

# Auto Groover NH-800

Installation and Operating Instructions



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# OPERATING INSTRUCTIONS

## MODEL NH-800 AUTO GROOVER

PSI's NH-800 Auto Groover is an easy to use groover for any lab or retail location. The auto groover features three precision grooving options: center, front-curve and rear-curve grooving. The depth and location of the groove can be easily and accurately adjusted. The Auto Groover is designed to work on plastic and polycarbonate lenses.

**WARNING:** Never attempt to operate this machine before you have thoroughly read and understand all the instructions. Failure to comply can result in fire, electric shock or serious personal injury. Keep this users manual on hand and review it frequently to ensure continued safe operation.

**NOTE:** Manufacturer assumes no responsibility or liability for any damages caused by negligence or ignorance of precautions in this manual.

### SAFETY PRECAUTIONS

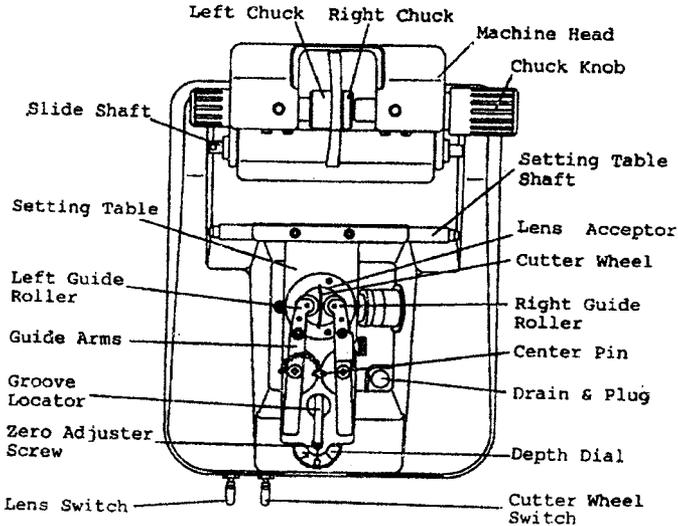
- Do not use this machine for any purpose other than grooving lenses.
- Make sure your power source corresponds to the specifications of the unit. Never operate this machine with the wrong power source.
- Do not place the machine in a hot area or near flammable materials.
- If any type of liquid or material gets into the inner part of the unit, IMMEDIATELY turn off and unplug the unit. Do not turn the power on again until the unit has been checked by a qualified service representative.
- Do not try to disassemble any part of the unit except the parts that are explained in this manual. Doing so will void all warranties.
- Unplug the power cord when not in use for a long period of time.
- Do not touch the cutter wheel while the machine is in operation to avoid injury.

### Unpacking The Machine

1. Open the carton.
2. Carefully remove the machine from the packing materials.
3. Place machine on a stable, flat surface.
4. Make sure the following accessories are included in the package.

<u>Accessory</u>	<u>Qty</u>	<u>Part #</u>			
Syringe	1	NH-800-85	Left 1/2-eye Chuck	1	NH-800-25C-1
Cutter Belt	1	NH-800-79	Chuck Rubber	2	NH-800-26B
Sponges	2	NH-800-4	1/2-eye Chuck Rubber	2	NH-800-26B-1
Right 1/2-eye Chuck	1	NH-800-27B-1			
<u>Accessory</u>	<u>Qty</u>	<u>Part #</u>			

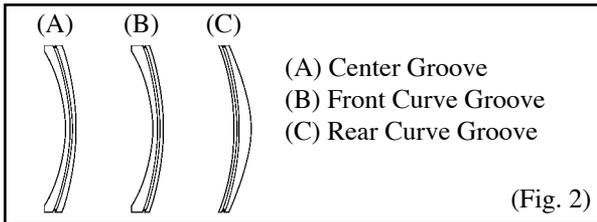
## PARTS



( Fig. 1 )

## Choosing A Groove Type

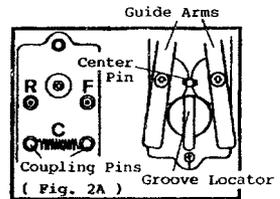
Before grooving a lens you must decide what type of groove is needed. Lift the setting table (Fig. 1) and set the control settings on the underside in accordance with the desired groove type.



### A. Center Groove – Used for plus lenses or thin lenses with uniform edge thickness

The Center Groove setting is the most commonly used method for plus lenses. In this mode, the groove is automatically centered between the front and rear surfaces of the lens.

1. Lift the setting table (Fig. 1) and plug the coupling pins into the lower two holes marked "C". Lower the setting table.
2. Install the center pin between the guide arms.
3. Adjust the groove locator to the center

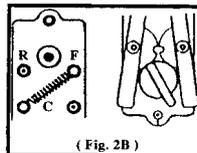


## Choosing A Groove Type

### B. Front Curve Groove – Used for high minus lenses and lenses with high cylinder curves

High minus lenses, particularly when combined with strong cylinders look best when the groove is based on the front curve of the lens. The groove should be close and equidistant to the front surface but not less than 1.0 mm. Use Fig 2B and proceed as follows.

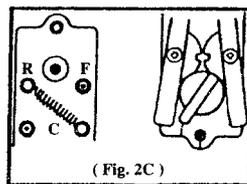
1. Lift the setting table (Fig. 1) and plug the coupling pins into the "F" and left "C". Lower setting table.
2. Remove the center pin and let it hang.
3. Chuck up the lens, lower it on to the lens acceptor (Fig. 1) and allow it to rotate until the thinnest part of the lens edge is directly on the lens acceptor.
4. Turn the groove locator so that the lens edge moves over the slot to the position that will cut the groove at the distance from the front edge that you desire.



### C. Rear Curve Groove – Used on Executive Bifocals

This setting is seldom used for normal lenses but it is very useful if you are attempting to groove a lens that has an interrupted lens edge such as those found on Executive Bifocals. Use Fig. 2C as a guide when setting up the machine.

1. Lift the setting table (Fig. 1) and place the coupling pins into the "R" and right "C" positions. Lower setting table.
2. For a normal lens simply use the same operating procedure as above for a front curve groove only setting the groove locator knob to the left.
3. If grooving a lens with an **interrupted edge**, adjust the left guide arm to place the lens so the groove is set at the desired position.
4. While pressing gently on the right side of the machine head, (Fig. 1) lower the setting table to the desired groove depth and then turn on the lens switch (Fig. 1). Hold the right guide arm away from the front surface of the lens so that the interrupted lens edge does not catch on the right guide arm.



## Grooving A Lens

After your Auto Groover has been set up for the desired groove type, use the following instructions to groove the lens.

1. The depth dial should be set to zero, both switches in the off position. (See Fig. 1 for location of controls.)
2. Place the sponge between the two upright plastic septums directly under the setting table. Use the accessory plastic syringe to wet the sponge liberally with tap water (no other coolant is needed). Do not add too much water.
3. Lower the setting table to its operating position and chuck-up the lens approximately in the center. Tighten the chuck knob finger-tight plus a quarter turn. Always make sure that the front of the lens faces to your right.

## Grooving A Lens

4. Open the guide arms and gently lower the lens between the two nylon guide rollers onto the lens acceptor.
5. Check to be sure everything is set correctly the turn the lens switch to the ON position. Allow the lens to rotate about a quarter-turn and check to see that it is snugly between the rollers.
6. Turn on the cutter wheel switch
7. Turn the depth dial to the setting you prefer.
8. After approximately 60 seconds, the sound from the cutter will change indicating that the lens is finished. Turn off the cutter wheel switch and then the lens switch and raise the machine head.

**NOTE:** If you wish to create a deep groove on a hard glass lens, first set the depth dial to half of the final depth and after the lens being grooved has made one revolution (approx. 60 seconds), adjust the depth dial again to the final depth for another revolution of the lens.

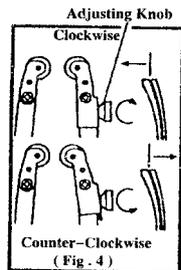
**CAUTION:** Before grooving glass lenses you must first refer to the safety rules and regulations in

## Adjustments

### Groove Position Adjustment When Using the Center Groove Mode

This is a fine adjustment of the position of the groove produced in the center curve mode.

To move the groove to the rear face of the lens, turn the adjusting knob clockwise. (Fig. 4) To move the groove to the front face of the lens, turn the adjusting knob counterclockwise. (Fig. 4)



### Depth Adjustment

To check that the "0" position is correct, set the depth dial to "0" and see whether the cutter wheel protrudes above the surface of the lens acceptor. It should be flush with the surface of the lens acceptor. If it isn't, adjust the zero adjuster screw located at the end of the setting table. (Fig. 1).

### Removal Of The Setting Table

To remove the setting table (Fig. 1), insert a small diameter metal rod into the hole that is located on the right side of the setting table shaft. This is a two piece screw design, screw the end point of the shaft into the body of the main shaft.

## Maintenance

### Water Drain

The Auto Groover has a small drain located in the front wheel well (Fig. 1). A plug is installed in this drain to prevent accidental spills. We strongly recommend permanently removing this stopper so that you never accidentally allow too much water to accumulate which could lead to bearing failure. Bearings are not warranted against damage from exposure to water.

### Sponge

Wash the sponge frequently to rid it of entrapped particles and wet it liberally before each use. Change the sponge when it appears worn. At the end of each day's use, take the sponge out and rinse it thoroughly.

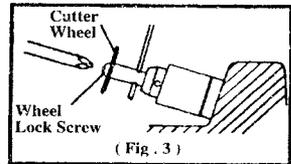
### Slide Shaft

Clean the slide shaft frequently with a clean cloth and occasionally place a small dab of white grease on the shaft surface to make sure that the machine head moves side-to-side freely at all times (Fig. 1)

### Replacing the Cutter Wheel

To replace the cutter wheel, first unplug the power cord and put a narrow rod in the hole of the shaft and then undo the phillips wheel lock screw. (Fig. 3)

**CAUTION:** The cutter wheel must be replaced correctly (Fig. 3) so that it fits into the slot of the lens acceptor (Fig. 1).



### Replacing Chuck Rings

Open the lens chucks and remove the left chuck followed by the right chuck (Fig. 1). You can then remove the chuck rings easily and snap in a new pair.

### Replacing Carbide Motor Brushes

1. Turn the machine up side down and remove the 3 recessed phillips head screws and remove bottom cover.
2. Roll belt off pulley
3. Check to see if the brushes need changing by removing the front brush. To remove the front brush, unscrew the black phillips head screw cap on the side of the motor housing. Pull the spring out. If the carbide tip on the end is short replace it.
4. To remove the back brush, detach the motor from the mounting bracket by removing the two nut screws. Unscrew the black phillips head screw cap on the motor housing and remove. Pull the spring out and replace with a new brush.
5. Reinsert black phillips head screw caps and remount motor housing to the mounting bracket.
6. Replace cover and 3 recessed phillips head screws.

## Specifications

Lens Materials	Plastic, Polycarbonate & Glass
Possible Depth of Groove	0 to 0.7mm
Width of Groove	0.6mm
Acceptable Lens Thickness	1.5mm to 11.0mm
Acceptable Lens Diameter	28mm to 70mm
Approximate Grooving Time	60 sec. (1 rev. of lens)
Dimensions:	6-1/2" w x 8-1/4" d x 6" h (170mm w x 210mm d x 150mm h)
Weight	6 lbs. (2.7 kg)
Power Requirement	100 to 120V/60Hz AC or 200 to 240V/50Hz AC, 95

**CAUTION:** Before drilling glass lenses you must first refer to the safety rules and regulations in your area for glass lenses.

**Contact PSI at 800-237-8154 or 727-376-7900  
if you have any questions or problems with your machine.  
Thank you for Looking To PSI.**



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