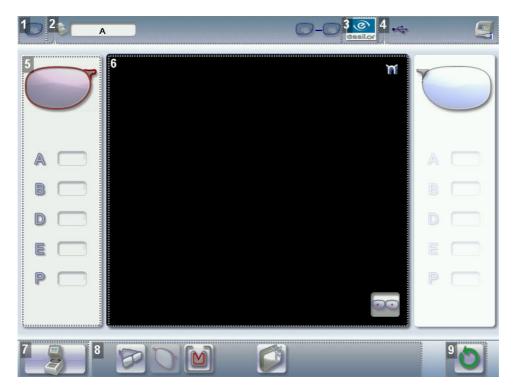
- Job ID

- Job reference (alphanumeric characters)

- Job☐ list

- Collection list

d. Tracing screen

Tracer

Main menus of the tracing screen:

1. *Work screen indicator*

2. *Job information*

3. *Settings*

4. *Devices connected*

5. *Active eye and information on the shape*

6. *Work area*

7. *Function buttons*

- ◦ Tracing

- ◦ Centering

- ◦ Shape management

8. *Actions available for the current screen*

9. *Starting the tracing cycle*

> **Detailed functions**
>
> For further information, refer to the following section: Tracing > Tracing environment > Legend screen (☞ *p.20)*.
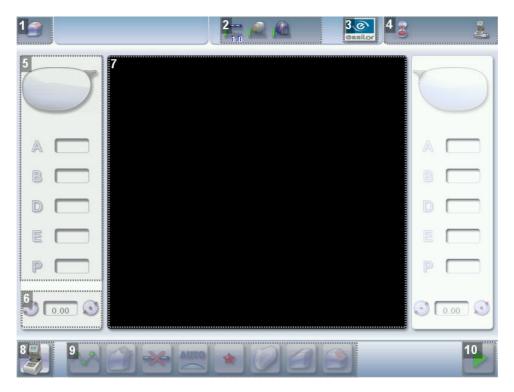
e. Edging screen

Edger

Main menus of the edging screen:

1. *Work screen indicator*

2. *Tool wear indicators*

3. *Settings*

4. *Devices connected*

5. *Active eye and information on the shape*

6. *Size increase / reduction*

7. *Work area*

8. *Job call*

9. *Actions available for the current screen*

10. *Start the edging cycle*

Detailed functions

For further information, refer to the following section: Edging > Edger working environment > Legend screen *(☞ p.92)*.

II. TRACING

This chapter describes the procedures for the tracing of all types of frames, patterns, demo lenses and recut lenses:
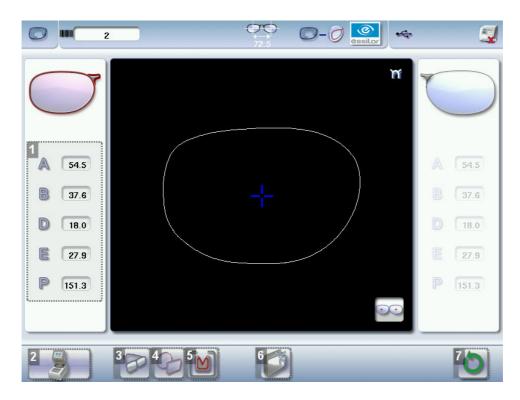
- Description of the tracing environment *(☞ p.20)*
- Managing and storing shapes *(☞ p.24)*
- Tracing a rimmed frame *(☞ p.28)* (including a high-base frame)
- Tracing a high-base frame *(☞ p.30)*
- Tracing a pattern, demo lens or recut lens *(☞ p.32)*

1. TRACING ENVIRONMENT

This section describes the tracing screen and explains how to manage the jobs:

- Description of the tracing screen *(☞ p.20)*
- Jobs and working modes *(☞ p.22)*
- Displaying the tracing done in binocular mode *(☞ p.23)*

a. Legend screen

1. *Display of dimensions*

- ◦ A: A-dimension
- ◦ B: B-dimension
- ◦ D: D-dimension
- ◦ E: greatest radius from the boxing center
- ◦ P: perimeter

2. *Function buttons*

- ◦ Tracing
- ◦ Centering

- ◦   Shape management

3. *Tracing mode*

- ◦   Rimmed frame (including high-base frame)
- ◦   High-base frame
- ◦   Optical tracing (patterns, demo lenses or recut lenses)
- ◦   Mechanical tracing (patterns, demo lenses or recut lenses)

  This mode cannot be selected. It is activated automatically upon detection of the pattern holder in the tracing table.

4. *Type of tracing*

- ◦   Symmetric binocular tracing▢
- ◦   Asymmetric binocular tracing▢
- ◦   Right-eye monocular tracing
- ◦   Left-eye monocular tracing

5. *Frame material or optical tracing type*

For the mechanical tracing of a frame, three options are available:

- ◦   Metal frame: high-precision tracing, with feeling of the groove cross-section
- ◦   Plastic frame
- ◦   Optyl▢ frame, for highly flexible frames

For optical tracing, two options are available:

- ◦   Demo lens/ Recut lens
- ◦   Pattern

For the mechanical tracing of demo lenses, recut lenses or patterns, the tracer automatically detects the pattern holder inserted in the tracing table.

6. *New Job*

For further information on the jobs▢, refer to the following section: Tracing > Managing and storing shapes *(☞ p.24)*.

7. *Starting the tracing cycle*

Always browse from left to right: depending on your selection, certain menus will be available while others will not.

> **Automatic detection**
>
> You can configure the tracing for automatic detection. The frame material and type of optical tracing (pattern or demo lens) are detected automatically.
>
> To enable automatic tracing, refer to section Configuring the digital system > Customizing the tracer > Action bar *(☞ p.133)*.

b. Jobs and working modes

Jobs

A job represents all the actions to be carried out to produce a pair of glasses. It can be managed in two ways:

- Saved job: allocating an ID🕮 and a reference to the job makes it possible to save it and subsequently re-use it.
    ◦ Automatic archiving of the job
    ◦ Mandatory in tracing - tracing mode
- Job not saved: working in current job (job identified by the letter A) makes it possible to do a job rapidly without saving it.
    ◦ The job processing cycle must be completed before starting a new cycle.
    ◦ If the cycle is interrupted, a warning is displayed asking you if you want to save the job.

Working modes

There are two working modes for the management of your jobs:

- The tracing - centering mode (default mode)
- The tracing - tracing mode

The selected working mode is indicated in the information bar, on the left of the Essilor logo. Your can modify it in the tracer settings.

Working in tracing-centering mode

At the end of a tracing, the tracer automatically displays the centering screen.

You can process a job completely before moving on to the next one:

1. Tracing or retrieval of a job from the database
2. Modification of the shape and positioning of the drilling points if required
3. Centering
4. Lens blocking
5. Lens edging

Working in tracing-tracing mode

At the end of a tracing, the tracer automatically displays the centering screen.

- You can do several tracings in succession.
- The tracings are saved with the job number you have allocated to them.
- Shape modification, centering, blocking and edging of the lenses are handled subsequently.
- All jobs must be saved.
- You can access the centering screen at any time to center the lens corresponding to the active shape:

    > Select [icon] then [icon] .
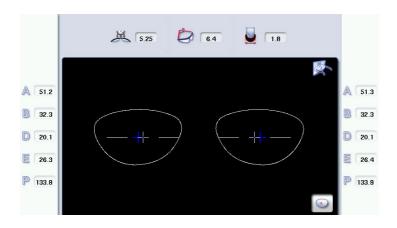
c. Displaying the binocular view

Once the tracing is finished, you can display a binocular representation of the job on a 1:1 scale, in order to check the frame shape and centering.

Three values are displayed above the image:

- the frame base📖
- the curve angle📖
- the frame thickness

This symbol indicates the view from the wearer side.

In tracing - centering mode, the centering screen is displayed at the end of the tracing:

1 Select then to access the tracing screen.

2 Press to display the binocular view.

> The binocular view is displayed.

3 Place the frame against the screen to check its shape and centering.

4 Press to go back to the monocular screen.

5 Select then to go back to the centering screen.

Tracing - tracing mode

The tracing screen is displayed again at the end of the tracing:

1. Press to display the binocular view.
   > The binocular view is displayed.
2. Place the frame against the screen to check its shape and centering.
3. Press to go back to the monocular screen.
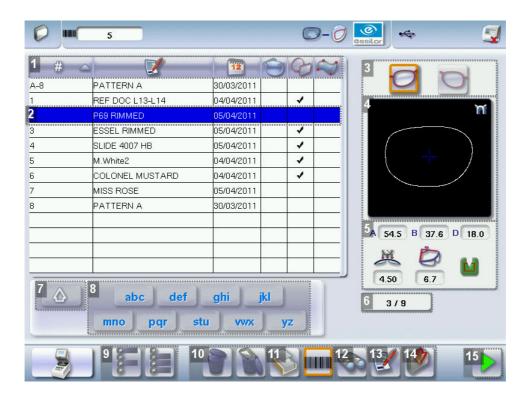
2. MANAGING AND STORING SHAPES

This section explains how to manage the available lists to store your shapes.

- Description of the shape storage screen *(☞ p.24)*
- Job list and collection list *(☞ p.26)*
- Creating a job *(☞ p.26)*
- Working in current job (job A) *(☞ p.28)*

a. Legend screen

In the tracing screen or centering screen, press on the menu [icon] then [icon] to access the shape storage screen.

1. *Sort the jobs*

- ◦ [icon] ID
- ◦ [icon] Reference
- ◦ [icon] Date
- ◦ Types of jobs:
    - [icon] Drilled
    - [icon] Asymmetric tracings
    - [icon] Creative shapes

2. *Selected job*

3. *Select the eye to be displayed in the preview*

4. *Shape preview*

5. *Information concerning the lens shape and frame*
- ◦ A, B and D dimensions
- ◦ Frame base
- ◦ Curve angle
- ◦ Material of the frame / pattern / demo lens or recut lens

6. *Job counter for the selected list*

7. *Back to the default display of the selected list*

8. *Display all jobs starting with the selected letter*

To display the all jobs starting with the selected letter:

- ◦ Press once if it is in the first position on the button,
- ◦ Press twice in succession if it is in the second position,
- ◦ Press three times in succession if it is in the third position.

Example:

- ◦ Press 3 times on the button **pqr** to display all jobs starting with the letter R.

  > The R goes into upper case: **pqR** .

  > The jobs starting with the letter R are displayed.

9. *Select several jobs*

- ◦ Press to select several non-consecutive jobs in the list.

  Example: Press on the button then select jobs #1, #5, #7.
  > Only jobs #1, #5 and #7 are selected.

- ◦ Press to select a group of consecutive jobs in the list, then select the first and last job in the group.
  Example: Press on the button then select jobs #1 and #10.
  > All jobs from #1 to #10 are selected.

10. *Delete one or more jobs*

- ◦ Press to delete the selected job(s). A confirmation message is displayed.

- ◦ Press to delete all jobs. A confirmation message is displayed.

11. *Job list or collection list*

Select the list to be displayed:

- ◦ Job list

- ◦ Collection list

12. *Search for a job by ID or by reference*

13. *Rename the selected job*

14. *Duplicate the selected job*

15. *Call the selected shape to the work area*

b. Job list and collection list

Two lists are available for the storage of shapes:

- ▌▌▌▌▌ The job list

- 📇 The collection list

You can copy a job from one list to the other via the button 📥.

The job list

The job list enables you to save jobs on a daily basis, without the possibility of re-using them at a later date. It can store up to 1,000 jobs.

The collection list

The collection list enables you to save specific jobs, for subsequent re-use:
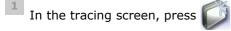
- Recurrent jobs
- Standard shapes
- Drilling models
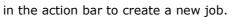
It can store up to 1,000 jobs. The barcode reader (optional) cannot be used to call or save a job in the collection list; only the numeric keypad can be used for that purpose.

c. Creating a job

There are several ways of creating a job:

- Scan the barcode corresponding to the desired ID using the barcode reader (optional): the job is saved to the job list.
- To create a job, use the alphanumeric keypad and follow the procedure below.

1 In the tracing screen, press 📁 in the action bar to create a new job.

> The alphanumeric keypad is displayed.

📖 For further information on data input and use of the keypad, refer to the following section: First steps > First use of the digital system > Using the touch screen *(☞ p.15)*.

2 Select the list in which you want to store the job:

- Press ▌▌▌▌▌ to select the job list.

- Press 📇 to select the collection list.

📖 For further information on the lists, refer to the following section: Tracing > Managing and storing shapes > Job list and collection list *(☞ p.26)*
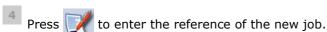
3 Press ![#] to enter the ID▯ of the new job.

An ID is automatically allocated by the tracer (first free slot in the selected list). You can modify it: the ID can consist of alphanumeric characters.

> In the collection list, the ID solely consists of numeric characters.

4 Press ![icon] to enter the reference of the new job.

> Irrespective of the list selected, the reference may consist of alphanumeric characters. It can contain the information of your choice:
> - Customer's name
> - Frame brand or reference
> - Manufacturer, etc.

5 Press ![✓] to confirm.

> The tracing screen is displayed. The ID allocated and the symbol of the list in which the job is stored appear in the information bar.

Job list: Collection list:

6 The tracer is ready for tracing. For further information, refer to the section concerning your frame type.

> The ![save] symbol is displayed at the bottom right of the job ID as soon as the job is being modified. It disappears once the job has been saved.

If you don't want to save the job, you can work in current job mode. For further information, refer to the following section: Tracing > Shape management and storage > Working in current job (job A) *(☞ p.28)*

Successive tracings and saving

If you start a new tracing while a job is still active on the tracing screen, a message is displayed:

- Replacement of the active shape: the tracing you have just started replaces the former one under the current ID .

- Creation of a new job: the alphanumeric keypad is displayed to enable you to create a new job for the tracing you have just started (new ID). The two jobs are thus saved.

To cancel, press again on .

d. Working in current job (job A)

- As soon as the tracer is initialised, you can work in current job mode: the letter A is displayed by default in the information bar. The job is not saved.
- If you want to save job A, refer to the job creation procedure *(☞ p.26)*.
- If you want to go back to job A after having worked on a saved job:
  - ◦ Scan barcode A using the barcode reader (optional), or
  - ◦ Use the numeric keypad and follow the procedure below.

1 In the tracing screen, press in the action bar to create a new job.

> The alphanumeric keypad is displayed.

 For further information on data input and use of the keypad, refer to the following section: First steps > First use of the digital system > Using the touch screen *(☞ p.15)*.

2 Press to select the following field: ID📖.

3 Press to delete the ID.

4 Press to confirm.

> The letter A is displayed in the information bar.

5 The tracer is ready for tracing.
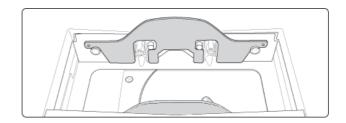
For further information, refer to the section concerning your type of job.

3. TRACING A RIMMED FRAME

 Prerequisite:

- For the correct tracing of the shape, the frame to be traced must not be deformed and its hinges must be closed.
- For a small frame, place the two wedges between the tracing table clamps:
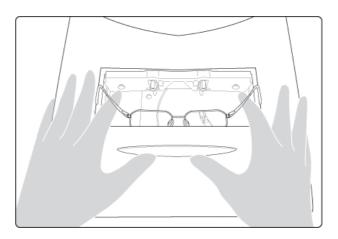
This section describes the procedure to follow for the tracing of rimmed frames including high-base frames:

- Symmetric binocular⬚ mechanical tracing of a rimmed frame
- Asymmetric binocular⬚ tracing of a rimmed frame
- Monocular tracing of a rimmed frame

1 Place the frame in the tracing table, between the two clamps located opposite you.

2 Gently close the jaw to hold the frame.

⚠ Optyl⬚ frames: be careful not to crush the frame when you close the jaws.

3 Press to select the type of rimmed frame.

4 Select the required type of tracing.

5 Select the frame material.

6 Press to start the tracing cycle.

To interrupt the tracing at any time, press .

> If you selected a monocular tracing, the numeric keypad is displayed. Enter the D-dimension, then

press to confirm.

> The tracing result is displayed in the centering screen, in monocular format on a 1:1.6 scale.

> **Tracing - tracing mode**
>
> In tracing - tracing mode, the result of the tracing is displayed in the work area of the tracing screen. For further information on the working modes, refer to the following section: Tracing > Tracing environment > Jobs and working modes *(☞ p.22)*.

Before centering

If you want to add drilling points to your lenses, refer to the following chapter: Preparing a drilled job *(☞ p.79)*.

4. TRACING A HIGH-BASE FRAME
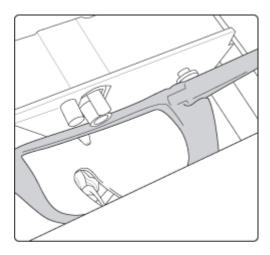
This specific procedure enables you to trace a high-base frame, if the standard rimmed frame tracing fails.
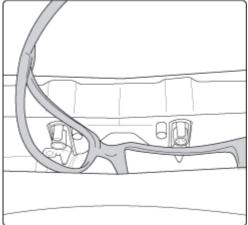
The tracing of a high-base frame is done in two stages:

- The frame is placed in the tracing table and the mechanical tracing is done for each eye individually.
- The curve angle is measured and the tracing is completed.

Put the frame in place and start the tracing

1 When you place the frame in the tracing table, position the eye as flat as possible: the black grips which hold the eye to be traced must be in the middle of the circle.

2 Gently close the jaw to hold the frame.

3 Press [icon] to select the high-base frame tracing.

4 Press [icon] to select the first eye to be traced.

5 Select the frame material.

6 Press [icon] to start the tracing cycle.
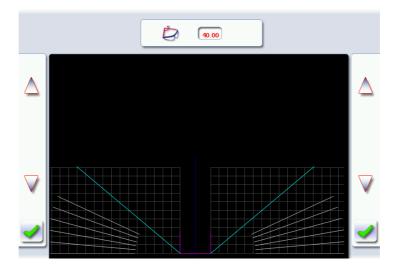
To interrupt the tracing at any time, press 🟥 .

> The numeric keypad is displayed.

7 Enter the D-dimension, then press ✅ to confirm.

> Once the tracing of the first eye is finished, a message is displayed:

8 Position the frame to trace the second eye.

9 Press 🔄 to start the tracing of the second eye.

> The following screen is displayed:
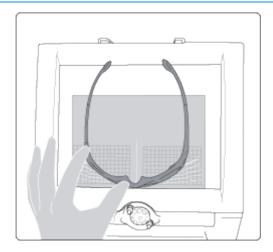
Measuring the curve angle and completing the tracing.

This screen enables you to measure the curve angle which cannot be captured in a monocular tracing.

1 Place the frame on the screen:

- The vertical blue line must be in the center of the frame
- The plane which is tangent to the two lenses must coincide with the pink line at the bottom.

2 Use the ▲ and ▼ buttons to align the light blue lines with the nasal and temporal ends of the rim.

You can also press on the value for a few seconds, then modify it via the numeric keypad.

> The value of the curve angle is modified.

3 Press ✔ to confirm.

> The tracing result is displayed in the centering screen, in monocular format on a 1:1.6 scale.

Tracing - tracing mode

In tracing - tracing mode, the result of the tracing is displayed in the work area of the tracing screen. For further information on the working modes, refer to the following section: Tracing > Tracing environment > Jobs and working modes *(☞ p.22)*.

Before centering

If you want to add drilling points to your lenses, refer to the following chapter: Preparing a drilled job *(☞ p.79)*.

5. TRACING A PATTERN, DEMO LENS OR RECUT LENS

Two types of tracing are available for patterns, demo lenses and recut lenses: optical tracing and mechanical tracing. This section also presents the operations to be carried out to enter the curve angle and frame base which cannot be captured in this type of tracing.

- Optical tracing *(☞ p.33)*
- Mechanical tracing *(☞ p.35)*
- Entering the curve and frame base values after a monocular tracing *(☞ p.38)*

a. Optical tracing

Preparing optical tracing of demo or recut lens

This type of tracing makes it possible to retrieve the existing shape and drilling data of a lens.
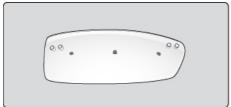
⚠️ Do not carry out an optical tracing on lenses with a power of more than 1 diopter as this would disrupt the tracing.
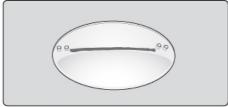
✅ Prerequisite: for the tracer to correctly detect the horizontality of the lens, the lens must be clean and marked with:
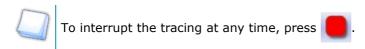
- Either three focimeter dots
- Or a horizontal line which must not touch the edges of the lens (a space of at least 5 mm is required)

Tracing
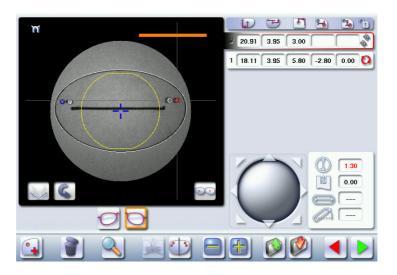
1 Place the pattern or the lens in the middle of the centering chamber.

2 Press ▱ to select optical tracing 📷.

3 Press ◯ to select the eye to be traced.

4 Press ⬭ to select the pattern or ⬭ to select the demo or recut lens.

5 Press 🔄 to start the tracing cycle.

📖 To interrupt the tracing at any time, press 🟥.

> If the tracer does not detect any focimeter dots or line on the lens, an error message is displayed: check and/or re-mark the focimeter dots or line on the lens. If the tracing fails after the check, do a mechanical tracing using the pattern holder.

> The numeric keypad is displayed.

6 Enter the D-dimension, then press ✓ to confirm.

> The drilling screen is displayed.

7 Configure the drilling points if required.

For further information, refer to the following chapter: Preparing a drilled job *(☞ p.79)*.

8 Press ▶ to go to the centering screen.

Tracing - tracing mode

In tracing - tracing mode, the result of the tracing is displayed in the work area of the tracing screen. For further information on the working modes, refer to the following section: Tracing > Tracing environment > Jobs and working modes *(☞ p.22)*.

Before centering

Once the tracing is complete, you can:
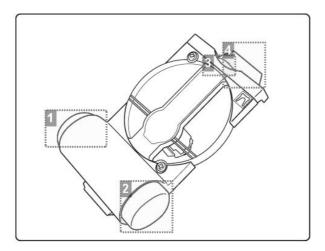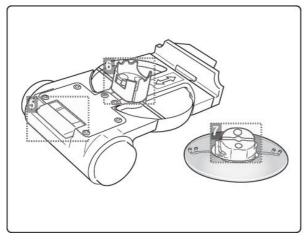
- Input the curve angle and frame base, for optimal centering precision.
- Add drilling points on the shape. For further information, refer to the following chapter: Preparing a drilled job *(☞ p.79)*
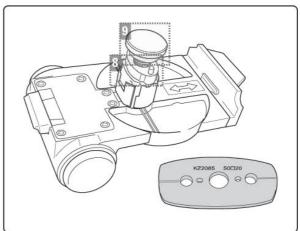
b. Mechanical tracing

Detailed view of the pattern holder

1. *Cap of the housing of the pattern-holder posiblock*

2. *Rear tab retraction button*

3. *Metal button to open the posiblock clamp*

4. *Front tab*

5. *Retractable rear tab*

6. *Posiblock clamp*

7. *18x14 mm posiblock*

8. *Pattern-holder posiblock*

9. *Holding screw*

Attaching a recut lens or demo lens to the pattern holder

1 Block the lens in the boxing center, making sure it is properly centered.

2 Press the metal button to open the posiblock clamp.

> The posiblock clamp opens.

3 Insert the blocked lens, then let go.

> The lens is clamped.
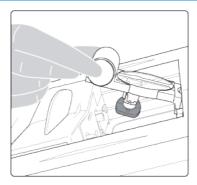
Attaching a pattern to the pattern holder
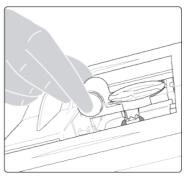
1 Remove the cap (round white button) of the pattern holder.

> You will access the pattern-holder posiblock in its housing.

2 Unscrew the screw holding the pattern-holder posiblock.

3 Attach the pattern to the pattern-holder posiblock:

- Nose on the right for a right lens, and on the left for a left lens
- The positioner on the pattern-holder posiblock must be at the bottom of the pattern

4 Press the metal button above the arrows on the pattern holder.

> The posiblock clamp opens.

5 Insert the pattern-holder posiblock in the posiblock clamp, then let go.

> The pattern is clamped.

Place the pattern holder in the tracing table
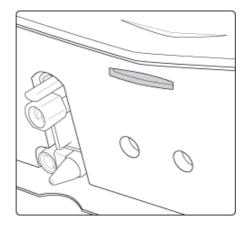
1 Hold the pattern holder by placing your thumb and index finger on the two white circles, then press.

> The rear white tab retracts.

2 Fit the front tab of the pattern holder between the cylindrical white pins on the tracing table (in front of you).
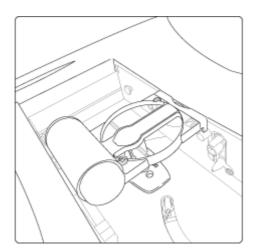
3 Release the pressure on the white circles so the rear tab goes into the slit located opposite the cylindrical white pins (next to you - see illustration below).
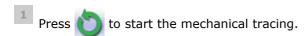
4 Check that the pattern holder doesn't move in the table.

Tracing

1 Press to start the mechanical tracing.

> To interrupt the tracing at any time, press .

> The tracer automatically detects the pattern holder.

> The buttons and are displayed.

2 Select the eye to be traced.

> The numeric keypad is displayed.

3 Enter the D-dimension, then press to confirm.

> The tracing result is displayed in the centering screen, in monocular format on a 1:1.6 scale.

Tracing - tracing mode

In tracing - tracing mode, the result of the tracing is displayed in the work area of the tracing screen. For further information on the working modes, refer to the following section: Tracing > Tracing environment > Jobs and working modes *(☞ p.22)*.

Before centering

Once the tracing is complete, you can:

- Input the curve angle and frame base, for optimal centering precision.
- Add drilling points on the shape. For further information, refer to the following chapter: Preparing a drilled job *(☞ p.79)*

c. Entering the curve and frame base values after a monocular tracing

In a monocular tracing, the curve angle and frame base cannot be measured. For optimal centering precision, we recommend that you enter those values after the optical or mechanical tracing of a pattern, recut lens or demo lens.

Prerequisite: before entering the curve angle and frame base, one of the following operations must be performed:
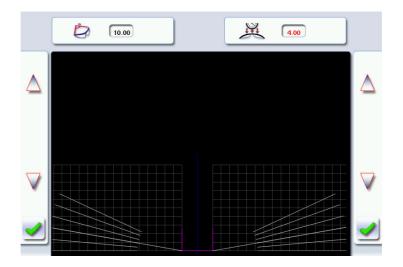
- Optical tracing of a pattern, demo lens or recut lens *(☞ p.33)*
- Mechanical tracing of a pattern, demo lens or recut lens *(☞ p.35)*
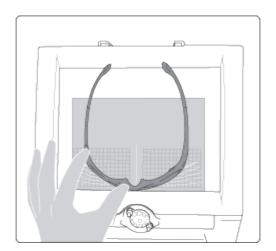
Entering the curve angle and frame base values

1 Press the button.

> The following screen is displayed.

2 Select the value of the curve angle to modify it.

> The value is displayed in red.

3 Place the frame on the screen:

- The vertical blue line must be in the center of the frame.
- The plane which is tangent to the two lenses must coincide with the pink line at the bottom.

4   Use the △ and ▽ buttons to align the light blue lines with the nasal and temporal ends of the rim.

You can also press on the value for a few seconds, then modify it via the numeric keypad.

> The value of the curve angle is modified.

5   Select the value of the frame base to modify it.

> The value is displayed in red.

6   Use the buttons △ and ▽ to modify the frame base value.

You can also press and hold the value for a few seconds, then modify it via the numeric keypad.

7   Press ✔ to confirm.

III. Centering

This chapter describes the lens centering procedures according to the type of lens.

- Description of the centering environment *(☞ p.42)*
- Centering a single vision lens *(☞ p.45)*
- Centering a progressive lens *(☞ p.50)*
- Centering a bifocal lens *(☞ p.56)*
- Centering an executive lens *(☞ p.58)*
- Centering a mid-distance lens *(☞ p.60)*
- Centering for a high-base frame *(☞ p.65)*
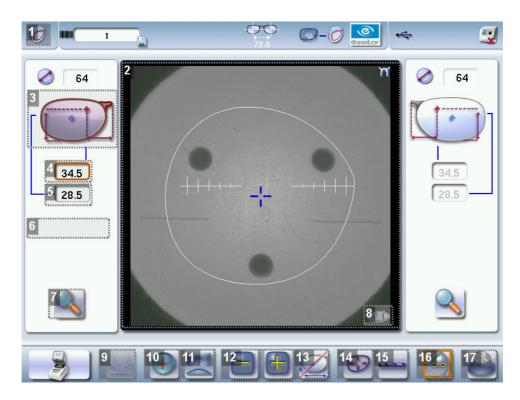
This chapter also describes the procedure to block the lens *(☞ p.66)*.

1. CENTERING ENVIRONMENT

This section describes the centering screen and the various centering modes available:

- Legend screen *(☞ p.42)*
- Centering modes *(☞ p.44)*
- Using the tripods *(☞ p.44)*
- Centering help *(☞ p.45)*

a. Legend screen

1. *Centering screen indicator*

2. *Work area*

- ◦ ⬛ Nasal side indicator
- ◦ Lens shape
- ◦ Centering target according to lens type (white cross)
- ◦ Boxing center of the shape (blue cross)

3. *Active eye and type of display of PD and pupillary height*

Four modes available:

- ◦ Boxing mode
- ◦ Datum mode
- ◦ ΔY mode
- ◦ ΔX + ΔY mode

For further information on the display modes, refer to the following section: Configuring the digital system > Customizing the tracer > Decentration mode .

4. *Half PD*

5. *Pupillary height*

6. *Distance between the PRP and the centering cross (progressive and mid-distance lenses only)*

7. *Zoom*

8. *Tripod detection indicator*

- ◦ Standard tripod with or without recut lens accessory

- ◦ High-base tripod

9. *Entering the curve angle and frame base*

10. *Lens type selection*

- ◦ Single vision lens📖

- ◦ Progressive lens📖

- ◦ Bifocal lens📖

- ◦ Executive lens📖

- ◦ Mid-distance lens📖

11. *Centering mode selection*

- ◦ Centering using three focimeter dots

- ◦ Centering using re-marked micro-engravings

- ◦ Centering using manufacturer markings

- ◦ Centering using segments for bifocal / trifocal lenses

12. *Value modification*

Reduce or increase the previously selected value.

13. *Toggle between the PD and pupillary height*

14. *Shape modification*

Provides access to the shape modification screen. For further information, refer to the following chapter: Modifying the shape of a lens .

15. *Drilling preparation*

Provides access to the drilling screen. For further information, refer to the following chapter: Preparing a drilled job *(☞ p.79)*.

16. *Centering help*

Used to enable / disable centering help.

17. *Blocking*

Used to start lens blocking.

Always browse from left to right: depending on your selection, certain menus will be available while others will not.

b. Centering modes

Always refer to the specific procedure for your type of lens.

⊕	✔	✔		
		✔	✔	
				✔
	✔			
		✔	✔	
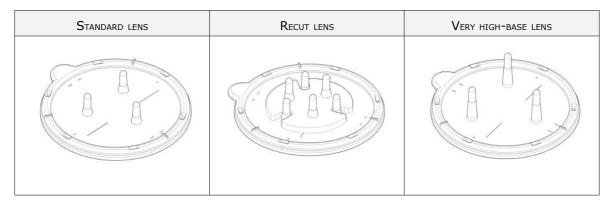
c. Using the tripods

A standard tripod📖 is required to center lenses.

Special cases: if the standard tripod does not hold the lens securely, two accessories are available:

- Small lenses: use the recut lens accessory📖, to be placed at the center of the standard tripod
- Very high-base lenses: use the high-base tripod📖, equipped with higher pins spaced further apart than on the standard tripod

STANDARD LENS	RECUT LENS	VERY HIGH-BASE LENS

d. Centering help

Centering help is used to detect the lens centering marks depending on the centering mode selected.

Two types of help are available for the following lenses:

- Single vision

- Progressive

Arrowed help	Discrete help
Positioning indicators help you to place the lens accurately for centering.	Only the centering marks detected on the lens are highlighted.

Possible statuses on the centering screen:

- Help enabled

- Help available

If none of these icons is displayed on the centering screen, centering help is disabled.

To select the type of help required and choose automatic or manual activation, refer to the following section: Configuring the digital system > Customizing the tracer > Action bar *(☞ p.133)*.

Centering help and micro-engravings

To use centering help with re-marked micro-engravings: erase any circles around the micro-engravings before re-marking them so as not to affect detection.

> **Essiclean™**
>
> You are recommended to use a water-alcohol solution such as Essiclean™ to erase the existing markings.

2. Centering a single vision lens

Prerequisite: Before centering the lens, a shape must be displayed in the centering screen.

If necessary, we recommend the following prior operations:

- Prepare the drilling *(☞ p.79)* to be carried out
- Place the stickers recommended by the manufacturer on hydrophobic lenses.

This section describes the procedures for the centering of a single vision lens:

- Centering using three focimeter dots *(☞ p.46)*
- Centering using re-marked micro-engravings *(☞ p.48)*

a. Centering a single vision lens using three focimeter dots
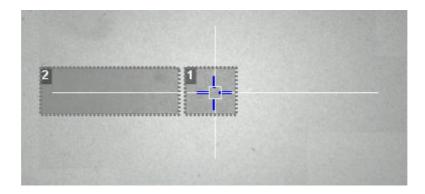
✓ Prerequisite: The lens must be marked with the focimeter.
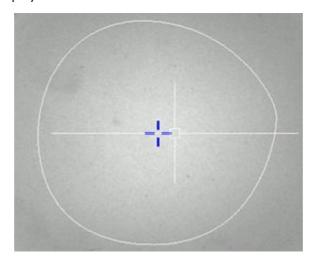
The three focimeter dots must be:

- Lined up
- At the same distance from the central dot
- 0.5 to 1.5 mm in diameter

Description of the centering target

1. *Optical center of the lens (white cross) and boxing center of the shape (blue cross)*

2. *Centering marks*

1 Press ⊕ to select the type of single vision lens.

2 Press ⣀ to select the centering mode using the three focimeter dots.

> The centering target is displayed:
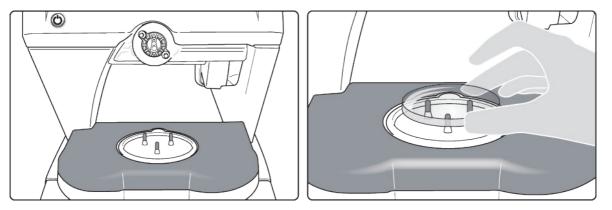
3 Enter the half-PD and pupillary height.

> The target moves.

4 Make sure that the standard tripod is inside the centering chamber.

💡 | • Use the high-base tripod for high-base lenses.

> • Place the recut lens accessory in the center of the standard tripod for small lenses.

5 Position the lens on the tripod.
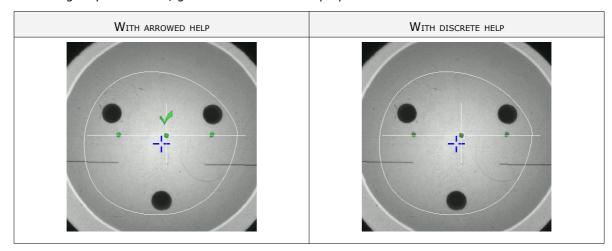
> > If centering help is enabled, yellow indicators are displayed when the focimeter dots are detected.

> For further information on centering help, refer to the following section: Centering > Centering environment > Centering help *(☞ p.45)*.

WITH ARROWED HELP	WITH DISCRETE HELP

6 Move the lens slowly until the three focimeter dots are perfectly aligned on the target.

> > If centering help is enabled, green indicators are displayed:

WITH ARROWED HELP	WITH DISCRETE HELP

> > The lens is centered and ready to be blocked.
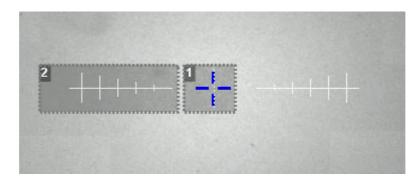
To block the lens, refer to the following section: Centering > Blocking *(☞ p.66)*.
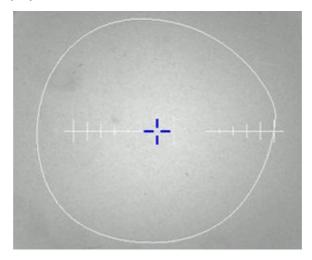
b. Centering a single vision lens using re-marked micro-engravings

Description of the centering target

1. *Optical center of the lens (white dotted lines) and Boxing center of the shape (blue cross)*

2. *Centering marks*

1 Mark the micro-engravings with felt tip marker. The diameter of the dots must be between 0.5 and 1.5 mm.

> You are recommended to use the white felt tip marker supplied with the tracer to mark the lens.

2 Press ⊕ to select the type of single vision lens.

3 Press 👓 to select the centering mode using the micro-engravings.

> > The centering target is displayed:

4 Enter the half-PD and pupillary height.

> > The target moves.

5 Make sure that the standard tripod is inside the centering chamber.

> - Use the high-base tripod for high-base lenses.
> - Place the recut lens accessory in the center of the standard tripod for small lenses.

6 Position the lens on the tripod.

> If centering help is enabled, yellow indicators are displayed when the re-marked micro-engravings are detected.

For further information on centering help, refer to the following section: Centering > Centering environment > Centering help *(☞ p.45)*.

WITH ARROWED HELP	WITH DISCRETE HELP

7 Move the lens slowly until the micro-engravings are perfectly aligned on the target.

> If centering help is enabled, green indicators are displayed:

WITH ARROWED HELP	WITH DISCRETE HELP

> The lens is centered and ready to be blocked.

To block the lens, refer to the following section: Centering > Blocking *(☞ p.66)*.

---

3. Centering a progressive lens

✓ Prerequisite: Before centering the lens, a shape must be displayed in the centering screen.

If necessary, we recommend the following prior operations:

- Prepare the drilling *(☞ p.79)* to be carried out
- Place the stickers recommended by the manufacturer on hydrophobic lenses.

This section describes the procedures for the centering of a progressive lens:

- Centering using re-marked micro-engravings *(☞ p.50)*
- Centering using manufacturer markings *(☞ p.52)*

a. Centering a progressive lens using re-marked micro-engravings

Description of the centering target

1. *Far vision mark (white dotted lines) and Boxing center of the shape (blue cross)*

2. *Centering graduated marks*

3. *Near vision mark*

1 Mark the micro-engravings with felt tip marker. The diameter of the dots must be between 0.5 and 1.5 mm.

You are recommended to use the white felt tip marker supplied with the tracer to mark the lens.

2 Press ⬤ to select the type of progressive lens.

3 Press ⬤ to select centering using re-marked micro-engravings.

> The centering target is displayed:
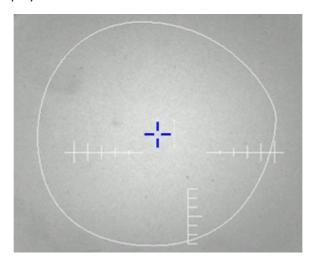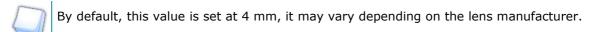
4 Enter the half-PD and pupillary height.

5 Modify the distance between the PRP (prismatic reference point) and the centering cross

⬤ **4** if necessary.

By default, this value is set at 4 mm, it may vary depending on the lens manufacturer.

> The target moves.

6 Make sure that the standard tripod is inside the centering chamber.

- Use the high-base tripod for high-base lenses.
- Place the recut lens accessory in the center of the standard tripod for small lenses.
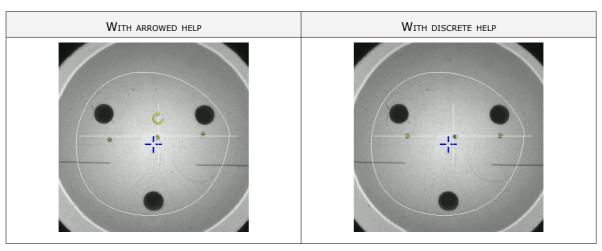
7 Position the lens on the tripod.

> If centering help is enabled, yellow indicators are displayed when the re-marked micro-engravings are detected.

For further information on centering help, refer to the following section: Centering > Centering environment > Centering help *(☞ p.45)*.

WITH ARROWED HELP	WITH DISCRETE HELP

8 Move the lens slowly until the micro-engravings are:

- Aligned on the graduated centering mark,
- Symmetrical with respect to the graduations.

> If centering help is enabled, green indicators are displayed:

WITH ARROWED HELP	WITH DISCRETE HELP

> The lens is centered and ready to be blocked.

To block the lens, refer to the following section: Centering > Blocking *(☞ p.66)*.

b. Centering a progressive lens using manufacturer markings

Prerequisite:

- The markings must be clear
- The lens must at least have the following markings:

1. *Far vision mark*
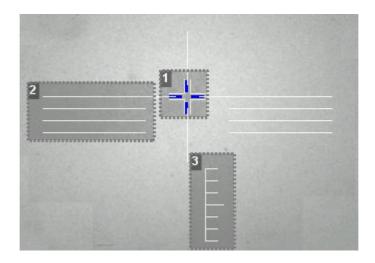
If centering help is enabled, the cross must contain at least three branches: ⌐⌐ , ⊤ , +

2. *Centering marks*

If centering help is enabled, the marking must include at least two lines on the same axis at the centering point:

- ◦ Minimum length: 3 mm
- ◦ Average thickness: 0.5 mm

Description of the centering target

1. *Centering cross (white cross) and boxing center of the shape (blue cross)*
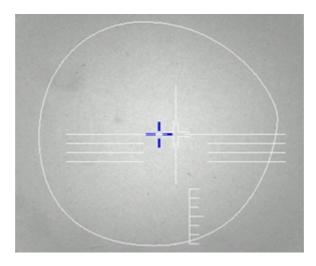
2. *Centering marks*

3. *Near vision mark*
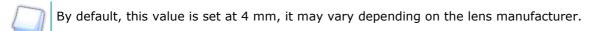
Centering the lens

1 Press ⊙ to select the type of progressive lens.

2 Press ⊙ to select centering from manufacturer markings.

> The centering target is displayed:

3 Enter the half-PD and pupillary height.

4 Modify the distance between the PRP (prismatic reference point) and the centering cross

⊙ **4** if necessary.

By default, this value is set at 4 mm, it may vary depending on the lens manufacturer.

> The target moves.

5 Make sure that the standard tripod is inside the centering chamber.

- Use the high-base tripod for high-base lenses.
- Place the recut lens accessory in the center of the standard tripod for small lenses.

6 Position the lens on the tripod.
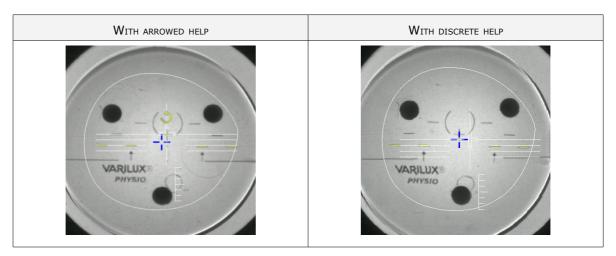
> If centering help is enabled, yellow indicators are displayed when the manufacturer markings are detected.

For further information on centering help, refer to the following section: Centering > Centering environment > Centering help *(☞ p.45)*.

WITH ARROWED HELP	WITH DISCRETE HELP

7 Move the lens slowly until the manufacturer markings are superimposed on the target.

> If centering help is enabled, green indicators are displayed:

WITH ARROWED HELP	WITH DISCRETE HELP

> The lens is centered and ready to be blocked.

To block the lens, refer to the following section: Centering > Blocking *(☞ p.66)*.

4. Centering bifocal / trifocal lenses
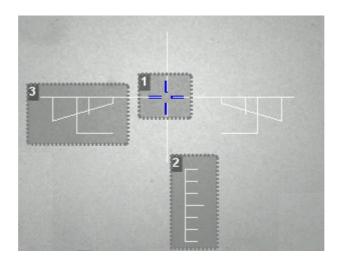
✓ Prerequisite: Before centering the lens, a shape must be displayed in the centering screen.

If necessary, we recommend the following prior operations:

- Prepare the drilling *(☞ p.79)* to be carried out
- Place the stickers recommended by the manufacturer on hydrophobic lenses.

This section describes the centering procedure for bifocal and trifocal lenses with a D-, curved or round segment.

Description of the centering target

1. *Centering cross (white cross) and boxing center of the shape (blue cross)*

2. *Near vision mark*

3. *Centering marks*

Centering the lens
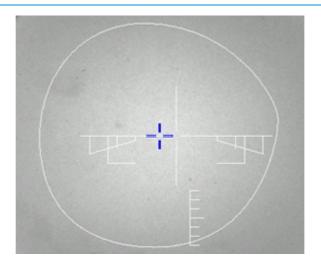
1 Press ⬇ to select the type of bifocal lens.

> The centering mode for bifocal lenses ⌣ is displayed.

> The centering target is displayed:
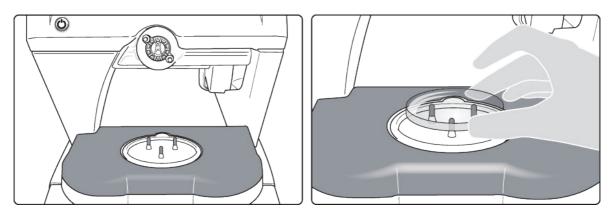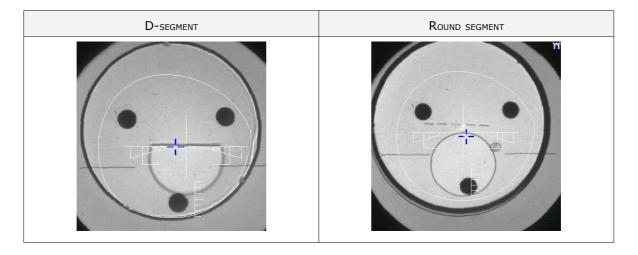
2 Enter the half-PD for near vision and the frame height.

> **>** The target moves.

3 Make sure that the standard tripod is inside the centering chamber.

- Use the high-base tripod for high-base lenses.
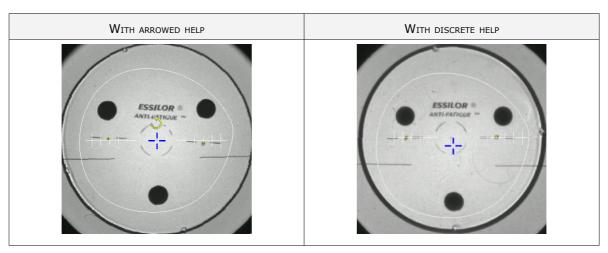- Place the recut lens accessory in the center of the standard tripod for small lenses.
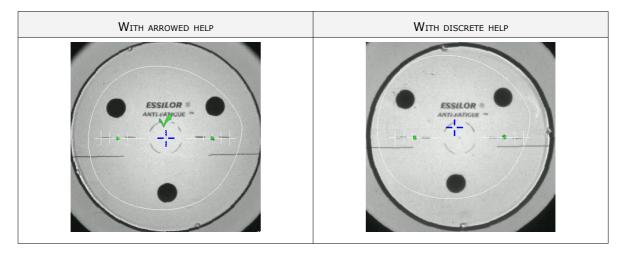
4 Position the lens on the tripod.

5 Move the lens slowly until the top of the segment is in the center of the target.

D-segment	Round segment

> The lens is centered and ready to be blocked.

5. CENTERING AN EXECUTIVE LENS

Prerequisite: Before centering the lens, a shape must be displayed in the centering screen.

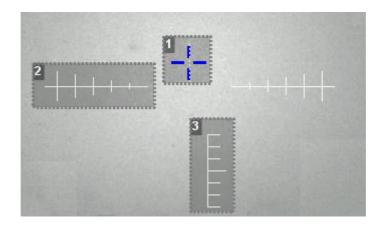If necessary, we recommend the following prior operations:

- Prepare the drilling *(☞ p.79)* to be carried out
- Place the stickers recommended by the manufacturer on hydrophobic lenses.

This section describes the procedure for the centering of an executive lens.
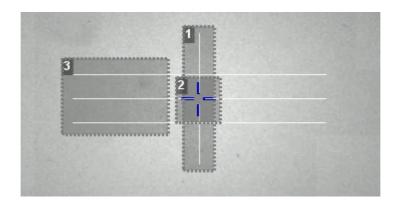
Prerequisite: The lens must be marked with the focimeter.

The three focimeter dots must be:

- Lined up
- At the same distance from the central dot
- 0.5 to 1.5 mm in diameter

Description of the centering target

1. *Centering mark*

2. *Boxing center of the shape (blue cross)*

3. *Centering mark*

Centering the lens
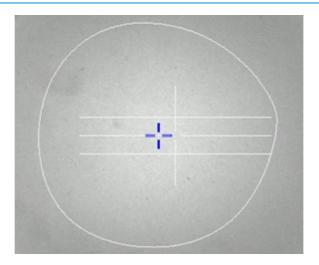
1 Press 🔵 to select the type of executive lens.

> The centering mode using the three focimeter dots 😞 is displayed.

> The centering target is displayed:
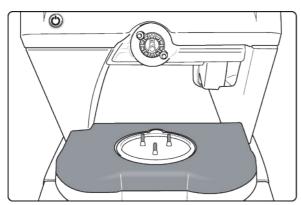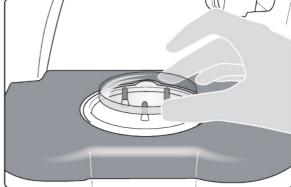
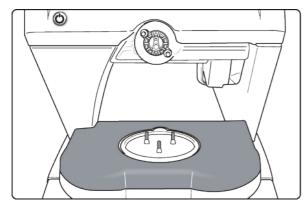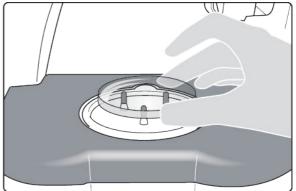**2** Enter the half-PD (for near vision or far vision) and the frame height.

> The target moves.

3 Make sure that the standard tripod is inside the centering chamber.

- Use the high-base tripod for high-base lenses.
- Place the recut lens accessory in the center of the standard tripod for small lenses.

4 Position the lens on the tripod.
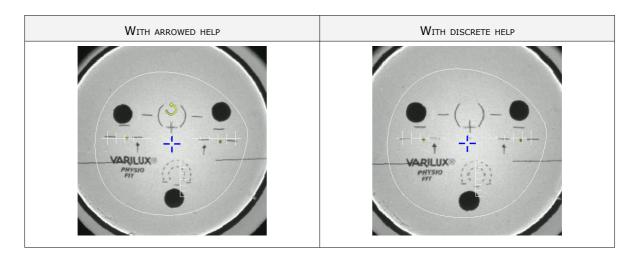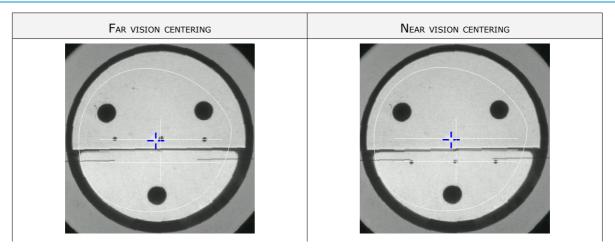

5 Move the lens slowly until it is perfectly centered:

- Line up the transition segment between near vision and far vision with the horizontal mark in the center
- Position the central focimeter dot on the vertical axis of the target

Far vision centering	Near vision centering

> The lens is centered and ready to be blocked.

To block the lens, refer to the following section: Centering > Blocking *(☞ p.66)*.

6. Centering a mid-distance lens

Prerequisite: Before centering the lens, a shape must be displayed in the centering screen.

If necessary, we recommend the following prior operations:

- Prepare the drilling *(☞ p.79)* to be carried out
- Place the stickers recommended by the manufacturer on hydrophobic lenses.
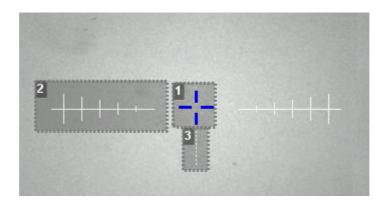
This section describes the procedures for the centering of a mid-distance lens:

- Centering using re-marked micro-engravings *(☞ p.60)*
- Centering using manufacturer markings *(☞ p.63)*

a. Centering a mid-distance lens using re-marked micro-engravings

Description of the centering target

1. *Centering cross (white cross) and boxing center of the shape (blue cross)*

2. *Centering graduated marks*

3. *Near vision marks*

1 Mark the micro-engravings with felt tip marker. The diameter of the dots must be between 0.5 and 1.5 mm.

You are recommended to use the white felt tip marker supplied with the tracer to mark the lens.

2 Press ![icon] to select the type of mid-distance lens.

3 Press ![icon] to select centering using re-marked micro-engravings.

> The centering target is displayed:

4 Enter the half-PD and the frame height.
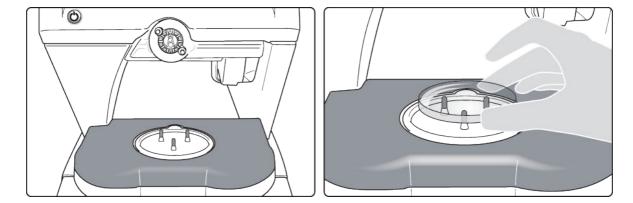
5 Modify the distance between the PRP (prismatic reference point) and the centering cross ![icon 6] if necessary.

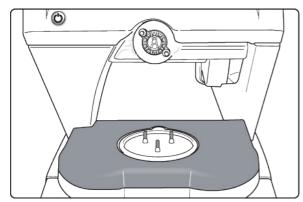By default, this value is set at 6 mm, it may vary depending on the lenses.

> The target moves.

6 Make sure that the standard tripod is inside the centering chamber.

- Use the high-base tripod for high-base lenses.
- Place the recut lens accessory in the center of the standard tripod for small lenses.

7 Position the lens on the tripod.

8 Move the lens slowly until the micro-engravings are perfectly aligned on the target.

> The lens is centered and ready to be blocked.
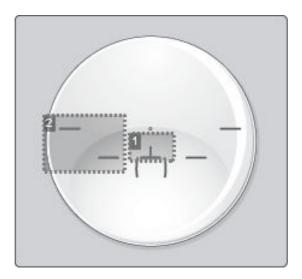
To block the lens, refer to the following section: Centering > Blocking *(☞ p.66)*.

b. Centering a mid-distance lens using manufacturer markings

✓ Prerequisite:
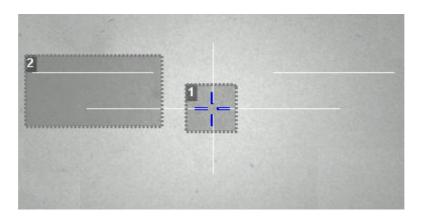
- The markings must be clear
- The lens must at least have the following markings:

1. *Centering cross*

2. *Centering marks*

Description of the centering target

1. *Centering cross (white cross) and Boxing center of the shape (blue cross)*
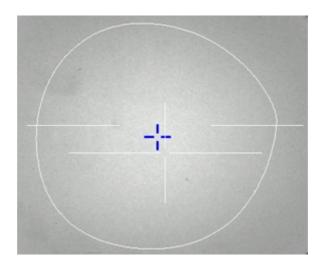
2. *Centering marks*

Centering the lens

1 Press 😴 to select the type of mid-distance lens.

2 Press ⚕ to select centering from manufacturer markings.

> The centering target is displayed:

3 Enter the half-PD and the frame height.

4 Modify the distance between the PRP (prismatic reference point) and the centering cross

 6 if necessary.
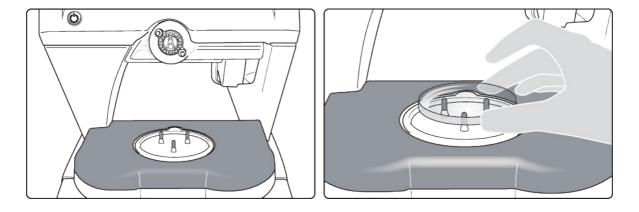
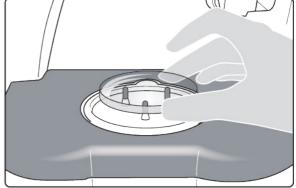By default, this value is set at 6 mm, it may vary depending on the lenses.

> The target moves.

5 Make sure that the standard tripod is inside the centering chamber.
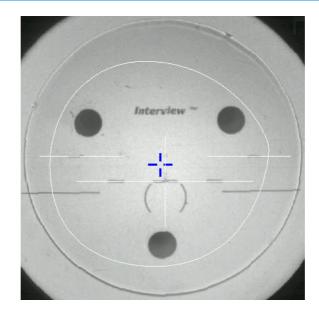
- Use the high-base tripod for high-base lenses.
- Place the recut lens accessory in the center of the standard tripod for small lenses.
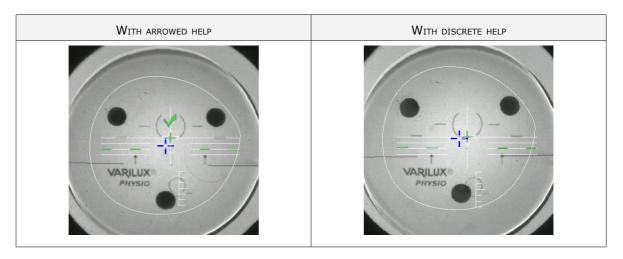
6 Position the lens on the tripod.

7 Move the lens slowly until the manufacturer markings are superimposed on the target.

> The lens is centered and ready to be blocked.
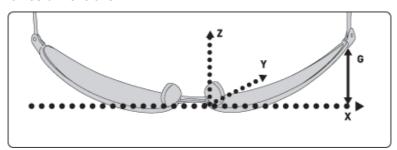
To block the lens, refer to the following section: Centering > Blocking *(☞ p.66)*.

7. CENTERING FOR A HIGH-BASE FRAME

At the end of a tracing, if a frame is considered as a high-base frame, this indicator is displayed in the information bar.

3D compensation

The PD and pupillary height measurements as well as the lens centering are done in two dimensions. Yet, the frame is treated in three dimensions:

3D compensation takes into account all frame characteristics (x, y, z, curve, pantoscopic tilt, etc.) to ensure that the center of the wearer's pupil is at the optical center of the lens. For an optimal job, the on-screen positioning of the centering indicators always takes account of 3D compensation.

Match between frame base and lens base

To do a job involving a high-base frame, use lenses whose base matches that of the frame (maximum difference of 0.7 D).
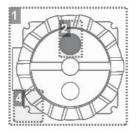
To center high-base lenses, use the high-base tripod.
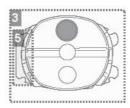
Refer to the centering procedure for the particular type of lens:

- Centering a single vision lens *(☞ p.45)*
- Centering a progressive lens *(☞ p.50)*
- Centering a bifocal lens *(☞ p.56)*
- Centering an executive lens *(☞ p.58)*
- Centering a mid-distance lens *(☞ p.60)*

8. BLOCKING

Two accessories are available for the blocking operation:

1. *22 mm posiblock*

Specific pads corresponding to the size of the posiblock are supplied with the digital system.

2. *Magnet*

3. *18x14 mm posiblock*

Specific pads corresponding to the size of the posiblock are supplied with the digital system.

4. *Fin*

5. *Tab*

Prerequisite:

- The lens must be centered.
- Get hold of a posiblock suited to the shape, as shown on the bottom right of the screen: or

.

Small frames

Depending on the B-dimension of the frame and the posiblock you choose to use, certain finishes may or may not be possible. In such cases, an alert is displayed.

Example:
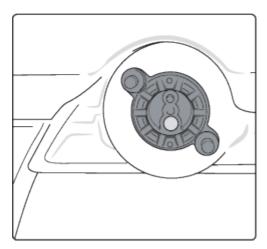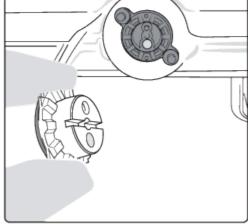
- Press and block the lens with an 18×14 mm posiblock to do a high-base bevel and/or chamfer.

- Otherwise, press and block the lens with a 22 mm posiblock.

1 Fit the appropriate pad on the posiblock, taking care to align the pad lug with that of the posiblock.
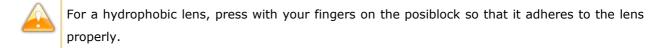
- Always use Essilor pads: they are specially designed to ensure the performance of your machine for quality jobs.
- The pads are non re-usable.
- Do not stick pads on posiblocks in advance as they may loose some of their holding power.
- The posiblock must never be placed on the rear (inner) surface of the lens.

2 Position the posiblock in the blocking head.

3 Depending on the display, press or to start the blocking.

> The blocking arm places the posiblock on the lens at the shape Boxing center.

> The lens is blocked.

For a hydrophobic lens, press with your fingers on the posiblock so that it adheres to the lens properly.

> The centering screen for the second lens is displayed.

The adjustments made to the PD, pupillary height, type of lens and type of centering are displayed by default for the second lens.

4   Center and block the second lens.

IV. Modifying the shape of a lens

This chapter describes the lens shape modification procedures:
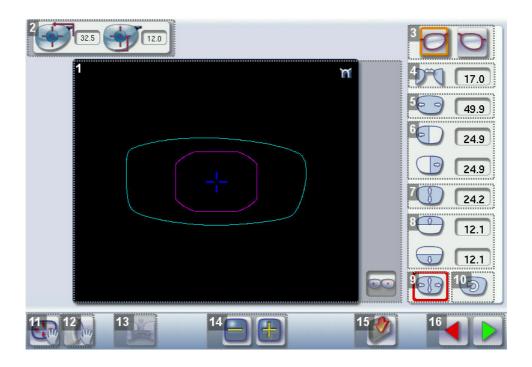
- Description of the shape modification screen *(☞ p.70)*
- Modifying the shape of a lens *(☞ p.72)*
- Archiving shapes *(☞ p.77)*

1. Legend screen

In the centering screen, press to access the shape modification screen.

The following screen is displayed:

1. *Work area*

Colours which may appear on screen:

- ▢ (white) Current shape (stemming from the shape scanned) and associated drilling points
  ▩ (cyan) Current shape (obtained by symmetry with the shape scanned) and associated drilling points
- ▩ (light red) Shape before modification
- ▩ (grey) Part of the shape not selected for the modification underway
- ▩ (purple) Smallest possible shape
- ▩ (pink) Limit of the no-accessory area
- ▢ (yellow) Limit of the drilling area
- ▩ (red) Non-machinable shape
- ▩ (blue) Reference drilling points
- ▩ (green) Lens already blocked

 Binocular view

2. *Half PD and pupillary height*

3. *Active eye*

The selected eye has an orange frame around it.

4. *D-dimension modification*

5. *A-dimension modification*

6. *Modification of half A-dimensions (temporal / nasal)*

7. *B-dimension modification*

8. *Modification of half B-dimensions (upper / lower)*

9. *Modification of the overall size of the shape*

   Scaling in relation to boxing center

10. *Shape rotation around the boxing center*

11. *Free-form modification*

   ◦   Modification focused on the center of the selected shape.

   ◦   Uniform modification across all points of the selected area.

12. *Shape retouch*

   ◦   Retouch to create a straight line.

   ◦   Retouch to create a curve.

   ◦   Retouch to create an angle.

13. *Modify both eyes simultaneously or not*

14. *Modify the selected value*

   The modification is done in steps of 0.5 mm or 1 mm depending on the precision setting *(☞ p.130)*.

15. *Duplicate the job displayed*

16. *Back to the centering screen*

   ◦   Press to save the modifications and go back to the centering screen.

   ◦   Press to go back to the centering screen without saving the modifications.

2. Modifying a shape

The shape modification screen gives you access to several functions:

- Simple modifications *(☞ p.72)*: D-dimension, Boxing dimensions, size modification and rotation of the shape
- Free-form modification *(☞ p.74)*, within the limits of the constraints pertaining to the edging of the lens
- Retouching *(☞ p.75)* a shape in the event of tracing defects

Shape modifications and retouches are applied only if all dimensions and half-dimensions are within the boundaries.

If a portion of the shape is outside the edging limits, it is displayed in red.

a. Enlarging, reducing or rotating a shape

The side panel on the right of the screen enables you to:

- Modifying each dimension or half-dimension separately
- Modifier the size of a shape as a whole
- Rotating a shape around the boxing center

Modifying both eyes simultaneously
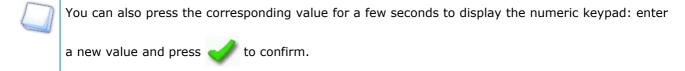
If you have done an asymmetric binocular tracing, you can modify both shapes simultaneously.

- Modification of both eyes simultaneously

- Modification of each eye separately

In symmetric monocular or binocular tracing, modifications are automatically made to both eyes.

Modifying each dimension or half-dimension separately
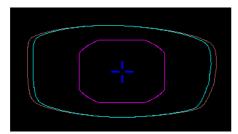
1 Select the icon representing the part of the shape you want to reduce or enlarge.

> A red rectangle is displayed around the icon.

2 Use buttons or to reduce or increase the corresponding value and view the modification in real time.

You can also press the corresponding value for a few seconds to display the numeric keypad: enter a new value and press to confirm.

> The shape is modified.
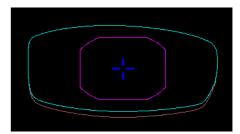
> The original shape is displayed in light red.

Example of a reduced A-dimension: Example of a reduced half B-dimension:
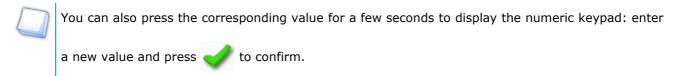
Modifying the overall size of the shape
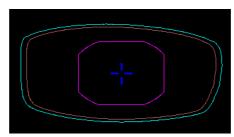
1 Press ⬅️⬆️➡️ to select the scaling function.

> A red rectangle is displayed around the icon.

2 Use buttons ➖ or ➕ to reduce or enlarge the shape and view the modification in real time.

📘 You can also press the corresponding value for a few seconds to display the numeric keypad: enter

a new value and press ✅ to confirm.

> The shape is modified.

> The original shape is displayed in light red.

Example of an overall enlargement of the shape:

Rotating a shape around the boxing center
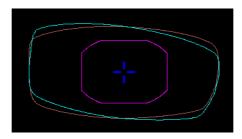
1 Press 🔄 to select the rotation function.

> A red rectangle is displayed around the icon.

2 Use buttons ➖ or ➕ to rotate the shape 1° clockwise or anti-clockwise and view the modification in

real time.

> The shape rotates: the rotation is applied.

> The original shape is displayed in light red.

Cancelling a modification

- Press once on ✖ to cancel the last modification made to the shape.

- Double-press on ✖ to go back to the original shape.

Once the shape has been modified, press ▶ to save and go back to the centering screen.

b. Free-form modification

This function enables you to freely modify the shape of the lens.

💡 **Modifying both eyes simultaneously**

If you have done an asymmetric binocular tracing, you can modify both shapes simultaneously.

- Modification of both eyes simultaneously

- Modification of each eye separately

In symmetric monocular or binocular tracing, modifications are automatically made to both eyes.
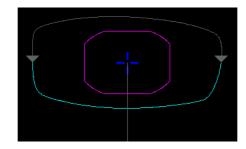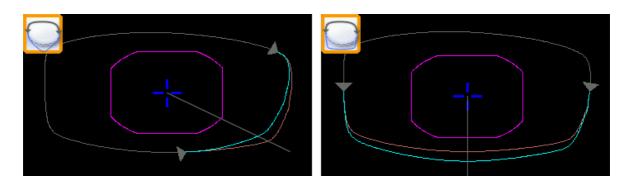
1 Select 🖐.

> The selection area is delimited by two cursors, ➡ and ⬅.

> The area not affected by the modification is displayed in grey.

2 Select the type of modification.

- Modification focused on the center of the selected shape.

- Uniform modification across all points of the selected area.

3 Drag the cursors ➡ and ⬅ to delimit the selection area.

4 Move the line starting at the boxing center to orient the modification.

5 Use buttons ⊟ or ⊞ to reduce or enlarge the shape.

> The shape is modified.

> The original shape is displayed in light red.

Cancelling a modification

- Press once on ✖ to cancel the last modification made to the shape.

- Double-press on ✖ to go back to the original shape.

Once the shape has been modified, press ▶ to save and go back to the centering screen.

c. Retouching a shape

This function enables you to retouch the shape of the lens.

Modifying both eyes simultaneously

If you have done an asymmetric binocular tracing, you can modify both shapes simultaneously.

- Modification of both eyes simultaneously

- Modification of each eye separately

In symmetric monocular or binocular tracing, modifications are automatically made to both eyes.

1 Select [hand icon].

> The selection area is delimited by two cursors, [arrow] and [arrow].

> The area not affected by the modification is displayed in grey.

2 Drag the cursors [arrow] and [arrow] to delimit the selection area.

3 Select the type of retouch.

The types of retouch available vary according to the size of the selected area.

- [icon] Retouch to create a straight line.
- [icon] Retouch to create a curve.
- [icon] Retouch to create an angle.

> The selected area is retouched.

> The original shape is displayed in light red.

Cancelling a modification

- Press once on to cancel the last modification made to the shape.

- Double-press on to go back to the original shape.

Once the shape has been modified, press to save and go back to the centering screen.

3. ARCHIVING / SAVING A SHAPE

This function enables you to save a modified shape to a new job with a new ID while keeping the original job.

1 Press .

> The job-creation alphanumeric keypad is displayed.

2 Select the list in which you want to store the shape.

   Job list

   Collection list

> A new ID is allocated (first free slot in the selected list).

   You can also give it a different ID.

3 Enter a reference for the shape to be saved.

4 Press to confirm.

> The shape is archived in a new job with a new ID and is displayed in the shape modification screen.

V. Preparing a drilled job

This chapter describes the procedure for the positioning of drilling points (drill-holes, slots, notches) on a lens.

- Description of the drilling screen *(☞ p.80)*
- Drilling settings *(☞ p.82)*
- Drilling models *(☞ p.87)*

Once the drilling parameters have been set, you can go on to the centering of the lens.

Prerequisite: to access this screen, you need to have carried out a lens tracing.

Optical tracing

If you trace a demo lens or a pattern using the optical tracing function, the drilling screen is displayed automatically once the tracing is complete.
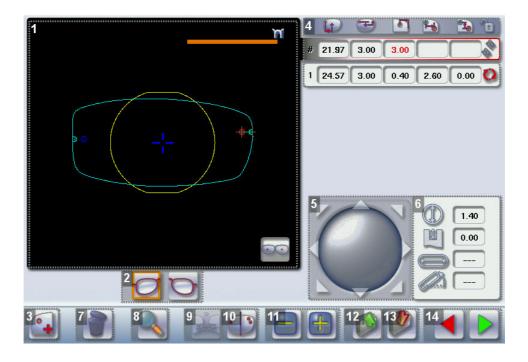
Glass lenses

The drilling function is not available for glass lenses.

1. Legend screen

In the centering screen, press ▭ to access the drilling screen.

The following screen is displayed:

1. *Work area*

Colours which may appear on screen:

- ▫ ☐ (white) Current shape (stemming from the shape scanned) and associated drilling points
  ▣ (cyan) Current shape (obtained by symmetry with the shape scanned) and associated drilling points
- ▫ ▣ (yellow) Limit of the no-drill area

- ◦ ■ (orange) Nasal or temporal side indicator
- ◦ ■ (red) Selected drilling point
- ◦ ■ (blue) Reference drilling point (by default, the first one created on each side – nasal and temporal)
- ◦ A drilling point with a colour infill indicates non-through drilling

Binocular view

2. *Active eye*

The selected eye has an orange frame around it.

3. *Type of drilling*

- ◦ Hole
- ◦ Slot
- ◦ Notch

4. *Drilling coordinates*

- ◦ X and Y coordinates in relation to the boxing⊞ center of the shape.
- ◦ Distance between the center of the hole entrance point and the edge of the lens.
- ◦ X and Y coordinates in relation to the reference drilling point.
- ◦ Freezing of the distance between the drilling point and the edge of the lens.

5. *Virtual mouse*

Slide the stylus in this area to move the selected drilling points.

6. *Drilling point dimensioning*

- ◦ Diameter in mm
  - ◦ default value: 1.40mm
- ◦ Drilling depth in mm in the case of non-through drilling
  - ◦ default value: 0 (through-drilling)
- ◦ Length of slot or notch in mm
  - ◦ default value of slot: 3.40mm
- ◦ Angle of slot or notch in °
  - ◦ default value for right eye: 0° on nasal side, 180° on temporal side
  - ◦ default value for left eye: 180° on nasal side, 0° on temporal side

7. *Delete one or all drilling points*

- ◦ Delete one drilling point
- ◦ Delete all drilling points

8. *Zoom*

9. *Create and set the drilling points for both eyes simultaneously*

10. *Symmetrically transfer the drilling points from the nasal to the temporal side or vice versa*

11. *Modify the selected value*

12. *Import a drilling model from the shape management screen*

13. *Archive the shape and create a new job based on the job displayed*

14. *Back to the centering screen*

- ◦ Press ▶ to save the modifications and go back to the centering screen.

- ◦ Press ◀ to go back to the centering screen without saving the modifications.

2. CONFIGURING A DRILLING POINT

This section describes the procedures for the creation and positioning of a drilling point:

- • Creating a drilling point *(☞ p.82)*
- • Deleting a drilling point *(☞ p.83)*
- • Dimensioning a drilling point *(☞ p.83)*
- • Adjusting the position of a drilling point *(☞ p.84)*

⚠ The positions of the various drilling points must be set before the centering of the lens.
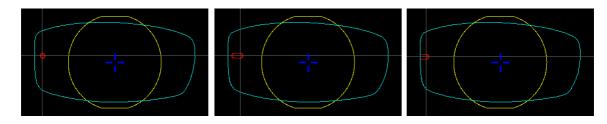
💡 **Setting the drilling points on both eyes simultaneously**

- • If you have done an asymmetric binocular tracing, you can create and set the drilling points simultaneously on both shapes.

    - ◦ Create or modify drilling points for both eyes simultaneously

    - ◦ Create or modify drilling points for each eye separately

- • In symmetric monocular or binocular tracing, the drilling points are automatically positioned on both eyes.

a. Creating a drilling point

1 Press to create a new drilling point.

2 Select the type of drilling (hole, slot or notch).

3 Press on the shape at the spot where you want to position the drilling point.

> The drilling point created is displayed in red in the shape:

> The drilling coordinates are displayed on the right of the work screen;

Press ![icon] to copy the drilling points from the nasal area to the temporal area and vice-versa.

On the tracer, you can configure up to 6 drilling points per side (nasal and temporal) of a shape.

b. Deleting a drilling point

1 Select the drilling point to be deleted.

If you want to delete all drilling points from the shape, select any of them.

> The drilling point is displayed in red.

2 Press ![icon].

> Two buttons are displayed: ![icons].

3 Press:

- ![icon] to delete the selected drilling point, or
- ![icon] to delete all drilling points from the shape.

> The selected drilling point or all drilling points are deleted from the shape.

c. Dimensioning a drilling point

You can define a setting for each existing drilling point.

1 Press on the hole, slot or notch to select it.

> The drilling point is displayed in red in the shape.

2 Press a few seconds on the setting to be modified:

- ![icon] Diameter
- ![icon] Depth (for non-through holes)
- ![icon] Length of slot or notch
- ![icon] Angle of slot or notch

> The numeric keypad is displayed.
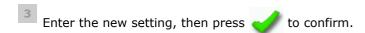
You can also use the buttons ⊟ or ⊞ to reduce or increase the selected value.

3 Enter the new setting, then press ✓ to confirm.

> The drilling point has been modified.
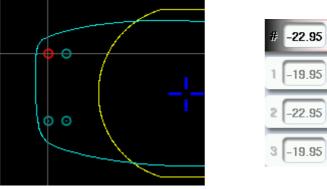
Grouping the drilling points

If you need to modify several drilling points simultaneously, you can group them together provided they are on the same side of the shape (nasal side / temporal side).

By default, the symbol ⬡ is displayed: each drilling point can be modified individually.

• Press ⬡.

> 🔗 is displayed. All future modifications will be applied to all drilling points in the same way:

◦ only the reference drilling point is modifiable,
◦ the coordinates of the other drilling points are greyed out.

#	-22.95	6.68	1.85			
1	-19.95	6.68	4.85	3.00	0.00	
2	-22.95	-4.52	1.61	0.00	-11.20	
3	-19.95	-4.52	4.61	3.00	-11.20	

• To ungroup the drilling points, press again on 🔗.

d. Adjusting the position of a drilling point
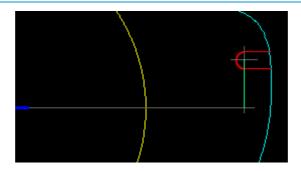
You have three possibilities to adjust the position of a drilling point on a shape:

• Use the virtual mouse
• Use the buttons ⊟ or ⊞ to reduce or increase the selected value
• Input the exact coordinates of the drilling point

The drilling coordinates are those of its entrance point..
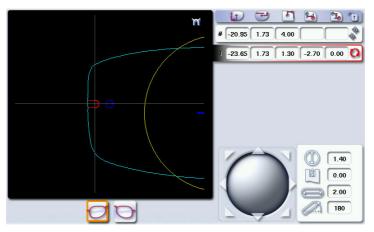
• For a hole, it is the center.
• For a slot and a notch, the entrance point is always on the side which is furthest away from the edge of the lens:
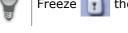
For greater precision, when you use the virtual mouse or the buttons ⊟ and ⊞, press 🔍 to zoom in on the selected drilling point: the displacement step is 0.01mm (0.1mm for normal display).

1 Press on the hole, slot or notch to select it.

>   The drilling point is displayed in red.

2 Press a few seconds on the value corresponding to the coordinates to be modified:

- 	X coordinates
- 	Y coordinates
- 	Distance from the edge of the lens.
- 	X coordinates in relation to the reference drilling point
- 	Y coordinates in relation to the reference drilling point

Freeze 🔒 the distance to the edge of the lens and adjust only the Y position of the drilling point.

>   The numeric keypad is displayed.

3 Enter the new value, then press ✔ to confirm.

>   The drilling coordinates have been modified.
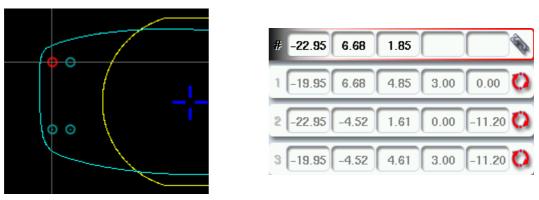
Grouping the drilling points

If you need to modify several drilling points simultaneously, you can group them together provided they are on the same side of the shape (nasal side / temporal side).

By default, the symbol ![icon] is displayed: each drilling point can be modified individually.

- Press ![icon].

    > ![icon] is displayed. All future modifications will be applied to all drilling points in the same way:
    - only the reference drilling point is modifiable,
    - the coordinates of the other drilling points are greyed out.
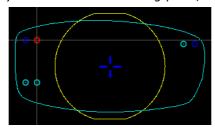
- To ungroup the drilling points, press again on ![icon].
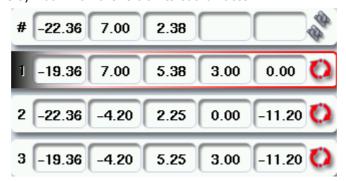
Reference drilling point

The first drilling point you set on a shape automatically becomes the 'reference drilling point' in relation to which you will be able to position the other ones:

- Each side (nasal and temporal) has its reference drilling point, identified by its dark blue colour ■.

- It is identified by the symbol # on the left of its coordinates.

You can position each drilling point in relation to the reference drilling point by modifying the values in the columns:

- X coordinates in relation to the reference drilling point
- Y coordinates in relation to the reference drilling point

To select another drilling point as the reference drilling point:

1 Select the drilling point you wish to have as the reference drilling point

2 Press on the right of its coordinates.

> The selected drilling point is displayed at the top of the list:

- The symbol # is displayed on the left of its coordinates
- The drilling point is displayed in dark blue ■ in the work area

> The coordinates of the other drilling points are also updated.

3. Drilling models

A drilling model consists of all the drilling points configured and positioned on a shape. You can retrieve a model in order to re-use it.

This section describes the following:

- Importing a model to a shape *(☞ p.87)*
- Saving a model *(☞ p.88)*

a. Importing a model
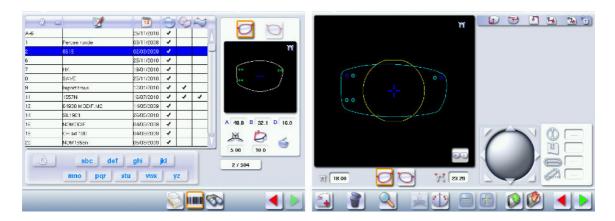
This function enables you to re-use the drilling points of a job in the shape management screen in the current job.

Importing a drilling model enables you to retrieve:

- The settings of the drilling points (diameter, depth, length, angle)
- The height of the drilling points in relation to the center of the shape (Y coordinates)
- The distance between the reference drilling point and the edge of the lens

1 In the drilling-point positioning screen, press to access the list of drilled jobs saved in the shape management screen.

2 Select the desired list.

> The drilled jobs in the selected list are displayed.

3 Select the desired job as a drilling model.

> The model is displayed in the preview.

4 Press ▶ to confirm the import of the model.

> The drilling screen is displayed:

> The drilling points are positioned in keeping with:

  • The settings of each drilling point in the model
  • The Y coordinates of each drilling point in relation to the boxing center of the model shape
  • The distance between the reference drilling point and the edge of the lens

> Two values are displayed under the work area

  • [18.00] The D-dimension (in mm) you have entered for the tracing

  • [23.29] The difference (in mm) between the two reference drilling points on the nasal
    side (right lens and left lens)

Once the model has been imported, you can move the drilling points if you wish. For further
information, refer to the following sections:

  • Preparing a drilled job > Positioning a drilling point > Configuring a drilling point *(☞ p.83)*
  • Preparing a drilled job > Positioning a drilling point > Adjusting the position of a drilling point
    (☞ p.84)

b. Saving a model

This function enables you to save a shape and its drilling points by creating a new job based on the current
job without modifying the latter.

Saving a model enables you to transfer the following to a new job:

  • The shape traced

- The D-dimension
- The drilling data
- The height of the drilling points in relation to the Boxing center of the shape (Y coordinates)
- The distance of the reference drilling points from the edge of the lens (the other drilling points from the reference drilling point)

1 Press to save the drilling points you have just configured to the current job shape.

> The job-creation alphanumeric keypad is displayed.

2 Select the list in which you want to store the shape.

> A new ID is allocated (first free slot in the selected list).

You can also give a different ID.

3 Enter a reference for your model.

4 Press to confirm.

> The model is saved in a new job.

> The new job with the new ID is displayed on the drilling screen.

5 Press to go back to the centering screen.

 You can go back to the previous job via the shape management screen.

VI. EDGING

This chapter describes the procedures concerning edging all types of lens:
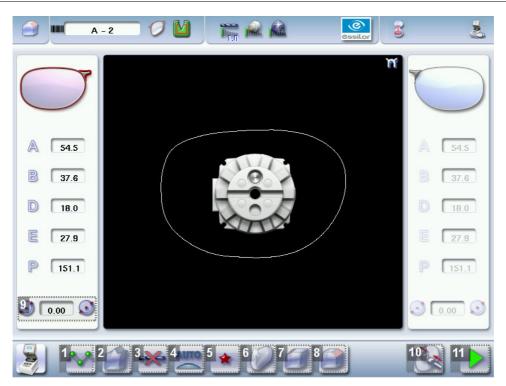
- Beveling *(☞ p.96)*
- Beveling for a high-base frame *(☞ p.104)*
- Grooving *(☞ p.107)*
- Flat-edge finishing *(☞ p.114)*
- Mixed job *(☞ p.115)*
- Drilled job *(☞ p.120)*
- Polishing *(☞ p.123)*
- Chamfering *(☞ p.124)*
- Retouching *(☞ p.125)*

1. Edger working environment

This section describes:

- The edger work screen *(☞ p.92)*
- Shape call-up procedure *(☞ p.94)*
- Putting the lens in place *(☞ p.95)*

a. Legend screen

1. *Lens material*

- ◦ Plastic lens, index 1.5 📖
- ◦ Polycarbonate lens
- ◦ Medium/High index plastic lens - index > 1.5
- ◦ Trivex™ lens
- ◦ Glass lens

The configuration of the edging cycles depends on the type of material. An incorrect choice may result in material damage.

2. *Type of finish*

- Bevel
- High-base bevel
- Groove
- Flat-edge finish
- Mixed job

3. *Drilling*

- Drilling enabled
- Drilling disabled

4. *Edging mode*

- Automatic mode

  The finish parameters are automatically calculated according to the information acquired when tracing the frame and feeling the lens.

- Customized mode

  The finish settings can be fully customized.

5. *Type of cycle*

- Standard cycle

  For all types of materials.

- StarControl™

  For all types of materials. This cycle offers a more sophisticated edging mode than the standard cycle, dedicated to thin lenses or hydrophobic lenses.

6. *Polishing*

- Polished lens
- Non-polished lens

7. *Front surface chamfering*

- Small chamfer
- Large chamfer
- No chamfer

8. *Rear surface chamfering*

- Small chamfer

- ◦ Large chamfer

- ◦ No chamfer

9. *Size reduction / increase (mm)*

10. *Manual lens clamping*

Do a long press to close the the lens clamp shafts manually.

11. *Start the edging cycle*

The door closing and lens clamping are automatic.

Always browse from left to right: depending on your selection, certain menus will be available while others will not.

Your habits taken into account

The digital system memorises your working habits: as time goes by, the buttons of the functions you use most often will be displayed by default.

b. Calling a shape

There are 3 ways of calling the shape you want to edge:

- Calling the current shape:

  Press to display the shape being processed on the tracer.

- Calling the number of a shape saved on the tracer:

  > Press on for a few seconds to display the numeric keypad.

  > You can then call a shape via the ID allocated to it.

- Calling a shape via a barcode:
  > Scan the barcode using the barcode reader (optional).

Always block your two lenses before proceeding with the edging. If a job under modification on the tracer (symbol displayed next to the reference) is called on the edger, a warning is displayed.

> Press to continue and display the job on the edger. The modifications underway are then ignored.

> Press to prevent the display of the job and finish the modifications underway on the tracer.

A reminder of the type of posiblock required is displayed on the shape. It is crucial to use the proper accessory to edge the lens. Otherwise, an error message is displayed at the start of the cycle.
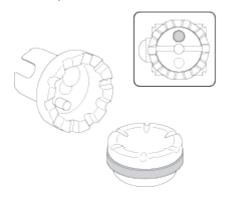
c. Positioning and feeling the lens
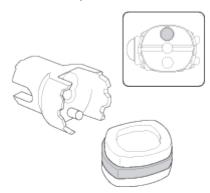
✔ Prerequisite: the lens must be centered and blocked before it can be placed in the edger.

1 Check that the posiblock holder and the stop correspond to the posiblock used. Otherwise, you will need to remove them form the lens clamp shafts and replace them with the tools matching the diameter of the posiblock.

- For a 22 mm posiblock
- For an 18×14 mm posiblock
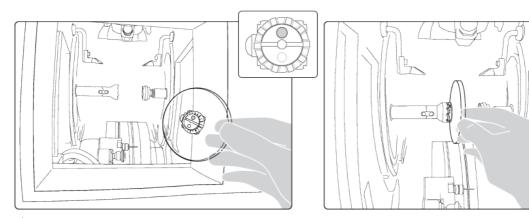
2 Place the lens in the posiblock holder.

💡 Place the metal peg of the posiblock upwards and the positioner downwards: a magnet is used to hold the lens in position on the axis.

💡 You can clamp the lens manually by pressing on 🖱. Manual lens clamping is particularly suited to hydrophobic lenses, thick lenses and high-camber lenses, as it ensures that the lens won't come off the pad before clamping.

✋ Make sure you move your hand well away before you start the edging cycle.

3 Press ▶.

> The door closes then the lens clamping operation starts.
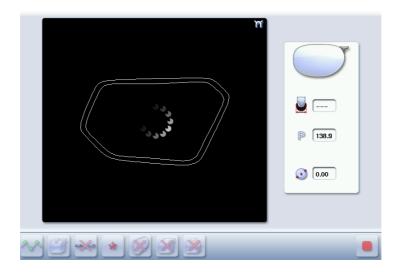
> The size of the posiblock holder is checked then the feeling cycle starts.

To interrupt the feeling cycle at any time, press .

> As the lens is felt, its shape appears on screen. The double tracing represents the profile of the front surface of the shape (inner shape) and its rear surface (outer shape).

> Depending on the selected edging mode:

- In automatic mode, you have nothing to configure. All of the data is automatically retrieved from the tracer. The lens edging starts automatically after the feeling cycle.
- In customized mode, the finish parameters can be fully customized.

For further information, refer to the section concerning your type of finish.

2. BEVELING

This section describes the procedures for the creation of a bevel:

- **AUTO** In automatic mode *(☞ p.97)*, you have nothing to configure. All the data is automatically retrieved from the tracer. The lens cutting starts automatically after the feeling cycle.
- In customized mode *(☞ p.100)*, you can opt for front/rear surface tracking, a distributed bevel, lens curve tracking or rim tracking. You can also do the following:
  ◦ a general modification of the bevel curve *(☞ p.101)*
  ◦ a modification of the bevel curve at a particular point *(☞ p.102)*
  ◦ a displacement of the bevel curve *(☞ p.103)*
- You can refer to the description of the customized bevel screen *(☞ p.98)*.

a. Automatic beveling

1 Call the desired shape located on the tracer.

> The shape is displayed on the edger work screen.

> After the tracing of a rimmed frame:

- The bevel finish is selected by default.
- The automatic mode is selected by default.

2 Select the lens material.

3 Select the type of cycle.

4 Choose whether or not to polish and/or chamfer your lens.

For further information, refer to the following sections: Edging > Polishing *(☞ p.123)* and Edging > Chamfering *(☞ p.124)*.

5 Press ▶.
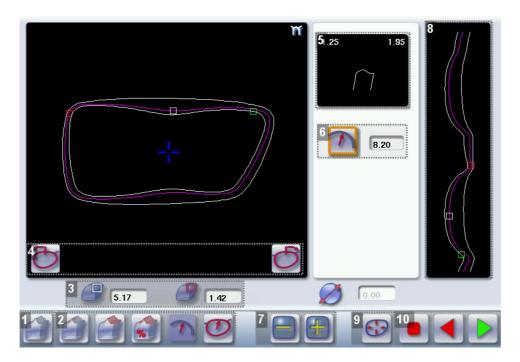
> The door closes, the lens is clamped, then the feeling operation starts.

> The edging cycle starts.

> When the edging cycle is finished, the retouch screen is displayed.

6 Press to release the lens.

7 If necessary, retouch the lens.

Otherwise, start edging the second lens. Select the lens directly on screen, on the left or right of the work area.

> The edging screen for the second lens is displayed. All finishes chosen and the modifications made are kept.

b. Legend screen for customized bevels

1. *Automatic bevel*

2. *Customized bevels*

- ◦ Front surface tracking: the crest of the bevel is positioned at a constant distance from the front surface.

- ◦ Rear surface tracking: the crest of the bevel is positioned at a constant distance from the rear surface.

- ◦ Distributed bevel: the position of the crest of the bevel is proportional to the thickness of the lens, with respect to the front surface.

- ◦ Lens curve tracking: the camber of the bevel is adjustable.

- ◦ Frame rim tracking: the bevel follows the groove in a precise way, according to the data obtained from the frame tracing.

3. *Lens thickness*

- ◦ Maximum lens thickness - represented by the white square along the shape.

- ◦ Minimum lens thickness - represented by the red square along the shape.

4. *Cursor movement*

The cursor is represented by the green square along the shape. To move it, select it directly or use the

buttons and .

5. *Zoom window*

Represents the bevel profile and indicates the distance between the bevel crest and the front and rear surfaces of the lens at the cursor position.

6. *Bevel distribution value*

Distribution value modifiable for:

- front/rear surface tracking
- a distributed bevel
- lens curve tracking

7. *Modify the selected value*

Reduce or increase the distribution value.

8. *Bevel trajectory*

Flat representation of the lens making it possible to assess the distances between the bevel crest and the front & rear surfaces of the lens.

9. *Trajectory modification*

- General modification of the bevel curve
- Modification of the bevel curve at a particular point
- Displacement of the bevel curve

10. *Navigation*

- Stop the cycle
- Return to the main edging screen
- Start the edging cycle
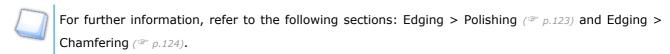
c. Customized beveling

The use of the customized bevel depends on 2 parameters: the frame and the lens. Before starting your job, identify the major constraint.

Bevel	Frame	Lens	Advantages
	Classic	Lens for which the front surface base is approximately equal to the frame base.	Makes it possible to do an aesthetically pleasing job. The lens material does not protrude beyond the front of the frame.
	Classic	Lenticular lens▯, Executive lens▯	Makes it possible to do a job with specific lenses.
	Classic	Thin lens	Makes it possible to balance out the bevel when thin lenses are used.
	Flat base High base	Thin lens for which the front surface base is approximately equal to the frame base.	Makes it possible to retrieve the frame base in a pattern tracing (base = 0).
	Specific groove (groove with meniscus▯)	Thin lens for which the base is approximately equal to the meniscus of the groove.	Compliance with original shape. Job using a specific frame.

1 Call the desired shape located on the tracer.

> The shape is displayed on the edger work screen.

> After the tracing of a rimmed frame:

- The bevel finish is selected by default.
- The automatic mode is selected by default.

2 Select the lens material.

3 Change the edging mode. To do this, press **AUTO** to select the customized mode 🖐.

4 Select the type of cycle.

5 Choose whether or not to polish and/or chamfer your lens.

For further information, refer to the following sections: Edging > Polishing *(☞ p.123)* and Edging > Chamfering *(☞ p.124)*.

6 Press ▶.

> The door closes, the lens is clamped and then felt.

> The customized bevel finish screen is displayed.

7 Select the type of customized bevel you want to do.

⚠️ To avoid reproducing defects when tracking a frame rim, check that the frame groove is in perfect condition and that the hinges are properly closed. All groove imperfections will be reproduced.

8 Press ▬ and ➕ to adjust the distribution value if required.

9 Press ▶.

> The edging cycle starts.

> When the edging cycle is finished, the retouch screen is displayed.

10 Press 🔧 to release the lens.

11 If necessary, retouch the lens.

Otherwise, start edging the second lens. Select the lens directly on screen, on the left or right of the work area.

> The edging screen for the second lens is displayed. All finishes chosen and the modifications made are kept.

d. Modifying the bevel curve

Once you have configured the desired type of customized bevel, you can complete your customization by moving the bevel curve towards the front or rear surface of the lens so it takes on its shape.

1 Press ⊕ in the customized bevel finish screen.

> You will access the trajectory modification screen.

2 Press ⬭ to select the general modification of the bevel curve.

3 Use the buttons ▬ and ➕ to move the bevel curve:

• Press ▬ to move the curve towards the front surface of the lens.

- Press to move the curve towards the rear surface of the lens.

 The curve cannot be moved more than the minimum distance between the front and rear surfaces observed on the bevel before the modification.

> The position of the bevel as well as the distances between the crest of the bevel and the front and rear surfaces of the lens are displayed in the zoom window at the position of the cursor.

4 Press .

> The edging cycle starts.

> When the edging cycle is finished, the retouch screen is displayed.

5 Press to release the lens.

6 If necessary, retouch the lens.

Otherwise, start edging the second lens. Select the lens directly on screen, on the left or right of the work area.

> The edging screen for the second lens is displayed. All finishes chosen and the modifications made are kept.

e. Modifying the bevel curve at a particular point

Once you have configured the desired type of customized bevel, you can complete your customization by partially moving the bevel curve towards the front or rear surface of the lens so it takes on its shape.

1 Press in the customized bevel finish screen.

> You will access the trajectory modification screen.

2 Press to select the bevel curve modification at a particular point.

3 Using the cursor, select the point on the curve that you want to move or click directly on the position of the shape you want to modify.
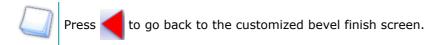
4 Use the buttons and to move the selected point on the curve:

• Press [icon] to move it towards the front surface of the lens.

• Press [icon] to move it towards the rear surface of the lens.

[icon] The curve cannot be moved more than the minimum distance between the front and rear surfaces observed on the bevel before the modification.

> The position of the bevel as well as the distances between the crest of the bevel and the front and rear surfaces of the lens are displayed in the zoom window at the position of the cursor.

5 Press [icon].

[icon] Press [icon] to go back to the customized bevel finish screen.

> For the second lens, the customized bevel icon is pre-selected and the trajectory modification icon is displayed.

f. Displacing the bevel curve

The displacement of the bevel curve makes it possible to move the bevel without modifying its curve.

1 Press [icon] in the customized bevel finish screen.

> You will access the trajectory modification screen.

2 Press [icon] to select the displacement of the bevel curve.

3 Use the buttons [icon] and [icon] to displace the bevel curve:

• Press [icon] to displace it towards the front surface of the lens.

• Press [icon] to displace it towards the rear surface of the lens.

> The position of the bevel as well as the distances between the crest of the bevel and the front and rear surfaces of the lens are displayed in the zoom window at the position of the cursor.

4 Press [icon].

> The edging cycle starts.

> When the edging cycle is finished, the retouch screen is displayed.

5 Press [icon] to release the lens.

6 If necessary, retouch the lens.

Otherwise, start edging the second lens. Select the lens directly on screen, on the left or right of the work area.

> The edging screen for the second lens is displayed. All finishes chosen and the modifications made are kept.

3. HIGH-BASE BEVELING

This section describes the procedures for the creation of a high-base bevel:

- Description of the high-base bevel screen *(☞ p.105)*
- High-base beveling *(☞ p.106)*
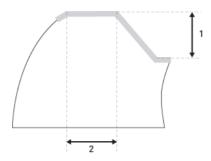
The use of the high-base bevel depends on 2 parameters: the frame and the lens.

- Concerning the lens, the main constraint is the thickness of the nasal and temporal edges.
- Concerning the frame, the crucial elements are the bridge and shape of the groove. For a metal frame, the hinge is an additional factor.

For this job, the lens base must always match the frame base perfectly. Too great a difference between the two could be detrimental to the quality of your job.

Cross-sectional view of a high-base bevel
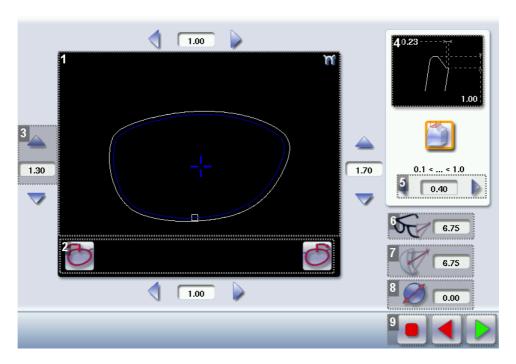
1 : Shelf bevel value

2 : Width of the flat side of the bevel

a. Legend screen

1. *Work area*

   Image of the shape to be edged:

   ☐ Frame shape at the bottom of the groove

   🟦 Bevel trajectory on the rear surface

2. *Cursor movement*

   The cursor is represented by the square along the shape. To move it, select it directly or use the buttons

   🔄 and 🔄.

3. *Shelf bevel value*
   - Nasal
   - Temporal
   - Upper
   - Lower

4. *Zoom window*

   Represents the bevel profile at the position of the cursor.

5. *Width of the flat side of the bevel*

6. *Frame base*

7. *Lens base*

8. *Reminder of the size reduction / increase applied to the lens diameter*

9. *Navigation*

- ◦ ■ Stop the cycle

- ◦ ◀ Return to the main edging screen

- ◦ ▶ Start the edging cycle

b. High-base beveling

1 Call the desired shape located on the tracer.

> The shape is displayed on the edger work screen.

> After the tracing of a high-base frame:

- • The high-base finish is selected by default.
- • The customized mode is selected by default.
- • As a large chamfer is required on the front surface, it is selected by default.

In the high-base finish, you cannot:

- • Polish your bevel. However, the high-base wheel has been designed to provide an equivalent finish on polycarbonate lenses.
- • Do a chamfer on the rear surface of the lens However, we highly recommend that you do a manual chamfering on the rear surface to eliminate the risks of chipping on mounting.

2 Select the lens material.

You cannot do a high-base bevel on Trivex™ and glass lenses.

3 Select the type of cycle.

4 Press ▶.

> The door closes, the lens is clamped and then felt.

> The high-base bevel finish screen is displayed.

If the difference between the frame base value measured by the tracer and the lens base measured by the edger is greater than 0.70, the values are displayed in red.

> By default, the edger shows the values corresponding to the frame material (metal or plastic). Check and modify the values if necessary, according to the thickness of your lens and frame.

5 Press ▲ ▼ and ◀ ▶ to modify the shelf bevel value at each point of the shape in each of the areas:

- • Temporal
- • Nasal
- • Upper
- • Lower

Move the cursor along the shape to see the bevel profile in the zoom window.

> The edger calculates the shelf bevel value to be applied between each of the four points in each area.

> The bevel trajectory on the rear surface is modified in the work screen. The result can be viewed in the zoom window.

6 Press ◀ and ▶ on the right of your screen to modify the width of the flat side of the bevel.

> The result can be viewed in the zoom window.

7 Press ▶.

> The edging cycle starts.

> When the edging cycle is finished, the retouch screen is displayed.

8 Press to release the lens.

9 If necessary, retouch the lens.

Otherwise, start edging the second lens. Select the lens directly on screen, on the left or right of the work area.

> The edging screen for the second lens is displayed. All finishes chosen and the modifications made are kept.
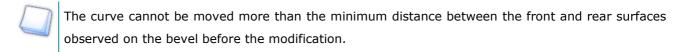
4. GROOVING

This section describes the procedures for the creation of a groove:

- **AUTO** In automatic mode *(☞ p.108)*, you have nothing to configure. All the data is automatically retrieved from the tracer. The lens cutting starts automatically after the feeling cycle.
- In customized mode *(☞ p.110)*, you can opt for front/rear surface tracking, a distributed groove, or lens curve tracking. You can also do the following:
  - a general modification of the groove curve *(☞ p.112)*
  - a modification of the groove curve at a particular point *(☞ p.113)*
  - a displacement of the groove curve *(☞ p.113)*
- You can refer to the description of the customized groove screen *(☞ p.109)*.

In certain cases, the lens base or thickness makes grooving impossible.

> An error message is displayed.

> The white central line becomes red on the entire contour of the lens.

a. Automatic grooving

1 Call the desired shape located on the tracer.

> The shape is displayed on the edger work screen.

> After tracing a pattern, demo lens or recut lens, without any drilling settings:

- The groove finish is selected by default.
- The automatic mode is selected by default.

2 Select the lens material.

3 Select the type of cycle.

4 Choose whether or not to polish and/or chamfer your lens.

For further information, refer to the following sections: Edging > Polishing *(☞ p.123)* and Edging > Chamfering *(☞ p.124)*.

5 Press .

> The door closes, the lens is clamped and then felt.

> The edging cycle starts.

> When the edging cycle is finished, the retouch screen is displayed.

6 Press to release the lens.

7 If necessary, retouch the lens.

Otherwise, start edging the second lens. Select the lens directly on screen, on the left or right of the work area.

> The edging screen for the second lens is displayed. All finishes chosen and the modifications made are kept.

b. Customized groove legend screen

1. *Automatic groove*

2. *Customized grooves*

- ◦ Front surface tracking: the middle of the groove is positioned at a constant distance from the front surface.

- ◦ Rear surface tracking: the middle of the groove is positioned at a constant distance from the rear surface.

- ◦ Distributed groove: the middle of the groove is positioned in proportion to the thickness of the lens, with respect to the front surface.

- ◦ Lens curve tracking: the camber of the groove is adjustable.

3. *Lens thickness*

- ◦ Maximum lens thickness - represented by the white square along the shape

- ◦ Minimum lens thickness - represented by the red square along the shape

4. *Cursor movement*

The cursor is represented by the green square along the shape. To move it, select it directly or use the buttons and .

5. *Zoom window*

Distance between the edges of the groove and the front & rear surfaces of the lens at the position of the cursor.

6. *Groove settings*

○ Distribution value - according to the type of customized groove selected

○ Groove depth (in mm)

○ Groove width (in mm)

7. *Modify the selected setting*

8. *Groove trajectory*

Flat representation of the lens making it possible to measure the distances between the groove and the front & rear surfaces of the lens.

9. *Modify the trajectory*

○ General modification of the groove curve

○ Modification of a point in the groove curve

○ Displacement of the groove curve

10. *Navigation*

○ Stop the cycle

○ Return to the main edging screen

○ Start the edging cycle

c. Customized grooving

The use of the customized groove depends on 2 parameters: the frame and the lens. Before starting your job, identify the major constraint.
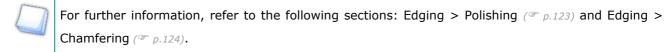
GROOVE	FRAME	LENS	ADVANTAGES
	Standard groove	Lens for which the front surface base is approximately equal to the frame base.	Makes it possible to do an aesthetically pleasing job. The lens material does not protrude beyond the front of the frame.
	Standard groove	Lens for which the rear surface base is not as high as the front surface base.	Minimises the risks of the nylon thread coming out.
	Standard groove	Thin lens	Makes it possible to balance out the groove when thin lenses are used.
	Flat base High base	Thin lens for which the base is approximately equal to the frame base.	In the event of pattern tracing (base = 0), makes it possible to retrieve the frame base.

1 Call the desired shape located on the tracer.

> The shape is displayed on the edger work screen.

> After tracing a pattern, demo lens or recut lens, without any drilling settings:

- The groove finish is selected by default.
- The automatic mode is selected by default.

2 Select the lens material.

3 Change the edging mode. To do this, press **AUTO** to select the customized mode [hand icon].

4 Select the type of cycle.

5 Choose whether or not to polish and/or chamfer your lens.

For further information, refer to the following sections: Edging > Polishing *(☞ p.123)* and Edging > Chamfering *(☞ p.124)*.

6 Press [green arrow icon].

> The door closes, the lens is clamped and then felt.

> The customized groove finish screen is displayed.

7 Select the type of customized groove you want to do.

8 Select the values you want to modify and press [minus icon] and [plus icon] to adjust them if necessary.

9 Press [green arrow icon].

> The edging cycle starts.

> When the edging cycle is finished, the retouch screen is displayed.

10 Press [release icon] to release the lens.

11 If necessary, retouch the lens.

Otherwise, start edging the second lens. Select the lens directly on screen, on the left or right of the work area.
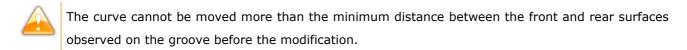
> The edging screen for the second lens is displayed. All finishes chosen and the modifications made are kept.

d. Modifying the groove curve

Once you have configured the desired type of customized groove, you can complete your customization by moving the groove curve towards the front or rear surface of the lens so it takes on its shape.

1 Press 🔵 in the customized groove finish screen.

> You will access the trajectory modification screen.

2 Press 🔴 to select the general modification of the groove curve.

3 Use the buttons 🟦 and 🟦 to move the groove curve:

- Press 🟦 to move the curve towards the front surface of the lens.
- Press 🟦 to move the curve towards the rear surface of the lens.

⚠️ The curve cannot be moved more than the minimum distance between the front and rear surfaces observed on the groove before the modification.

> The position of the groove as well as the distances between the center of the groove and the front & rear surfaces of the lens are displayed in the zoom window.

4 Press ▶️.

> The edging cycle starts.

> When the edging cycle is finished, the retouch screen is displayed.

5 Press 🔧 to release the lens.

6 If necessary, retouch the lens.

Otherwise, start edging the second lens. Select the lens directly on screen, on the left or right of the work area.

> The edging screen for the second lens is displayed. All finishes chosen and the modifications made are kept.

e. Modifying a point in the groove curve
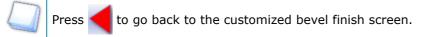
Once you have configured the desired type of customized groove, you can complete your customization by moving the groove curve towards the front or rear surface of the lens so it takes on its shape.

1 Press ⊕ in the customized groove finish screen.

> You will access the trajectory modification screen.

2 Press ⬭ to select the modification of a point in the groove curve.

3 Using the cursor, select the point on the curve that you want to move or click directly on the screen.

4 Use the buttons ⊟ and ⊞ to move the selected point on the curve:

- Press ⊟ to move it towards the front surface of the lens.
- Press ⊞ to move it towards the rear surface of the lens.

⚠ The curve cannot be moved more than the minimum distance between the front and rear surfaces observed on the groove before the modification.

> The position of the groove as well as the distances between the center of the groove and the front & rear surfaces of the lens are displayed in the zoom window.

5 Press ▶.

📖 Press ◀ to go back to the customized bevel finish screen.

> For the second lens, the customized groove icon is pre-selected and the trajectory modification icon is displayed.

f. Displacement of the groove curve

The displacement of the groove curve enables you to move the groove without modifying its curve or perimeter.

1 Press ⊕ in the customized groove finish screen.

> You will access the trajectory modification screen.

2 Press ⊕ to select the displacement of the curve.

3 Use the buttons ⊟ and ⊞ to displace the curve:

- Press ![minus button] to displace it towards the front surface of the lens.

- Press ![plus button] to displace it towards the rear surface of the lens.

> The position of the groove as well as the distances between the center of the groove and the front & rear surfaces of the lens are displayed in the zoom window.

4 Press ![play button].

> The edging cycle starts.

> When the edging cycle is finished, the retouch screen is displayed.

5 Press ![release icon] to release the lens.

6 If necessary, retouch the lens.

Otherwise, start edging the second lens. Select the lens directly on screen, on the left or right of the work area.

> The edging screen for the second lens is displayed. All finishes chosen and the modifications made are kept.

5. FLAT-EDGE FINISHING

To do a flat-edge finish, only the automatic mode ![AUTO] is accessible.

1 Call the desired shape located on the tracer.

> The shape is displayed on the edger work screen.

2 Select the lens material.

3 Press ![flat-edge icon] to select the flat-edge finish.

4 Select the type of cycle.

5 Choose whether or not to polish and/or chamfer your lens.

For further information, refer to the following sections: Edging > Polishing *(☞ p.123)* and Edging > Chamfering *(☞ p.124)*.

6 Press .

> The door closes, the lens is clamped and then felt.

> The edging cycle starts.

> When the edging cycle is finished, the retouch screen is displayed.

7 Press to release the lens.

8 If necessary, retouch the lens.

Otherwise, start edging the second lens. Select the lens directly on screen, on the left or right of the work area.

> The edging screen for the second lens is displayed. All finishes chosen and the modifications made are kept.

6. MIXED JOB

In this section, you will find the required procedure to do a mixed job:

- Description of the legend screens *(☞ p.116)*
- Configuring the mixed finish *(☞ p.118)*

This finish enables you to do mixed jobs such as the following:

- Groove - Groove
- Bevel - Groove
- Flat-edge - Groove
- Flat-edge - Bevel

To do a mixed finish, you need to define the points between which the two types of finish will be done. Only
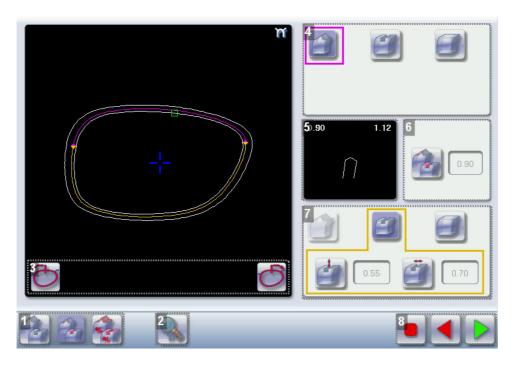
the customized mode is thus accessible.

a. Legend screens

Main screen for mixed jobs

1. *Modes available for a mixed finish*

- Automatic mode: the position of the bevel or groove is automatically calculated according to the information acquired when tracing the frame and feeling the lens.

- Front surface tracking: the crest of the bevel or the middle of the groove is positioned at a constant distance from the front surface.

- Distributed mixed finish: the crest of the bevel or the middle of the groove is positioned in proportion to the thickness of the lens, with respect to the front surface.

2. *Access to the area defining screen*

Access on a 1:1 scale.

3. *Cursor movement*

The cursor is represented by the green square along the shape. To move it, select it directly or use the buttons [icon] and [icon].

4. *Settings for area 1*

- Bevel finish

- Groove finish

- Flat-edge finish

5. *Zoom window*
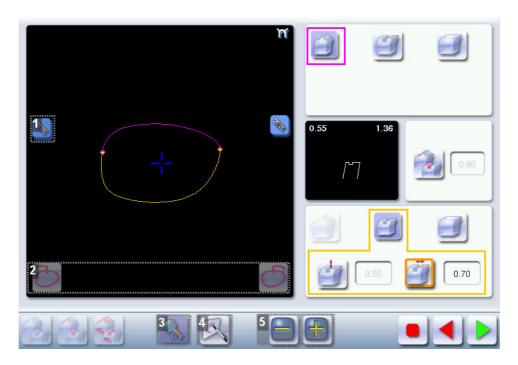
Display of the distance from the edges of the lens to the position of the cursor.

6. *Position of the center of the groove or bevel*

Value expressed in mm ('Front surface tracking' mode) or in % ('Distributed mixed finish' mode).

7. *Settings for area 2*

- ◦   Bevel finish
- ◦   Groove finish
- ◦   Flat-edge finish

8. *Navigation*

- ◦   Stop the cycle
- ◦   Back to the main edging screen without saving your modifications
- ◦   Start the edging cycle

Area definition screen

1. *Lock / unlock the area delimitation points*

2. *Move the area delimitation points*

3. *Back to the main screen*

4. *Enable area delimitation on the touch screen*

5. *Modify the selected value*

Legend of the colours delimiting the areas of the shape:

■ (pink) Bevel finish

■ (yellow) / ■ (orange) Groove finish (in the case of a Groove - Groove mixed job, the colours make it possible to differentiate grooves with different parameters)

■ (black) Flat-edge finish

b. Configuring the mixed finish

Initiating a mixed finish

1 Call the desired shape located on the tracer.

> The shape is displayed on the edger work screen.

2 Select the lens material.

3 Press [icon] to select the mixed job mode.

4 Select your type of cycle.

5 Choose whether or not to polish the lens.

> [icon] You cannot do a chamfer on a mixed job.
>
> For more information on polishing, refer to the following section: Edging > Polishing *(☞ p.123)*.

6 Press [icon].
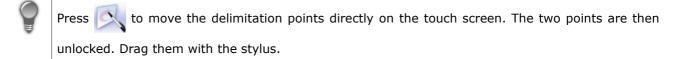
> The door closes, the lens is clamped and then felt.

> The mixed finish screen is displayed:

> The default setting is the bevel - groove finish in automatic mode.

Customizing the mixed finish
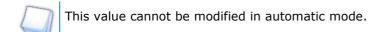
1 Select the desired type of mixed finish.

2 Press [icon] to access the area definition screen.

> The area definition screen is displayed on a 1:1 scale. You can thus refer to a sample lens placed on the screen.

3 Select the finish you want to do in area 1, then area 2.

4 Press one of the buttons to unlock an area delimitation point.

5 Press the buttons and to move the unlocked point.

> Press to move the delimitation points directly on the touch screen. The two points are then unlocked. Drag them with the stylus.

6 If required, press to modify the position of the center of the groove or bevel using the buttons and .

> This value cannot be modified in automatic mode.

7 If required, press and to modify the depth and width of the groove using buttons and .

8 Press .

> The edging cycle starts.

> When the edging cycle is finished, the retouch screen is displayed.

9 Press to release the lens.

10 If necessary, retouch the lens.

Otherwise, start edging the second lens. Select the lens directly on screen, on the left or right of the work area.

> The edging screen for the second lens is displayed. All finishes chosen and the modifications made are kept.

7. Drilled job

Prerequisite: the edger's drilling function is only accessible if the tracer sends a shape with drilling settings. For further information, refer to the following chapter: Preparing a drilled job *(☞ p.79)*.

You can do the drilling in automatic mode or in customized mode:

- **AUTO** In automatic mode *(☞ p.120)*, you have nothing to configure. The drilling angle consists of the average value calculated at right angles with the front surface of the lens for each drilling point. The lens cutting starts automatically after the feeling cycle.
- In customized mode *(☞ p.122)*, you can do the following:
    - Drilling at right angles with the front or rear surface: you can modify the diameter but not the drilling angle which is automatically calculated by the edger based on the lens curve.
    - Customized drilling: you can modify the diameter and angle for each drilling point.
- You can refer to the description of the customized bevel screen *(☞ p.121)*.

Two different diameter drill bits are available: a 1 mm bit and a 0.8 mm bit. If the diameter of the drilling point is smaller than that of the installed bit, an error message is displayed. Change the drill bit or modify the diameter of the drilling points.

You can also do various combinations:
- Drilled bevel
- Drilled high-base bevel
- Drilled groove
- Drilled mixed finish

a. Automatic drilling

1 Call the desired shape located on the tracer.

> The shape is displayed on the edger work screen.

> After the tracing of a shape with drilling settings:
- The drilling function is selected by default.
- The automatic mode is selected by default.

2 Select the lens material.

3 Select the type of finish.

4 Select the type of cycle.

5 Choose whether or not to polish and/or chamfer your lens.

For further information, refer to the following sections: Edging > Polishing *(☞ p.123)* and Edging > Chamfering *(☞ p.124)*.

6 Press ▶ .

> The door closes, the lens is clamped and then felt.

> The edging cycle starts.

> When the edging cycle is finished, the retouch screen is displayed.

7 Press ⚒ to release the lens.

8 If necessary, retouch the lens.

Otherwise, start edging the second lens. Select the lens directly on screen, on the left or right of the work area.

> The edging screen for the second lens is displayed. All finishes chosen and the modifications made are kept.

b. Legend screen for customized drilling

1. *Type of drilling*

- ∘   Perpendicular to the front surface

- ∘   Perpendicular to the rear surface

- ∘   Customized

2. *Select the drilling points*

- ∘   Nasal side

- ∘   Temporal side

○ All drilling points

3. *Modify the selected value*

4. *Modify the diameter*

   ○ diameter (mm)

   ○ difference between the initial value and the modified value

5. *Modify the drilling angle*

   ○ drilling angle (degrees)

   ○ difference between the initial value and the modified value

6. *Cross-sectional view*

Cross-sectional view of the lens after the feeling cycle, showing the angle of the drill bit at the selected drilling point.

7. *Reminder of the size reduction / increase applied to the lens diameter*

8. *Navigation*

   ○ Stop the cycle

   ○ Back to the main edging screen without saving your modifications

   ○ Start the cycle

c. Customized drilling

1 Call the desired shape located on the tracer.

   > The shape is displayed on the edger work screen.

   > After the tracing of a shape with drilling settings:

   • The drilling function is selected by default.
   • The automatic mode is selected by default.

2 Select the lens material.

3 Change the edging mode. To do this, press AUTO to select the customized mode .

4 Select the type of cycle.

5 Choose whether or not to polish and/or chamfer your lens.

For further information, refer to the following sections: Edging > Polishing *(☞ p.123)* and Edging > Chamfering *(☞ p.124)*.

6 Press .

   > The feeling cycle starts.

> The customized drilling screen is displayed.

7 Select the type of drilling you want to do.

8 If necessary, select the drilling point(s) you want to modify.

9 If necessary, modify the diameter and/or angle of the selected drilling point.

> The difference between the initial value and the modified one is displayed in the delta column.

10 Press .

> The edging cycle starts.

> When the edging cycle is finished, the retouch screen is displayed.

11 Press to release the lens.

12 If necessary, retouch the lens.

Otherwise, start edging the second lens. Select the lens directly on screen, on the left or right of the work area.

> The edging screen for the second lens is displayed. All finishes chosen and the modifications made are kept.

8. POLISHING

Press button to enable/disable the polishing option.

Lens material	Available options
	The polishing option is pre-selected and is strongly recommended by the manufacturer to prevent small cracks.
	Make sure you select the correct type of material for MHI lenses (> 1.5) and never polish an MHI lens without water. Otherwise, the polishing wheel could suffer irreversible damage.
	The polishing option is pre-selected.

The polishing option is not available for high-base jobs. However, the high-base wheel has been designed to provide an equivalent finish on polycarbonate lenses.

9. CHAMFERING

The chamfer, also called counter-bevel, removes the sharp edge of the lens.

- Standard value of a small chamfer: 0.20 mm
- Standard value of a large chamfer: 0.40 mm

Before you select a type of chamfer, make sure it is compatible with the lens characteristics:

- Lens material

Lens material	Available options
	The quality of the chamfer depends on the spraying. Make sure there is a constant flow of water until the end of the chamfering operation.
	The chamfering wheel supplied cannot be used on glass lenses. For further information, contact your technical department.

- Thickness at the edge of the lens

Lens thickness	Available options
> 1.2 mm	
between 1 and 1. 2 mm	
< 1 mm	

- Distance between the edge of the groove and the edge of the lens
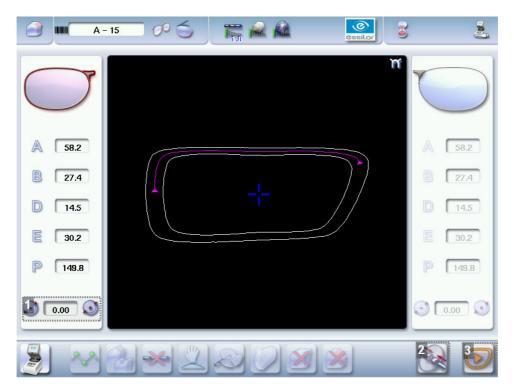
Distance	Available options
> 0.8 mm	
between 0.5 and 0.8 mm	
< 0.5 mm	

The chamfers available also depend on the lens shape and the posiblock used when blocking.

Press the buttons [image] and [image] to configure a small chamfer, a large chamfer or no chamfer on the front and rear surfaces of the lens.

10. Retouching
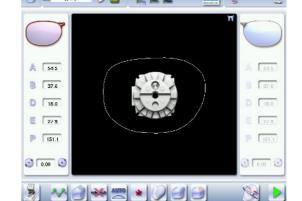
1. *Diameter modification*

2. *Manual lens clamping*

3. *Start the retouch*

Differences with the edging screen

The edging screen is different to the retouch screen through:

- the presence of the posiblock
- no frame thickness
- the edging start-up button [image]

When the first-lens edging cycle is finished:

1 Press to release the lens.

2 Insert it in the frame and check that the edging was correctly configured.

> Depending on your job:

  • If your job is perfect, proceed with the machining of your second lens.
    > All of the selected finishing options and modifications made are kept.
  • If the lens requires adjustment, do a retouch on the edged lens to obtain optimal results.

3 Indicate the size reduction to be applied to the lens you want to retouch.

> The chosen finish and the modifications made during the edging cycle are automatically selected.

4 Insert the lens in the posiblock holder.

To close the clamp shafts manually, do a long press on .

5 Press .

> For a customized finish, the customized finish screen is displayed.

> In all other cases, the door closes, the lens is clamped automatically, then the retouching starts.

6 Select the second lens to be edged directly on screen, on the left or right of the work area.

> The edging screen for the second lens is displayed.

> All finishes chosen and the modifications made are kept. The retouch done on the first lens is automatically saved for the edging of the second lens.

VII. Configuring the digital system

This chapter will enable you to set the digital system according to your requirements. You can:

- Configure the digital system *(☞ p.128)* (time, date, language, connections, screensaver),
- Customize the tracer *(☞ p.130)*,
- Adjust the precision of the edger *(☞ p.134)*,
- Restore the factory settings *(☞ p.139)*.

1. CONFIGURING THE DIGITAL SYSTEM

This section describes the procedures to:

- Set the time, date and language *(☞ p.128)*
- Access the connections and network *(☞ p.129)*
- Configure a screensaver *(☞ p.130)*

a. Time, date and language

To access this menu from your work screen, select [essilor] > [tool] > [flags].

The following screen is displayed:

1. *Time*

Use the arrows [up arrow] and [down arrow] to set the time.

2. *Date*

Use the arrows [up arrow] and [down arrow] to set the date.

3. *Type of date display*

Select the type of display out of the available formats.

4. *Language*

Select the flag corresponding to your language.

5. *Other languages*

Press ▷ to display the other languages.

6. *Confirm*

Press ⊞ to save the new settings.

Once the setting has been completed:

1. Press ⊞ to save.

2. Press ◀ to go back to the work screen.
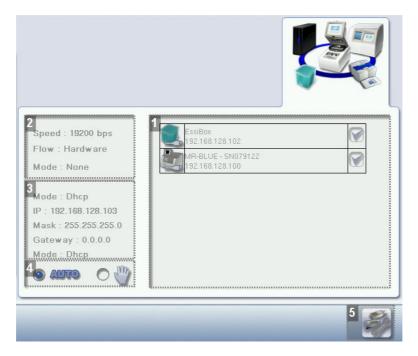
b. Connections

The connections are configured from the tracer. The screen which you access from the edger is only available for consultation purposes.

To access that menu from your tracer's work screen, select ⊙ essilor > ⚒ > 🌐 .

The following screen is displayed:

1. *List of devices connected to the tracer*

2. *Settings linked to the configuration of the serial port*

3. *Settings linked to the configuration of the Ethernet port*

4. *Select the mode of detection for devices connected to the tracer*

    ◦   In automatic mode, all devices detected are connected to the tracer.

    ◦   In manual model, tick ☑ the devices you want to connect to the tracer.

5. *Reinitialization of communication ports*

Once the modification has been made, press ◀ to go back to the work screen.
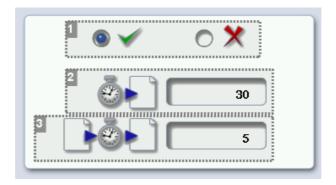
c. Screensaver

This menu enables you to configure a screensaver.

To access this menu from your work screen, select [essilor] > [icon] > [icon].

The following screen is displayed:

1. *Screensaver display*

    Enable ✔ or disable ✘ the screensaver.

2. *Triggering*

    Set the waiting time before the display of the screensaver (in seconds).

3. *Transition*

    Set the transition time between each image (in seconds).

Once the modification has been made, press ◀ to go back to the work screen.

2. CUSTOMIZING THE TRACER

This section will enable you to customize the tracer according to your requirements:

- Choosing a working mode and a measurement display mode *(☞ p.130)*
- Choosing a decentration mode *(☞ p.132)*
- Customizing the action bar *(☞ p.133)*

a. Working mode and measurement display
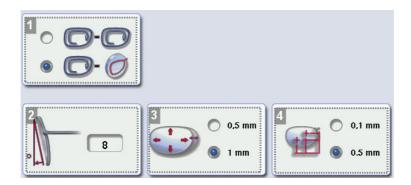
This menu enables you to customize the working mode and precision of display of the tracer.

To access this menu from your work screen, select > > .

The following screen is displayed:

1. *Working mode*

   Select the default working mode:

   - Tracing - tracing
   - Tracing - centering

2. *Pantoscopic tilt*

   a. Press on the tilt value to modify it.
      > The numeric keypad is displayed.
   b. Enter the angle (between -5° and +25°).
   c. Press to validate.

3. *Shape modification*

   Select the desired step for the shape modification.

4. *PD and pupillary height*

   Select the desired step for input of the PD and pupillary height.

Once the modification has been made, press to go back to the work screen.
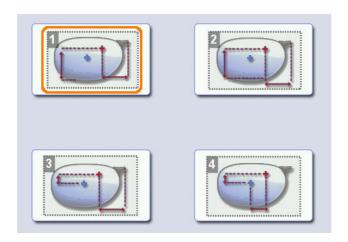
b. Decentration mode

This menu enables you to select a default input mode for decentration data.

To access this menu from your work screen, select [icon] > [icon] > [icon] .

The following screen is displayed:

1. *Boxing mode (½ PD + Boxing Height)*

The wearer's pupillary height is calculated in relation to the lowest point on the frame.

2. *Datum mode (½ PD + Datum Height)*

The wearer's pupillary height is calculated in relation to the point of intersection with the frame.

3. *ΔY mode (½ PD + ΔY)*

ΔY: This value corresponds to the difference in height between the boxing center of the shape and the center of the wearer's pupil.

4. *ΔX + ΔY mode*

ΔX: This value corresponds to the horizontal distance between the boxing center of the shape and the center of the wearer's pupil.

ΔY: This value corresponds to the difference in height between the boxing center of the shape and the center of the wearer's pupil.

Once the modification has been made, press [icon] to go back to the work screen.

c. Action bar

This menu enables you to customize the action bar according to your requirements. You can:

- Enable default options so that they are displayed first in the job options (tracing and centering screens)
- Disable the options you do not require so they are no longer displayed in the job options.

You can also configure centering help.

To access the action bar customization menu from your work screen, select ![essilor icon] > ![tool icon] > ![check icon] .

The following screen is displayed:

1. *Tracings*

- ◦ Symmetric binocular tracing
- ◦ Asymmetric binocular tracing
- ◦ Right eye
- ◦ Left eye

2. *Frames*

- ◦ Metal
- ◦ Plastic
- ◦ Optyl
- ◦ Automatic detection

3. *Optical or mechanical tracing*

- ◦ Pattern
- ◦ Demo lens or recut lens
- ◦ Automatic detection

4. *Types of lenses*

- ◦ Single vision
- ◦ Progressive
- ◦ Bifocal or trifocal
- ◦ Executive

◦ Mid-distance

5. *Centerings available according to lens type*

◦ Three focimeter dots
◦ Re-marked micro-engravings
◦ Manufacturer marking
◦ Specific to bifocals and trifocals

6. *Centering help*

◦ : Centering help

◦ : Arrowed help

Customizing the action bar

Press an option button several times to change its status in the tracing or centering screen:

- Option enabled: the option can be selected in the action bar drop-down menus.

- Option disabled: the option is no longer displayed in the action bar.

- Option inside orange circle: the option is displayed and selected by default in the action bar.

Customizing centering help

Five combinations are available to customize centering help:

Combination	Result
+	Arrowed help enabled by default
+	Discrete help enabled by default
+	Arrowed help to be enabled manually
+	Discrete help to be enabled manually
+	Centering help disabled

Once the modification has been made, press to go back to the work screen.

3. Adjusting the precision of the edger

This menu enables you to adjust the precision of the edger. You can adjust:

- The diameter of the finished lenses *(☞ p.135)*
- The position of the bevel and groove *(☞ p.136)*
- The diameter of all drill-holes *(☞ p.136)*
- The chamfer *(☞ p.137)*
- The depth and width of the groove *(☞ p.138)*
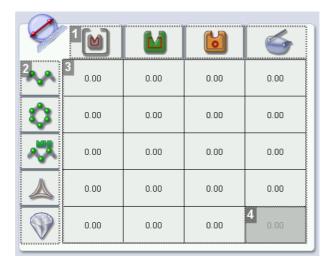
a. Adjusting the diameter of the thin lenses

If lenses of a particular material always seem too small or too big after edging, you can adjust their diameter according to the type of frame.

To access that menu from your edger's work screen, select ![essilor] > ![checkmark] > ![diameter].

The following screen is displayed:

1. *Types of frames*
- ◦ Metal
- ◦ Plastic
- ◦ Optyl
- ◦ Drilled/Grooved/Flat-edge

2. *Lens materials*
- ◦ Plastic
- ◦ Polycarbonate
- ◦ MHI
- ◦ Trivex™
- ◦ Glass

3. *Adjusting the lens diameter*
- a. Press the value to be modified.
  - > The numeric keypad is displayed.
- b. Enter the new value.
  - ◦ Negative value: the diameter will be smaller
  - ◦ Positive value: the diameter will be bigger
- c. Press ![checkmark] to validate.

4. *Glass lens*

   You cannot drill glass lenses.

Once the modification has been made, press ![back] to go back to the work screen.
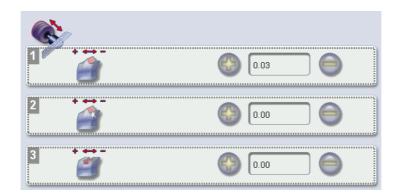
b. Adjusting the position of the bevel and groove

After edging a lens, if the position of the bevel or groove always seems too close to the front or rear surface, you can adjust it.

To access that menu from your edger's work screen, select ![icon] > ![icon] > ![icon] .

The following screen is displayed:

1. *Default bevel position*

- ◦ Press ![plus] to move the bevel towards the front surface of the lens.

- ◦ Press ![minus] to move the bevel towards the rear surface of the lens.

2. *Default polished bevel position*

- ◦ Press ![plus] to move the polished bevel towards the front surface of the lens.

- ◦ Press ![minus] to move the polished bevel towards the rear surface of the lens.

3. *Default groove position*

- ◦ Press ![plus] to move the groove towards the front surface of the lens.

- ◦ Press ![minus] to move the groove towards the rear surface of the lens.

Once the modification has been made, press ![arrow] to go back to the work screen.

c. Adjusting the diameter of drill-holes
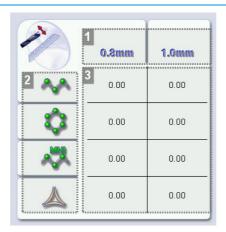
After drilling a lens, if the diameter of the holes always seems too small or too big, you can adjust it according to the diameter of the drill bit used and the lens material.

To access that menu from your edger's work screen, select ![icon] > ![icon] > ![icon] .

The following screen is displayed:

1. *Drill bit diameters*

0.8 mm or 1.0 mm.

2. *Lens materials*

◦ Plastic
◦ Polycarbonate
◦ MHI
◦ Trivex™

3. *Increasing or reducing the default drill-hole diameter*

a. Press the value to be modified.
  > The numeric keypad is displayed.
b. Enter the new value.
  ◦ Negative value: the hole will be smaller
  ◦ Positive value: the hole will be larger

c. Press to confirm.

Once the modification has been made, press to go back to the work screen.

d. Adjusting the chamfer
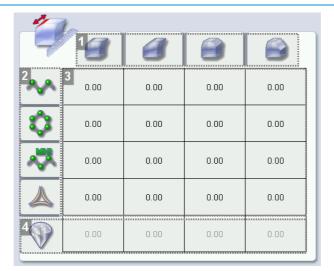
After edging a lens, if a chamfer always seems too small or too big, you can adjust its size according to the lens material.

To access that menu from your edger's work screen, select > > .

The following screen is displayed:

1. *Chamfer*

- ◦ Small, front surface
- ◦ Large, front surface
- ◦ Small, rear surface
- ◦ Large, rear surface

2. *Lens materials*

- ◦ Plastic
- ◦ Polycarbonate
- ◦ MHI
- ◦ Trivex™

3. *Increasing or reducing the default chamfer*

- a. Press the value to be modified.
  > The numeric keypad is displayed.
- b. Enter the new value.
  - ◦ Negative value: the chamfer will be smaller
  - ◦ Positive value: the chamfer will be larger
- c. Press ✔ to confirm.

4. *Glass lens chamfer*

The chamfering wheel supplied cannot be used on glass lenses.

For further information, contact the technical department.

Once the modification has been made, press ◀ to go back to the work screen.

e. Adjusting the groove
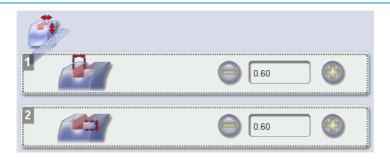
After edging a lens, if the width or depth of the groove always seem too close too small or too big, you can adjust them.

To access that menu from your edger's work screen, select ⊚ > ☑ > 🖱 .

The following screen is displayed:

1. *Adjusting the default groove width*

- ◦ Press ⊖ to reduce the width of the groove.

- ◦ Press ⊕ to increase the width of the groove.

2. *Adjusting the default groove depth*

- ◦ Press ⊖ to reduce the depth of the groove.

- ◦ Press ⊕ to increase the depth of the groove.

Once the modification has been made, press ◀ to go back to the work screen.

4. RESTORING THE FACTORY SETTINGS

At the bottom right of certain setting screens on the tracer and edger, the 🏭 button enables you to restore the page's factory settings.

- • Press ✖ to cancel and go back to the settings screen.
- • Press ✔ to confirm the reset.

VIII. Maintenance & servicing

This chapter describes the maintenance operations you can carry out on the digital system without the aid of a technician.

- Carrying out the digital system autotests *(☞ p.142)*,
- Checking and calibrating the tracer *(☞ p.145)*,
- Viewing the statistics and technical history *(☞ p.149)* (jobs and actions performed),
- Changing the tools on the edger *(☞ p.153)*
- Servicing and cleaning the digital system *(☞ p.157)*.

1. CARRYING OUT THE AUTOTESTS

This menu enables you to do an auto-diagnosis of the functions of the tracer and edger:

- Tracer autotests *(☞ p.142)*
- Edger autotests *(☞ p.143)*

a. Tracer

Tracing table
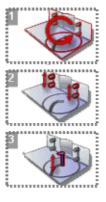
To check the proper operation of the tracing table, select ![essilor icon] > ![settings icon] > ![tracer icon] in your work screen.
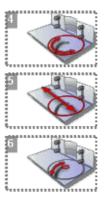
1. *Tracing table autotests*

2. *Clamps*

3. *Vertical movement of the feeler*

4. *Rotation of tracer core*

5. *Displacement of tracer core*

6. *Feeler movement*

1. Select the autotest to be carried out.
2. Press ![green button] to start the test cycle.

   To interrupt the cycle at any time, press ![red button] .

   > The result is displayed on the right of the icon of the autotest carried out:

   ◦ ![green check] The equipment is operational.

◦ ❌ A malfunction has been detected; a description is displayed in the message box on the right.

Centerer-blocker

To check the proper operation of the centerer-blocker, select [essilor icon] > [settings icon] > [device icon] in your work screen.

1. *Blocking arm movements*

2. *Optical tests*

1. Select the autotest to be carried out.

2. Press [green arrow icon] to start the test cycle.

   To interrupt the cycle at any time, press [red square icon].

   > The result is displayed on the right of the icon of the autotest carried out:

   ◦ ✔ The equipment is operational.

   ◦ ❌ A malfunction has been detected; a description is displayed in the message box on the right.

b. Edger

To check the proper operation of the edger, select [essilor icon] > [settings icon] > [settings icon] from your work screen.

1. *Edger autotests*

2. *Initialisation and rotation of lens shafts*

3. *Reproducer: up and down movements of the lens shafts*

4. *Right feeler movement*

5. *Left feeler movement*

6. *Closing of lens shafts*

7. *Wheel rotation*

8. *GCD module rotation*

9. *Movement of the GCD module*

10. *Transfer initialization*

11. *Door*

12. *Water test*
- trough spraying
- door spraying

1. Select the autotest to be carried out.

2. Press to start the test cycle.

   To interrupt the cycle at any time, press .

   > The result is displayed on the right of the icon of the autotest carried out:
   - The equipment is operational.

◦ ❌ A malfunction has been detected; a description is displayed in the message box on the right.

2. CHECKS AND CALIBRATION

This section describes the procedures to follow if you note mounting problems that may be due to tracing or centering operations.

- Checking the tracing table then calibrating it if required *(☞ p.145)*,
- Checking the centerer-blocker then calibrating it if required *(☞ p.147)*,
- Calibrating the touch screen *(☞ p.149)*.
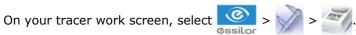
Edger calibration
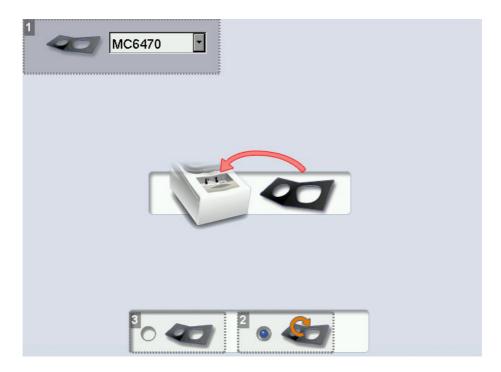
The calibration of the edger can only be done by a qualified technician.

a. Checking and calibrating the tracing table

If you encounter mounting problems, you can check the calibration of the tracing table.

On your tracer work screen, select ![essilor] > ![ruler] > ![tracer] .
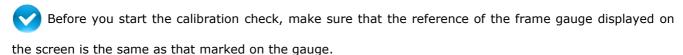
The following screen is displayed:

1. *Frame gauge reference*

2. *Calibration check*

3. *Calibration*

Checking the calibration of the tracing table.

Before you start the calibration check, make sure that the reference of the frame gauge displayed on the screen is the same as that marked on the gauge.

- If it is not the same, press ▼ to display the drop-down list: select the reference which corresponds to the gauge.
- If none of the references match that marked on the gauge, contact the technical department.

1 Select .

2 Insert the pattern gauge in the tracing table.

3 Press to start the test.

4 Wait: a timer is displayed for a few minutes.

> The test is finished:

- The test is successful: press to go back to the work screen.
- The test has failed: start a calibration cycle.

Calibrating the tracing table

This procedure must be followed if the above calibration check has failed.

1 Select to start the cycle.

> The image of the pattern holder is displayed:

2 Attach the pattern gauge to the pattern holder then insert it into the tracing table.

The pattern gauge is considered as a left lens. For further information on how to attach the gauge to the pattern holder, refer to the following section: Tracing > Tracing a pattern, demo lens or recut lens > Mechanical tracing *(☞ p.35)*.

3 Select ⟳ to start the cycle.

4 Wait: a timer ⏱ is displayed for a few minutes.

> ✔ : The first calibration phase is finished.

> The image of the frame gauge is displayed:

5 Insert the frame gauge in the tracing table.

6 Close the jaws.

7 Select ⟳ to start the cycle.

8 Wait: a timer ⏱ is displayed for several minutes.

> ✔ : The calibration is finished.

Once the calibration is finished, you can redo the test cycle ⟳ to check it.

⚠ If the calibration fails, restart the cycle. If it fails again, contact the technical department.

Once the modification has been made, press ◀ to go back to the work screen.
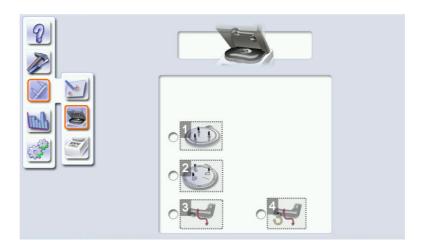
b. Checking and calibrating the centerer-blocker

If you encounter problems with centering or blocking, you can check the calibration of the centering chamber and blocking arm.

On the tracer work screen, select ⓔ > 🖊 > 🖨 .

The following screen is displayed:

1. *Standard tripod*

The tracer detects the position of the feet and the axes on the tripod to optimize correction of the rotation offset and translation offset due to the power of the lenses centered.

2. *High-base tripod*

The tracer detects the position of the feet and the axes on the tripod to optimize correction of the rotation offset and translation offset due to the power of the lenses centered.

3. *Blocking arm calibration*

Only calibrate the blocking arm if the check fails.

During calibration, the tracer detects when the arm is in blocking position, to guarantee its accuracy.

4. *Checking the calibration of the blocking arm*

If the check fails, calibrate the blocking arm.

Checking or calibrating the centerer-blocker

Prerequisite: Make sure the blocking head is empty before starting the check or calibration.

1 Select the desired option.

2 If necessary, place the tripod corresponding to the selected option, without the recut lens accessory, in the centering chamber.

3 Press ⟳ to start the cycle.

> ✔ The procedure was successful

✖ The procedure failed

- If the check fails, calibrate.
- If the calibration fails, restart the cycle. If it fails again, contact the technical department.

c. Calibrating the touch screen

Calibrate the touch screen if your operations have become difficult due to lack of precision.

Touch screen malfunction

On the tracer and edger, you can access the calibration screen directly without going through the settings menu. To do this, press on the tracing or edging screen for 5 seconds.

Calibrating the touch screen

1 On the tracer, select > > .

On the edger, select > .

> A confirmation message is displayed:

- Press to start the calibration.
- Press to cancel and go back to the menu.

2 Point precisely on each cross as they are displayed, holding the stylus perpendicular to the screen so as not to alter the calibration.

> The settings menu is displayed automatically once the calibration is finished.

3 Press to go back to the work screen.

3. STATISTICS AND TECHNICAL HISTORY

This menu enables you to view the number of cycles performed by the tracer and edger. It also gives you access to the technical history.

- Tracer cycles *(☞ p.150)*
- Edger cycles *(☞ p.151)*
- Technical history and errors *(☞ p.152)*

a. Tracer cycles

In the work screen, select > > to view the number of cycles performed by the tracer, centerer and blocker.

The following screen is displayed:

1. *Mechanical tracings*

 Total number of mechanical tracings

2. *Traced frame materials*

The tracing cycles for optyl frames are counted as part of the tracing cycles for plastic frames.

3. *Optical tracings*

4. *Tracing table tests and calibrations*

5. *Partial counter*

Number of actions performed since the last reset.

6. *Total counter*

Total number of actions performed.

7. *Reset*

You can reset a partial counter to zero:

    a. Select the cycle counter to reset.

    b. Press to reset it to zero.

8. *Next page / Previous page*

9. *Centering operations*

10. *Blocking operations*

11. *Blocking arm calibration and calibration checks*

b. Edger cycles

In the work screen, select [icon] > [icon] > [icon] to view the number of cycles performed by the edger.

The following screen is displayed:

1. *Partial counter*

The replacement of a worn tool with a new one resets the partial counter(s) to zero.

2. *Total counter*

3. *Edging operations*

Number of cutting, drilling and finishing operations performed depending on the lens material:

- ◦ Roughing
- ◦ Bevels
- ◦ Flat-edge finish
- ◦ Grooves
- ◦ Drill-holes / slots
- ◦ Notches
- ◦ Polishing
- ◦ Chamfers
- ◦ High-base bevels

4. *Drilling operations*

Number of drilling operations performed for each lens material, according to the drill bit used.

5. *Touch screen calibrations*

6. *Dressing cycles*

Glass roughing wheel / Finishing wheel / Polishing wheel

7. *Number of lenses cut*

8. *Next page / Previous page*

c. Technical history and errors

In the work screen of your tracer or edger, select [essilor] > [icon] > [warning] to access the list of error messages.
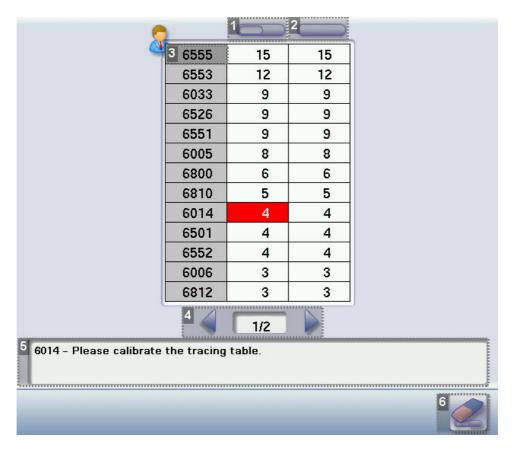
The following screen is displayed:

1. *Partial counter*

    Number of error messages displayed since the last reset.

2. *Total counter*

3. *Error message codes*

    Classed by display frequency.

4. *Error message pages*

5. *Description of selected error*

    Use the scroll box on the right of the message box to scroll through the text.

6. *Reset*

    You can reset a partial counter to zero:

        a. Select the counter to be reset.

        b. Press [eraser icon] to reset it to zero.

Press to go back to the work screen.

4. CHANGING OR CLEANING THE EDGER TOOLS

This menu enables you to perform several operations on the tools of the edger GCD module:

- Drill bit: clean or replace by a bit of different diameter or a new bit
- Chamfering wheel: replace by a new wheel
- Grooving wheel: replace by a new wheel

Wear indicators

Three indicators in the information bar inform you of the level of wear of certain tools:

- Wear of the 1.0 mm or 0.8 mm drill bit
- Wear of the high-base wheel (to be changed by a technician only)
- Wear of the polishing wheel (to be changed by a technician only)

The colour of the indicator informs you of the level of wear of the tool:

- Green for a new tool
- Flashing red for a worn-out tool needing to be changed: press on it to access the tool replacement menu.

- Always use tools recommended by Essilor .
- Never use the edger if one of the tools is missing from the module. Never remove a used or broken tool if you cannot replace it.
- All tools coming into contact with the module must be clean and dry in order to prevent water from seeping into the mechanisms.
- The use of broken tools may cause lens breakage or errors with respect to lens shape or drill-hole diameter: change the tools as soon as they are worn (check the indicators and statistics of your digital system).
- Incorrect positioning of the tools may cause breakage or errors with respect to lens shape or drill-hole diameter: insert the tools fully.

a. Changing or cleaning the drill bit

The wear indicator informs you of the need to change the 0.8 mm drill bit after 250 holes and the 1.0 mm bit after 500 holes.

On your edger work screen, select > > to change or clean the drill bit.
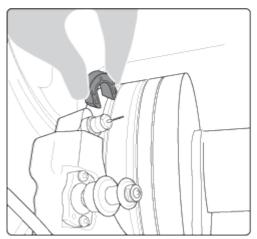
1 Select the diameter of the drill bit to install (0.8 mm or 1.0 mm).
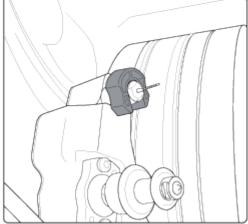
For cleaning, select the diameter of the drill bit in place.

2 Select the type of operation:

- Install a new drill bit: at the end of the procedure, the wear statistics will be reset to zero.

- Replace the drill bit with a different diameter bit or clean the bit in place: the wear statistics will not be reset.

3 Press .

> The GMD module moves to facilitate the operation.

4 Insert the drill bit replacement tool at the base of the chuck.
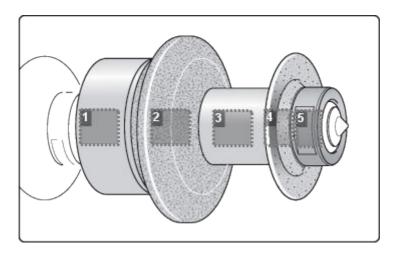
> The chuck is loosened.

5 Remove the drill bit and replace it with the one required.

6 Hold the drill bit at the bottom of the chuck then remove the drill bit replacement tool .

> The chuck tightens up. The drill bit is in place.

7 Press .

> The module goes back into its initial position.

b. Changing the grooving or chamfering wheel

Wheel shaft

1. *High-base wheel*

The high-base wheel can only be changed by a technician.

2. *Chamfering wheel*

It is equipped with a positioner to prevent incorrect insertion.

3. *Spacer*

4. *Grooving wheel*

The boss is turned towards the right.

5. *Nut*

We recommend that you change the grooving and chamfering wheels every 5,000 grooves or chamfers.

On the edger work screen, select > > to change the grooving or chamfering wheel.

Changing both wheels at the same time
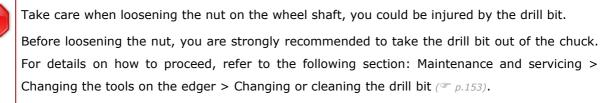
The menu is designed to replace only one wheel at a time. If you are replacing both wheels at the same time, simulate a replacement of the second wheel so that the wear statistics are also reset.

Press the button corresponding to the second wheel, then to validate, without touching the wheel shaft.
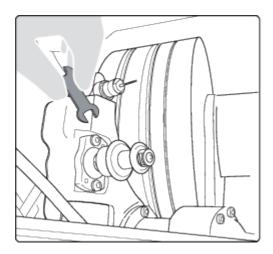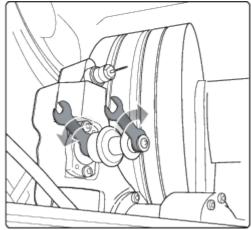
Replacing the grooving or chamfering wheel

1 Press the ▶ button corresponding to the wheel to be replaced:

- 🖊 Grooving wheel

- 🖊 Chamfering wheel

> The GMD module moves to facilitate the operation.

🛑 Take care when loosening the nut on the wheel shaft, you could be injured by the drill bit.

Before loosening the nut, you are strongly recommended to take the drill bit out of the chuck. For details on how to proceed, refer to the following section: Maintenance and servicing > Changing the tools on the edger > Changing or cleaning the drill bit *(☞ p.153)*.

2 Position the spanners and loosen the nut as shown by the arrows below.

3 Loosen the nut, then remove the parts required to replace the tool.

4 Put back the parts on the shaft, in the order shown on the wheel shaft diagram.

⚠ The boss on the grooving wheel must be turned towards the right.

5 Tighten the nut with the open-ended spanners, without over-tightening.

6 If you took the drill bit out of the chuck, put it back.

7 Press ◀.

> The module goes back into its initial position.

> The wear statistics of the tool replaced are reset.

5. SERVICING AND CLEANING THE DIGITAL SYSTEM

This section describes the procedures to service and clean the digital system:

- Precautions required *(☞ p.157)*
- Cleaning the centering chamber glass *(☞ p.157)*
- Cleaning the door and GCD module *(☞ p.157)*
- Dressing the wheels *(☞ p.158)*

a. Precautions required

To avoid any incidents, unplug the device before all cleaning operation.

- Clean the covers of the digital system regularly: use a neutral detergent (e.g. washing-up liquid) diluted with water on a soft cloth.
- Clean the window of the centering chamber regularly with a dry soft cloth.
- Clean the touch screens with a dry cloth: they must never come into contact with liquids (e.g. water, alcohol, window cleaner).
- Service the water recovery and filtration systems regularly.
- Use protective covers on the machines and keep them dust-free as dust alters the precision and operation of the machine.

- Do not touch the lens on the optical block as this could affect the performance of the tracer.
- Never clean the digital system with chemicals (e.g.: petrol, thinners, solvents, etc.).
- Never clean the mechanical parts (feelers, tracing table, module) with a damp cloth.
- No additive should be added to the water in the edger tank. Do not add pyridine.

b. Cleaning the centering chamber glass

A dirty or scratched glass may cause tracing and centering faults. It must be replaced by a technician.

Take care of it and clean it regularly with a soft cloth.

Whenever possible, leave the standard tripod in position in the centering chamber. It protects the glass.

c. Cleaning the door and GCD module

On the edger work screen, select ![essilor] > ![settings] > ![cleaning] to access the cleaning menu.

The following screen is displayed:

1. *Cleaning the door*

a. Press ⬡ to start the door cleaning cycle.
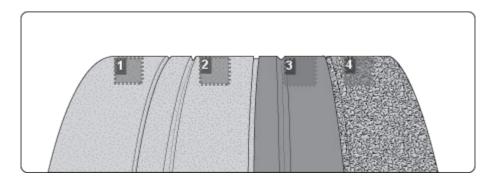
The module moves to facilitate the cleaning.
> The door opens.

b. Use a cloth to clean the inside of the door.

2. *Cleaning the module and trough*

Press ⬡ to start the cleaning cycle.

> The door closes.

> The cleaning is done automatically.

d. Dressing the wheels

1. *Glass roughing wheel*

2. *Finishing wheel*

3. *Polishing wheel*

4. *Plastic roughing wheel*

This wheel cannot be dressed
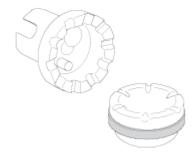
On the edger work screen, select ⬡ > ⬡ > ⬡ to access the wheel dressing menu.

1 Make sure that the 22 mm accessories (posiblock holder and stop) are installed on the lens clamp shafts.

2 Select the appropriate dressing cycle:

- ⬡   Glass roughing wheel

- ⬡   Finishing wheel

- Polishing wheel

 Never dress the polishing wheel twice in a row to avoid possible damage.

> For each wheel, there is a specific dressing stone, whose icon is displayed on the screen:

- The orange dressing stone for the glass roughing wheel

- The white dressing stone for the finishing wheel

- The square dressing stone for the polishing wheel

3 Insert the dressing stone for the selected cycle between the lens clamp shafts, with the hollow side against the posiblock holder.

4 Press to close the clamps.

5 Press to start the dressing cycle.

6 Once the cycle is finished, press to open the clamps and remove the dressing stone.

7 If the dressing stone shows a residual ring, remove it in order not to disrupt subsequent dressing operations.

Technical data

- Tracer-centerer-blocker *(☞ p.162)*
- Edger *(☞ p.163)*
- Environment *(☞ p.161)*

1. TRACER-CENTERER-BLOCKER

Centering-blocking mode: boxing center (passive)

Automatic initialisation

Automatic centering of the frame

Automatic insertion of the feeler

Frame dimension limits (for tracing and shape modification):

- B-dimension: minimum of 18.5 mm (pattern: 17 mm) | maximum of 58 mm
- A-dimension: minimum of 28 mm | maximum of 68 mm
- Z-height: maximum of 30 mm in binocular | 40 mm in monocular
- Frame thickness: minimum of 1.45 mm | maximum of 17 mm

Mechanical tracing:

- Frame tracing in 3 dimensions
- Tracing of patterns, demo lenses and recut lenses in 2 dimensions
- High-precision tracing with groove capture (metal frame)
- Automatic binocular tracing (automatic RE/LE transfer)
- Symmetric binocular tracing
- Asymmetric binocular tracing
- High-base frame tracing
- Automatic detection of frame material
- Automatic measurement of the D-dimension of the frame in binocular tracing
- Automatic measurement of frame thickness

Optical tracing:

- Tracing of tinted lenses
- Tracing of patterns, demo lenses and recut lenses in 2 dimensions
- Automatic tracing of patterns, demo lenses and recut lenses
- Pre-positioning of drilling points and their parameters on a demo lens or recut lens
- Recut lens: equivalent sphere [-1 D; +1 D]

Manual centering:

- Single vision lenses: using focimeter dots or re-marked micro-engravings
- Progressive lenses: using re-marked micro-engravings or manufacturer markings
- Bifocal and trifocal lenses
- Executive lenses
- Mid-distance lenses: using re-marked micro-engravings or manufacturer markings

Centering help:

- Single vision lenses: assisted centering: detection of focimeter dots or re-marked micro-engravings
- Progressive lenses: assisted centering: detection of re-marked micro-engravings or manufacturer markings

Specific centering target for each type of lens: single vision, bifocal/trifocal, progressive, executive, mid-distance

2-track optical video system: without parallax

Magnification: 1.59

Input of job distances:

- PD: 1/2 PD, ΔX
- Height: Boxing height, Datum height, ΔY
- Modification by steps of 0.1 mm or 0.5 mm

Pantoscopic tilt: from -5° to +25°

Shape modification:

- Scaling, A-dimension, B-dimension, ½ A-dimension, ½ B-dimension, D-dimension, modification in one point, rotation
- Retouch
- Modification by steps of 1 mm or 0.5 mm

Display of Precal dimensions

Toolbar customization

Electrical blocking command with pressure control

Networking possibility:

- Tracers-centerers-blockers
- Edgers
- PC
- Essibox

RS232C and RJ45 ports

Memory update via USB key, external Essilor key or via the Essibox system

Integrated auto-maintenance functions (self-calibration, autotests)

Size of colour touch screen: 10 inches

Dimensions: L 300, D 500, H 620 mm

Weight: 22.5 kg

Power supply: 230 V – 50/60 Hz, or 115 V – 50/60 Hz

Power consumption: 250 W

Due to constant improvements, these specifications may be modified without prior notice.

2. Edger

Edger in boxing mode (passive)

Automatic initialisation

Tool wear indicators

Simultaneous feeling of the front and rear surfaces of the lens

Types of finish:

- Bevel:
  - Automatic bevel
  - Customized bevel: frame base tracking, rim tracking, distributed bevel (%), front surface tracking, rear surface tracking, partial and global adjustment, displacement
  - Distribution value: modification step of 0.1 mm or 5% (distributed bevel)
- High-base bevel
  - Shelf bevel values: 0.25 to 2.5 mm; modification step: 0.1 mm
  - Shelf bevel value: 0.1 to 1 mm; modification step: 0.1 mm
- Flat-edge
- Grooving:
  - Automatic groove
  - Customized groove: frame base tracking, distributed groove (%), front surface tracking, rear surface tracking, partial and global adjustment, displacement
  - Adjustable groove width and depth
  - Groove depth between 0.20 and 1.20 mm; modification step: 0.05 mm
  - Groove width between 0.55 and 1.20 mm; modification step: 0.05 mm
  - Distribution value: modification step of 0.1 mm or 5% (distributed groove)
- Chamfering:
  - Chamfer adjustable on front surface and rear surfaces
  - Default value of small chamfer 0.20 mm
  - Default value of large chamfer 0.40 mm
- Drilling:
  - Automatic adjustment of drilling angle according to lens curve up to 30°; modification step: 0.5°
  - Hole diameter: 0.8 to 3 mm; modification step: 0.05 mm
  - Types of drilling: through-hole, non-through hole, straight or tilted notch, slot and spot-facing
  - Maximum number of drilling points per lens: 20

◦ No-drill area: diameter of 29 mm from the boxing center

3-D preview of the bevel and groove before the start of the cycle

Self-apprenticeship of work habits

Edging pressure varying according to the material to be edged

Automatic wheel cleaning cycle

Lens edging capacity:

- Max. diameter: 105 mm (90 mm with a decentration of 15 mm)
- Min. B-dimension : 17 mm for flat edge, 18.5 mm for bevel

3-wheel and 4-wheel versions (depending on material): glass, plastic, polycarbonate, medium-index, high-index, and Trivex™ lenses; polishing

Networking possibility:

- Tracers-centerers-blockers
- Edgers
- PC
- Essibox

Integrated auto-maintenance functions (self-calibration, autotests)

Size of colour touch screen: 8.4 inches

Dimensions: L 570, D 490, H 550 mm

Weight: 65 kg

Power supply: 230 V – 50/60 Hz, or 115 V – 50/60 Hz

Power consumption: 1350 W – 10 A for 230 V and 15 A for 115 V

Two-pole circuit-breaker

Average water consumption:

- CR39, glass, Trivex™ and MHI: 8 litres/minute.
- Polycarbonate: 10 litres/minute.

Measured noise level on edging, at a distance of 0.5 m from the machine:

- Plastic lens = 71 dB
- Glass lens = 71 dB
- Polycarbonate lens = 71 dB
- Trivex™ lens = 72 dB
- MHI lens = 71 dB

Due to constant improvements, these specifications may be modified without notice.

3. Environment

Your digital system should preferably be installed on a perfectly flat and stable work surface of suitable height (about 70 cm), free from shocks and vibrations, to benefit from the high accuracy of your tracer and edger. Your tracer may be installed on the right or left of your edger. The tracer may be installed up to 5 m away from the edger (a 5 m cable is supplied with the edger). Longer cables are also available on an optional basis.

The temperature and relative humidity of the room where you use your digital system must lie within the following limits:

Operation:

- temperature of +10°C (+50°F) to +40°C (+104°F)
- humidity: 30% to 75%

Storage:

- temperature of -5°C (+23°F) to 50°C (+122°F)
- humidity: 25% to 95%

Altitude: < 2,000 m

Degree of pollution: 2

Avoid sudden changes in temperature and relative humidity and install your system:

- in an area not exposed to direct sunlight
- away from all heat sources
- away from any strong magnetic fields
- away from all chemical products, corrosive vapours and liquids

Take care not to block the ventilation louvres and make sure there is adequate space above each unit. Do not place anything on the tracer or the edger. Avoid exposing the equipment to vibrations or shocks.

The rear of your digital system must be at least 20 cm away from the wall.

This machine is not suitable for nor intended to operate in an environment classified as being under risk of explosion.

GENERAL INFORMATION

1. Symbols

Symbols present on the digital system	
O	Off (power)
I	On (power)
⎓	DC speed
⎍	Asynchronous motor speed
⚡	Caution: risk of electric shock
⚠	Caution: danger, refer to the user manual

Symbols present in the document	
🛑	Danger: risk of injury
⚠	Caution: risk of damage to the machine or the lens
📄	Note: additional information
💡	Tip: practical operating advice
📖	Glossary: indicates that a word is defined in the glossary
☞	See also: indicates the number of the page to view for further information

2. Modifications

The information contained in this document is non-contractual and provided as a guide. It is subject to change without prior notice. Errors or omissions may occur in this type of document, although the greatest care has been taken to ensure the accuracy of the information provided. Essilor cannot be held responsible for any malfunction or loss of data resulting from such errors or omissions.

3. Declaration of conformity

Complies with marking: **CE**

Complies with standard ISO 16284

This equipment complies with the limits imposed by Part 15 of the FCC rule. Its use meets the following conditions: (1) this device must not cause interference and (2) must accept interference from external sources, notably that liable to cause malfunctions.

In accordance with the requirements of FCC rules, any modification made to this equipment which is not expressly approved by ESSILOR INTERNATIONAL would nullify the user's right to use this device.

This equipment has been tested and is deemed compliant with the limits imposed for Class-B digital devices according to Part 15 of the FCC rule. Those limits are set so as to ensure reasonable protection against interference in a residential environment. This equipment generates, uses and may emit radiofrequency energy liable to interfere with radio communications if the device is not installed and used in strict compliance with manufacturer instructions. However, nothing guarantees the absence of interference under particular conditions. If this equipment is the source of interference with radio or television reception (this can be confirmed by switching off the device then turning it back on), the user may be able to eliminate this interference through one or more of the following measures:

- Swivel of move the affected receiver or its receiving antenna;
- Move the device away from the affected receiver;
- Connect the device to a different circuit to that powering the affected receiver;
- Request help from the retailer or a qualified radio / television technician.

4. Copyright

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5. Materials and products

The purpose of all edgers is to obtain a final shape on a lens by removing material. This process generates dust whose type depends on the lens and grinding wheel materials.

The materials used for the coating of the Essilor grinding wheel, consumed during use, are not toxic or allergenic. Nevertheless, users must check that the materials machined are not toxic.

The edger significantly limits dust emission via built-in devices: working in a closed machine and edging in a wet environment.

Do not place this machine in a dusty environment, in a room where the temperature is too high or too low or in a damp place.

6. Safety instructions:

All mechanical or electronic adjustments and electrical maintenance must be carried out by an after-sales technician approved by Essilor.

The use and operation of any accessory or cable other than those recommended in this manual could create a risk for the operators using the product.

Keep the power cables as well as the cables of the solenoid valves and pump away from all heat sources, sharp edges and greasy substances.

Check the power cable periodically; if damaged, have it replaced by an approved repairer.

Do not use your system for any purposes other than those described in this document Otherwise, the protection provided by the device could be compromised.

Never try to modify or dismantle this product yourself. Apart from the risk of damaging the instrument, there is a risk of personal injury.

Your digital system must be carefully maintained, in accordance with the instructions detailed in this document.

Your system is an electrical device which complies with the relevant safety standards. In the event of malfunction, the repair operations must be performed by qualified personnel approved by Essilor. Otherwise, the user's safety would be at risk.

During extended periods of non-use and before the servicing and/or replacement of certain accessories, you must disconnect your system from the electricity supply.

The equipment must be connected to an electricity supply with earth connection. The earth connection must comply with public standards and be checked by a technician. Avoid using extension cords or intermediary multiple-socket connectors which might result in poor contact.

Never pull the cables to disconnect them from the power socket.

Before you connect your digital system to the electricity supply, make sure the switch is in the OFF or "0" position.

If the switches no longer perform their On/Off (0/I) function, you must stop using your digital system. Defective switches must be replaced by an approved repairer.

Your system is a professional tool which must only be used by specialized, responsible operators. It must not be used by anyone other than those operators.

This machine is not suitable for nor intended to operate in an environment classified as being under risk of explosion. Do not use this system in the presence of inflammable liquids or gases.

Make sure that the equipment is connected to a mains supply in compliance with standard NFC 15-100. In addition, make sure that the socket type is 3-pin 10/16 A (earthed) and protected by a high sensitivity differential circuit-breaker, maximum 30 mA and that the wall outlet is easy to access.

You are strongly advised to wear gloves to protect your hands when emptying the tank to clean it.

LEDs used by the tracer:

LED radiation.

Do not observe directly using optical instruments.

Class 1M LED device

Maximum power emitted: 1.3 mW; 107mJ

Wavelength: 400-800 nm

Name of standard and publication date (IEC 60825-1: 1993 / A2: 2001).

7. ELECTROMAGNETIC WAVES

Electromagnetic waves emitted by radio and television sets, mobile phones, radio transmitters, etc. are liable to cause malfunctions in the instrument. This instrument is also liable to interfere with radio or television sets, mobile phones, radio transmitters, etc. Avoid installing or positioning devices which may create interference near the instrument. Likewise, never place the instrument on or near this type of device. This could generate malfunctions or faults in the instrument.

Interference and micro-outages

The products have been designed to withstand interference and operate despite its presence and the possibility of micro-outages on the network. However, if these malfunctions are too serious and abnormal, the machine cannot be guaranteed to operate normally.

GLOSSARY

Asymmetric binocular tracing

The two rims are traced as having different shapes; the perimeters and shapes are kept.

Bifocal / trifocal lenses

Type of lens with distinct correction zones:

- the upper part of the lens is used for far vision.
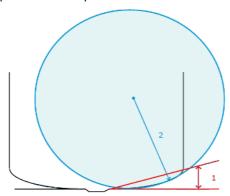- the lower part of the lens is used for near vision.

Boxing dimensions

The boxing system is a standard method to indicate the dimensions of frame contours (or gauges). It consists in boxing the frame in a rectangle of which the dimensions are given.

- Boxing center: geometric center of the rectangle
- Boxing axis: horizontal axis of the frame going through the boxing center
- A-dimension: length of the rectangle
- B-dimension: height of the rectangle
- E-dimension: greatest radius from the boxing center
- Boxing height: calculated from the tangent line at the bottom of the frame

Curve angle and frame base

1. Curve angle: relative parameter formed between the median plane of each frame rim and the general plane of the frame. It is used to calculate the decentration required for curved corrective lenses. The curve angle is expressed in degrees.
2. Frame base: parameter corresponding to the radius of the sphere going through the maximum number of points traced on the circle. It allows a better match between the lens bases (bevel) and the frame. The frame base is expressed in diopters.

Executive lens

Type of bifocal lens with two full fields – one which corrects far vision defects and one which corrects near vision defects. They come in two versions:

- step present on the front surface of the lens
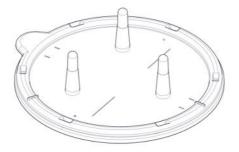- step present on the rear surface of the lens

- Example of such lenses: Telex™ lenses

Groove with meniscus

The curve of the frame rim is significant.

High-base tripod

Specific tripod for centering high-base lenses.

ID

The job ID consists of alphanumeric characters in the job list, and of numeric characters only in the collection list. It is unique.

Job

All the actions to be carried out on the tracer and edger to produce a pair of glasses. It is saved in the shape management screen under a specific ID.

Lenticular lens

Type of lens with a small cambered optical area on the front or rear surface and whose edge gradually flattens. The correction is located in the central part.

Mid-distance lens

Type of lens for near vision with a deeper field (e.g. interview lenses™).

Optyl

Material used for certain frames; highly flexible plastic.

Progressive lens

Type of lens whose power varies progressively from far vision on the upper part of the lens to near vision on the lower part. Without any optical break or unsightly line.

Recut lens accessory

Specific accessory for centering recut lenses or small lenses, to be placed in the center of the standard tripod.

Refractive index

Characterises the refractive power of a transparent optical material.

Indices vary according to lens materials, as follows:

- Plastic lens: 1.5
- Polycarbonate lens: 1.59
- Medium or High Index lens: > 1.5
- Trivex™ lens: 1.5 to 1.6
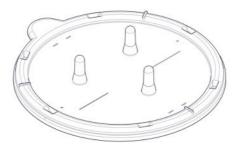- Glass lens: 1.5 to 1.9

Single vision lens

Type of single focus lens correcting ametropias. The power of the lens is the same throughout its surface.

Standard tripod

Tripod for centering all types of lens, except very high-base and recut lenses.

SYMMETRIC BINOCULAR TRACING

The shape of the right rim is applied symmetrically to the left rim; the perimeters traced are kept.

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