



# RxD Lathe

## ■ Features

- Generates surfaces ready for Soft Lap Polishing
- Generates traditional back-surface base curves, cylinder and prism without prism blocking
- VCA compatible data interface
- DAC software removes center artifact in prism and free form lenses
- Free Form and Digital capability
- Air-bearing spindle, X slides and Z' slides
- Patented Reaction Eliminator reduces machine vibration
- Automatic chip segmenting for polycarbonate swarf



## ■ Description

The DAC International RxD Lathe is a high-precision diamond turning lathe for spectacle lens back-surface generation. All turned plastic lenses are ready for Soft Lap Polishing.

A dual diamond tool assembly is mounted on the Z' air-bearing slide, which is driven by a voice coil and a proprietary Digital Motion Control system. The tool is precisely positioned in synchronization with the spindle to generate the sphere, cylinder and prism prescriptions. The air-bearing spindle is DC motor driven with encoder feedback.

A patented electronic/mechanical force and vibration cancellation assembly eliminates more than 99% of machine frame vibration, resulting in a surface that is ready for Soft Lap Polishing. The surface is so smooth that on some materials, particularly CR-39, it is possible

to go from the RxD directly to hard coating with no polish step required.

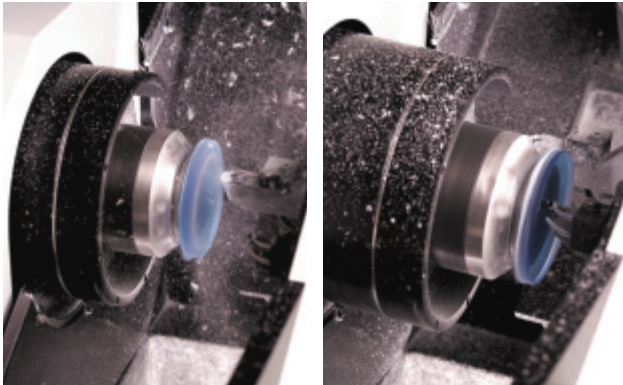
The spindle speed is automatically set by the computer to optimize production throughput while maintaining surface finishes of the very best quality. All axes are precisely controlled through the use of high resolution digital encoders.

DAC International's proprietary Specialty Lens Menu Software takes you a step beyond conventional Free Form. All Free Form shapes and asymmetrical designs are generated on the back surface of spherical lens blanks. The PAL menu works with customer-supplied points files to generate backside Progressive Add Lens designs. The DAC Specialty Lens Menu is used to create designs, such as Slabs, Round Segs, Lenticulars and Wraps, including the family of SportWrap™ designs.

## ■ Operation

The operator scans the job number using a barcode reader. The blocked lens blank is placed in the foot pedal-operated pneumatic chuck that has integral index pins or bar. The safety door automatically closes, and the operator presses the dual start button. Interlocks keep the door closed during turning to ensure safety.

Surface finishes of better than 1 micron peak to valley roughness are produced for the full range of curves. At the end of the machining operation, the door opens, providing access to the machined lens.



Rough Cut

Finish Cut

## ■ DAC-Pioneered Exceptional Surfaces

The very best optics are seen directly off a CNC lathe with 10 nm resolution. Any fining or polishing tends to degrade the optical qualities of the lens. With the DAC RxD, lenses of superior quality and less than 1 micron surface roughness are turned, making it possible to go direct-to-coat (particularly with CR-39 material). For other materials, it is direct-to-polish on the companion new Soft Lap Polisher.

The unique voice coil driven/air slide mounted diamond tool assembly and the air-bearing cross slide assembly, combined with the precision of the air-bearing spindle, provide DAC customers with previously unattainable form accuracy and surface finish. Whether turning standard

Rx, using third-party software to create Freeform® PAL designs or DAC Specialty Lenses, Direct-to-Coat or Polish is highly beneficial for the patient, as well as financially advantageous for the lab.

The DAC Reaction Eliminator module actively provides counter forces to internally and externally generated forces. This results in virtually no surface artifacts, yielding a lens surface that is ready to coat or polish.

## ■ DAC Unique User Benefits

Eliminating the need for hard lap fining and polishing results in a finished lens with heretofore unequalled quality with respect to prescription accuracy and surface quality. Delivery to your customer is better because of the elimination of the traditional secondary surfacing operations.

## ■ Specifications

<b>Power</b>	208/220/240 VAC 1 $\phi$ , 50/60 Hz, 20 Amps
<b>Air</b>	7.5 cfm @ 80 PSIG dry and filtered
<b>Temperature</b>	68–74 degrees Fahrenheit
<b>Floor Space</b>	60" (1.37m) W x 35" (0.86m) D
<b>Weight</b>	2,700 lbs (1225 Kg)
<b>Form Accuracy</b>	$\pm 0.06$ diopter for combined base, cylinder and prism error exclusive of front base curve and index of refraction errors
<b>Blank Diameters</b>	50–95 mm
<b>Blank Thickness</b>	5–30 mm
<b>Spherical range</b>	plano $\pm 20$ diopter ( $\pm 35$ diopter with Specialty Lens Menu)
<b>Cylinder</b>	0 to $-12$ diopter ( $-20$ diopter with Specialty Lens Menu)
<b>Prism</b>	0 to 12 $\Delta$

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