

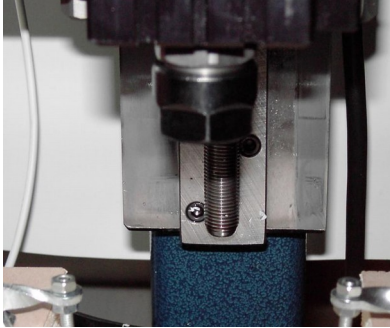
SpindleCam software and hardware usage

Requirements

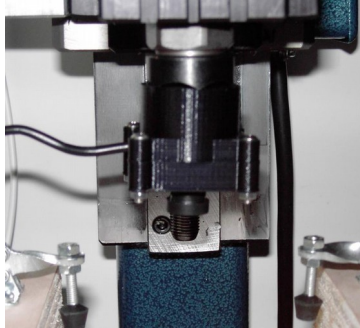
The OpenCV library “python-opencv” is required. Install it from a terminal as follows:

```
sudo apt-get install python-opencv
```

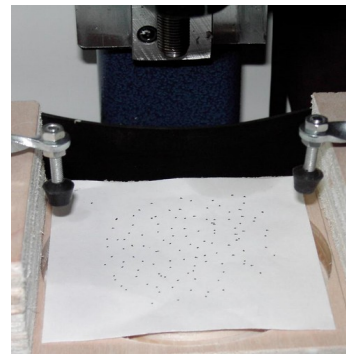
Instructions



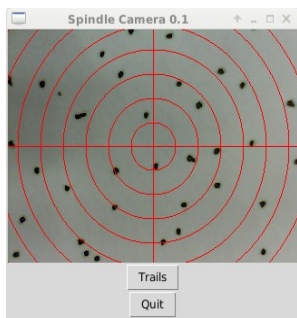
1. Remove bit from spindle.



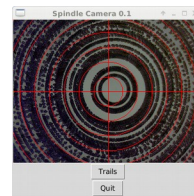
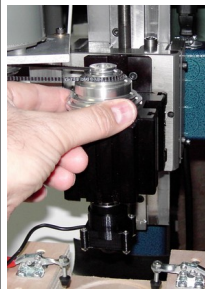
2. Push camera on to spindle and connect camera to USB port of computer.



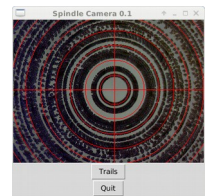
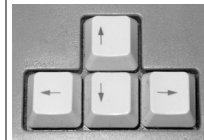
3. Place paper with random dots in camera view.



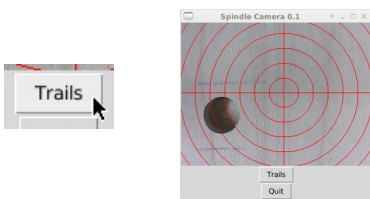
4. Start up Spindlecam software.



5. Rotate spindle by hand and watch that dark circular trails are made on screen.



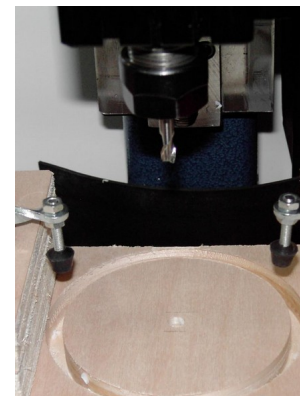
6. Use the cursor keys to center the red target pattern over the circles.



7. Remove the dotted paper and press the “Trails” button to watch live video from the camera.



8. Use the CNC controller to move the table to the reference location as viewed through the spindlecam software. Then the X and Y axis can be homed.



9. Remove the camera from the spindle and put the bit into the collet and home the Z axis.