

Rofin-Sinar UW200W Laser Cutter

Version 1.0 by Steven Sergenese 07/05/07

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Start-up

- Turn on the compressed air.
- Turn on the assist gas cylinder and adjust the regulator to 150psi O2.
- Turn on the main power switch on the back of the workstation.
- Log onto the computer. User: ROFIN (leave password blank)
- Press the blue **E-Stop Reset** button then **Power On** button on the workstation.
- Make sure the workstation door is closed.
- Wait until laser starts (There may be up to a 30 minute delay).
- Select **NView MMI(2)** icon.
- When prompted, select **OK** to home the axes. (Note: if NView was not shut down with a blank program loaded an error will occur and axis will not home. Press **File** then **New** and close and reopen NVIEW to correct).

Alignment of Material

- Open the door.
- Place material under clamps. Careful not to trip light curtain.
- Close one clamp by pressing clamp button (use the next command button (^ **F12** button) to get to clamp buttons).
- While holding down the material, close the other clamp. Make sure sample is flat.
- Select the **Home Page** button in the lower right corner and select **Manual**.
- Highlight the **Z** button (button turns green when highlighted).
- **Using extreme care not to crash the cutter head**, press the lower the z-axis button. First use “free run” until the cutter head is about 1cm from the work piece then use “distance” (make sure distance is set at 0.1mm per step. Use “**distance**” not “**distance hold**”).
 - Slowly lower the head until it is 0.30mm above the material. Check distance is correct using a feeler gauge.
 - Manually move cutter head over the area to be cut and confirm that distance is always at least 0.3mm above the work piece. Position cutter head where you want the program to start. (Alignment can be assisted with the camera (cross hair icon) or pointing laser (RL=1 =on, RL=0=off from hyper terminal icon).
 - Record the negative number that is in the z-axis distance. This number is to be entered into the cutting program (see below).
- When the alignment is completed, home Z axis (select **Home Z**)

Loading Cutting Program

- Select **Home Page** button in the lower right corner and select **File**.
- Select **Open** on the right side and select your file.
- Within the cutting program code, where it has the z-axis height (\$zFocusPos=), enter the negative number recorded in the alignment process (0.3mm above sample height). **Caution: Entering the incorrect value can crash the cutter head.** You may also change any other parameters under the PSO and laser power sections.
- Select **Save** on the right hand side.
- Select **Error Check**. (Do not run program if any errors are indicated).
- Select **Run** on the right hand side.

Laser Setup and Start

- On workstation, switch the laser key to **Enable** (clockwise).
- Turn on power to the fume extractor and make sure the workstation's exhaust hose is plugged in.
- Press **Cycle Start** button on workstation or on the bottom of the NView screen. (Note: there is a background program running under Task 3 that monitors system interlocks. If cycle start does not start the program this monitor program may have faulted and frozen during setup (When viewed the program should be constantly scrolling through). If frozen, it can be reset by pressing **restart monitor** button located on the side panel in NView).

End of Cycle and Removal

- Open the door.
- On the NView HMI screen, select the **Next** button to display the left and right clamp buttons on the screen.
- Release the clamps by pressing the left and right clamp buttons (will go from yellow to gray when open).
- Remove the material carefully. If some of the pieces are small, they may have fallen into the tray underneath.

Shutdown

- Close the door.
- Load a blank program into NView (press **File** then **New**). Cutter will not startup correctly the next time if a cutting program was left loaded in memory.
- Turn off fume extractor.
- Close the NView HMI screen.
- Shutdown the computer system.
- Select the **Power OFF** button on the machine.
- Close gas cylinder and loosen regulator.
- Turn off the compressed air.
- Turn off the main power supply switch on the back of the machine.