THE 4000 EDGER

User Manual

Référence : FC 00 234

briot
A BUCHMANN PRODUCT

Dear Valued Customer,

*Congratulations on acquiring the new **4000 BRIOT EDGER**. We appreciate and thank you for the confidence you have entrusted in our name.*

This unit has been manufactured with the greatest of care and inspected to meet the most rigorous Briot standards. We recommend you read this manual, carefully, for the proper use and enhancement of the life of your new equipment. Please keep it in a safe place for future reference.

As with all mechanical and electronic devices, however, your Briot unit will require periodic adjustments, routine maintenance, and eventually the replacement of certain hard-working parts. To ensure that your Briot unit is continually operating at peak efficiency, it may be beneficial to have your unit periodically inspected by an authorized service representative.

We have written this manual to guide through the various routine uses, procedures and adjustments required to operate and maintain your Briot 6000 edger. Easy reference part illustrations will help you identify specific parts and their proper assembly.

To ensure the longevity and maximum efficiency of your Briot unit, insist on genuine Briot replacement parts and diamonds.

Once again, thank you for choosing Briot.

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Reference: FC - 00 - 234

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1 Installation/Preparation

Unpacking Unit

Caution

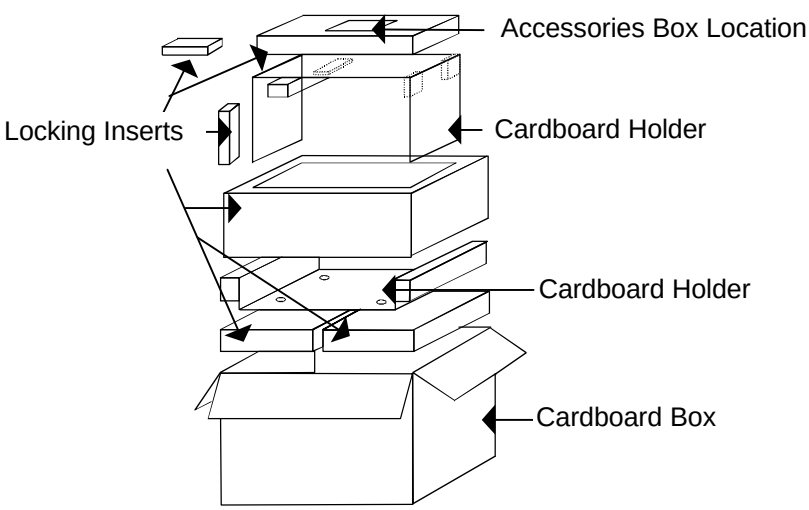
If you proceed to install the unit yourself, please, do not discard the box or its packing contents.

Procedure

Follow the steps below to unpack your edger unit.

Step	Action
1	Open the cardboard carton.
2	Remove from the cardboard carton: • Small Accessory Cardboard Box • Edger and Packing Inserts.
3	Remove: • Accessories from small box • Inserts from edger unit.

Edger Packaging



Safety Precautions

Warning

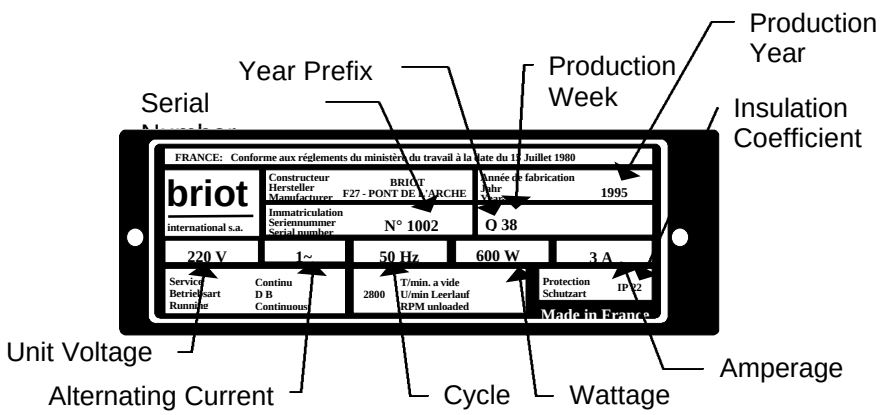
Do not attempt to operate this unit until you have read thoroughly and understand completely all instructions, rules, etc. contained in the manual. Failure to comply can result in accidents involving fire, electric shock or serious personal injury. Save this owners manual and review frequently for continuing safe operation, and instructing possible third-party users.

Briot does not assume any responsibilities or liabilities for damages caused by negligence or ignoring the safety precautions enlisted in this manual.

Safety Precautions

- Do not place the edger near or on top of a source of energy (radiator or heater).
- Make sure your voltage source corresponds to the voltage specified on the edger nameplate located on the left side of the unit (see diagram below).
- If any type of liquid or material gets into internal part of the edger, you must do the following immediately:
  - Unplug the power cord from the wall outlet
  - Have the unit checked by a qualified Briot technician before switching the unit on.
- If the unit is not going to be used for a long period of time you should unplug the power cord from the wall outlet.

Edger Nameplate



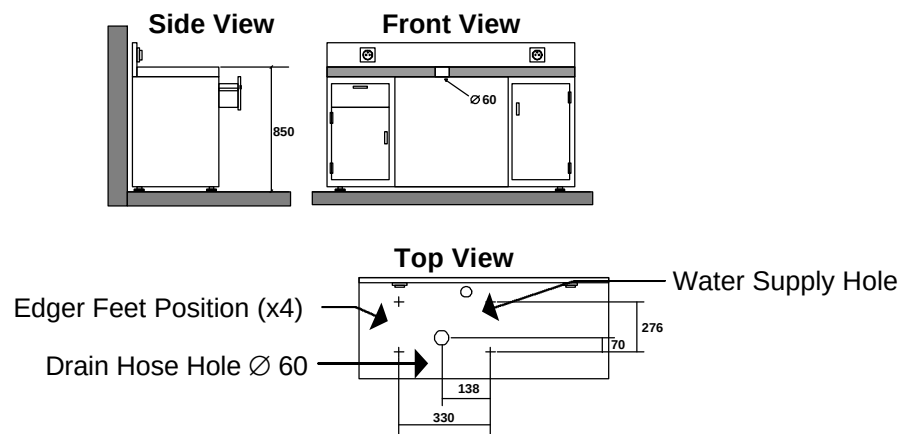
Edger Installation

Procedure

Follow the steps below to install the 4000 edger unit.

Step	Action
1	Place the edger: • on a sturdy and leveled work bench • plan ahead the position of your water supply and drain holes with reference to the edger's rubber feet • away from a source of heat • allowing yourself enough room for job trays and other working space around the edger.
2	Place the edger in its final position on the work bench and drill the following holes: • Hole for water supply hose • Hole for drain hose under edger (see diagram below).
3	Connect the: • water supply hose into hose barb (reference 21 92 014) • drain hose into hose barb under edger (reference 21 92 066) Note: If you are installing recirculating system see Appendix A.
4	Connect power cord into wall outlet.

Workbench Drilling Layout for 4000 Edger



Edger Level Adjustment

Introduction

You must adjust the edger level position whenever:

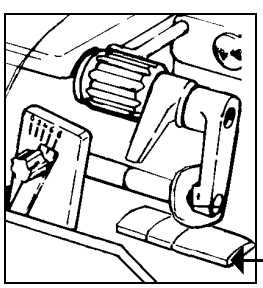
- you are installing the unit for the first time
- you have relocated the edger to a new position.

Procedure

Follow the steps below to find the proper edger level.

Step	Action	
1	Place a former on former holder attachment. See paragraph *Former Placement* in chapter 3.	
2	Place a small amount of grease on former touch platform.	
3	Start retouch cycle. See paragraph *Lens Retouch* in chapter 3.	
4	During the finishing cycle, observe the lateral movement of the former on the former touch platform. Result:	
	IF former drifts towards the ...	**THEN unscrew the ...**
	right side	right feet to lift right side of edger.
	left side	left feet to lift left side of edger.
5	Repeat step **3** as it is necessary.	

Former Holder and Former Touch Platform



Edger On/Off Switching

Switching On Procedures

Prior to turning unit on, follow the following steps:

- Make sure that your power source corresponds to the voltage indicated in the edger's nameplate (see nameplate diagram in *Safety Precautions* section).
- Verify the unit's power cord is plugged in wall outlet.
- Verify the hose clamps around the water supply hose ends are properly tightened.
- Check for proper drainage slope, angle pitch should be at least 5 %.

Switching Unit On

Operation	Illustration
Unit will start operating once main switch is positioned to the **I** position.	

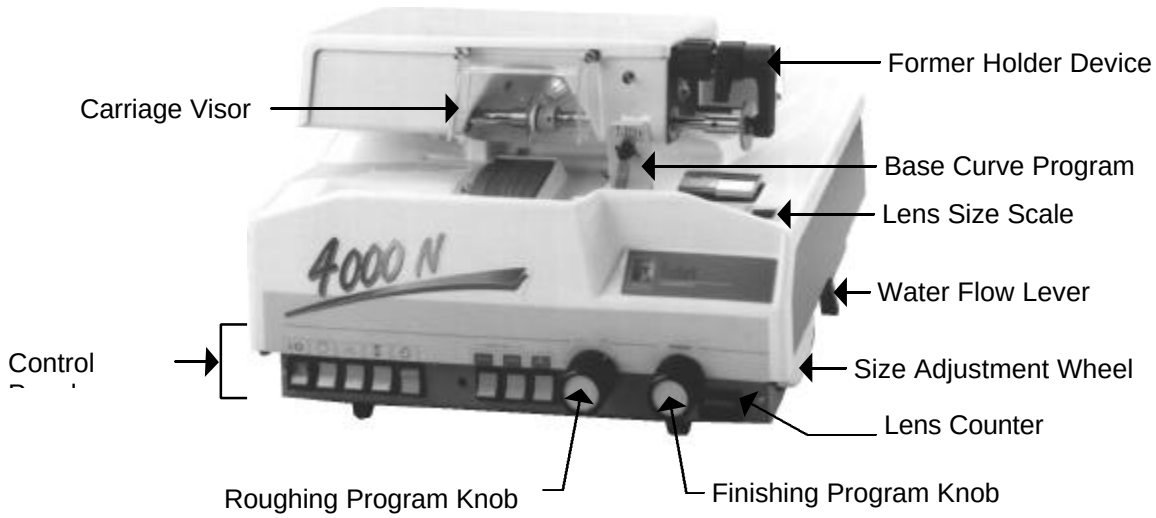
Switching Unit Off

Operation	Illustration
All operations will stop once the main switch is positioned to the **O** position.	

2 Unit Introduction

Edger

Main Controls and Components

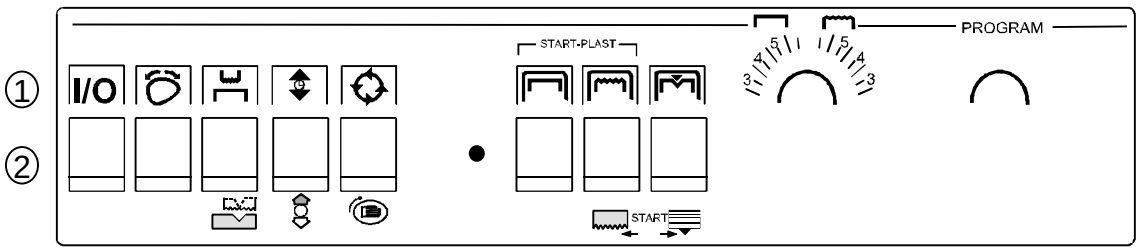


Lens Counter

You can know at any time the number of edged lenses by seeing the lens counter, located on the right front view of the edger.

Edger (continued)

Control Panel



① Serigraphy ② Control Knobs

Key	Knob Position	Description
I/O	Top	Switching on of the edger.
	Bottom	Switching off of the edger.
	Top	Activation of the push/pull lens motion mode.
	Bottom	Deactivation of the push/pull lens motion mode.
	Top	Deactivation of roughing cycle only.
	Bottom	Activation of roughing cycle only.
	Fugitive on Top	Lighting of the lens during the control bevel mode.
	Centering	Neutral.
	Fugitive on Bottom	Lowering of the lens during the control bevel mode.
	Top	Reactivation of the automatic lens rotation mode.
	Centering	Deactivation of the automatic lens rotation mode.
	Bottom	Activation of the manual lens rotation mode.

Edger (continued)

Control Panel (continued)

Key	Knob Position	Description
●	-	Photocell Indicator Light.
	Fugitive on Bottom	Beginning the glass (mineral) edging program.
	Fugitive on Bottom	Beginning the plastic (organic) edging program, when activating simultaneously with the  key.
	Fugitive on Bottom	Activating of the retouch cycle.

Warning

In the following of this manual, only the symbols drawn above the control knobs will be represented whereas in practical you will have to press the control knob relating to it.

Standard Accessories

List

Standard Accessories Kit

Accessory	Briot's Reference	Quantity
User Manual	FC 00 234	1
Roughing Wheel Maintenance Sheet	NT 01 049	1
Finishing Wheel Maintenance Sheet	NT 01 050	1
Water Supply Hose	21 92 066	1
Roughing Dressing Stick (Orange)	24 07 001	1
Finishing Dressing Stick (Green)	24 07 002	1
Former Blanks	11 23 025	12
Metal Hose Clamps	21 24 006	2
1/2 Eye Left Side Clamping Adaptor	01 10 400	1
Articulate Left Side Clamping Adaptor	01 10 399	1
Allen Key Set	08 00 064	1
Replacement Bulb	12 01 057	1
Full Size Suction Cup (Briot)	11 17 046	10
1/2 Eye Suction Cup (Briot)	11 17 047	2
Leap II Rubber Chuck (Briot)	11 17 045	6
1/2 Eye Right Side Adaptor	11 38 102	1
Adhesive Holder	11 38 082	2
Replacement Pad for Left Side Adaptor (large)	11 18 008	1

Standard Accessories (continued)

List (continued)

If your edger unit is supplied to be used with **110** Volts, you will receive the following accessories.

Accessory	Briot's Reference	Quantity
Power Cord	22 33 034	1
Fuse 1 A - 5 x 20 (quick-blow)	22 29 013	3
Fuse 5 A (slow-blow)	22 29 002	2
Fuse 20 A - 250 V (quick-blow) 6.35 x 32	22 29 039	2
Fuse 2 A (slow-blow)	22 29 038	2

If your edger unit is supplied to be used with **220** Volts, you will receive the following accessories.

Accessory	Briot's Reference	Quantity
Power Cord	22 34 009	1
Fuse 1 A - 5 x 20 (quick-blow)	22 29 013	3
Fuse 5 A (slow-blow)	22 29 002	2
Fuse 0.5A - 5x20 (slow-blow) ref: EAWK 500	22 29 042	2
Fuse 12.5 A 250 V (slow-blow)	22 29 003	2
Fuse 3.15A - 5x20 (slow-blow) ref: EAK 3.15	22 29 043	2

Diamond Wheels: Types/Sets

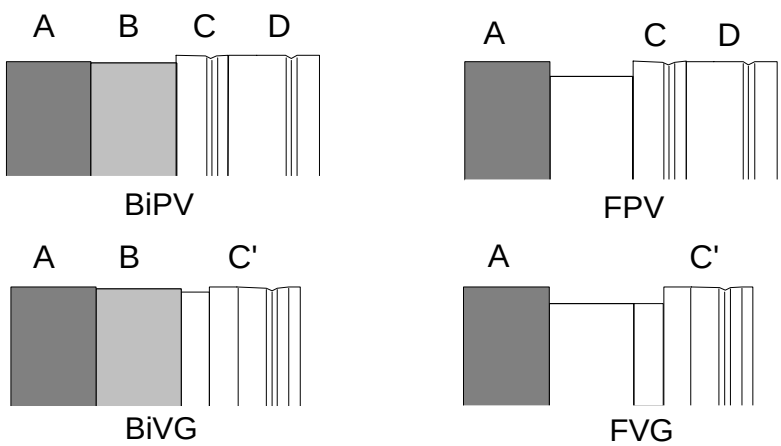
Types

The table below describes the wheel types.

Type	Description
A	Sintered (impregnated) Roughing for Glass Lenses (mineral)
B	Electrolytic (plated) Roughing Wheel for Plastic Lenses
C	Free Floating Bevel Wheel
C'	Free Floating + Rimless Bevel Wheel + Guided Bevel
D	Rimless + Controlled + Facet Bevel Wheel

Wheel Sets

Here is available wheel sets for the range of products **4000**.



3 Lens Edging Process

The Edging Sequence

Procedure

Follow the steps below to edge two symmetrical lenses.

Step	Action
1	Former Placement.
2	Lens Placement.
3	Roughing Program Selection.
4	Finishing Program Selection.
5	Lens Size Adjustment.
6	Lens Curve Adjustment (if necessary).
7	Water Flow Adjustment.
8	Edging the First Lens.
9	Edging the Second Lens.
10	Lens Size and Axis Adjustment.
11	Lens Retouch (if necessary).

Additional Functions

In addition to edging standard lenses, you can also edge with **4000 N**:

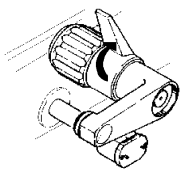
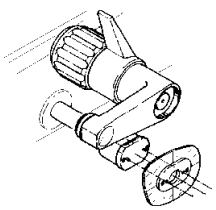
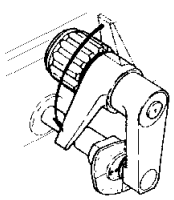
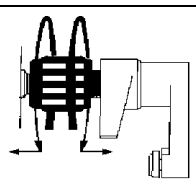
- 1/2 Eye Lenses
- Lenticular Lenses with Facets.

See the section at the end of this chapter.

Former Placement

Procedure

Follow the steps below to place the former.

Step	Action	Illustration
1	Unscrew (counterclockwise) former holder device's barrel to release pressure.	-
2	Lift-up former holder locking lever.	
3	Position former on its support with proper side orientation according to job requirement. To edge a... • **Right** lens, place former: - so that top of lens faces up - nasal area faces away from you. • **Left** lens place former: - so that top of lens faces up - nasal area faces you.	
4	Lower former holder locking lever.	
5	If necessary tighten (clockwise) former holder device's barrel to clamp pattern securely.	

Lens Placement

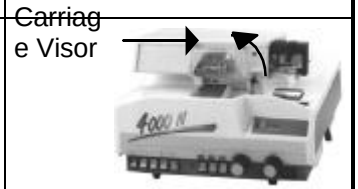
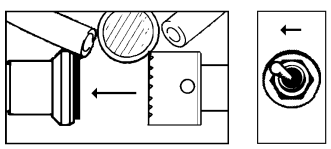
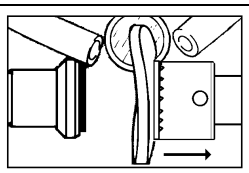
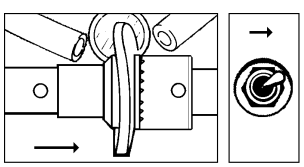
Prerequisites

Before clamping the lens in the edger, you must:

- make sure the lens is clean and dry
- make sure the lens has been neutralized and marked with a lens meter
- make sure the lens has been centered and blocked on the convex side with a centering device.

Procedure

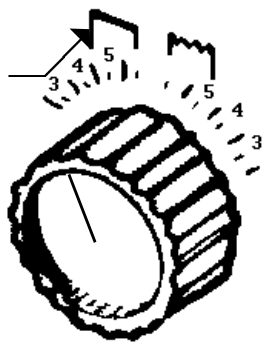
Follow the steps below to clamp the lens.

Step	Action	Illustration
1	Open carriage visor.	
2	Open clamping shaft by activating closing switch to the left. Note: Clamping shaft does not have to be open all the way.	
3	Place the blocked lens into the right side adaptor. Note: Make block is sitting inside adaptor with the proper orientation.	
4	Clamp lens by activating closing switch to the right. Result: • Clamping shaft (left shaft) displaces to the right clamping concave side of lens. • Lens pressure is automatically adjusted.	

Roughing Program Selection

Procedure

Use this table to select roughing program.

To edge...	Turn Roughing Knob...	Illustration
a mineral lens (glass)	counterclockwise facing 'Mineral Lens' symbol.	Mineral Lens Symbol 
an organic lens (plastic)	clockwise facing 'Organic Lens' symbol. Result: The clamping pressure is **10 kg higher** than mineral program.	 Organic Lens Symbol

Finishing Program Selection

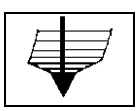
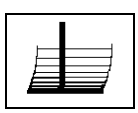
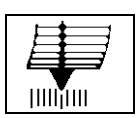
Location

The finishing program knob is located on the extreme right side of the edger.

Introduction	Illustration
The selection of three different types of bevel is obtained with the operation of this knob. The program selection can be observed through the display program window above the knob.	**PROGRAM** 

Procedure

Use this table to guide you in proper bevel selection.

Finishing Program	Index Proper Program Label To:
Free Floating Bevel	Turn knob to its extreme clockwise position 
Flat Edging (Rimless)	Turn knob counterclockwise 
Controlled bevel	Turn knob counterclockwise 

Lens Size Adjustment

Selecting the Proper Size

The final lens size depends on the type of bevel you select, the frame material and shape you choose, and the type of former (frame manufacturers' or lab made 'on size').

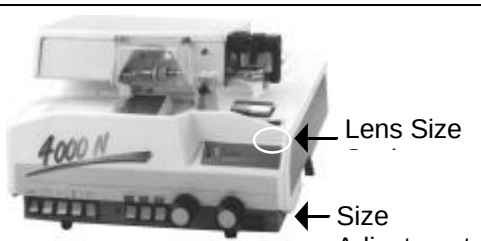
IF the frame is...	**THEN compensate final size by...**
Plastic	+ 0,3 mm.
Metal	0 mm.
Optyl	+ 0,5 mm.

Sizing Scales

- The lighted sizing scales are displayed on graded bands and positioned from the left to the right as follows:
  - free floating bevel (automatic)
  - rimless
  - controlled bevel
- Scales graduations are engraved:
  - in black for positive values (Europe)
  - in red for negative values (Europe)
  - in black for all values (USA).

Procedure

Follow the step below to select the lens size with **4000 N**.

Step	**Action**	**Illustration**
1	Turn the sizing wheel until the desired size graduation is placed under the indexing needle.	

Lens Curve Adjustment

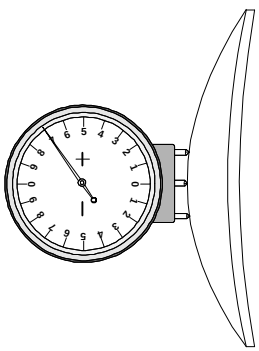
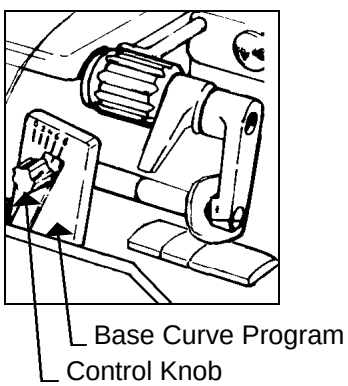
Introduction

For proper lens curve selection, you must measure the lens with a lens clock whenever you want to edge in the controlled bevel mode.

Note: The base curve device might have to be adjusted to **2** when edging rimless lenses.

Procedure

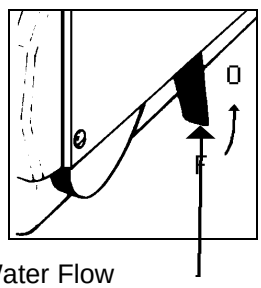
Follow the steps below to adjust the lens curve.

Step	Action	Illustration
1	Measure lens' convex side with a lens clock.	
2	Loosen locking control knob of base curve device so it moves freely.	
3	Move locking knob laterally until the indicator bar aligns with the proper base curve value.	-
4	Tighten locking control knob.	-

Water Flow Adjustment

Procedure

Follow the steps below to adjust the water flow.

Step	Action	
1	• Verify the house water valve is turned on, if using direct water supply or • Verify if the recirculating system is plugged-in into the edger's outlet.	
2	Adjust the water flow by moving the water flow lever on the lower right side of the edger. Notice: When the lever is positioned in its extreme forward position, the water is shut-off. Maximum water flow is obtained with lever positioned to the rear of edger. It is advised to place the lever in the center position when initially starting the unit.	 Water Flow

Edging the First Lens

Bevel Selection

Using the Program Knob select one of the following:

- Free Floating Bevel (Automatic)
- Rimless Edging
- Bevel Control.

Free Floating Bevel

Follow the steps below to edge a free floating bevel lens.

Step	Action	
1	Make sure you have done the following steps: 1. Clamped the former. 2. Clamped the lens. 3. Selection of proper roughing program. 4. Selection of proper bevel program. 5. Proper lens size. 6. Correct water flow adjustment. See *Former Placement*.	
2	Lower the carriage visor.	
3	Start the cycle by:	
	IF you edge...	**THEN activate...**
	a mineral lens (glass)	 knob towards the bottom.
	an organic lens (plastic)	 +  knobs towards the bottom.
4	**As soon as the lens touches the roughing wheel:** • Re-adjust the water flow • If necessary, adjust the lens position over the roughing wheel for even wear of diamond wheel with the aid of the roughing knob.	
5	**Once the finishing cycle ends**, open the carriage visor.	

Edging the First Lens (continued)

Free Floating Bevel (continued)

Step	Action
6	Hold the edged lens while activating the clamping switch to the left, to open the left side shaft.
7	Remove the lens from the right side adaptor, making sure not to remove the block (suction cup or leap II block) as some re-edging might be necessary for proper sizing of lens into optical frame.
8	Continue with second lens. See *Edging the Second Lens* below.

Rimless Bevel

Follow the steps below to start a flat edging.

<table>
<tr><th>Step</th><th colspan="2">Action</th></tr>
<tr><td>1</td><td colspan="2">Make sure you have done the following steps:
1. Clamped the former.
2. Clamped the lens.
3. Selection of proper roughing program.
4. Selection of proper bevel program.
5. Proper lens size.
6. Proper lens curve adjustment.
7. Correct water flow adjustment.
See Former Placement.</td></tr>
<tr><td>2</td><td colspan="2">Lower the carriage visor.</td></tr>
<tr><td rowspan="3">3</td><td colspan="2">Start the cycle by:</td></tr>
<tr><td>IF you edge...</td><td>THEN activate...</td></tr>
<tr><td>a mineral lens (glass)</td><td>  knob towards the bottom.</td></tr>
<tr><td>an organic lens (plastic)</td><td>  +  knobs towards the bottom.</td></tr>
</table>

Edging the First Lens (continued)

Rimless Bevel (continued)

Step	Action
4	**As soon as the lens touches the roughing wheel:** • Re-adjust the water flow • If necessary, adjust the lens position over the roughing wheel for even wear of diamond wheel with the aid of the roughing knob.
5	**As soon as the lens touches the finishing wheel**, adjust lens position over the finishing wheel according to lens thickness and for even wear of the diamond wheel with the aid of the finishing program knob. Advice: Longer wheel life will result if the full wheel width is used during roughing cycle.
6	**Once the finishing cycle ends**, open the carriage visor.
7	Hold the edged lens while activating the clamping switch to the left, to open the left side shaft.
8	Remove the lens from the right side adaptor, making sure not to remove the block (suction cup or leap II block) as some re-edging might be necessary for proper sizing of lens into optical frame.
9	Continue with second lens. See *Edging the Second Lens* below.

Controlled Bevel

Follow the steps below to edge a controlled bevel lens with **4000 N**.

Step	Action
1	Make sure you have done the following steps: 1. Clamped the former. 2. Clamped the lens. 3. Selection of proper roughing program. 4. Selection of proper bevel program. 5. Proper lens size. 6. Proper lens curve adjustment. 7. Correct water flow adjustment. See *Former Placement*.

Edging the First Lens (continued)

Controlled Bevel (continued)

Step	Action	
2	Lower the carriage visor.	
3	Activate  knob towards the bottom to activate the roughing cycle only.	
4	Start the cycle by:	
	IF you edge...	**THEN activate...**
	a mineral lens (glass)	 knob towards the bottom.
	an organic lens (plastic)	 +  knobs towards the bottom.
5	**As soon as the lens touches the roughing wheel:** • Re-adjust the water flow • If necessary, adjust the lens position over the roughing wheel for even wear of diamond wheel with the aid of the roughing knob.	
6	Open the carriage visor.	
7	Increase the size by 3 or 4 mm by turning the sizing wheel.	
8	Activate  knob towards the bottom to deactivate the roughing cycle only.	
9	**As soon as the lens touches the finishing wheel**, activate  knob towards the bottom to activate the manual lens rotation mode. Result: The bevel control cycle is beginning.	
10	Reduce the water flow by activating the water flow lever the right on side of edger to improve view of lens.	
11	According to your wishes adjust the following: • Using the bevel program knob you can position the lens from the left to right over the diamond wheel groove. and/or • Adjust the bevel curve position in relation to the lens base curve that you have measured with the lens clock. Note: You may repeat this operation several times until desired tracking position is achieved.	

Edging the First Lens (continued)

Controlled Bevel (continued)

Step	Action
12	Reduce the size gradually by using the sizing wheel, until the lens touches the diamond wheel groove. Result: The bevel path is traced on the lens edge.
13	Activate  knob towards the top to re-activate the automatic lens rotation mode.
14	Reduce the size to **0** (European) or to the **original size setting** (USA). Result: The bevel begins to form on the lens edge.
15	Increase the water flow with the water-flow lever.
16	Lower the carriage visor.
17	**Once the finishing cycle ends**, open the carriage visor.
18	Hold the edged lens while activating the clamping switch to the left, to open the left side shaft.
19	Remove the lens from the right side adaptor, making sure not to remove the block (suction cup or leap II block) as some re-edging might be necessary for proper sizing of lens into optical frame.
20	Continue with second lens. See *Edging the Second Lens* Paragraph.

Cycle Interruption

The edging cycle can always be interrupted at any time by following the steps below.

IF you edge...	**THEN activate...**
a mineral lens (glass)	 knob towards the bottom.
an organic lens (plastic)	 +  knobs towards the bottom.

Edging the Second Lens

Procedure

Follow the steps below to edge the second lens.

Step	Action
1	Place the former in the proper orientation. See *Former Placement* Paragraph.
2	Follow the respective edging program. See *Lens Placement* Paragraph.
3	While edging the second lens, verify the first lens' size and axis placement. See *Lens Size and Axis Adjustment* Paragraph.

Lens Size and Axis Adjustment

First Lens Inspection

Follow the steps below to adjust the size and axis of the first lens.

Step	Action	
1	Place the blocked lens on the centering device. Result:	
	IF the marks are...	**THEN the lens axis is...**
	superimposed	Right. See following step.
	not superimposed	Wrong. You must if necessary, refer to the axis error list at the *Solving Edging Problems* Paragraph in chapter 5 to find the solution to the problem.
2	Place the edged lens into the spectacle frame to verify size. Result:	
	IF this lens...	**THEN the lens size is...**
	fits correctly into the frame	Right. See following paragraph.
	is too big for the frame	Wrong. See paragraph *Lens Retouch*.
	is too small for the frame	Wrong. You must if necessary, refer to axis error list at *Solving Edging Problems* Paragraph in chapter 5 to find the solution to the problem.

Lens Size and Axis Adjustment (continued)

Second Lens Inspection

Follow the steps below to adjust the size and axis of symmetrical lenses.

Step	Action	
1	Place the two symmetrical lenses in the frame.	
2	Compare the two symmetrical lenses axes with the frame. Result:	
	IF the marks...	**THEN the axis is...**
	are aligned	Right. See following step.
	are not aligned	Wrong. You must if necessary, refer to the axis error list at *Solving Edging Problems* Paragraph in chapter 5 to solve problem.
3	Check the second lens size. Result:	
	IF this lens...	**THEN the lens size is...**
	fits correctly into the circle	Right. The edging is finished.
	is too big for the frame	Wrong. See *Lens Retouch* below.
	is too small for the frame	Wrong. You must if necessary, refer to the axis error list at *Solving Edging Problems* paragraph in chapter 5 to find the solution to the problem.

Lens Retouch

Prerequisites

Before retouching a lens, make sure of the following.

- The suction cup or lens block hasn't been removed from its original placement.
- The finishing edging program hasn't been altered.
- The former is clamped in place with the correct orientation.
- The upper carriage hasn't been moved after the finishing cycle completion.

Note: The retouch system consists of a mechanical memory that records the latest lifting position of the lens in relation to the groove in the diamond wheel.

Procedure

Follow the steps below to retouch a lens.

Step	Action
1	Place the blocked lens in the holder adaptor again, verify the lens orientation with reference to the clamped former.
2	Lower your size as required by using the sizing wheel and observing the graduation scale.
3	Lower the carriage visor.
4	Activate  knob towards the bottom of the edger. Result: The lens lowers itself exactly on the same spot where it picked up at the end of the finishing cycle, thus starting the retouch cycle.
5	Once the finishing cycle ends, open the carriage visor.
6	Hold the edged lens while activating the clamping switch to the left, to open the left side shaft.
7	Remove the lens from the right side adaptor, making sure not to remove the block (suction cup or leap II block) as some re-edging might be necessary for proper sizing of lens into optical frame.

Lens Retouch (continued)

Cycle Interruption

The edging cycle can always be interrupted at any time by following the steps below.

IF you edge...	**THEN activate...**
a mineral lens (glass)	 knob towards the bottom.
an organic lens (plastic)	 +  knobs towards the bottom.

Edging a 1/2 Eye Lens

Prerequisites

Before edging a 1/2 eye lens, you should:

1. Make sure that the left side clamping shaft is open.
2. Turn the edger off.
3. Wait till the diamond wheels are at a complete stop.

Procedure using suction cups

Follow the steps below to edge a 1/2 eye lens **by using a suction cup**.

Step	Action
1	Remove the following accessories: • Large left side clamping adaptor • Right side suction cup holder.
2	Install the following accessories: • Left side clamping half eye adaptor • Right side half eye suction cup adaptor.
3	Turn edger main switch on.
4	Proceed to edge as any other normal lens. See *Lens Edging Process* Paragraph. Note: Make sure to use oval shape suction cups when blocking lenses for 1/2 eye frames.

Edging a 1/2 Eye Lens (continued)

Procedure using Leap II/Adhesive Blocks

Follow the steps below to edge a 1/2 eye lens by using Leap II or adhesive blocks.

Step	Action
1	Follow the prerequisite steps from the previous page.
2	Remove the following accessories: • Large left side clamping adaptor • Right side suction cup holder.
3	• Install the following accessories: - Left side clamping half eye adaptor - Right side half eye adaptor. or • **If using metal blocks**, install Leap II adaptor.
4	Use half eye blocks. Note: Make sure to remove excess adhesive tape prior to clamping lens into edger.
5	Turn edger main switch on.
6	Proceed to edge as any other normal lens. See *Lens Edging Process* Paragraph. Note: Make sure to use oval shape suction cups or half eye metal blocks when blocking lenses for 1/2 eye frames.

Edging a Lenticular Lens with a Facet (Undercut)

Introduction

A lenticular facet can be edged using the bevel control program after using the automatic bevel or the rimless program.

Sizing

Keep in mind that you will have to decrease the size, whether you are on size formers or sizing larger than pattern, you must lower your size requirement.

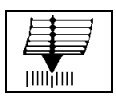
Prerequisites

Before edging a lenticular facet, do the following.

- Edge a lens according to standard procedures.
- Make sure the lens is properly clamped in edger.

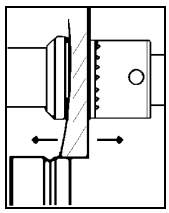
Procedure

Follow the steps below to edge a lenticular lens with a facet.

Step	Action
1	Turn the finishing program knob counterclockwise till the controlled bevel symbol figure lines up with the index needle.  
2	**Adjust the curve control mechanism to 0.**
3	Lower the carriage visor.
4	Increase the size by 3 or 4 mm with the aid of the sizing wheel.
5	Activate  knob towards the bottom. Result: The lens will lower itself at the same spot where it lifted at the end of original finishing cycle.
6	Activate  knob towards the bottom to activate the manual lens rotation mode.

Edging a Lenticular Lens with a Facet (Undercut) (continued)

Procedure (continued)

Step	Action	
7	Turn the program knob clockwise again so as to move the lens to the right, pass the outer edge of the diamond wheel. Position the lens according to the facet width desired. Note: Be careful not to edge the lens bevel.	
8	Using the sizing wheel gradually reduce the size to the desired depth.	
9	Increase the water flow with the aid of the water flow lever.	
10	Activate  knob towards the top to reactivate the automatic lens rotation mode.	
11	Open the carriage visor.	
12	Hold the edged lens while activating the clamping switch to the right, to open the left side shaft.	
13	Remove the lens from the left side adaptor, making sure not to remove the block (suction cup or leap II block) as some re-edging might be necessary for proper sizing of lens into optical frame. If resizing is required, activate  knob towards the bottom.	

4 Edger Cleaning and Wheel Maintenance

Cleaning the Edger

Introduction

In order for your new edger to retain its new appearance, simple care must be taken on a routine basis.

- Clean the edger daily after use.
- Follow the directions mentioned in this manual.
- Maintain your diamond wheels.

Daily Cleaning

Basic daily cleaning consists of dust removal by using:

- Pure water
- A soft sponge

  or
- A soft brush

Always clean edger surfaces wet to avoid scratching of its fine finish.

Avoid harsh cleansers, never use gritty cleansers which will harm your edger's appearance.

Caution

Do not use a hose with high water pressure, avoid any heavy splashing where it might penetrate the edger's internal electronic components thus causing serious damage to your unit.

Never use chemical solvents, agents or derivatives of such products as:

- **Acetone**
- **Trichlorethylene**
- **Benzene**
- **Kerosene**
- **Etc.**

These products directly or even by their simple vapors:

- **Might alter the structure and appearance of synthetic materials used in fabrication of your edger**
- **Usage of any of these materials voids any guarantee or warranty of the whole unit or its components.**

Speeding-up Roughing Cycle for Mineral Lenses (Glass)

Caution

- Make sure you have an ample flow of water over the diamond wheels prior to using the dressing sticks.
- Use only recommended dressing sticks (orange) by Briot or wheel manufacturer.
- Apply dressing stick to roughing wheel only when considerable slowing down of the cycle time occurs.

Wear

Please, bear in mind, the more often you apply a dressing stick to your diamond wheels the faster the wheel is going to wear.

Procedure

Follow the steps below to speed-up roughing cycle for mineral lenses (glass).

Step	Action
1	Start the edging cycle without clamping a lens in the edging chamber.
2	Apply the dressing stick on the wheel by applying pressure directly. For detailed information, see sheet *Roughing Wheel Cleaning*, supplied with edger.
3	As you apply the dressing stick on to the diamond wheel, sweep it from left to right to cover the full width of diamond wheel.
4	Use **10 to 15 mm** (1/4 to 1/2 Inch) of dressing stick. Warning: Excessive use of dressing stick will prematurely decrease the life of the diamond wheel.
5	Edge a test lens for inspection.

Warning

Never apply a dressing stick to the plastic (organic) roughing wheel, serious damage will occur and your wheel warranty will be void.

Speeding-up the Finishing Cycle

Caution

- Make sure you have an ample flow of water over the diamond wheels prior to using the dressing sticks.
- Use only recommended dressing sticks (green or grey) by Briot or wheel manufacturer.
- Apply dressing stick to roughing wheel only when considerable slowing down of the cycle time occurs.
- When applying dressing stick to bevel wheel always position dressing stick the same way, try to cover the diamond groove equally with the stick.
- Do not apply the stick in sections, one side or the other.

Result: Since your Briot wheels are manufactured in two pieces to obtain a much better bevel position, uneven application of dressing stick will alter the bevel position on the lens. Unnecessary use of the dressing stick will decrease the life of the diamond wheel.

Wear

Please, bear in mind, the more often you apply a dressing stick to your diamond wheels the faster the wheel is going to wear.

Procedure

Follow the steps below to speed-up the finishing cycle.

Step	Action
1	Start the edging cycle without clamping a lens in the edging chamber.
2	Apply the dressing stick on the wheel by applying pressure directly. For detailed information, see sheet *Finishing Wheel Cleaning* supplied with edger.
3	As you apply the dressing stick on to the diamond wheel, cover the full width of the groove Warning: Do not sweep the dressing stick left to right.
4	Use **10 to 15 mm** (1/4 to 1/2 Inch) of dressing stick. Warning: Excessive use of dressing stick will prematurely decrease the life of the diamond wheel.
5	Edge a test lens for inspection.

5 Maintenance

Solving Edging Problems

Introduction

If a problem or malfunction occurs during the normal edging cycle, please make reference to the following table.

Before you call for service, review this list. It may save you time and expense. The list includes common occurrences that are not the result of defective workmanship or materials in this unit. Otherwise, call Briot's after-sales service department.

Troubleshooting

Problem	Possible Cause	How to fix it
No lens rotation.	The manual lens rotation key has been deactivated.	Activate  knob towards the top.
Top carriage stops over the finishing wheel.	Roughing cycle only mode is activated.	Activate  knob towards the top.
Lens does not transfer properly during the automatic bevel cycle.	The program selector knob is not positioned correctly.	Turn program selector knob clockwise to its maximum traveled position.
Free bevel position has shifted.	You might have used a dressing stick and favored one side of the diamond wheel.	See *Speeding-up the Finishing Cycle* in chapter 4.
	Edger level is unbalanced.	See *Edger Level Adjustment* in chapter 1.
Can't get a complete bevel in the entire lens during automatic bevel mode.	The lens has a positive high power.	Replace the left large clamping adaptor with the articulate left side clamping adaptor.
	The lens: • has a large decentration • is of lenticular power.	Use the bevel control mode.
The lens does not land properly into the bevel wheel groove.	Upper carriage might have been moved prior to starting retouch cycle.	Edge another lens.
	The transfer platform or cam is greasy.	Remove grease and clean platform and cam thoroughly.

Solving Edging Problems (continued)

Troubleshooting (continued)

Problem	Possible Cause	How to fix it
Water does not shut-off.	Some dirt or debris have lodged itself inside the solenoid valve.	See *Cleaning the Water (Solenoid) Valve* below.
Edging time is gradually slowing down.	The wheels are loading up.	See *Speeding-up Roughing and Finishing Cycle* in chapter 4.
	The take-off difference between roughing wheel and finishing wheel is too large.	See *Roughing Wheel Differential Adjustment* below.
Incorrect sizing.	The finishing wheel is loaded.	See *Speeding-up the Finishing Cycle* in chapter 4.
	The finishing wheel is worn.	See *Diamond Wheel Replacement* below.
	The sizing wheel is not calibrated properly.	See *Finished Size Adjustment* below.
	The upper carriage's mounting screws are loose.	Tighten Allen cap head mounting screws.
Incorrect axis.	Former axis is off axis. Note: Lens finished size might be smaller than frame, lens rotates inside eyewire.	Obtain a good former or make a pattern on axis.
	The left side clamping adaptor pad is worn out.	Replace it.
	Lens rotating shafts have play.	Contact Briot's after-sales service.
	The lens was wet or greasy prior to blocking.	Clean lens thoroughly before blocking.
	The suction cup is worn out or ripped.	Replace with new suction cup.
	Adhesive blocking tape does not stick to lens surface.	Always use good fresh adhesive blocking tape and maintain metal blocks clean.

Solving Edging Problems (continued)

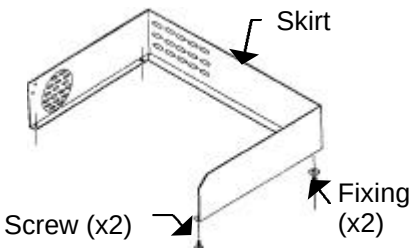
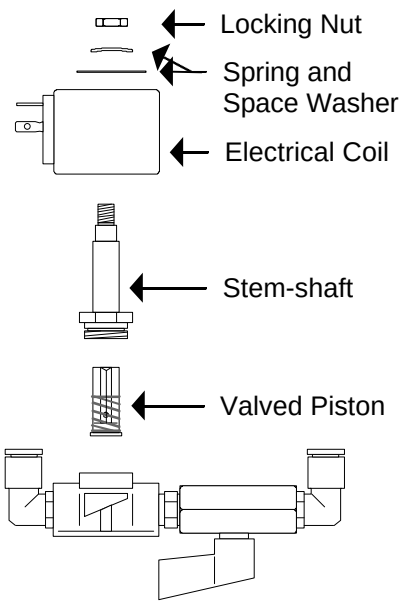
Troubleshooting (continued)

Problem	Possible Cause	How to fix it
Edging chamber light does not work.	Light bulb burned out.	See *Edging Chamber Bulb Replacement* below.
Sizing wheel light does not work.	Light bulb burned out.	See *Sizing Wheel Bulb Replacement* below.
The unit will not operate after switch is turn on.	Wall plug disconnected.	Push plug firmly into wall outlet.
	House fuse blown or circuit breaker tripped.	Replace fuse with time delay type or reset circuit breaker.
	Power switch in **Off** position.	Turn power switch to **On** position.
	One of the edger's fuses is blown.	See *Fuse Replacement* below.

Cleaning the Water (Solenoid) Valve

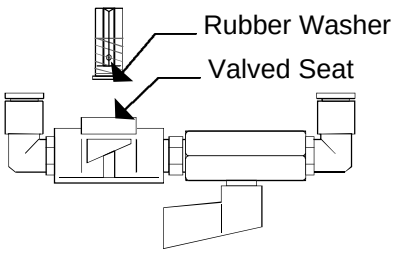
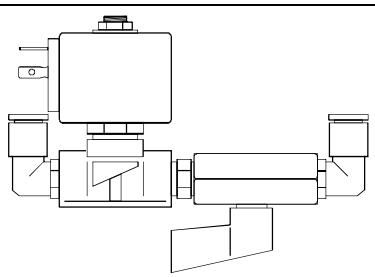
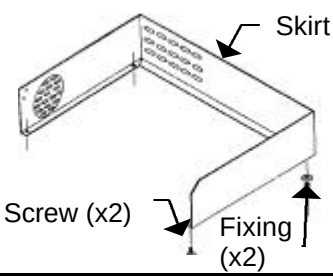
Procedure

Follow the steps below to clean the water (solenoid) valve.

Step	Action	Illustration
1	Unplug the edger from electrical outlet.	-
2	Remove the two front screws of the edger skirt.	
3	Unlock the two fixings of the edger skirt.	
4	Remove the skirt from the edger.	
5	Remove the solenoid components parts: • Locking Nut • Spring and Space Washer • Electrical Coil • Stem-shaft • Valved Piston.	

Cleaning the Water (Solenoid) Valve (continued)

Procedure (continued)

Step	Action	Illustration
6	Inspect and clean: • Rubber washer at end of valved piston • Valved Seat • Remove any debris or foreign matter.	
7	Re-assembled the solenoid components: • Valved Piston • Stem-shaft • Electrical Coil • Spacer and Spring Washer • Locking Nut.	
8	Before placing the skirt, edge in neutral (without lens) to check.	-
9	Place the edger skirt.	
10	Tighten the two screws of the edger skirt.	
11	Lock the two fixings of the edger skirt.	

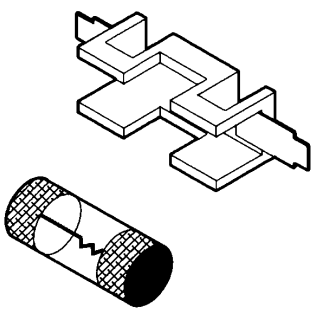
Edging Chamber Bulb Replacement (Upper Carriage)

Procedure

Follow the steps below to replace the edging chamber bulb (upper carriage).

Step	Action
1	Unplug the edger from electrical outlet.
2	Remove the upper carriage plastic cover by: • removing the two screws on the left side • lift cover and slide to the right.
3	Locate bulb in the center of carriage and remove the bulb from its holder.
4	Insert a new bulb into the bulb holder (see diagram below).
5	Replace the upper carriage cover.

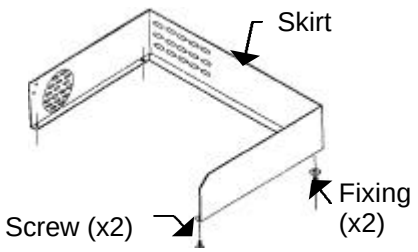
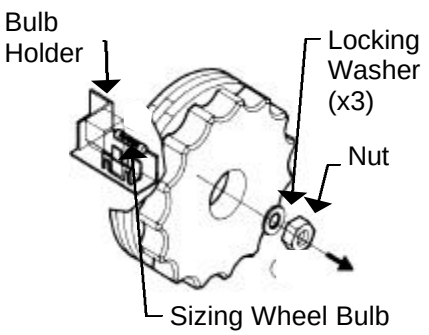
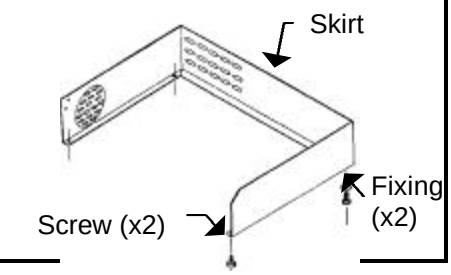
Upper Carriage Light Bulb and Holder Assembly



Sizing Wheel Bulb Replacement

Procedure

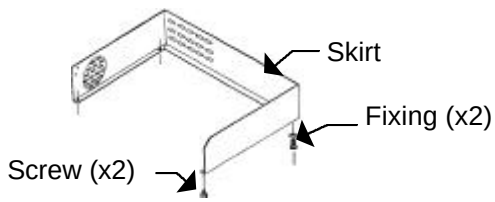
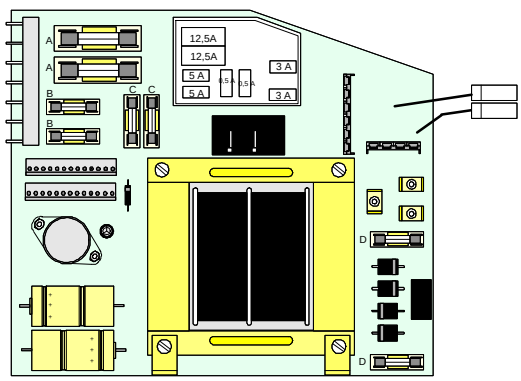
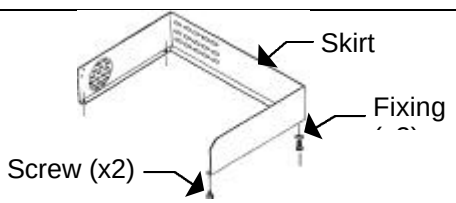
Follow the steps below to replace sizing wheel bulb on the mechanical sizing wheel.

Step	Action	Illustration
1	Unplug the edger.	-
2	Remove the two front screws of the edger skirt.	
3	Unlock the two fixings of the edger skirt.	
4	Remove the skirt from the edger.	
5	Remove the sizing wheel by: • removing the sizing locking nut • removing the three locking washers.	
6	Remove the light bulb from its holder.	
7	Insert a new bulb in holder.	
8	Replace the sizing wheel by: • inserting the three locking washers • tightening the large sizing wheel locking nut.	
9	Place the skirt.	
10	Tighten the two screws of the edger skirt.	
11	Lock the two fixings of the edger skirt.	

Fuse Replacement

Procedure

Follow the steps below to replace a fuse on the edger.

Step	Action	Illustration
1	Unplug the edger from electrical outlet.	-
2	Remove the two front screws of the edger skirt.	
3	Unlock the two fixings of the edger skirt.	
4	Remove the skirt from the edger.	
5	Locate and remove the blown fuse, located on the power supply circuit. The fuse list is the following: A : Power Supply Input B : Recirculating Pump C : Power Transformer Input D : Power Transformer Output.	
6	Place the edger skirt.	
7	Tighten the two screws of the edger skirt.	
8	Lock the two fixings of the edger skirt.	

Roughing Wheel Differential Adjustment

Introduction

The glass roughing wheel wears out sooner than the other diamond wheels. The outside diameter of the roughing wheel decreases as more lenses are being edged. As the diamond wheel diameter decreases the larger the roughed size of the lens gets before going into the finishing cycle. If this sizing differential is not corrected periodically, the faster the bevel wheel is going to wear.

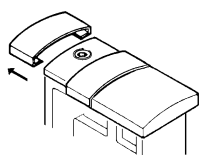
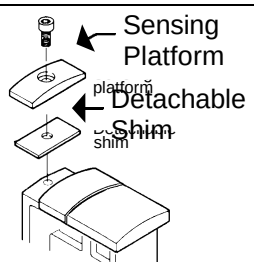
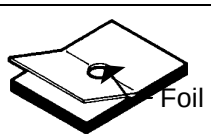
Average Take-off Differences

Average differences between roughing and finishing wheels are the following:

- Glass Lenses : from 1,2 mm to 1,4 mm
- Plastic Lenses : from 0,6 mm to 0,8 mm

Procedure

Follow the steps below to adjust the take-off difference.

Step	Action	Illustration
1	Push the former wear plate towards the left to expose the cap Allen screw, remove screw with the help of an Allen key.	
2	Remove the following: • Cap Screw • Sensing Platform. Result: Under the sensing platform there is a detachable shim made out of several layers of thin foil.	
3	Remove or peel a foil from the shim, remove as many as it is required to compensate for wheel wear. Note: A foil is about 0,1 mm thick.	
4	Replace components as follows: • Metal Shim • Sensing Platform • Cap Screw • Wear Plate.	-

Diamond Wheel Replacement

Procedure

Follow the steps below to replace a diamond wheel.

Step	Action
1	Unplug the edger from electrical outlet.
2	Insert a block of wood or foam under the left side of the carriage to lift it up for working clearance.
3	Remove the wheel cover guard.
4	Remove the following components for ease of procedure: • Left side clamping adaptor • Right side suction cup or block adaptor.
5	Draw a straight line across all the diamond wheels with a marking pen so that you will be able to align them the same way and have proper balance when you re-install them.
6	Remove the carriage visor off.
7	Loosen the wheel locking screw with the help of: • A 17 mm spanner wrench • A plastic or rubber mallet.
8	Remove the wheel locking screw and wheel retaining ring.
9	Remove the diamonds wheels.
10	If you are removing the glass (mineral) wheel make sure to remove the aluminium hub deflector.
11	Make sure that the motor sealing washer is resting against the motor.
12	**Clean the motor shaft and the diamond wheels sides with a solvent.**
13	**Grease lightly shaft and wheel arbor holes prior to re-installing diamond wheels.**

Diamond Wheel Replacement (continued)

Procedure (continued)

Step	Action
14	Assemble in the following order: • Mineral (glass) roughing wheel • Organic (plastic) roughing wheel • Free floating (automatic) bevel wheel (groove on the right side) • Controlled bevel wheel (groove on the right side).
15	Align the position of the wheels by matching the straight line drawn to maintain proper balancing.
16	Re-install the wheel retaining ring and the wheel locking screw.
17	Tighten the screw with a 17 mm wrench.
18	Replace the wheel guard.
19	Re-install the following accessories: • Left side clamping adaptor • Right side suction cup or block adaptor.

Finished Size Adjustment

Introduction

As the finishing wheels begin to wear out, the lens final size is not exact anymore. In order to correct for this wear, the sizing wheel needs to be calibrated.

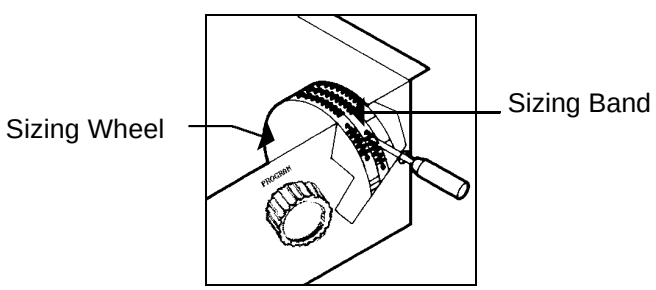
Procedure

Follow the steps below to calibrate sizing wheel on a **4000 N**.

Step	Action
1	Adjust size scale to **0** (European) or to **36-1/2** (USA) using sizing wheel.
2	Select an on-size former and initiate the edging cycle. See *Edging the First Lens* in chapter 3.
3	Measure the difference in diameter between the edged lens and the former used.
4	Insert a small screwdriver through one of the openings located in front panel facing the sizing wheel (see diagram below).
5	Insert the screwdriver blade into the opening and lock the spring portion of the sizing band with the screwdriver blade (see diagram below).
6	Rotate the sizing wheel to compensate for the difference in size. Result: The size is on target.

Diagram

Finish Size Adjustment



Appendix Installing a Recirculating System

Installing a Recirculating System

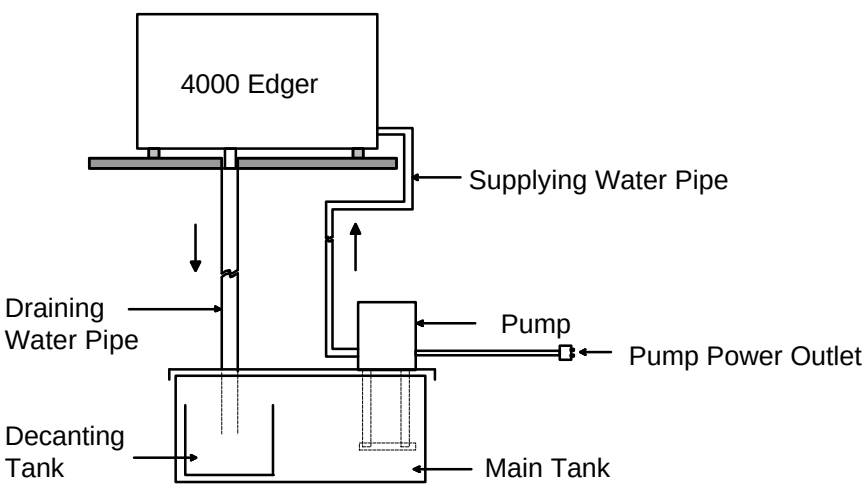
Procedure

Follow the steps below to install recirculating system.

Step	Action
1	Place system assembly under work bench.
2	Feed the following through the pre-drilled holes on the work bench top: • Supply Water Hose (reference: 21 92 014) • Drain Hose (reference: 21 92 066). Make sure to secure the hoses with the hose clamps supplied (see diagram below).
3	Connect the recirculating system's power cord to the rear of the edger.
4	Fill the recirculating tank with water 3/4 full.
5	Make a trial edging run without a lens to prime the pump.

Diagram

Recirculating System Installation



Cleaning the Recirculating Tank

Introduction

The recirculating tank should be cleaned periodically, with more frequency at the workload increases.

Procedure

Follow the steps below to clean the recirculating tank.

Step	Action
1	Disconnect the recirculating system electrical plug from the rear of the edger.
2	Disconnect the drain hose.
3	Remove: • Tank cover • Remove the settling tank.
4	Dispose of: • Water • Sediment accumulated at the bottom of the tank.
5	Clean and rinse the tanks thoroughly, make sure to use: • Rubber gloves to avoid injury • Clean water • Use a cleaning rag or sponge to wipe clean.
6	Replace all parts including electrical plug.
7	Make a trial edging run without a lens to prime the pump.

Appendix Specifications

Specifications

List

The table below lists specifications of your edger.

Specification	Description
Dimensions	• Width = 530 mm (20.8 in) • Depth = 390 mm (15.3 in) • Height = 350 mm (13.7 in)
Weight	38.0 Kg (84.0 lb)
Wheels Sets	• Diameter = 142 mm • FPV • FVG • BiPV • BiVG
Base Curve Adjustment	• Minimum = 0 • Maximum = 8
Carriage Counterweight	Fixed
Lens Clamping	Electrical
Power Supply	• 220 V / 50 Cycle • 110 V / 60 Cycle
Power Consumption	600 Watt
Control Panel	• Photocell Type Sizing Control • Manual Override Rotation • Automatic Stop Cycle • Retouch Cycle • Roughing Cycle Choice • Choice of Pull/Push Motion in Roughing Cycle

Specifications (continued)

List (continued)

Specification	Description
Adjustments and Displays	• Mechanical • Size • Sweeping of Roughing Wheel • Sweeping of Rimless Finishing Wheel • Roughing Cycle Program • Finishing Cycle Program • Lens Counter
Edging Programs	• Free Floating (Automatic) Bevel • Controlled Bevel • Controlled Tracing • Rimless (Flat) Edging • Lenticular Facet (Undercut)
Edging Diameter Range	• Minimum = 19 mm • Maximum = 100 mm
Others Specifications	• Former Clamping Device • Mechanical Vernier

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