

Installing the Adjustable Restrictor Kit

Kit G2741A

These instructions describe the procedure for installing an Adjustable Restrictor Kit in an Agilent 4890, 5890, or 6890 Series Gas Chromatograph (GC). It is assumed that your valves and heated valve box are already installed.

Parts supplied

The adjustable restrictor valve is normally used to simulate an installed column when your analysis requires an isolated column, or for certain liquid or gas sampling applications that need to maintain a regulated pressure.

The kit contents are listed in Table 1.

Table 1 Parts supplied

Description	Quantity
Nut	2
Ferrule, 1/16-inch	2
Adjustable restrictor valve	1
Screw, M4 × 8 mm	2*
Screw, M4 × 16 mm	2*
Valve bracket	1
Installation sheet (this document)	1

* Extra screws are provided. Some will be left over.



Part identification

The parts in the kit are identified in Figure 1.

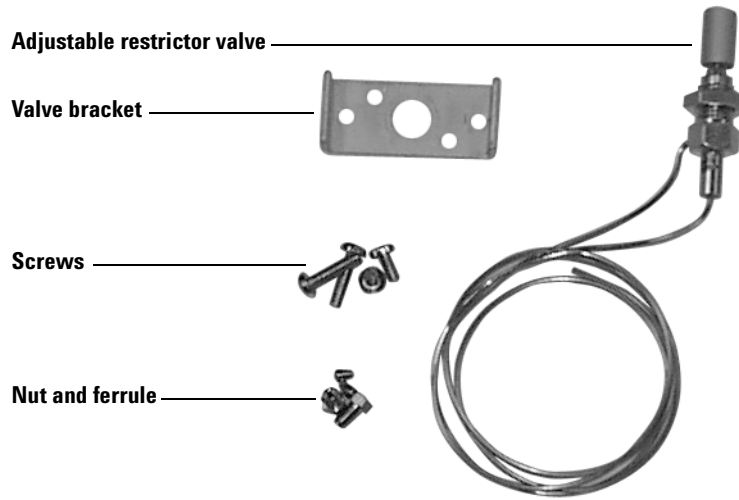


Figure 1 Part identification

Tools required

T-10 and T-20 Torx™ drivers
Pozidrive screwdriver

Install the adjustable restrictor valve

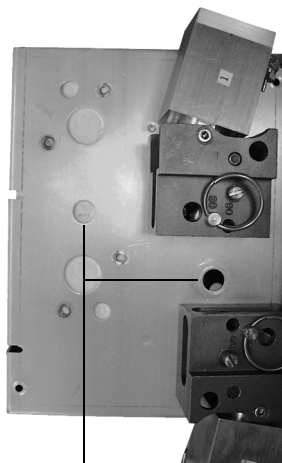
WARNING

The oven, inlet, detector, and valve box may be very hot. Before proceeding, turn off the oven and all other heated zones and let them cool down.

Harmful gases may be present. Hydrogen (if used) can present an explosion hazard. Before proceeding, turn off all supply gases at their sources.

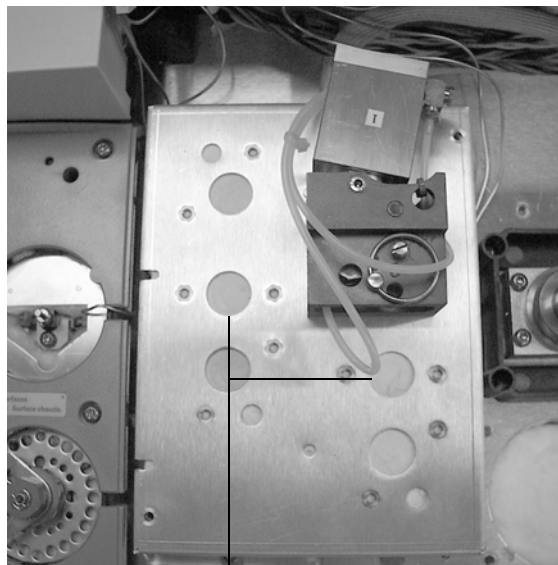
Shock hazard. Before proceeding, turn off the GC and disconnect the power cord.

- 1** When the heated zones have cooled to ambient temperature, turn off the GC and disconnect the power cord.
- 2** Remove the detector top cover.
- 3** Remove the GC right side panel and the electronics cover.
- 4** Determine where to mount the adjustable restrictor valve. The restrictor valve mounts through one of two holes in the top of the heated valve box, in between the actuators (Figure 2). Select the hole which will be most convenient for plumbing connections.



**Restrictor
mounting
locations**

6890 valve box



**Restrictor
mounting
locations**

Early 6890 and all 4890/5890 valve boxes

Figure 2 Restrictor mounting locations

- 5** Remove the two mounting screws that secure the upper valve box to the GC and lift it, exposing the valves in the lower valve box (Figure 3).

Remove two
mounting screws

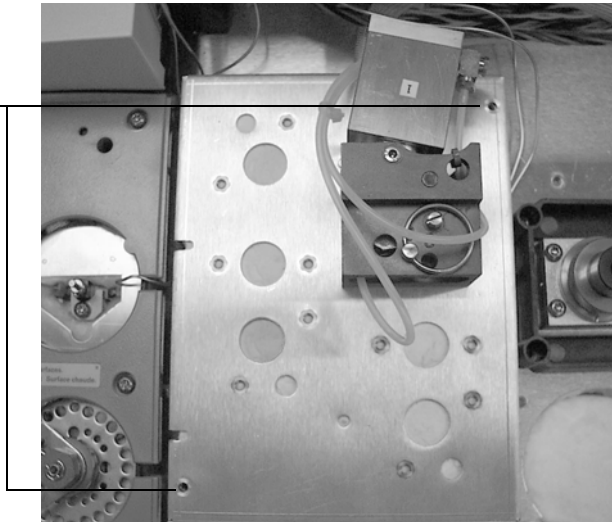


Figure 3 Opening the valve box

WARNING

The valve box is insulated with a fibrous material that can cause irritation to the skin, eyes, and mucous membranes. Always wear gloves when working with the insulation. Additionally, if the insulation is flaky/crumbly, wear protective eyewear and a respirator.

- 6 Hold the upper valve box over a trash receptacle and push the insulation out of the chosen mounting hole from the top.
- 7 If you are installing the valve on an Agilent 6890 with large through-holes, on a 5890, or on a 4890, install the adapter bracket on the top of the valve box using two screws.

8 Remove the mounting nut from the adjustable valve (Figure 4).

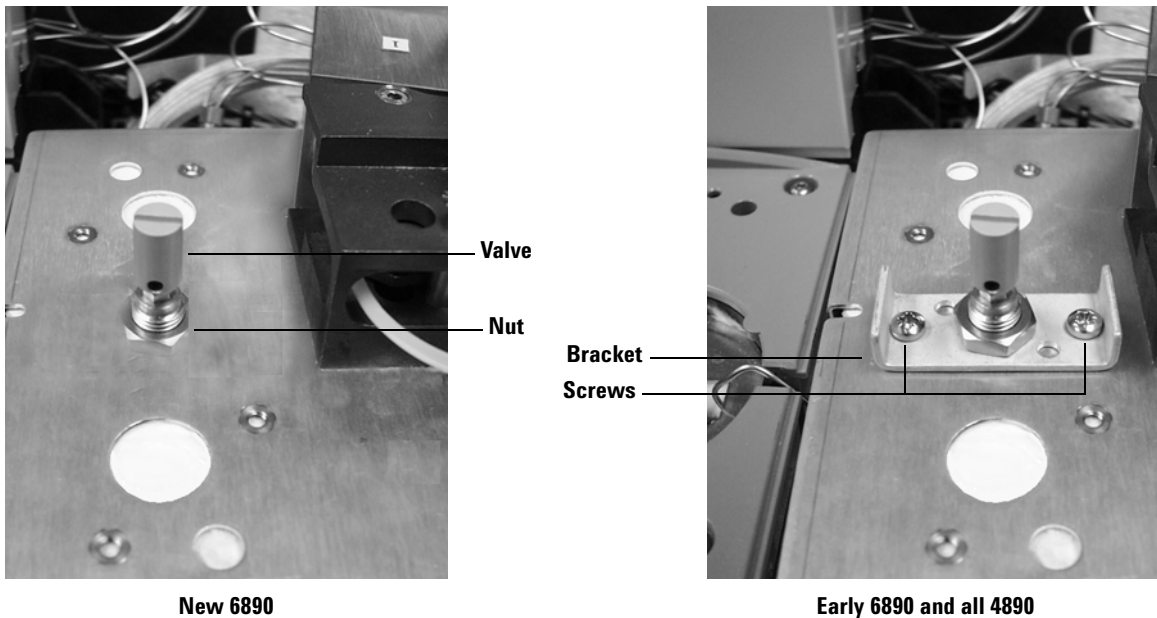


Figure 4 Installing the valve

9 Insert the valve up through the hole you prepared in the upper valve box. If you installed the adapter bracket, the valve should fit through it. Secure the valve to the valve box using the mounting nut. Carefully bend the tubing as needed so the nut threads smoothly and the valve stays perpendicular to the surface of the valve box (Figure 5).

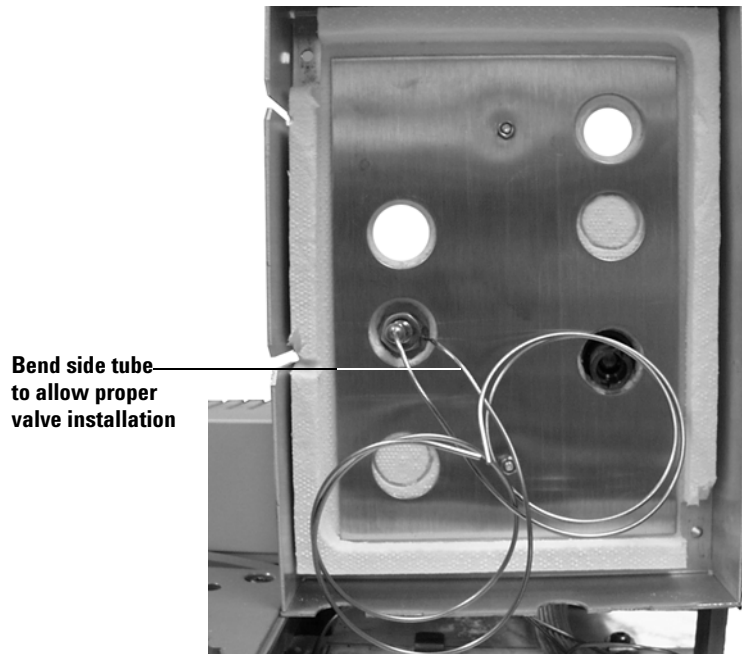


Figure 5 Bending the tubing

Connect the restrictor valve to the GC and other valves

Use the column nuts and ferrules supplied with your kit to connect the restrictor valve tubing to your column and valve(s) as required for your application. Several common configurations are described below.

Column isolation This setup (Figure 6) isolates the column from the flow path and uses the adjustable restrictor to compensate for the pressure drop across the column. This configuration is typically used when a column irreversibly absorbs some sample components.

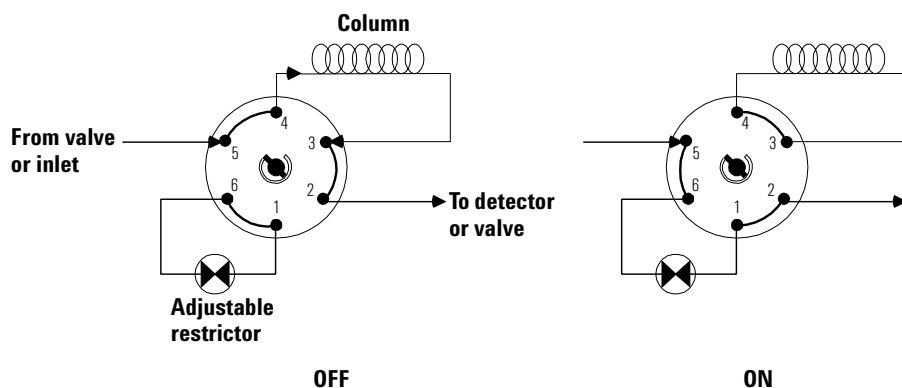


Figure 6 Column isolation

Liquid sampling The liquid sampling configuration (Figure 7) is usable with samples pressurized up to 1000 psi.

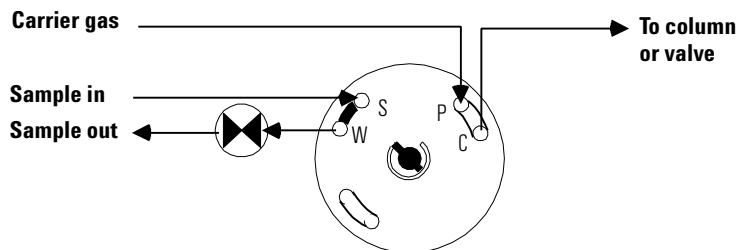


Figure 7 Liquid sampling

Gas sample and column isolation This setup (Figure 8) isolates the column from the flow path when using a gas sampling valve.

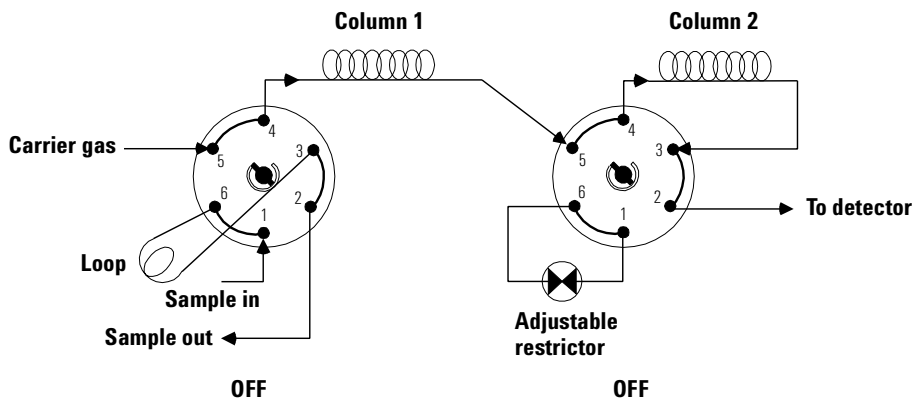


Figure 8 Gas sampling and column isolation

Gas sample/backflush and column isolation This setup (Figure 9) backflushes the gas sample through column 1 while isolating the second column.

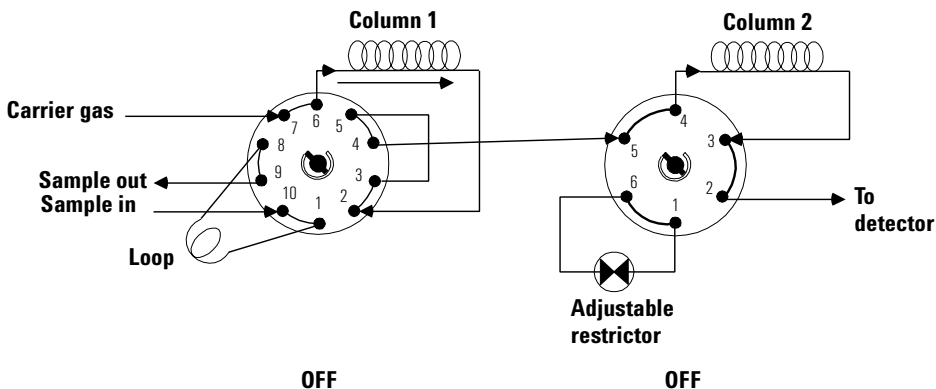


Figure 9 Gas sample/backflush and column isolation



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