TELEDYNE
CETAC TECHNOLOGIES
Everywhereyoulook™

Oils 7400 and Oils 7600
Homogenizing Autosampler

Quick Installation Guide

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Preparing for Installation

This document shows you how to install the hardware components of the Teledyne CETAC Oils 7400 and Oils 7600 homogenizing autosampler. See the *Oils 7400 and Oils 7600 Operators Manual* (on the CD) for instructions on installing the software and information on using and caring for the system. The Oils 7400 autosampler is shown as an example throughout this guide.

System Components

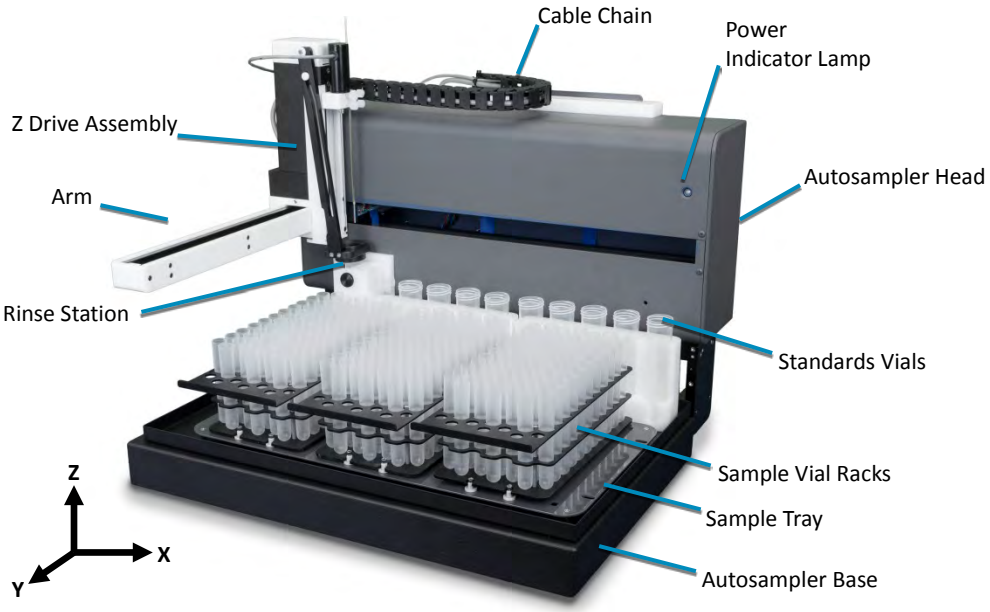

FIGURE 1 **Oils 7400 Autosampler—Front View**

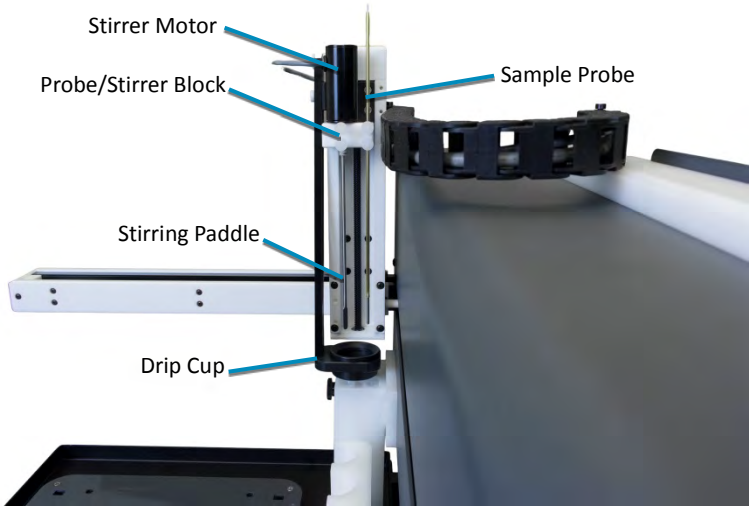

FIGURE 2 **Z-Drive Assembly—Right Side View**

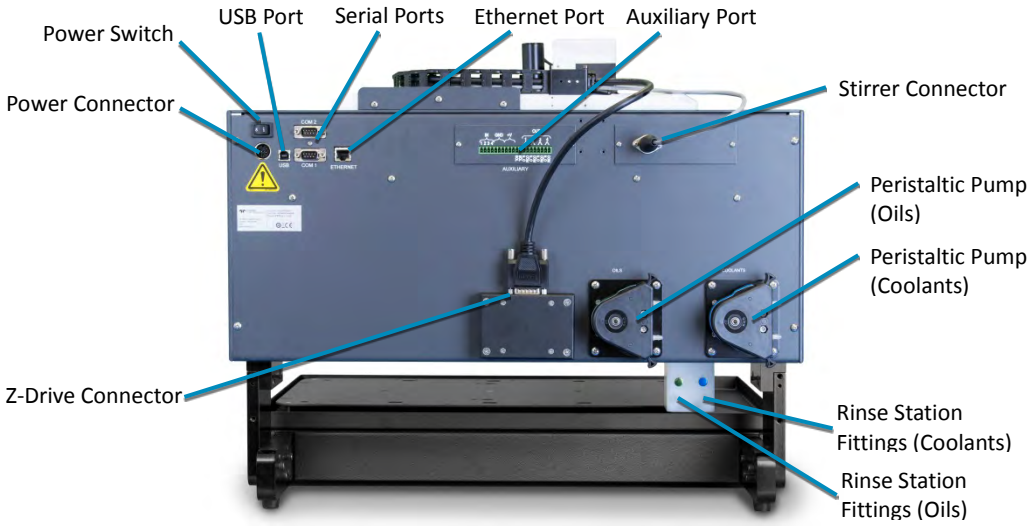

FIGURE 3 **Oils 7400 Autosampler—Back View**

Equipment Required

You will need to choose a sample probe and sample racks appropriate for your application.

The probe/stirrer block determines the spacing between the probe and stirrer; this spacing must match the vial-to-vial spacing of the rack which is in use.

You will need to supply the following items:

- Liquid waste containers, 10 liters or larger
- Solvent bottles
- Computer

Choosing a Location

Position the autosampler on a sturdy surface as close as possible to the ICP nebulizer.

CAUTION	**LIFTING HAZARD** Two people are required to lift the autosampler. Lifting should be done with a person situated on either side of the instrument. Lifting without assistance may cause injury.

NOTE

Keep the original packaging for use in case the product ever needs to be returned or shipped to another location.

Installing the ASX-7x00 Dashboard Software

1 On the included CD, double-click the ASX Dashboard installation file and follow the prompts to complete the installation.

You do not need to run the software yet. The installation includes a USB driver which Windows should automatically find when you connect the autosampler to the PC.

Mounting the Tray

1 Place the tray on the base of the autosampler.

Make sure the locating pins on the tray fully seat into the locating holes in the base.

Installing the Stirrer

When the autosampler is used for oils, install the stirrer paddle. When the autosampler is used for coolants, the stirrer paddle should be removed (or replaced with the optional coated coolants stirrer paddle).

1 Locate the oils stirrer paddle.

FIGURE 4 **Stirrer Paddle for Oils**

2 Press the stirrer paddle into the hole on the bottom of the stirrer motor.

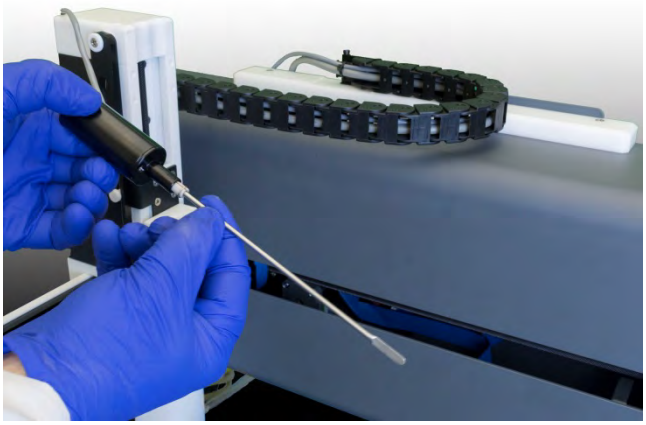

FIGURE 5 **Inserting the Stirrer Paddle**

3 Place the stirrer motor into the larger hole in the probe/stirrer block on the Z-drive.

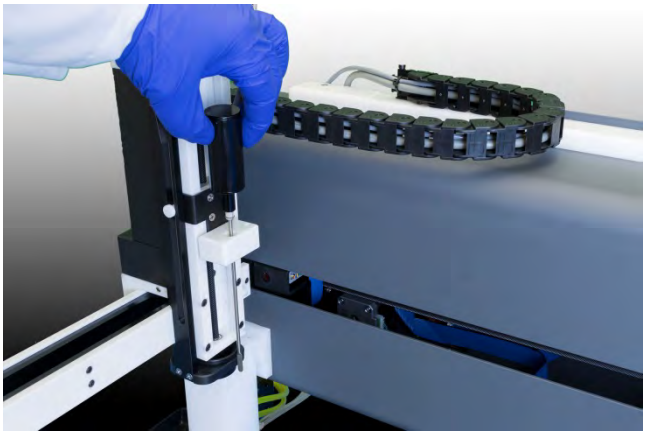

FIGURE 6 **Placing the Stirrer Motor**

4 Tighten the two thumbscrews.

FIGURE 7 **Securing the Stirrer**

Installing and Adjusting the Sample Probe

1 Choose the appropriate probe for your application.

2 Locate the two thumbscrews which are supplied with the probe.

3 Guide the probe straight down through the smaller hole in the Z-drive.

4 Adjust the height of the probe so that the tip of the probe is level with the tip of the stirrer paddle.

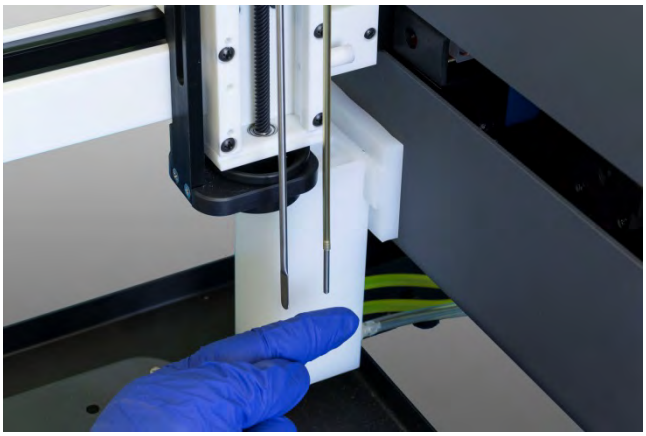

FIGURE 8 **Probe Level With Stirrer Paddle**

5 Tighten the thumbscrews.

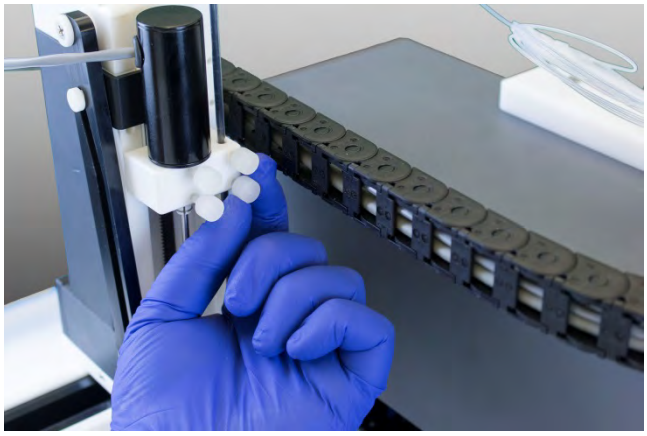

FIGURE 9 **Installing the Probe**

6 Check the position of the sample tubing.

Always position the sample transfer tubing so that it does not pull on the probe. The tubing should naturally curve away from the probe so that it won't rub or get caught. Be sure to check that the tubing will not be stretched and will not snag on an obstacle when the probe is moved to the far corner sample positions.

Connecting the Rinse Station

The rinse station is mounted at the left end of the autosampler.

For coolants samples, the rinse solution is typically deionized water or a dilute acid rinse such as 1% HNO_3. For oils samples, the rinse solution is typically a solution from the kerosene family.

The inlet of the rinse station is at the bottom of the rinse station. The rinse solution flows from the bottom to the top.

Waste Rinse Solution

In most cases, rinse solution will be “recycled” by returning it to the rinse solution bottle. If necessary, rinse solution can be pulled from a fresh bottle and used solution drained to a waste container. Remember to label the waste container according to your laboratory policy and local regulations.

CAUTION	Ensure that the tubing outlet is placed so that it will remain above the surface of the liquid in the waste container. If the end of the tube is immersed, the waste solution might back up and overflow.

Tubing Considerations

Verify that the supplied tubing material is compatible with the rinse solution you are using. Clear Superthane® tubing is supplied (except for the peristaltic pump tubing cartridge). Refer to the *Oils 7400 Spare Parts and Accessories Catalog* or contact CETAC if you need different tubing material.

The fittings on the rinse station and on the peristaltic pump use ⅛ inch (3.2mm) ID tubing.

Carefully press the tubing straight on to the fittings to avoid breaking the fittings. If you find it difficult to get a good connection to the rinse station, remove the rinse station and press

the tubing firmly so that it completely covers the barb of the fitting. It helps to use your other hand to apply counter-pressure.

Pumped Drain Arrangement

Normally, the peristaltic pump channel which is closest to the autosampler chassis is used to pull liquid out of the rinse station and the channel which is farther from the autosampler is used to feed in the fresh rinse solution.

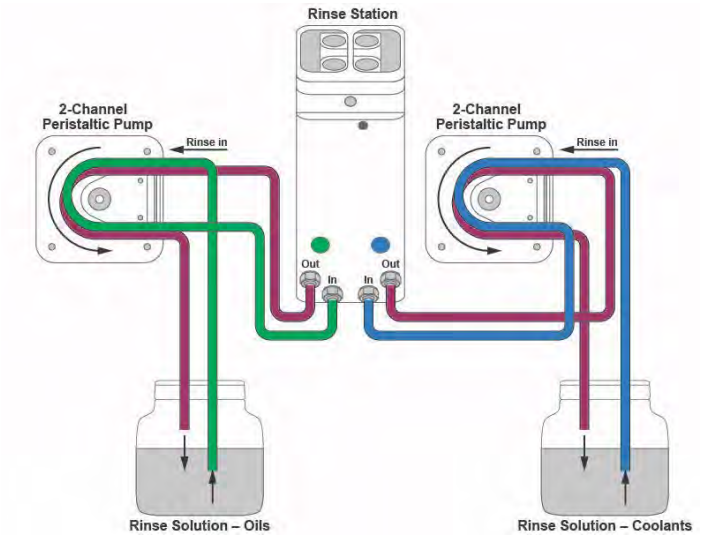

FIGURE 10 **Pumped Drain Tubing Connections**

To connect the rinse station using the pumped drain, complete the following steps. Repeat this procedure for both the “Oils” and “Coolants” peristaltic pump.

1 Connect up to 1.8 meters of tubing from the outlet fitting of the pump (the lower fitting of the channel closest to the autosampler) to the waste container.

FIGURE 11 **Connecting the Waste Line**

Ensure that the tubing outlet is placed so that it will remain above the surface of the liquid in the waste container. If the end of the tube is immersed, the waste solution might back up and overflow.

2 Cut two pieces of tubing to go between the peristaltic pump and the rinse station; ensure that the tubing is long enough to reach without any sharp bends or kinks. For the Oils side, the tubing should be about 25 cm (10 inches) long; for the Coolants side, it should be about 28 cm (12 inches) long.

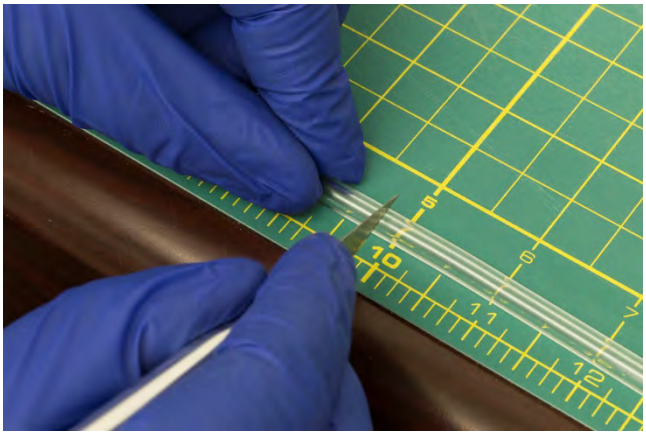

FIGURE 12 **Cutting Tubing**

3 Connect one of the pieces of tubing from step 2 to the input (top) of the pump channel.

4 Connect the other end of the tubing to the outlet (upper) fitting of the rinse station.

The “Coolants” peristaltic pump should be connected to the blue side of the rinse station and the “Oils” pump should be connected to the green side of the rinse station.

FIGURE 13 **Connecting the Rinse Station Drain (Oils Side Is Shown)**

5 Connect the second piece of tubing from step 2 to the fitting at the bottom of the pump, on the channel further from the autosampler.

6 Connect the other end of this second piece of tubing to the bottom fitting of the rinse station.

FIGURE 14 **Connecting the Rinse Station Inlet (Oils Side Is Shown)**

7 Use an appropriate length of the tubing to connect the rinse solution source to the fitting at the top of this channel.

FIGURE 15 **Completed Rinse Station Tubing for the Oils Side**

Gravity Drain Arrangement

For a gravity drain arrangement, connect the rinse input tubing as shown for the pumped drain. Connect a length of tubing from the drain fitting of the rinse station (the *upper* fitting) directly to the waste container.

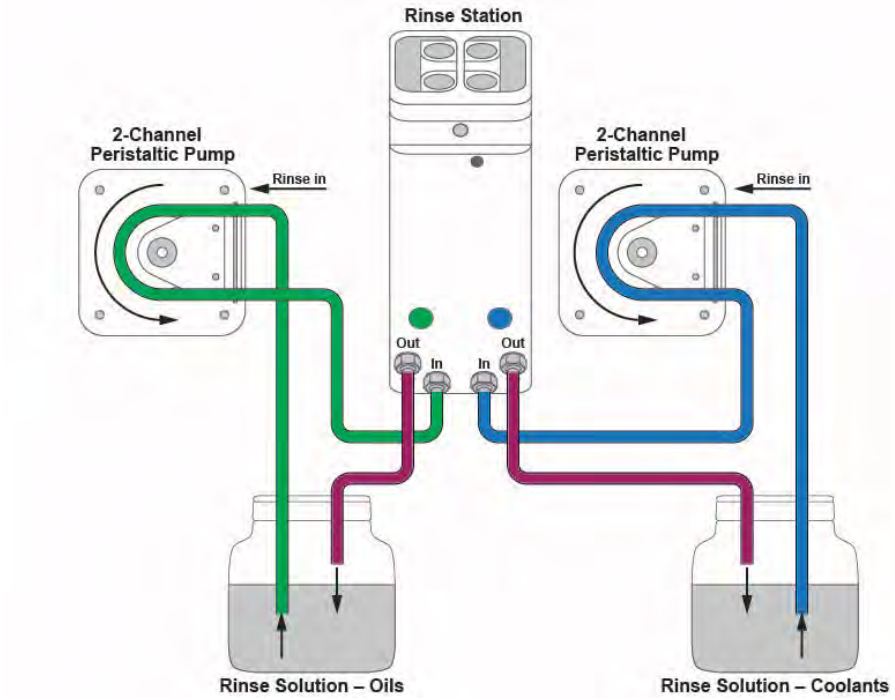

FIGURE 16 **Gravity Drain Tubing Connections**

CAUTION	Ensure that the tubing outlet is placed so that it will remain above the surface of the liquid in the waste container. If the end of the tube is immersed, the waste solution might back up and overflow.

Assembling and Placing the Sample Vial Racks

Some styles of sample vial racks are shipped unassembled. You can easily assemble them without using tools.

WARNING	**PUNCTURE HAZARD** **Never attempt to load, unload or reposition the sample vial rack or sample vial while the autosampler is operating. The sample probe may move unexpectedly and cause an injury.**

1. Before loading or unloading any sample vial racks on the sample tray, park the sampling arm and probe in the home position. The home position is the initial position at power up.
2. If necessary, assemble the racks as shown in the instructions included with each rack.
3. Place the first sample vial rack at the extreme left-hand side of the sample tray. Place the next sample vial rack to the right of the first rack, and so forth.

Connecting to an *ASXPRESS PLUS* System

See the *ASXPRESS PLUS Rapid Sample Introduction System Installation Guide* for more information.

If you are using an existing *ASXPRESS PLUS* system (not purchased with the autosampler), then you may also need to:

1. Install the ASX Dashboard from the Oils 7400-7600 CD. Do not use the standalone Xpress Configuration Tool which came with the *ASXPRESS PLUS*. For information on using the *ASXPRESS PLUS* with the ASX Dashboard, download the latest *ASXPRESS PLUS Rapid Sample Introduction System Operator's Manual* from www.teledynecetac.com.
2. Upgrade the *ASXPRESS PLUS* firmware to version 2.63 or greater.
3. Set the *ASXPRESS PLUS* personality to the appropriate value.

Connecting to the Analytical Instrument's Sample Port

You can connect the autosampler directly to a sample introduction peristaltic pump and then to a nebulizer or other sample introduction device.

One end of the sample transfer tubing is preconnected to the sample probe.

The transfer tubing should be long enough so that it there will be no strain on the tubing connectors even when the sample probe is at the position farthest from the analytical instrument.

1. Determine the length of the sample transfer tubing you need, and cut it to size.
2. Connect the free end of the sample transfer tubing to the inlet of the analytical instrument's peristaltic pump.

Connecting the Autosampler to the Power Supply

The autosampler is powered by the supplied external desktop "brick" power supply. Ensure that you position the autosampler so that the location where the power supply cord plugs into it is easily accessible (is not blocked) and it can be quickly disconnected if needed. In case of hazard, the system should be disconnected from the power source.

1. Turn the power switch on the autosampler OFF.
2. Check the plug on the power cord to verify that it is of the correct type for your country.
3. Plug the power cord into a power outlet.
4. Plug the power cord into the power supply.

FIGURE 17 **Power Supply**

5. Plug the power supply into the 24 V connector on the autosampler.
6. Turn the power switch on the autosampler ON.

It is important to use the appropriate power cord for your country.

Connecting the Autosampler to the Host Computer

Software on the host computer controls both the analytical instrument and the autosampler. The USB interface is the standard configuration. A virtual COM port is created so that the connection looks like a standard RS-232 serial port to the host PC software. If necessary, you may also use a serial (RS-232) cable.

> **NOTE:**
>
> **Use either a USB cable or a serial cable, but not both.** The serial port will not function when a USB cable is connected.

1. Power on both the computer and the autosampler.
2. Plug one end of the cable into the host computer's USB port and the other end into the autosampler's USB port.

   Windows will automatically find the driver which was installed with the ASX-7x00 Dashboard software.

3 When driver installation is complete, make a note of which COM port number was assigned. The COM port number may be displayed in a “bubble” in the lower right corner of the screen.

Switching Between Coolant and Oil Samples

1 Move the rinse station to the appropriate position. The status LED on the front of the autosampler will show green for the oils position or blue for the coolants position.

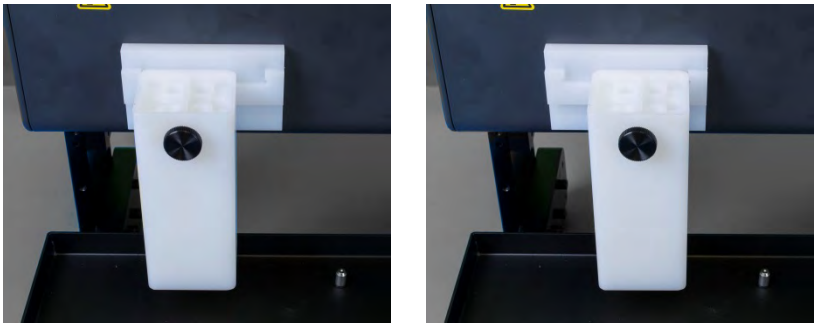

FIGURE 18 **Rinse station in coolants (left) and oils (right) position.**

2 Moving the rinse station will automatically switch to the appropriate peristaltic pump on the back of the autosampler. Visually verify that the tubing is directed to the correct rinse supply and waste containers.

3 Replace the sample probe with the appropriate version.

4 Replace the stirring paddle with the appropriate version. For oils, use the oils paddle. For coolants, remove the paddle or use the optional coolants paddle (identified by a black band).

5 If using an *ASXPRESS PLUS* Rapid Sample Introduction System, either replace the valve and tubing, or use a second valve/pump module which has been set up for oils or coolants.