Agilent 7697A Headspace Sampler

G4565A Cooling Plate Accessory Installation Guide

Parts Supplied

The contents of the G4556-64002 Cooling Plate Accessory Kit are described in Table 1.

Table 1 G4556-64002 Cooling Plate Accessory Kit

Part Number	Description	Quantity
G4556-60600	Metal vial rack assembly (3)	1
G4522-20540	Cooler drip tube	1
G4556-40680	Secondary drip tray	1
5080-8752	Nut and ferrule set, 1/4-in, brass	1
0100-0056	Nut, 1/4-in, brass	1
G4522-20500	Bulkhead union, 1/4-in	1
1400-3298	Clamp, hose, 0.468-0.531-in od, 0.22-in wd	1

Parts Identification

Figure 1 Metal vial racks, secondary drip tray, and cooler drip tube

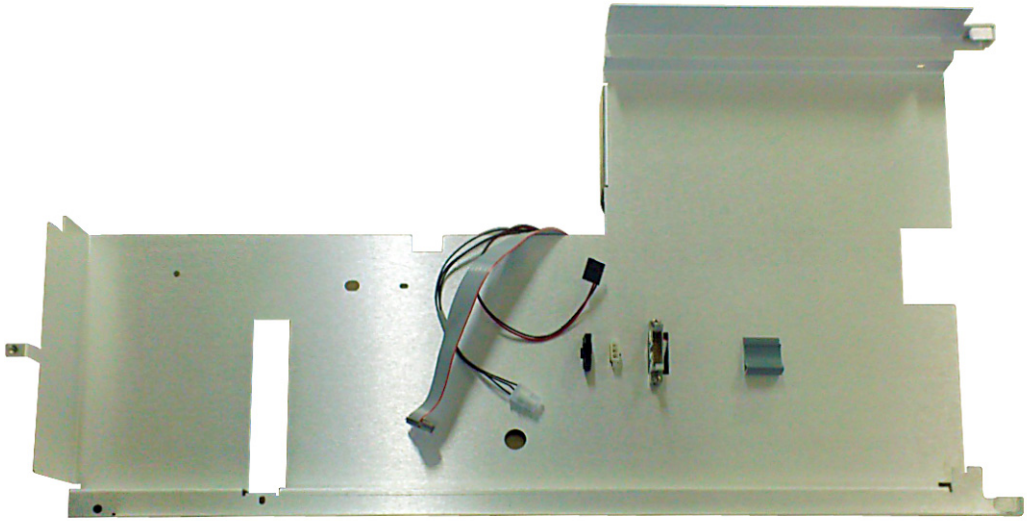

Figure 2 Top cooling accessory base plate

Figure 3 Cooling plate assembly

Required Tools

- T-20 Torx driver
- Agilent Instrument Utilities software, version B.01.05 SP1 or later
- Lint-free gloves
- Lint-free cloth

Installation

Read the Agilent 7697A Headspace Sampler Safety Manual before installing the cooling plate accessory, and whenever needed. The safety manual describes precautions to follow when performing maintenance and using the headspace sampler, as well as important regulatory information.

Confirm that all parts have been received. Refer to "Parts Supplied" and "Parts Identification" for information.

CAUTION Wear clean, lint-free gloves to prevent contamination of parts with dirt and skin oils.

To prepare the GC and 7697A 111-Vial Headspace Sampler

1. Set your GC oven, GC inlet, headspace oven, and transfer line to ambient temperatures and wait for them to cool.
2. Once the GC oven, headspace oven, and transfer line have cooled to ambient temperature, turn off the headspace and unplug the power cord.
3. Turn off all gas flows at their sources.
4. Remove all sample vials and vial racks from the headspace tray area.

To remove the 111-vial tray assembly from the headspace sampler

1 Lift the front of the tray assembly up and disconnect the two cable connections underneath the tray (Figure 4).

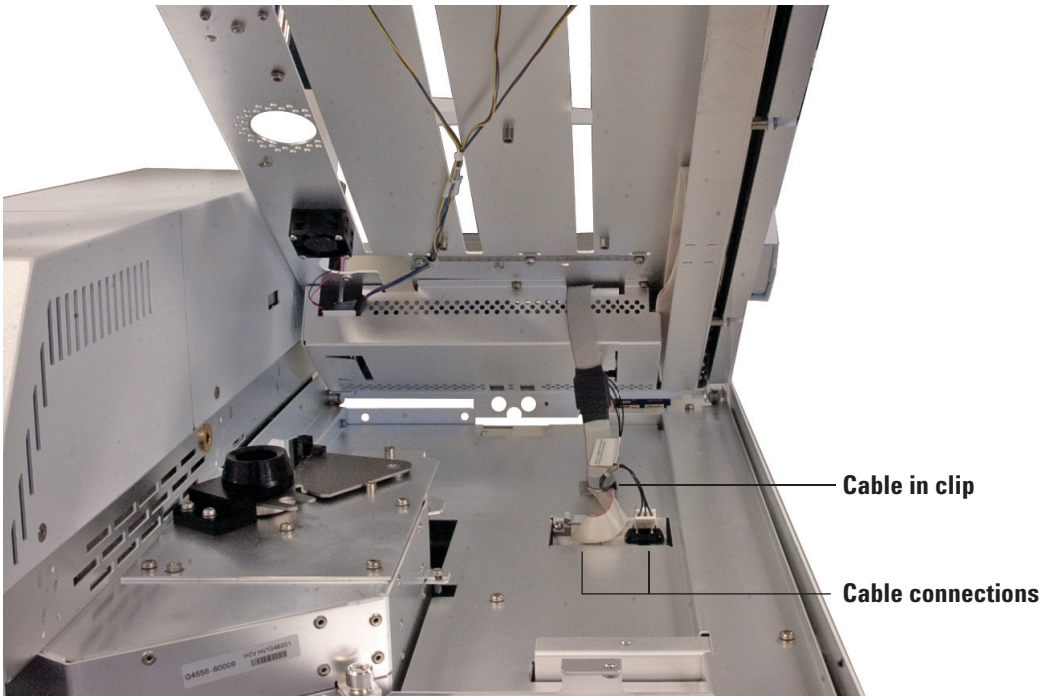

Figure 4 Tray cable connections

2 Slide the cables out of the tray cable clip (Figure 5).

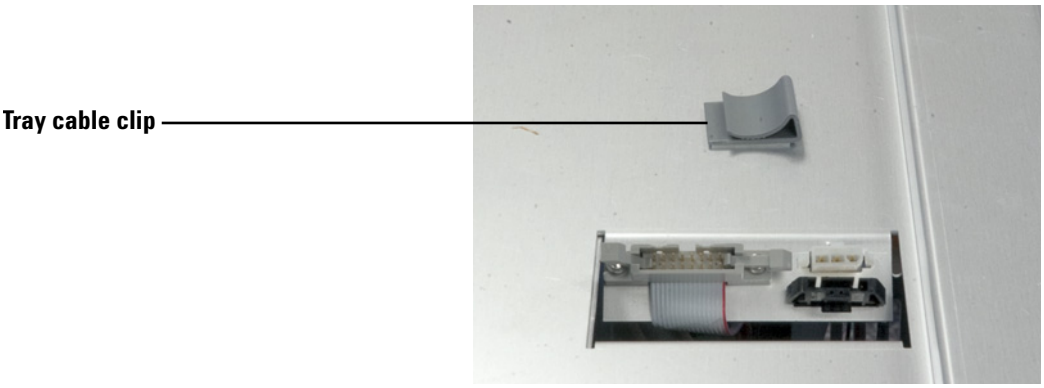

Figure 5 Tray cable clip

3 Lift the tray assembly off of the headspace and place it aside on a flat surface.

4 Using a T-20 Torx driver, remove the six screws that secure the top tray base plate to the headspace (Figure 6), then lift the top tray base plate from the headspace.

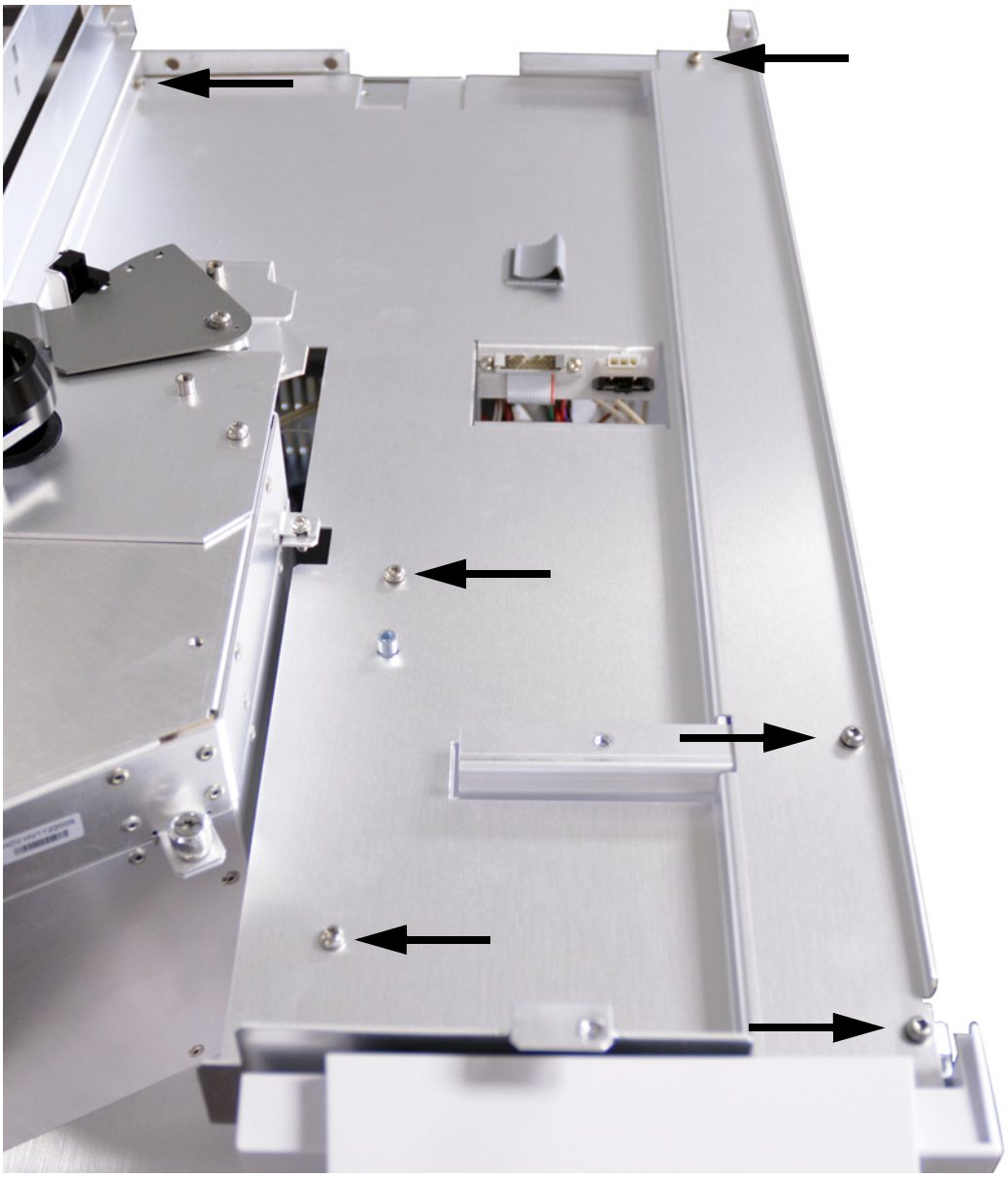

Figure 6 Remove six T-20 Torx screws

5 Disconnect the three cables from the wire harness on the underside of the top tray base plate (Figure 7).

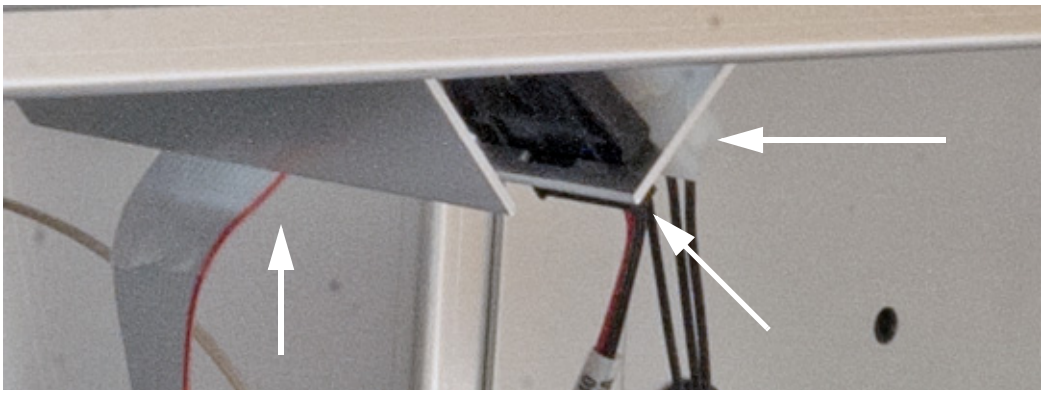

Figure 7 Disconnect the three cables from wire harness

6 Remove the top tray base plate from the headspace.

To install the G4565A Cooling Plate Accessory

1 Install the new top base plate.

   a Connect the three cables to the wire harness on the underside of the top cooling accessory base plate.

   b Install six T-20 screws to secure the top cooling accessory base plate to the headspace chassis.

   Figure 8 shows the new top base plate installed on the headspace.

Figure 8 Top base plate installed

2 Install the secondary drip tray on the right side of the base plate.

Align the hole in the base plate with the knob on the secondary drip tray (Figure 9).

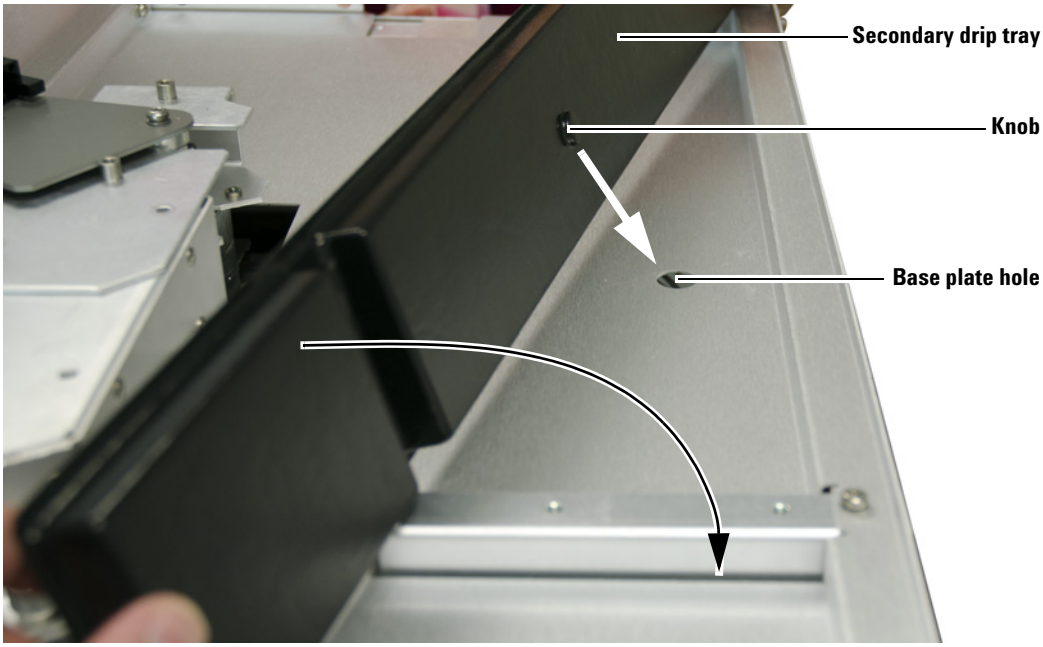

Figure 9 Install the secondary drip tray

CAUTION Moisture-sensitive components on the cooling plate assembly are wrapped in plastic. Do not remove the wrapping. Removing the wrapping will result in premature failure of the electronic components.

3 On the underside of the cooling plate assembly, check that all plastic wrapping is intact, especially for the three LED electronics boards on the underside of the front edge (see Figure 10).

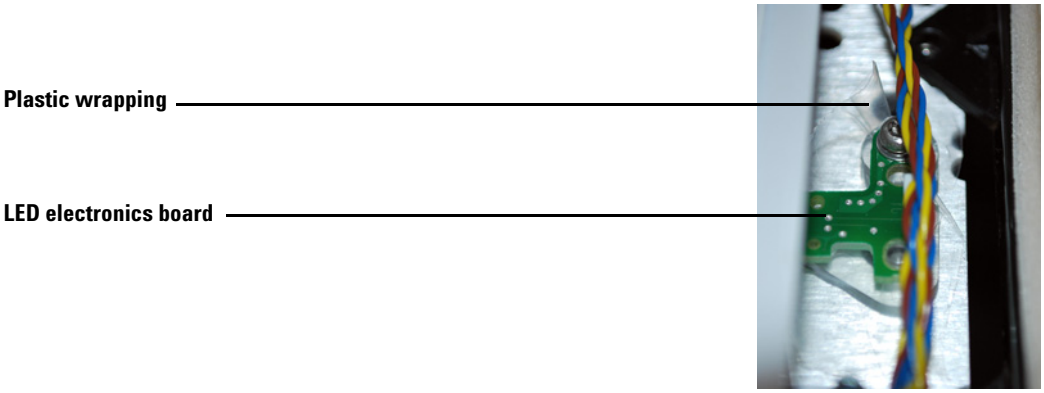

Figure 10 Plastic wrapping covering the LED electronics board on underside of front edge

4 Lower the back of the cooling plate assembly onto the top instrument cover while holding the front of the assembly above the headspace.

5 Slide the cables into the plate cable clip (Figure 11).

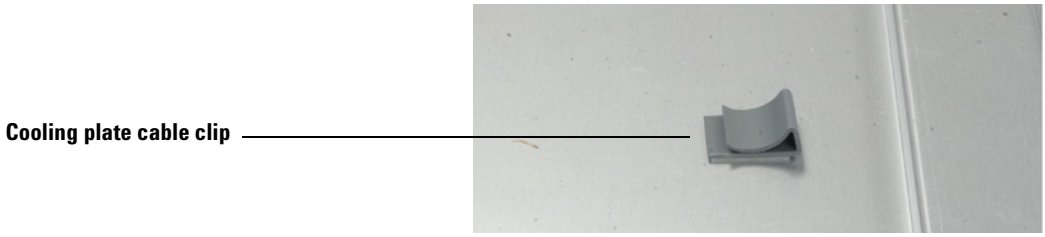

Figure 11 Slide cables into the cable clip

6 Connect the cooling plate cables to the cable connections (Figure 12).

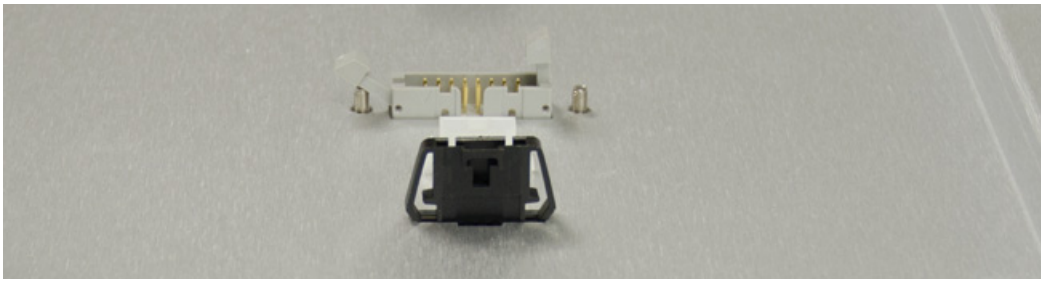

Figure 12 Cable connections on top base plate

7 Lower the front of the cooling plate assembly onto the headspace. Be sure it sits level on the headspace sampler.

8 Install the metal vial rack assemblies. Take note of the vial position numbering on the top of vial racks when placing them into the cooling plate assembly.

9 Install the cooler drip tube to the back of the headspace.

a Install the clamp onto the tube end.

b Install the clamp and tube into the fitting shown in Figure 13.

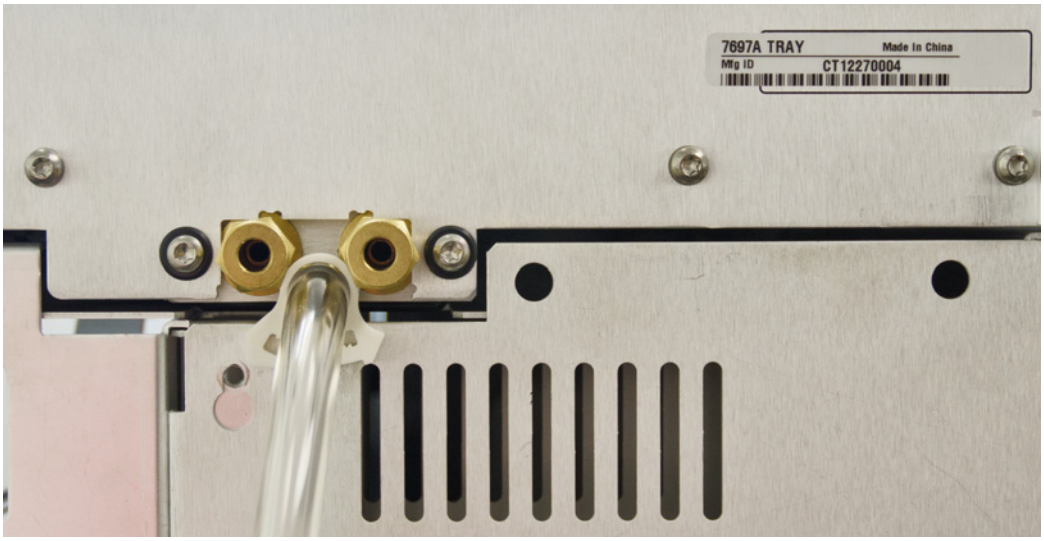

Figure 13 Drip tube and clamp installed on the back of the cooling plate

10 Cut the cooler drip tube to length. **The tube must allow for condensate to drain easily with no back pressure.** Otherwise, water will not drain properly. See "Periodic Maintenance" on page 16 for information about the drip tube.

11 Remove the orange shipping clamp from the cooling plate gantry using a T-20 Torx driver. Refer to the instruction sheet provided with the cooling plate.

12 Plug in the headspace power cord, and restore the headspace and GC to operating conditions.

To power on the headspace sampler

1 Power on the headspace sampler (Figure 14).

Figure 14 Power on the headspace sampler

2 Press **[Status] > [Clear]** on the headspace keypad to display the firmware revision. If the firmware revision is lower than A.01.05.1, you must update the headspace firmware. See "To update the headspace firmware" for details.

To update the headspace firmware

The 7697A Headspace Sampler firmware version must be A.01.05.1 or greater to control the G4565A Cooling Plate Accessory.

Use Agilent Instrument Utilities software, version B.01.05 SP1 or later to update the headspace firmware.

1 Load Agilent Instrument Utilities.

2 Select **Firmware Update** from the explorer pane.

3 Select the **Agilent 7697A Headspace Sampler** from the **Instruments** list and click **Connect**.

If the Agilent 7697A Headspace Sampler is not available, click **Add New Instrument** to open **Configure Instruments**. Add the new instrument, then return to firmware update.

4 If your 7697A Headspace Sampler firmware revision is not A.01.05.1 or greater, update to the latest version of the firmware.

   a Contact your local Agilent service representative to acquire a copy of the latest firmware.

   b If necessary, unzip the firmware file(s).

   c In the **Firmware Update** utility, click **Add**. Browse to and select the files unzipped in the previous step. The new firmware version appears in the **Available** drop-down list.

   d Click **Update**.

   e When prompted, save the active method and configuration data. You will restore the data from this file in a later step.

WARNING **Do not turn off power to the device during firmware update.**

   f When the process completes, the instrument reboots. Reconnect to the instrument, then click **Restore**. Select the previously-saved data file to restore the active method.

5 When complete, power cycle the 7697A Headspace Sampler.

Features and Specifications

This section describes some of the features and specifications of the cooling accessory.

Temperature

All 108 vial positions in the vial racks can be cooled to 4 °C or heated to 80 °C.

The center of each vial location temperature can vary within +1 to -3 °C of the cooling plate sensor reading.

NOTE The three priority sample positions on the cooling plate assembly are not temperature controlled.

Cooling source

Depending on your lab conditions, you may need to set your cooling source to a lower temperature value than the desired temperature setpoint, as coolant temperature losses can occur between the cooling source and cooling plate.

Coolant

Use only distilled water, ethylene glycol, or propylene glycol as coolant.

Water bath and pump specifications

The water bath and pump system used to control the sample vial temperatures must meet the following specifications:

- The components must meet national standards for safety requirements, be suitable for unattended operation, be suitable for continuous operation, and be controllable for high-temperature protection.
- The recommended coolant temperature range is 4 to 80 °C.
- If you use a built-in pump, it must be suitable for external circulation of liquid and for connection of 1/4-in od (6.35 mm) tubing or larger.
- If you use a pressure pump, it must maintain a pressure from 1.5 to 2.5 psi.
- If you use a suction pump, the pump vacuum cannot exceed –4 psi.
- Typical recirculator cooling power capacity varies from 1000 to 2000 watts.

Condensate and environmental conditions

To avoid excess condensate, keep the humidity level below 65% and the temperature below 23 °C. If either value increases above its limit, excess condensate will form and cause drainage overflow.

Be sure your cooling plate operating temperature remains above 4 °C. Temperatures at 4 °C and lower may cause condensate to freeze and drainage problems may occur.

If operating in a non-air conditioned environment, shut off the cooling plate source or raise its temperature to a value above the expected dew point temperature when not in use.

Occasional excess condensate will not cause permanent damage to your instrument. If the condensate management system overflows, unplug the power source to the headspace as soon as possible and dry the affected areas before use.

Operation

This section describes how to operate the cooling plate with the Agilent 7697A Headspace Sampler.

The 7697A Headspace Sampler firmware version must be A.01.05.1 or later. If it is an earlier version, you must update to the latest version. See "To update the headspace firmware" on page 11 for information.

To configure the cooling plate:

1 Using the headspace front keypad, press **[Temps]** to access the **Temperature** configuration.

2 Scroll to **Use Cool Plate Rdy** then press **[On/Yes]** to include the cooling plate as part of instrument readiness.

When **Use Cool Plate Rdy** is set to **On**, the **Cooling plate** and **Cooling plate Error-band** parameters appear below (Figure 15).

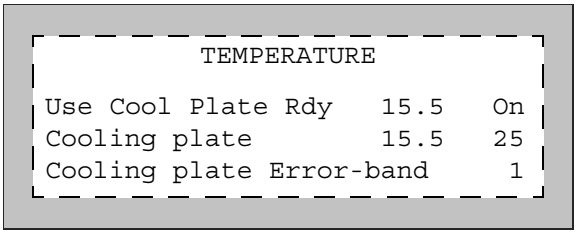

Figure 15 7697A Headspace Sampler front display

3 Scroll to **Cooling plate** and set the desired temperature setpoint for instrument readiness. The first number is the actual cooling plate temperature. The second number is the configurable target temperature setpoint.

4 Scroll to **Cooling plate Error-band** and set the allowable temperature margin of error before the instrument declares the cooling plate not ready.

Periodic Maintenance

This section contains some suggestions for ensuring good performance of your cooling plate. The maintenance interval varies with the use of the instrument.

On an occasional basis:

- Check for condensation buildup in the secondary drip tray. Use a towel or sponge to remove the excess condensate.
- Check that the drainage tubing drains condensate easily and has no back pressure. Be sure that:
  - The tubing slopes downward towards the drainage container.
  - The tubing is kept straight without kinks that may block the flow.
  - The tubing does not become clogged or dirty. Replace tubing if necessary.
  - The open end of the tubing is not submerged in the drainage container (Figure 16).

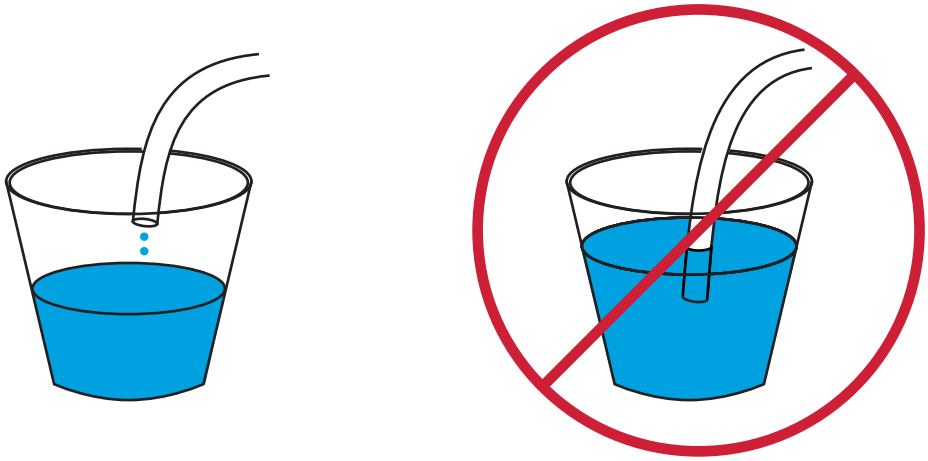

Figure 16 Drip tube correctly hung (left) and incorrectly submersed (right)

Replacement Parts

Table 2 describes the available replacement parts for the G4565A Cooling Plate accessory.

Table 2 Replacement parts

Part Number	Description	Quantity
G4556-60600	Metal vial rack assembly (3)	1
G4522-20540	Cooler drip tube	1
G4556-40680	Secondary drip tray	1
5080-8752	Nut and ferrule set, 1/4-in, brass	1
0100-0056	Nut, 1/4-in, brass	1
G4522-20500	Bulkhead union, 1/4-in	1
1400-3298	Clamp, hose, 0.468-0.531-in od, 0.22-in wd	1

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