

Tech Guide – F1 Fixture Setup

About This Guide:

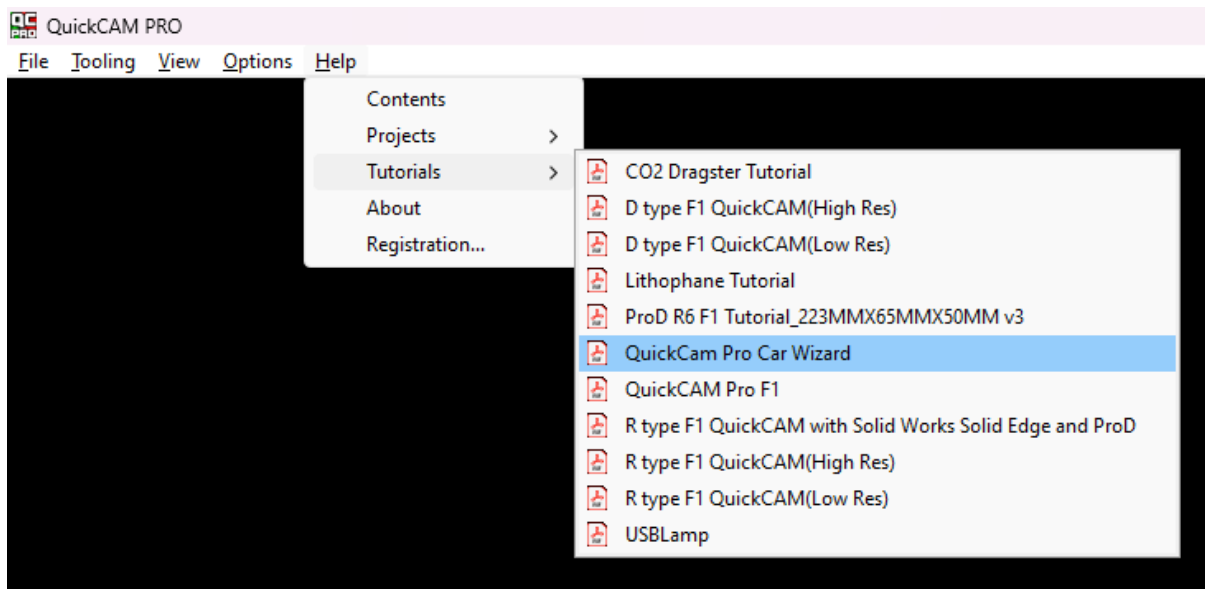
- This guide assists users of Denford machinery in manufacturing F1 in Schools Cars.
- It teaches users how to adjust the offsets to achieve the expected results.
- The programs used and included were created by modelling a 60x45x10mm slice of the F1 in Schools model block.
- The programs will remove 2.5mm from the width and height of the model block down 10mm of the model block.

Requirements:

- Denford CNC Router
- F1 in Schools Model Block – F1223
- ¼" LS Ball Nose Cutter – BI00811F
- Vernier Calipers

Assumptions:

- You have already followed the guide on setting the offsets on an F1 fixture. If not, please refer to the guide included with QuickCam Pro, titled QuickCam Pro Car Wizard.



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Using the F1 in Schools Setup Jig

Step 1: Program Selection

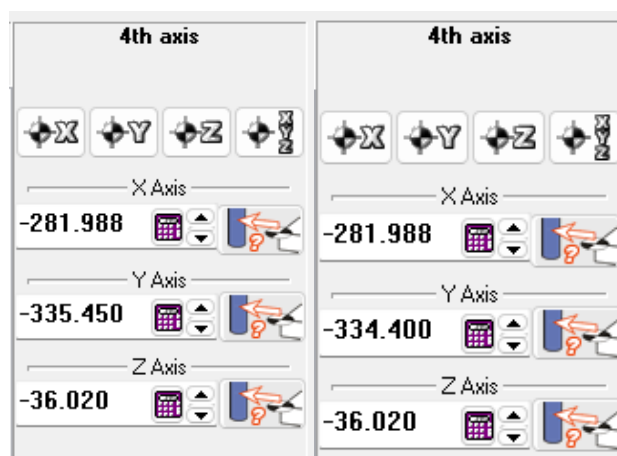
- If you are using the manual fixture or the MCR100, run the correct program for the side of the block you are cutting, RH side for the right side and LH side for the left side.
- If you are using the 4th axis, use the program titled "f1_model_block_18mm v1.fnc". Do not move it out of the folder with the programs labelled 0001.fnc and 0002.fnc

Step 2: Inspect and Measure the Ridge

- After cutting both sides of the block, inspect the centre for a ridge, as shown in the picture.



- Measure this ridge as accurately as possible. As seen here the ridge measures 2.10mm; this requires the Y-axis offset to be adjusted by 1.05mm.
- Adjust the offset in the offsets window, as shown below:



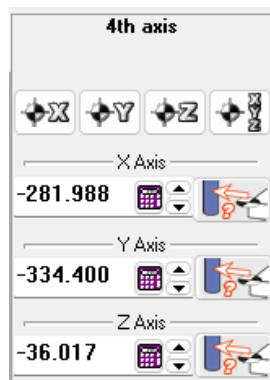
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Step 3: Measure and Adjust Width

- Measure the width of the block, which should be 60.00mm, as shown below:

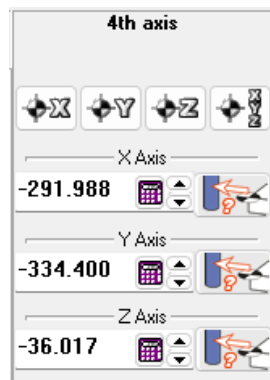


- Even if the width is not far off, make the necessary adjustment, in this case 0.03mm.



Step 4: X axis Adjustment and Checks

- Note the current X-axis offset and adjust by 10mm. This adjustment differs depending on the fixture used. For the 4th axis, increase the X-axis offset; for the F1 in Schools fixture, reduce it by 10mm.

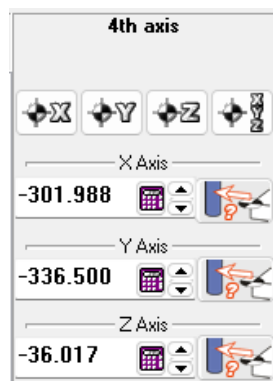


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- Run the program again and inspect, as shown below:



- From a visual check, the adjustment made was the wrong way, increasing the step on the billet. The Z axis offset adjustments were correct and this now reads exactly 60mm.
- Readjust the Y axis offset the other direction. The offsets on this machine now read like this, note that the X axis offset has been adjusted by another 10mm also:



- Run the program again and check the step in the billet.
- Repeat the above steps until no step can be seen or measured.

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- Once you achieve a smooth finish across the top of the block and the width measures 60mm, the fixture setup is complete.



- Ensure the X-axis offset is returned to the original value before cutting an F1 in Schools car. In this example, the original value was -281.988.

Other Points to Consider

- If you are unsure about the alignment of the fixture, run the program again at the opposite end of the block. If you have a step here but none at the other end, the fixture is not correctly aligned to the machine axis.
- If an adjustment to the Y-axis offset increases the step, it was adjusted in the wrong direction. Return to the original value and adjust again.
- If the car is cut partway down the block, the X-axis offset has not been reset to the original position. Check the value and try again.