

## ▶ CASE STUDY

### MEDICAL TECHNOLOGY

#### CYTO365

CYTO365 has developed a turn valve manifold to help nurses administer drugs without mixing them in an IV. Cyto365 is building prototypes of aluminum molds and optics on the Pocket NC machine. Because the parts for the aluminum molds have sealing surfaces, tolerances are very tight. Also, to get an optic that works correctly it must be cut and polished to a high degree of accuracy. In both instances the Pocket NC can hold the tolerances required to make these parts.



▲ Lens machined on Pocket NC V2-10 machine magnifying letters on a US dollar. image courtesy of Cyto365.



▲ Lens machined on the Pocket NC V2-10. image courtesy of Cyto365.



▲ The Pocket NC V2-10.

## BACKGROUND

CEO of CYTO365, Micael Törnblom, has a background in mechanical engineering. He was trained in SolidWorks so his work flow is to build the CAD model in SolidWorks and then import it into Fusion 360 for CAM. While having learned CAD/CAM in his studies he hadn't machined prior, so he spent a bit of time determining the proper feeds and speeds for the various materials he's machining such as aluminum, polycarbonate plastic and PMMA.

## MACHINING

CYTO365 also makes PMMA optics on the Pocket NC V2-10 machine. The lens magnifies the position of the valve on the handle of the device showing which mixture is going into the IV. The photo demonstrates the magnifying properties of a lens made on the Pocket NC. CYTO365 uses 0.5 mm diameter ball end mills at 10,000 RPM with one micron step downs and then mounts a polishing tool to the tool holder to polish the lens.

**TYPICALLY THESE LENS SAMPLES WOULD COST QUITE A BIT, SO THE ABILITY TO MAKE THEM ON THE POCKET NC SAVES MONEY AND TIME IN WAITING FOR SAMPLES BEFORE ITERATING ON THE NEXT PROTOTYPE.**

## PROTOTYPING

The ability to iterate and modify prototypes while holding tight tolerances in house has been very valuable for the progression of CYTO365 in bringing this medical device to market.

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You can find more on this application at ([www.cyto365.com](http://www.cyto365.com))