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Agilent 7820A

Gas Chromatograph

Installation Guide

Agilent Technologies

Notices

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Acknowledgements

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7820A GC Installation Guide

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The installation procedure assumes that the site has been prepared in accordance with the Site Preparation guide, available at www.agilent.com/chem. The installation requires the use of the Agilent GC and GC/MS User Information & Utilities DVD that ships with your 7820A GC along with the available documentation for your GC (and Automatic Liquid Sampler, if purchased).

- For installing columns and consumables, see the GC maintenance information.
- For operating the GC and Sampler, see the operating information.

Tools and Parts Required for Installation

Agilent provides all specialized tools needed for installation. In addition, agilent supplies several parts and plumbing assemblies to make installation easier. Find these tools and parts in the GC shipping container:

- Toolkit, 19199T, contains tools for installation maintenance tasks
- Tubing kit, 19199TF, contains preassembled tubing for connecting supply gases to the GC

In addition, you will need to provide the following:

- Wrenches for tightening any plumbing connections
- Adapters to connect your gas supplies to 1/8-inch male Swagelok fittings used on the GC

7820A GC Installation

Place and Prep the GC

1 Verify the site has been prepared for the GC.

- Refer to the 7820A GC Site Preparation Guide on the GC and GC/MSD Hardware User Information & Utilities DVD.
- Make sure the site meets the requirements in the guide, including power, and that clean gases and connection hardware are available.
- Installation requires a PC that meets the requirements of the Agilent Instrument Utility. Refer to the GC and GC/MSD Hardware User Information & Utilities DVD for details.
- Installation requires a PC user with administrative privileges to install software and to make LAN communications settings.
- If you purchased installation and familiarization services, make sure the GC operator is available.

WARNING **Use extreme caution when handling heavy parts. A two person lift is recommended. Failure to perform a two person lift may result in personal injury.**

2 Unpack the GC. Locate the tools, consumables, and the hardware user information & utility DVD. See Figure 1.

Big universal trap

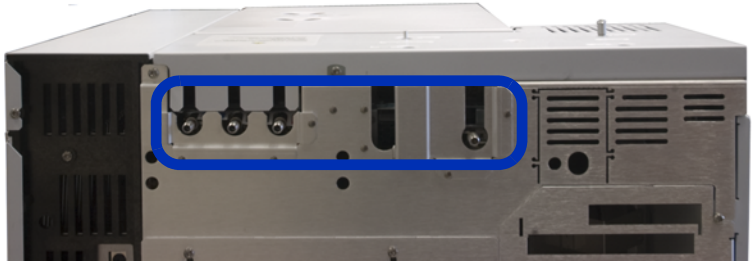
GC and GC/MS Hardware User Information & Utilities DVD

Figure 1 User documentation, ship kits, and parts

WARNING **Use extreme caution when handling heavy parts. A two person lift is recommended. Failure to perform a two person lift may result in personal injury.**

3 Place the GC on the bench and remove the detector caps under the detector cover.

4 On the back panel, remove the caps.



5 Check the power requirements on the GC back panel. Make sure the available power meets the requirements.

Connect the checkout gases

1 Install the Big Universal Trap into the carrier gas supply. See Figure 2.

- Install near the GC.
- Follow the instructions included with the trap.
- Use the nuts and ferrules supplied with the trap.
- Purge as directed by trap instructions.
- For details on making Swagelok connections, see the Maintenance manual.

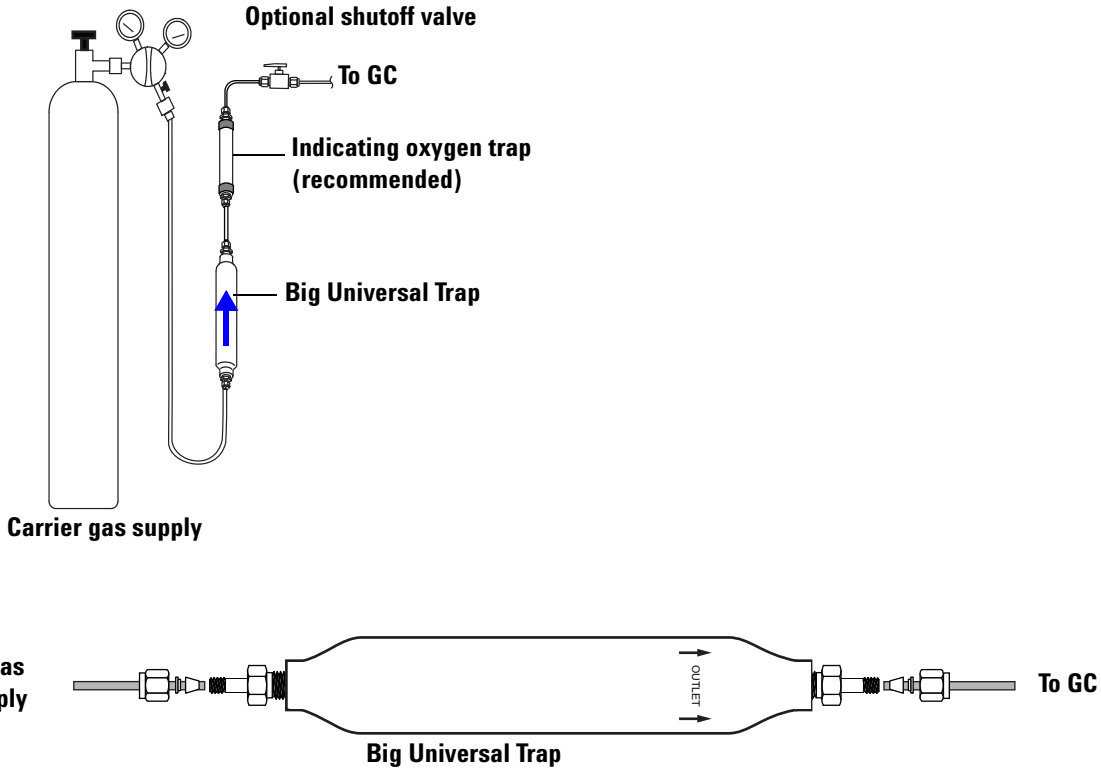


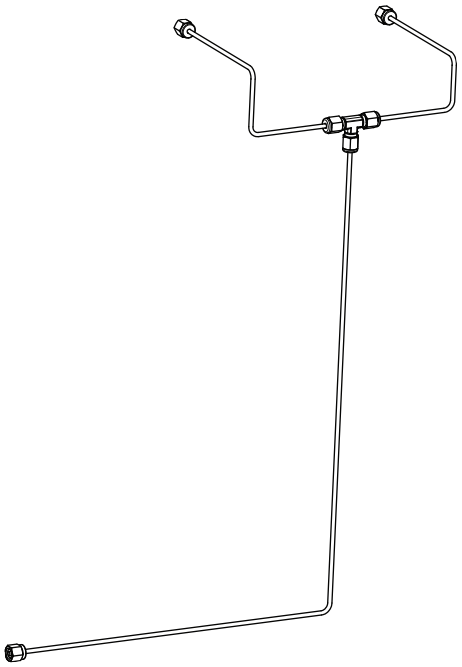
Figure 2 Trap installation

2 Select the pre-swaged gas tubing for your GC. See Figure 3.

- Use the tubing with 4 connectors for a GC with TCD.

(The tubing with 3 connectors is not used for instrument checkout, but may be useful for a GC with NPD, FID, or FPD after you have performed

the checkout test. The tubing with 4 connectors can be used for uECD after checkout, if using nitrogen carrier, anode purge, and makeup.)



G4331-60003

Use to connect a single supply gas as:

- Inlet carrier gas
- FID, FPD or NPD makeup gas

FID, FPD, and NPD air and hydrogen must be supplied through separate tubing.

G4332-60004

Use to connect a single supply gas as:

- Inlet carrier gas
- TCD reference and makeup gas
- uECD anode purge and makeup gas

Figure 3 Available preswaged tubing

3 Install the tubing and connect to gas supply. See Figure 4, Figure 5, and Figure 6.

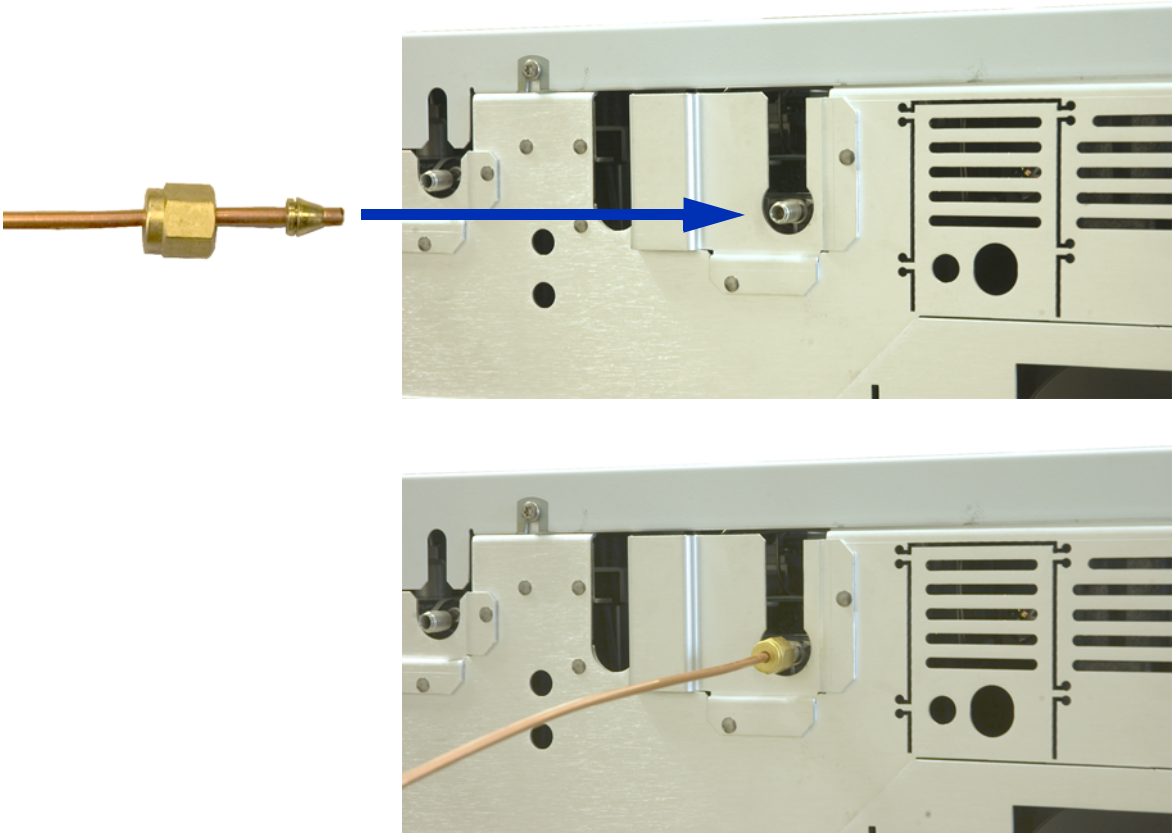
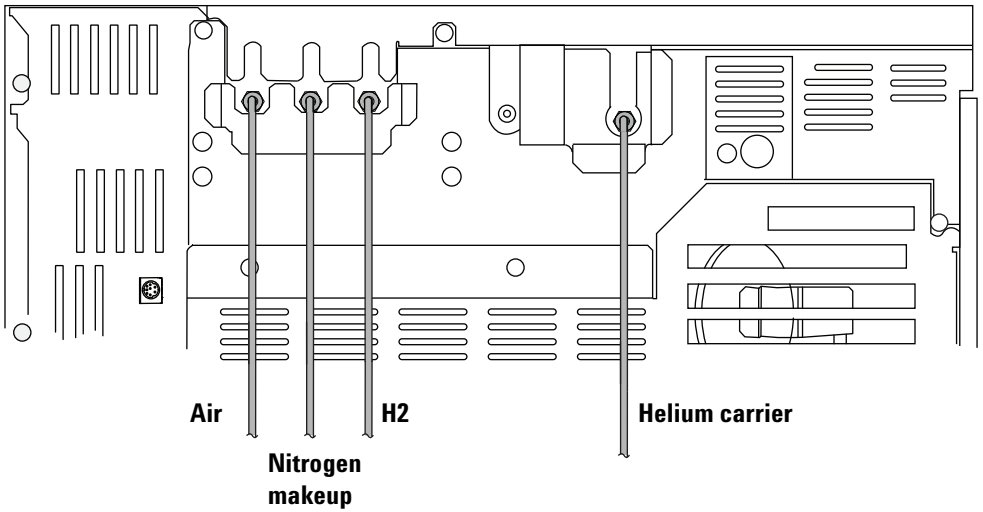


Figure 4 Connecting Swagelok tubing

FID, NPD, FPD



TCD

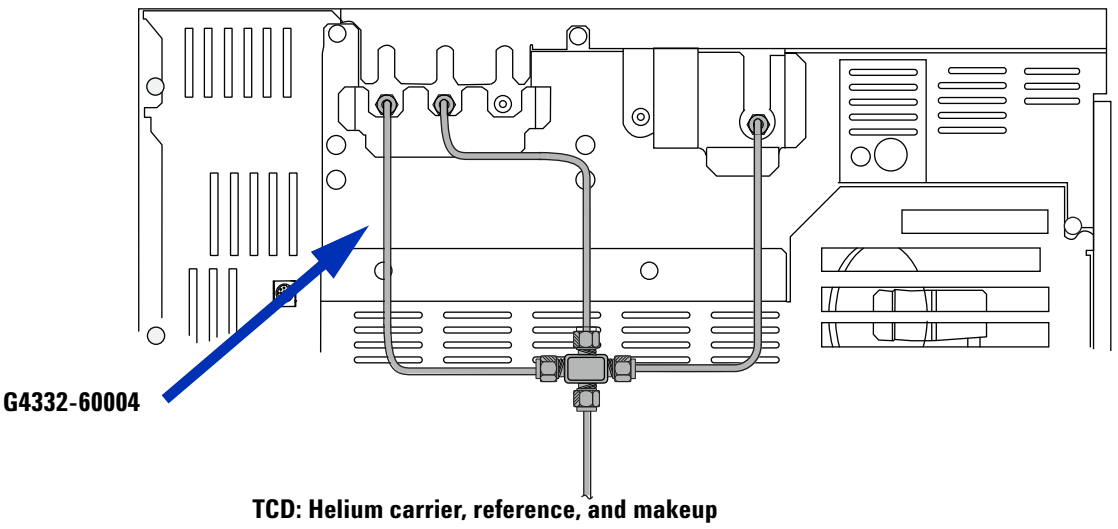


Figure 5 Proper plumbing configurations for instrument checkout (FID, NPD, TCD)

uECD

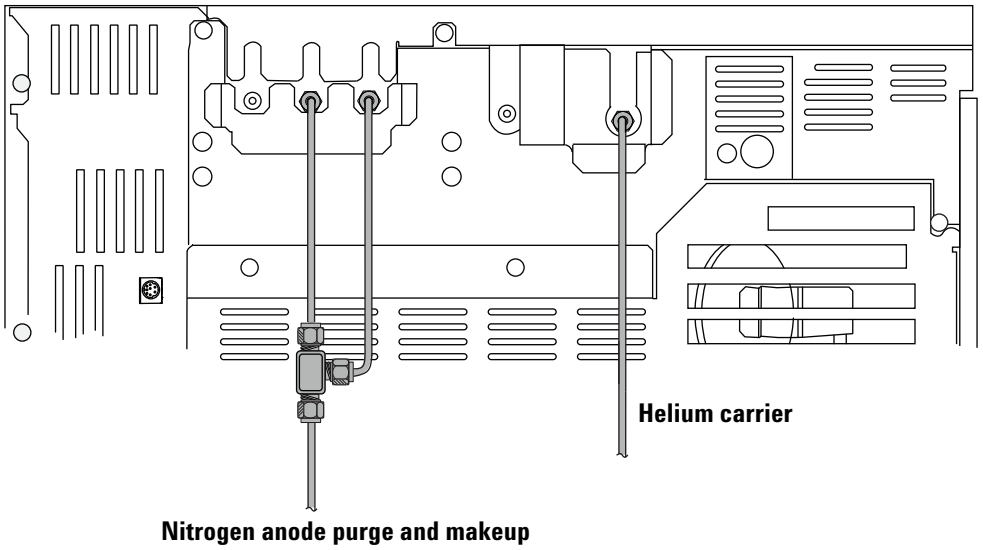


Figure 6 Proper plumbing configuration for instrument checkout (uECD)

4 Set the gas source pressures.

Gas	Recommended	Maximum
Helium	400 kPa (60 psi)	690 kPa (100 psi)
Hydrogen	400 kPa (60 psi)	690 kPa (100 psi)
Air	550 kPa (80 psi)	690 kPa (100 psi)
Nitrogen	400 kPa (60 psi)	690 kPa (100 psi)

5 Check for external leaks.

a Maintain pressure for 5 minutes.

b Turn off gas supplies.

c Wait 10 minutes.

d The pressure in the supply lines should remain constant. If not, check for and fix any leaks.

e Restore supply pressures when leak-free.

See Figure 7 for typical external leak points.

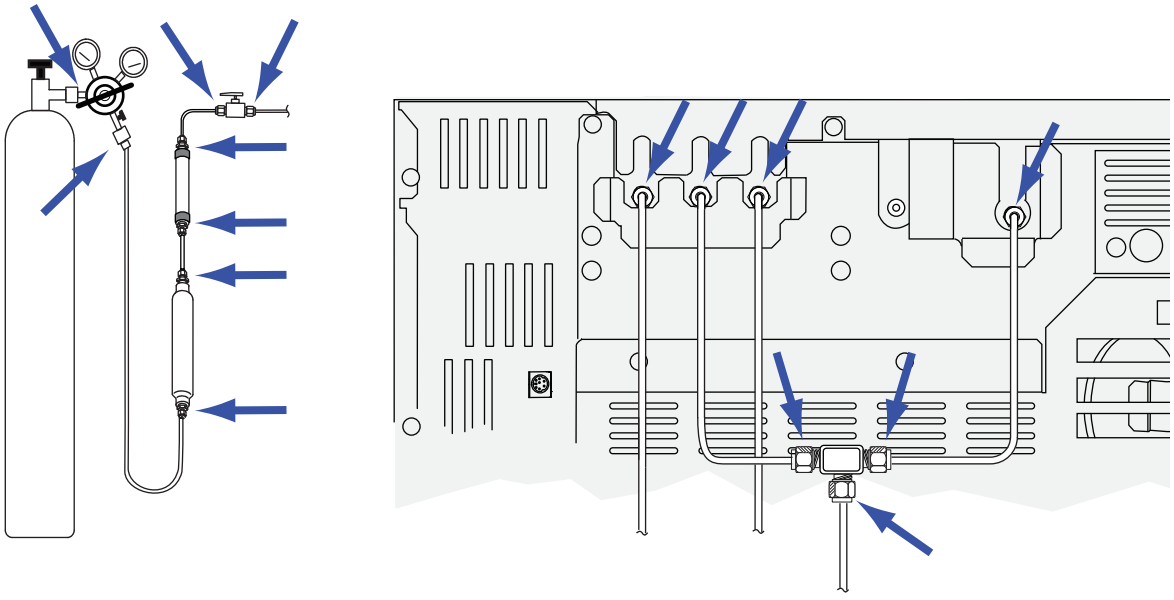


Figure 7 Example external leak points

6 Connect the power cord and the remaining cables. See Figure 8.

- Connect the LAN cable (part number 8121-0940) between the GC and PC. Installation requires a direct connection. Do not connect to a site LAN, hub, or switch for initial checkout.

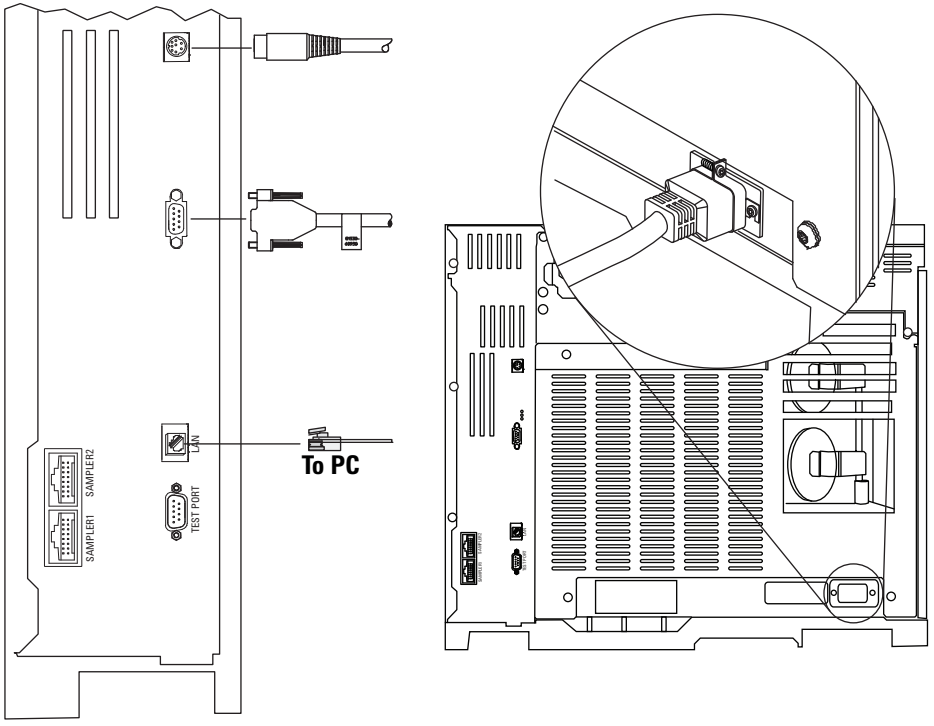
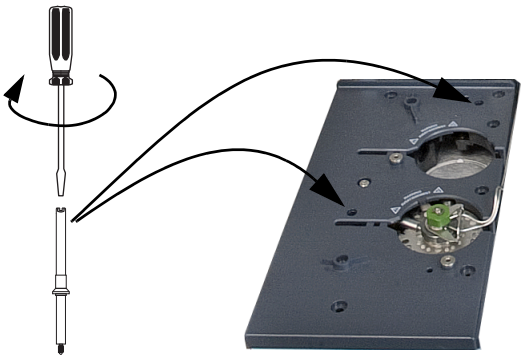


Figure 8 Connecting cables

If available, install the sampler

1 If available, install the 7693A injector as shown below.



Install G4513-20561 mounting post.

Install injector on mounting post. Connect cable.

2 If using a G4513A injector, prepare it for use:

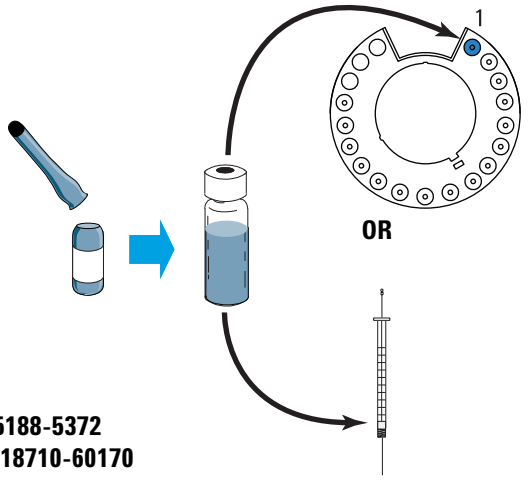
- Install the standalone (16 sample) turret (G4513-40532) into the injector.
- Install the 10 uL syringe (5181-3354).

Follow the instructions provided for the sampler on the GC and GC/MSD Hardware User Information & Utilities DVD. Insert the DVD into the PC. Select your language, then browse to **View Hardware Manuals & Videos**. Expand section **Sampler Documentation**, then expand the section titled **7693A ALS Documentation**. Open the *Installation, Operation, and Maintenance* manual.

NOTE The GC may include a small cover plate, G3450-00152. Retain for future use. If the ALS controller is removed from the GC, use this plate to cover the ALS controller opening in the GC back panel.

Prepare for checkout

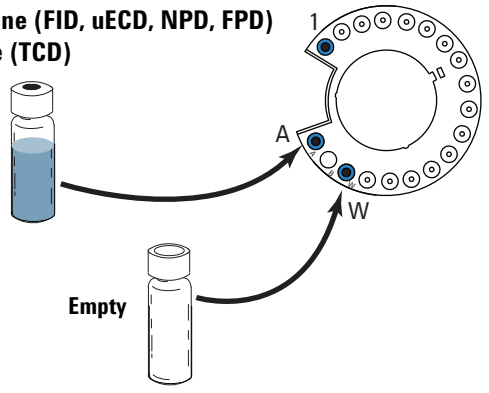
1 Prepare the checkout sample.



FID: 5188-5372
TCD: 18710-60170
NPD: 18789-60060
FPD: 5188-5953
uECD: 18713–60040 or 5183-0379 (Japan)

2 If using a sampler, prepare solvent and waste vials.

4 mL
Isooctane (FID, uECD, NPD, FPD)
Hexane (TCD)



3 Turn on the GC.

4 If purchased, install the NPD bead and configure the NPD. Refer to the 7820A Maintenance manual or the instructions that come with the bead.

Set the PC IP address

From the factory, the GC is set to:

IP address	192.168.0.26
Subnet Mask	255.255.255.0
Gateway	192.168.0.1

The installation **requires** that you connect **directly** to the GC using this address. However, after installation you should change the GC IP address or set it to use DHCP.

1 If needed, install the PC.

2 Record the PC's current LAN address (either the IP address, subnet mask, and gateway; or that the PC uses DHCP).

3 Set the PC IP address to 192.168.0.1 and the subnet mask to 255.255.255.0.

- See your Windows® help for instructions for setting the PC IP address. You may need administrator privileges on the PC.

4 Open a command prompt in Windows. Type **ping 192.168.0.26**, then press **Enter**. The GC should respond. See Figure 9.

- For help in using the **ping** command, see Windows help.
- If **ping** fails, use the scroll keys to view the current GC IP address on the GC display. If needed, change the PC IP address or reset the IP address in the GC (see the Operating Guide.)

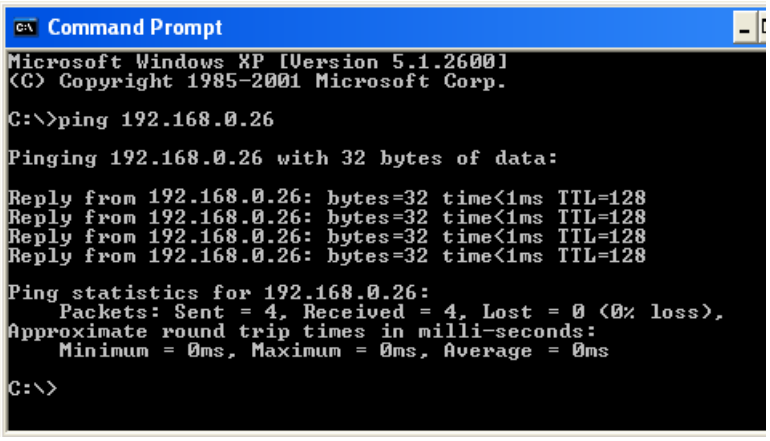


Figure 9 Successful **ping** reply

Install required documentation and software

If you do not have the instrument utility, software keypad, and all 7820A and sampler documentation installed, install them now.

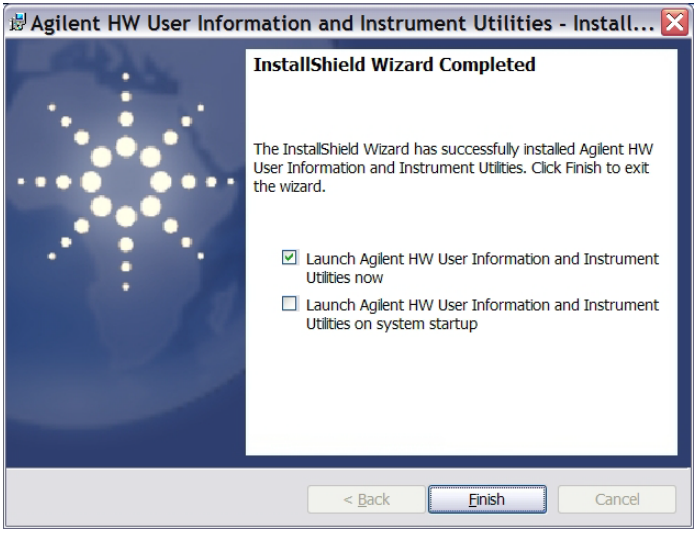
CAUTION Be sure to install the files in the default location! The Instrument Utility uses the documentation files to provide instruction and troubleshooting information.

1 Install the GC documentation (and sampler documentation, if purchased) from the GC and GC/MSD Hardware User Information & Utilities DVD. Click on **Install GC and GC/MSD Documentation**, then follow the instructions for installing the online manuals.

   Installing the 7820A GC documentation also installs the software keypad.

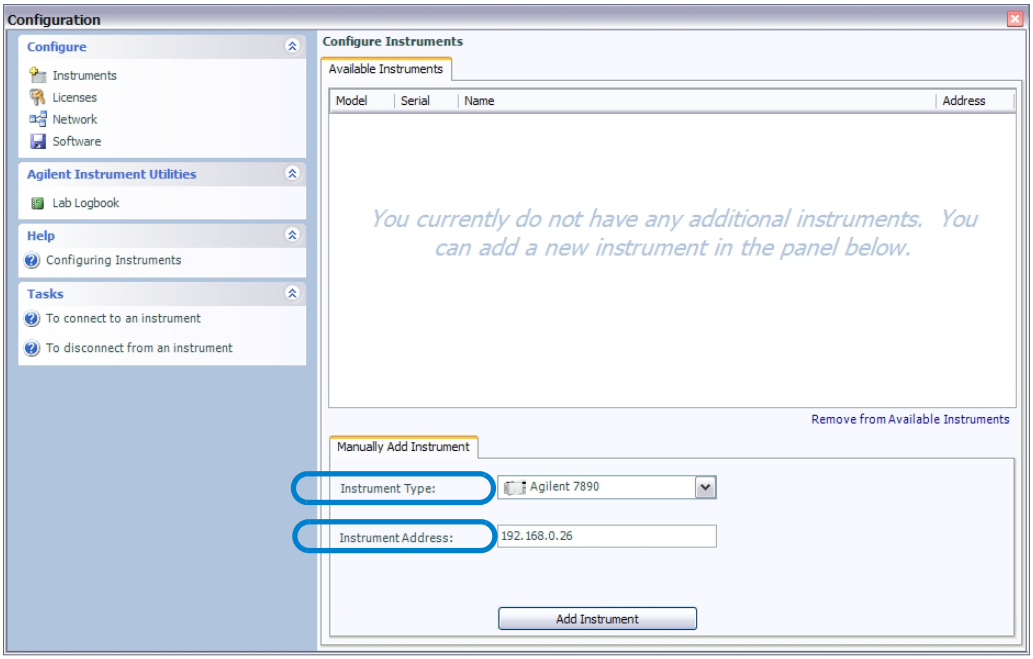
2 Install the Instrument Utility software.

3 After installation completes, let the installer launch the Instrument Utility.


Agilent HW User Information and Instrument Utilities - Install...
InstallShield Wizard Completed
The InstallShield Wizard has successfully installed Agilent HW User Information and Instrument Utilities. Click Finish to exit the wizard.
Launch Agilent HW User Information and Instrument Utilities now
Launch Agilent HW User Information and Instrument Utilities on system startup
< Back
Finish
Cancel

Run the Installation Wizard

1 When run for the first time, the Instrument Utility will open to the **Configure Instruments** window.

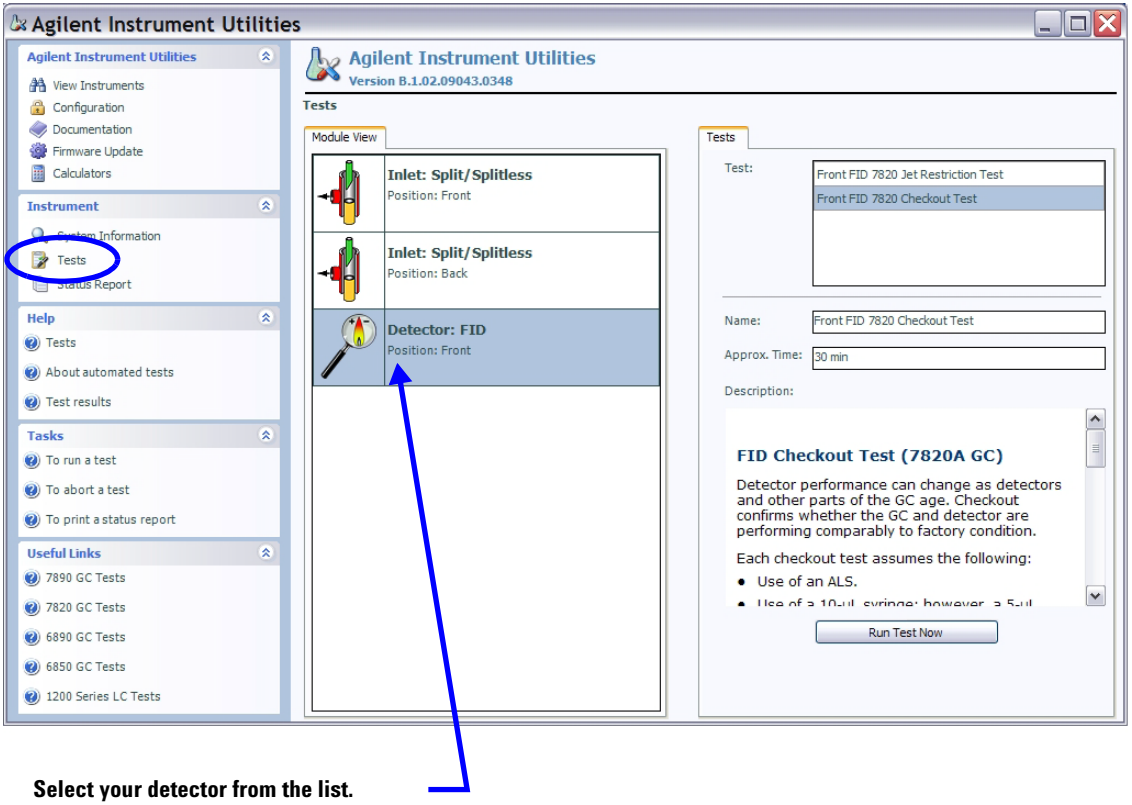


2 Select Instrument Type **Agilent 7820**. The default IP address (192.168.0.26) displays. Click **Add Instrument** to connect to the GC. Close the **Configuration** window.

(If the Instrument Utility was already installed on the PC, open it and go to **Configuration > Instruments**, then select **Add to My Instruments**. From the **Instrument Type** drop-down list, select GC type **Agilent 7820**, then enter GC IP address **192.168.0.26**. Click **Add Instrument**.)

3 In the left hand pane, click **Tests**.

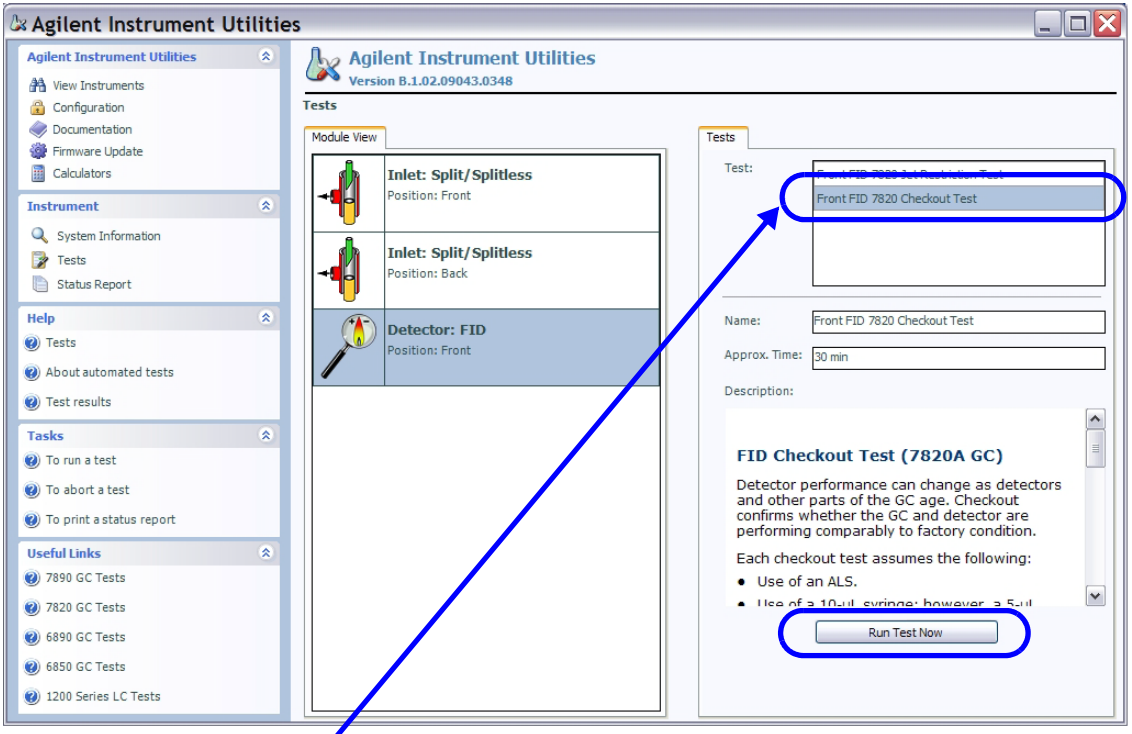
4 Select your detector type from the **Module View** tab.



Select your detector from the list.

5 Select the checkout test for the detector, then click **Run Test Now**.

- If using an FPD, refer instead to the Advanced User Guide. Perform the procedure as described in the manual for the checkout sample supplied with your instrument.



Select the checkout test for the detector. For example, **Front FID Checkout Test**.

6 The test will prompt you to first purge and bake out the GC. Perform the bakeout. Watch the detector's signal output. When bakeout ends, the detector output should meet the criteria listed below.

FID	Stable output ≤ 20 pA
TCD	Stable output between 12.5 and 750 µV (inclusive)
uECD	Stable output < 200 Hz (new detector)
NPD	not applicable

- To see the detector signal output on the GC, press ▲ or ▼ to scroll to the **Signal** line in the display.

If the signal did not stabilize below the limit, there is probably a leak in the gas supply fittings. Abort the test. Fix the leak(s), then retest. If the gas supply is leak free, see the Troubleshooting manual.

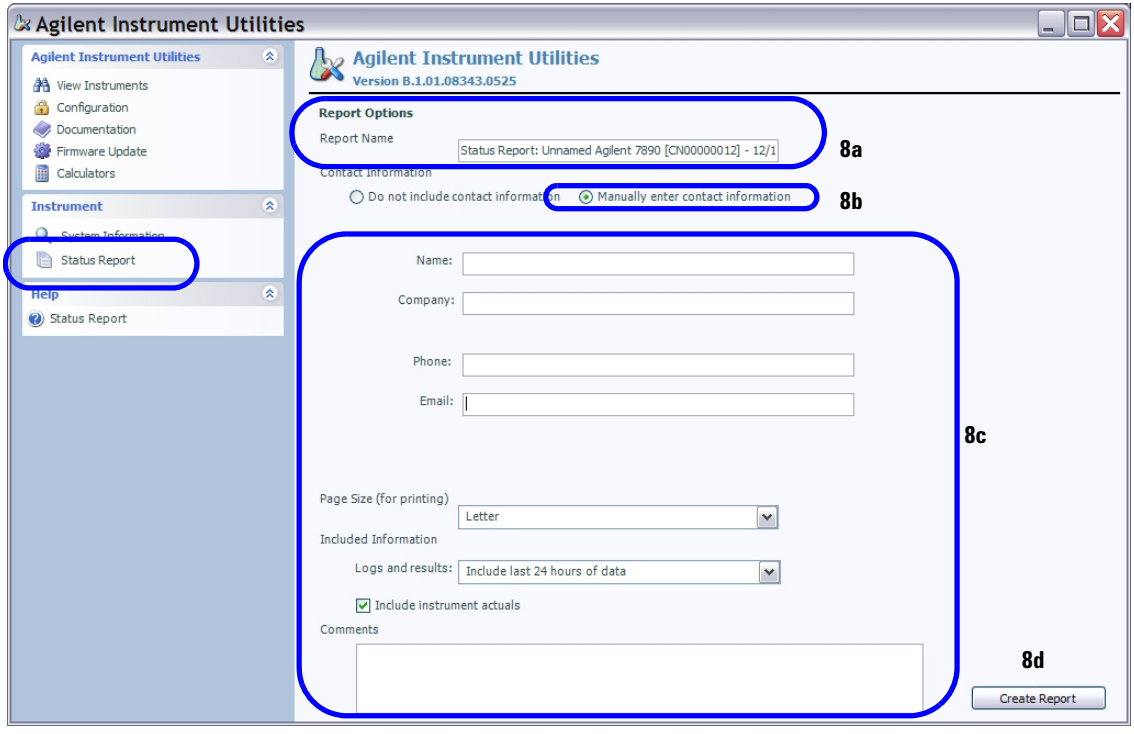
7 Next, the test will load and run the checkout method.

- If performing an ALS injection, the run starts automatically.
- If performing a manual injection, when prompted simultaneously make the injection and press **[Start]** on the GC.
- To learn about good manual injection technique, see the Fundamentals of Gas Chromatography manual.

8 Examine the test results on the **Signal** tab.

9 Generate a Status report.

- **a** If desired, change the **Report Name**.
- **b** Select **Manually enter contact information**.
- **c** Enter the appropriate contact information or change as needed.
- **d** Click **Create Report**.



10 Print or create a PDF version.

11 Send the results to Agilent.

At this point, GC installation is complete.

Set Permanent GC and PC IP Addresses

Your PC and GC are currently connected directly through a LAN cable. If this PC runs your data system, and you have no other GCs, you can leave the system as-is. However, to connect to more than one GC, or to connect the GC and computer to a site network, you must:

1. Change the GC IP address to be compatible with your site LAN. Refer to the GC Operating Guide for details.
2. Restore or change the PC IP Address to be compatible with the site LAN and the GC.

Install the Data System

The PC and GC are now installed and ready for use on your site LAN. The next step is to install your Agilent data system. Install the software, configure it to communicate with the GC, then make sure it is operating correctly. Refer to the installation instructions that came with the data system.

For More Information

The GC and data system installation is now complete. For more information refer to:

- GC Operating Guide for familiarization and everyday operating instructions
- GC Safety guide