



**TELEDYNE**  
**CETAC TECHNOLOGIES**  
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## Oils 7400 and Oils 7600 Alignment Guide



Manual Part Number **32-0497-061** Rev 0  
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## Introduction

### When to Align the Autosampler

The autosampler's alignment is critical to its ability to operate reliably. It may be necessary to adjust the alignment if you find that the probe is not properly centered in the rinse station or the sample tubes.

Shipping or rough handling may disturb the autosampler's chassis, causing a need for a new alignment. Also, an alignment may be needed after an autosampler component (such as the Z-drive) has been replaced.

### Origin Alignment

Performing an origin alignment sets the location of the home position so that the sample probe is centered in the rinse station. This alignment is done by setting offsets in the autosampler firmware. No mechanical adjustments are required.

### Full Alignment

A full alignment sets the location of the sample vials and standards vials in relation to the rinse station. This alignment is done by setting offsets in the autosampler firmware. No mechanical adjustments are required.

### Equipment Required

- Oils 7400 or Oils 7600 autosampler
- USB cable
- Sample probe
- Probe clamps
- Rinse station and spill tray
- Standard racks (two for Oils 7400, three for Oils 7600)
- Three standards vials, optionally with caps
- Alignment Utility software

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## Installing the Alignment Software

- 1 Insert the supplied CD into the computer.
- 2 On the included CD, find the alignment utility folder.
- 3 Double-click setup.exe and follow the on screen prompts.

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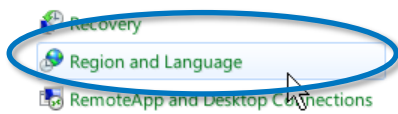
## Configuring the PC

*If you customarily use a period as the decimal symbol, skip to the next section.*

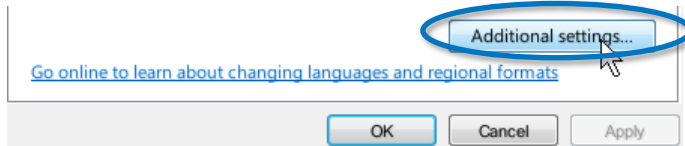
The alignment software assumes that your PC is set up to use a period as the decimal symbol. If you customarily use a comma as the decimal symbol, then you need to change the Region settings on your PC. The procedure may be a little different depending on your version of Microsoft Windows.

- 1 Open the Windows **Control Panel**.

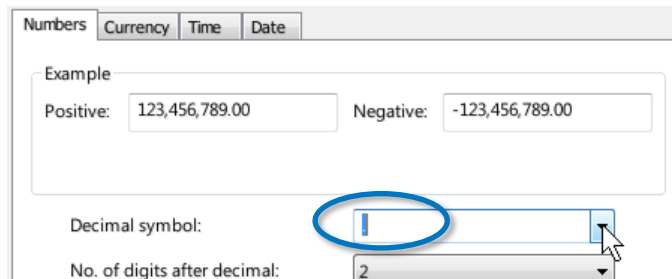
2 Select **Region and Language**.



3 Click **Additional Settings**.



4 For the **Decimal** symbol, choose the period ('.').



5 Click **OK**.

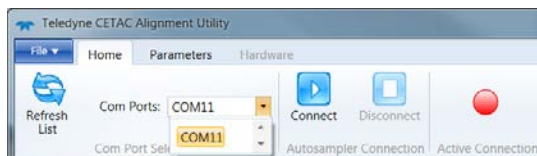
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## Starting the Software

- 1 Connect the autosampler to the PC using a USB cable. (You may use a direct serial connection instead. Do not use a USB-to-serial converter.)
- 2 Turn the autosampler on.
- 3 Select the Teledyne CETAC Alignment Utility from your desktop or select Start->All Programs->Teledyne CETAC Technologies->Teledyne CETAC Alignment Utility.



4 Select the appropriate COM port. Note that USB connections appear as COM ports.



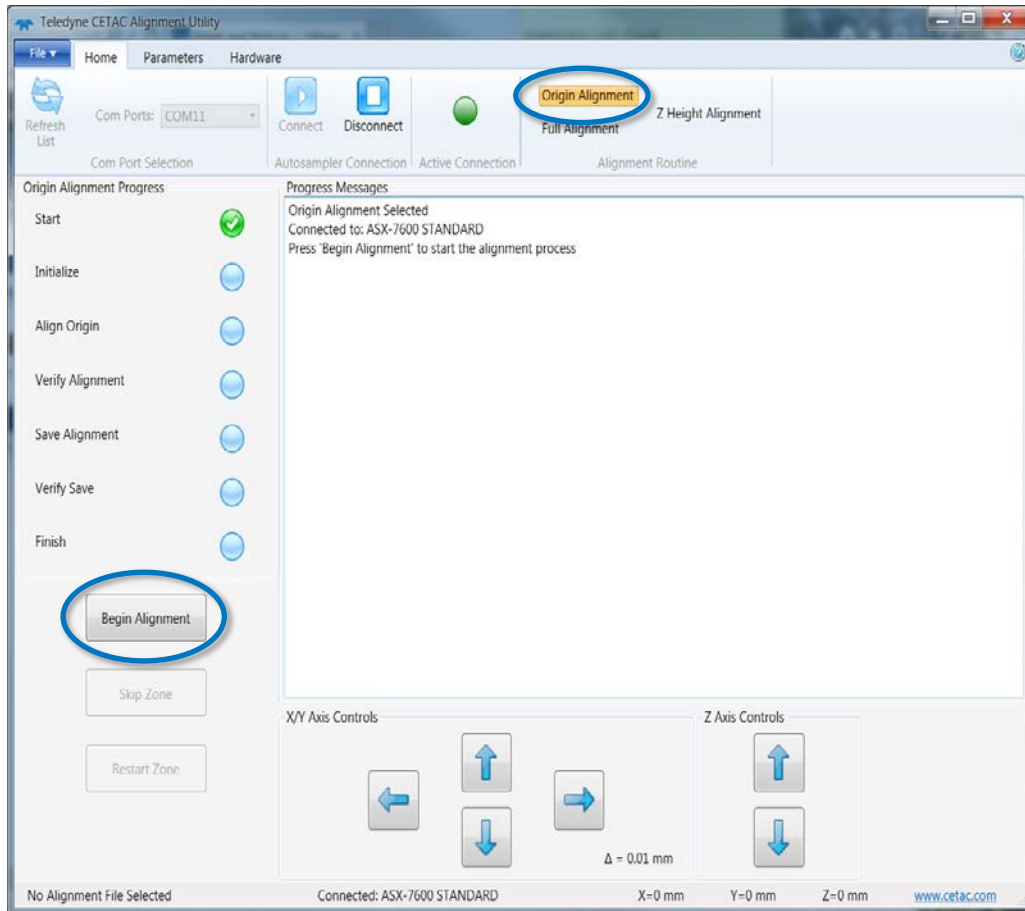
**Note:** If the com port does not automatically populate, ensure that all other programs are closed and then select Refresh List. This will connect to any CETAC autosamplers present.

5 Click **Connect**.

6 A splash screen will appear while the devices are being detected.

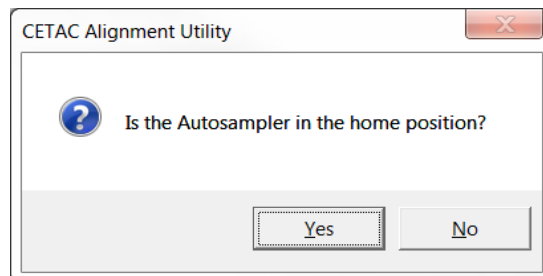
# Aligning the Origin/Rinse Station

## 1 Select **Origin Alignment**.



## 2 Click **Begin Alignment**.

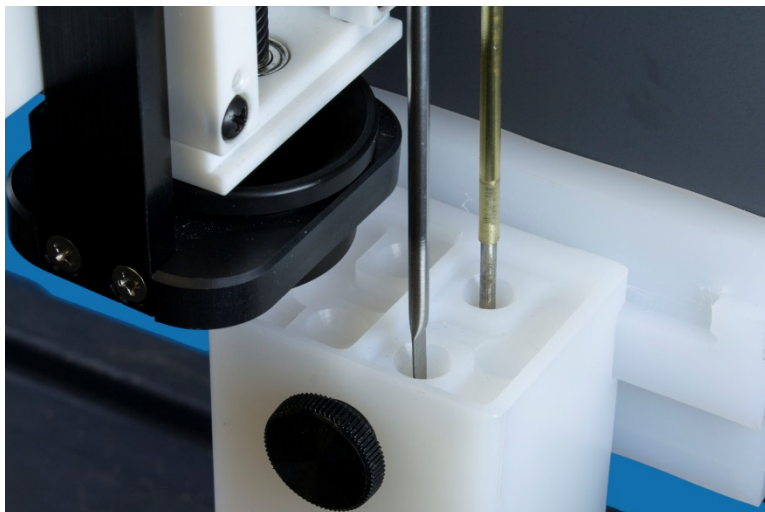
## 3 Ensure that the autosampler is in the home position before proceeding. If the autosampler is not in the home position, cycle power then reestablish communications with the alignment software.



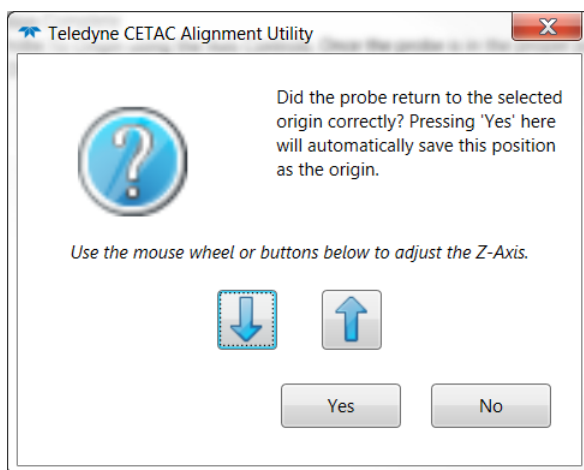
## 4 Ensure that the probe and stirrer are firmly attached and that the tip of the probe is level with the tip of the stirrer paddle. The probe will be used to align all sample vial positions; the stirrer paddle is used to align the rinse station.

**Note:** If set too low, the probe can get caught in the drip cup causing damage to the probe and the drip cup. If the probe has already been caught or jammed, check it for straightness before proceeding with the alignment.

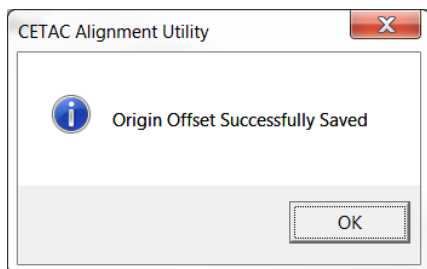
- 5 Right click in the axis controls section and select an appropriate step size for fine tuning. Use the alignment controls (X/Y Axis Controls and Z Axis Controls) to center the stirrer paddle in the rinse station. Position it so that the tip is approximately 1 cm into the rinse station (Z-axis) and the edges are equally spaced from the walls of the rinse station (X and Y axes).



- 6 Click **Set Alignment**.
- 7 The autosampler will recheck the rinse position and ask if it looks correct.



- 8 When complete, the software will indicate a successful origin alignment with a pop-up window. Close the software when complete. The autosampler will home itself.

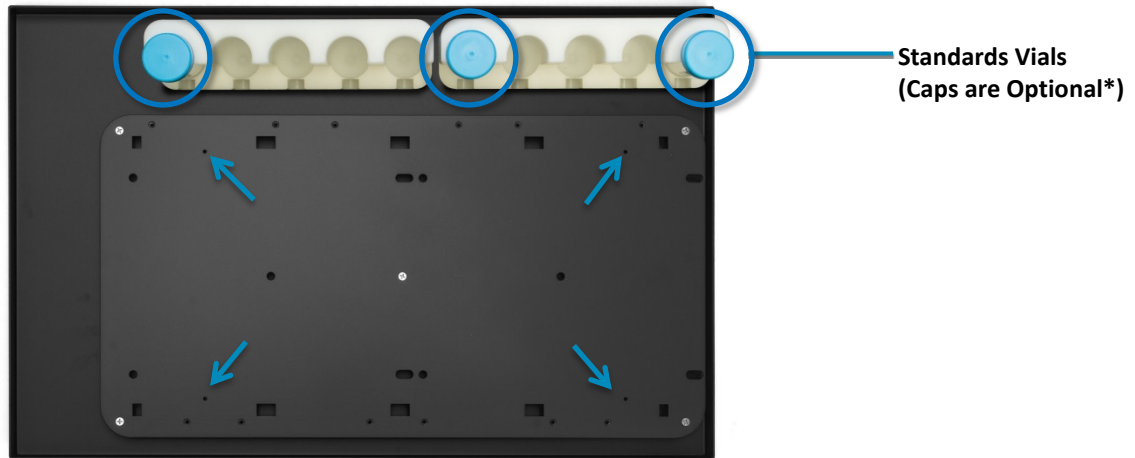


- 9 Remove the stirrer paddle. The vial positions will be aligned using just the sample probe.

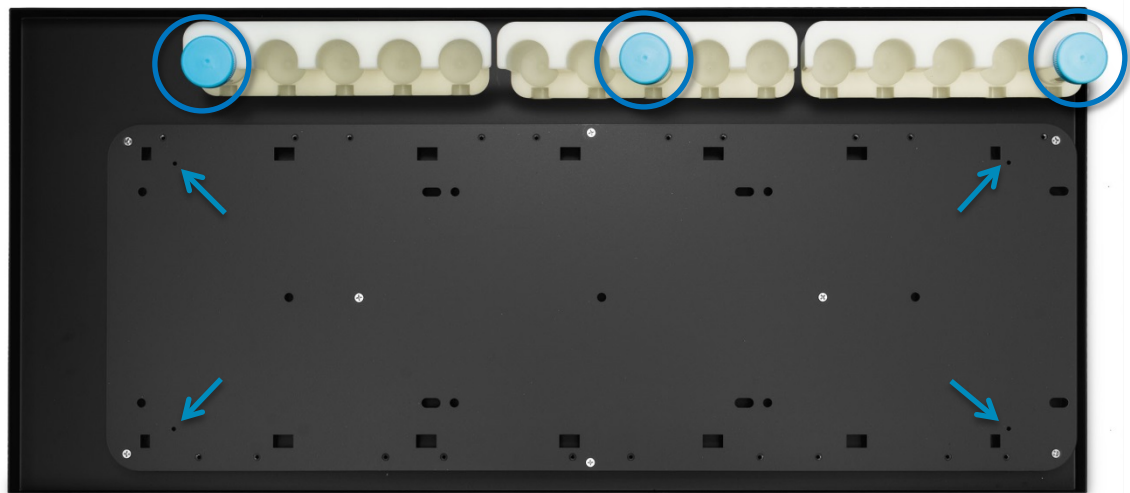
## Aligning the Vial Positions

To complete a full alignment you will need three standards vials with caps\* and two standard racks (three for the Oils 7600).

- 1 Mount the standards racks on their pegs and place the three standards vials in positions 1, 6, and 10 if on an Oils 7400 or 1, 8, and 15 if on an Oils 7600.

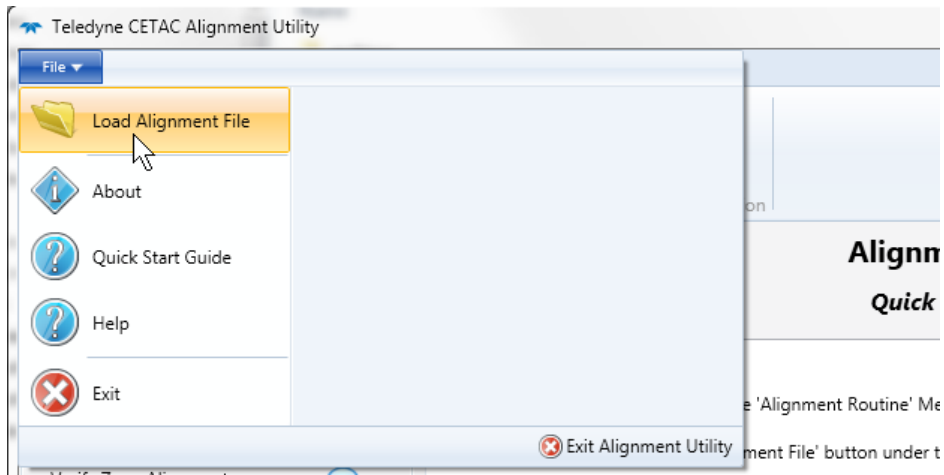


↗ Arrows indicate the 4 alignment holes on each tray.

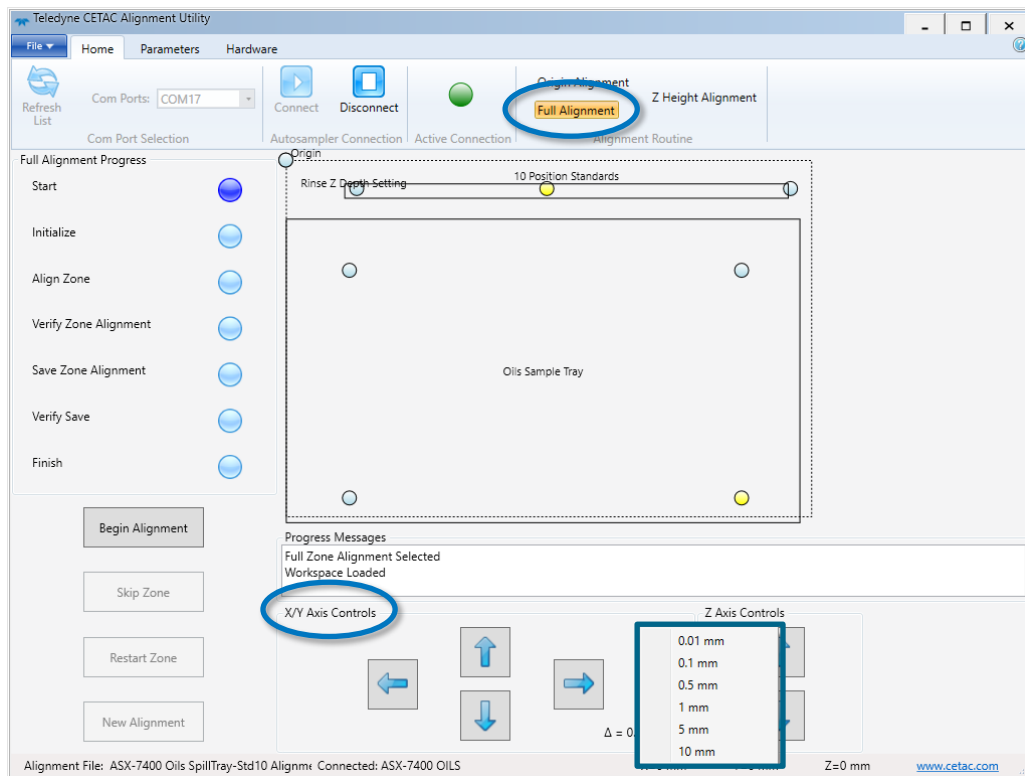


\* You can leave the caps on the standards vials. Most caps have a small dot (left by injection molding) in the very center, which helps visualize the alignment.

- 2 Select **File->Load Alignment File** and load either the 7400 or 7600 rack file.

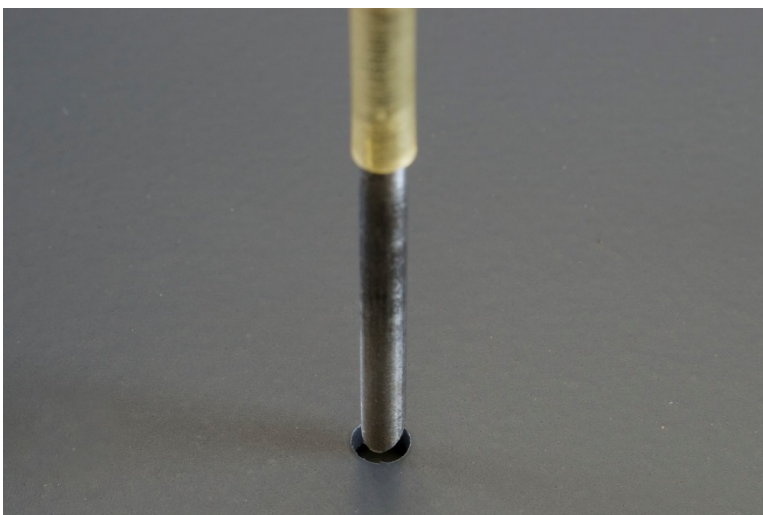


- 3 Select **Full Alignment**. The autosampler will immediately move the probe to the back left alignment hole.



- 4 Right click in the Axis Controls section and select an appropriate step size for fine tuning.

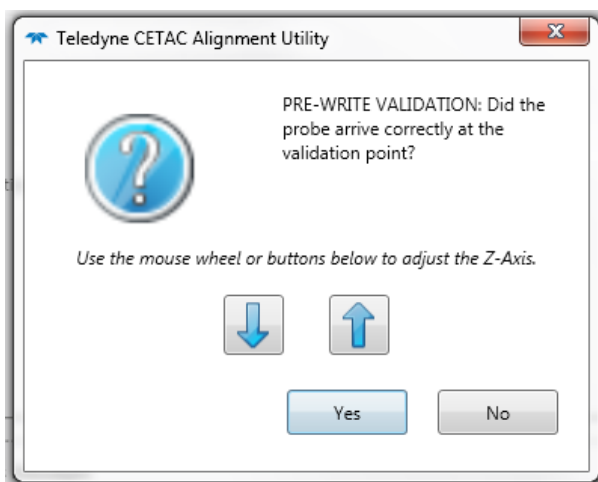
- 5 Use the alignment controls (X/Y Axis Controls) to center the probe tip over the back left alignment hole. If necessary, adjust the Z axis position so you can better see the position of the probe.



**NOTE**

If the probe doesn't seem to move, right click and choose a larger step size.

- 6 Click **Set Landmark**. The autosampler will move the probe to the front left hole.
- 7 Align to the front left hole and click **Set Landmark**.
- 8 Align to the back right hole and click **Set Landmark**.
- 9 To verify the alignment, the probe will move to the front right position and the software will ask if the validation point is correct. Click **Yes** to continue.



- 10 Click **Write Zone**.

**NOTE**

If you don't click Write Zone, the alignment information will not be saved.

- 11 The probe will move to the front right position again to verify that the new alignment information was saved correctly. Click **Yes** to continue.
- 12 The software will now begin aligning the "10 Position Standards" (15 position on the Oils 7600) zone. Click **OK** to continue.



13 Align the X and Y position for the first standards vial.



14 Click **Set Landmark**.

15 Align the X and Y position for the last vial.

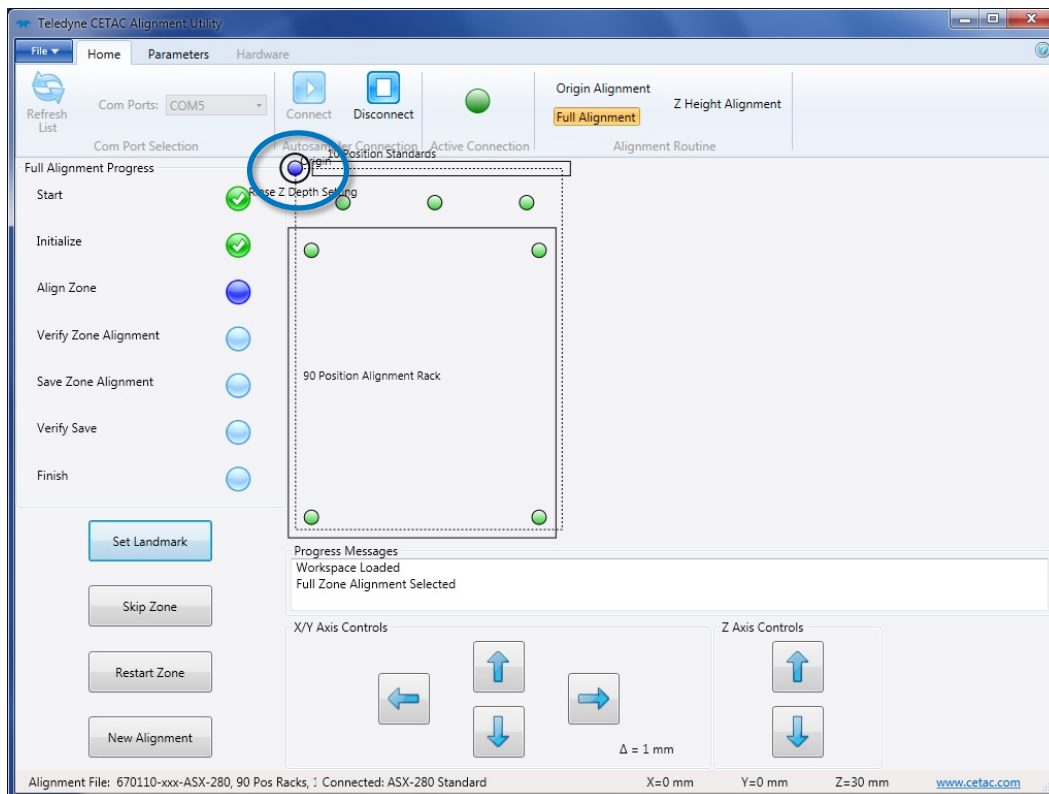
16 Click **Set Landmark**.

17 Verify the position for the center vial and click **Yes** to continue.

18 Click **Write Zone**.

19 Verify the position of the center vial again and click **Yes** to continue.

20 The software will now begin setting the Z position in the rinse station. Click **OK**.



- 21** The tip of the probe will move into the rinse station. No additional action is required except to click **Set Landmark**, then click through the prompts (**Yes**, **Write Zone**, and **Yes**) to save the alignment.