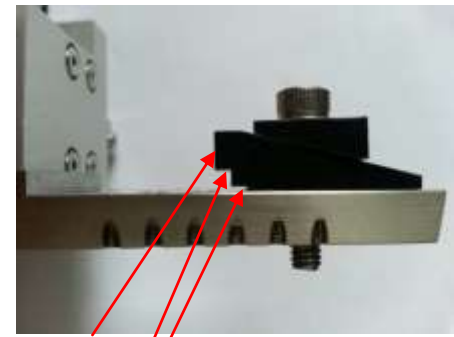
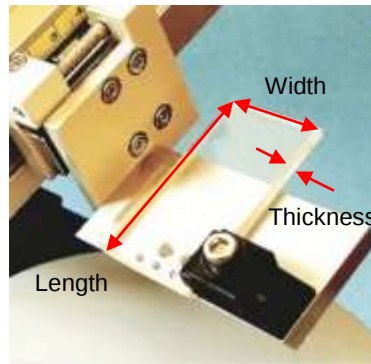


Waveguide Polishing with NOVA™

Locking Knob



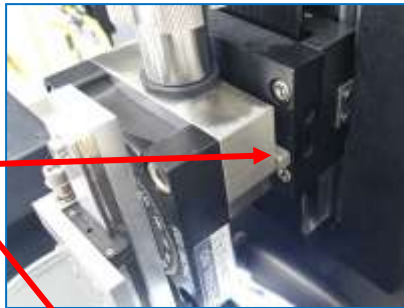
Place washer
between Locking
Knob and top of
Workholder



Clamp face
Large notch
Small notch

1. Loosen the main Locking Knob and engage workholder with the washer positioned on top of the workholder.

NOTE: When polishing components <5mm in width, place the Spacer Bar between workholder and Z-axis. This is only necessary when the Profile Videoscope Module is attached to the NOVA system.



2. Select clamp size according to best fit. Determine by first observing the length side of pre-polished specimen and match with clamp that offers maximum surface area contact. Then, decide which notch is appropriate for specimen thickness, or use clamp face.

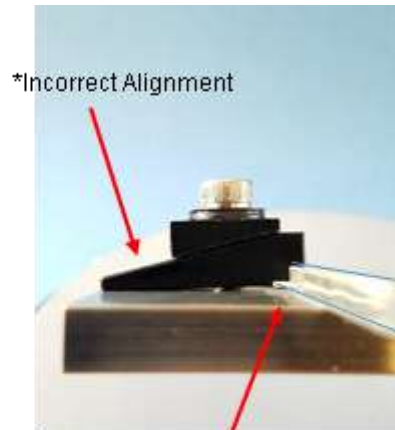
Use reference chart at the end of this manual to choose appropriate clamp size for corresponding item to be polished.

Position the Rotary Stage at a horizontal position.

Place the correct polishing film and pad/disk combination onto Platen for the first process step. Refer to the end of this manual section for suggested polishing procedures.



Referencing
Edge



*Incorrect Alignment

Specimen



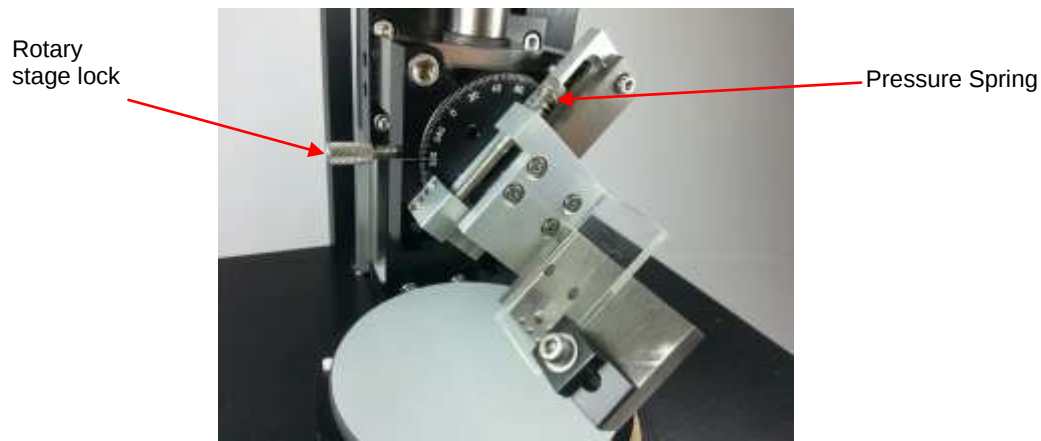
Spacing Set Screw



Correct Alignment

3. Set specimen flush against referencing edge. Select appropriate distance for clamp. *Note the angle alignment of the clamp.

4. Place Spacing Set Screw in rear of clamp. **Do not** fully tighten clamp screw to avoid damage. Tighten Spacing Set Screw until clamp is parallel with workholder face.



5. Rotate and set the Workholder Rotary Stage to the desired polishing angle.

Adjust the Pressure Spring. Clockwise will increase the maintained waveguide contact pressure against polishing film, Counter-clockwise will decrease pressure.

Manual Control Dashboard

Manual Control

Workholder Control

Select units: ☒ Millimeters ☐ Inches ☐ Steps

Enter distance: (0.005 - 50.000 mm)

LOWER **RAISE** **RETURN TO HOME**

Current Workholder Position **5.000 mm**

SAVE POSITION **GO TO SAVED POSITION** 5.000 mm

Platen Control

Speed: ☐ 1 ☐ 2 ☐ 3 ☒ 4 ☐ 5 ☐ 6

RUN **STOP**

Timer

0:00:00

START **LAP** **PAUSE** **RESET**

Lap 1: 00:00:00
Lap 2: 00:00:00

6. Enter the "Manual Control" mode to access the Dashboard. See associated manual section for instructions.

Activate the Platen, and using the available controls, lower the waveguide into contact with the polishing surface.

The following are suggested polishing procedures provided as a starting point for process development and refinement. Depending upon waveguide dimensions, waveguide material, polish angle, etc., polishing film types, pads/surfaces, and cycle times may vary

Process Step	Film Type	Polishing Surface	Time	Wet/Dry
Create Angle/Level Edge	30um silica	Glass	Polish until edge is formed	Dry
Coarse Polish	9um silica	Glass	60 seconds	Dry
Intermediate Polish	3um silica	Glass	60 seconds	Wet*
Fine Polish	0.5um diamond	Glass	30 seconds	Wet
Final Polish	0.3um alumina	Glass	60 seconds	Wet*

*A light spray of water onto the polishing film.

Suggested Clamping Positions for Various Chip Dimensions

The following suggestions for clamp selection for waveguides with varying dimensions are approximate. Pick and choose the configuration (i.e. clamp size/clamp contact surface) that best secures the waveguide while maintaining squareness in holding plate.

CLAMP SIZE	THICKNESS	WIDTH	CLAMP CONTACT SURFACE
Small Clamp (Lengths $\geq$ 5mm)	$\geq$ 0.5mm	$>$ 1mm	Notch
	$\geq$ 0.5mm	ANY	No Notch*
Large Clamp (Lengths $\geq$ 13mm)	$\geq$ 0.75mm	$\geq$ 4mm	Small Notch
	$\geq$ 2.75mm	$\geq$ 2mm	Large Notch
	$\geq$ 3mm	ANY	No Notch

*Engage "clamp face" against edge of waveguide.

NOTE: Whenever the tablet and base polisher are wirelessly "connected", always keep the tablet within 10' of the polisher for proper data communication. If programming the tablet remotely, always "disconnect".

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Version 1, 8/2017