

# 8 Analytical Methods

**What is a method?**

**What can you do with it?**

**Creating a method**

Procedure: Storing a method

Procedure: Loading a previously  
stored method

Procedure: Loading the default  
method

**Method mismatch**

User-entered configuration changes

Hardware configuration changes

Procedure: Modifying a previously  
stored method

Procedure: Deleting a stored method

**Method listings**

# Analytical Methods

---

## What is a method?

An analytical method is a collection of setpoints required to run a single sample on the 6890 Series GC. Methods make it possible to restore the instrument to a desired setup without reentering all the setpoints.

You can think of a method as a collection of completed control tables, containing information such as oven temperature programs, pressure programs, inlet temperatures, etc. Actually, there is always an active method in the GC—it is the set of conditions that are controlling the machine now. A method is created by saving these conditions as a numbered method using the [Store] key.

There are three kinds of methods:

- The active method—the setup that you are presently using.
- Stored methods—one of the five methods that can be stored in the GC.
- The default method—a set of default parameters for the GC. It can be reloaded at any time.

---

## What can you do with it?

Methods can be:

- **Created** by setting the GC up the way you want it. This is the active method.
- **Stored** by pressing [Store] and giving the method an identifying number from 1 to 5.
- **Loaded** by pressing [Load] and specifying the method number to be loaded. Loading a method overwrites the setpoints of the active method.
- **Modified** by loading, making the changes you want, and then storing using the original number. The new version replaces the old one.

Methods are viewed in a method status control table, which shows the times and dates when the methods were stored. Access this table by pressing [Method].

STORED METHODS		
1:	<empty>	<
2:	13:25 16 Feb 94	
3:	<empty>	
4:	<empty>	
5:	14:02 16 Feb 94	
Set default method		

**Method status.** <empty> means that no method is stored. If a method is stored the time and date it was last stored are shown.

**Set default method.** Replaces the active method with the default setpoints.

## Creating a method

Because a method is a set of control tables of setpoints used for analysis, it depends on instrument configuration. The following is a list of parameters for which you can store setpoints during method development:

- Oven
- Front/Back inlet
- Column 1 & 2
- Front/Back detector
- Signals 1 & 2
- Aux #1-5
- Post run
- Valve # 1-8
- Run time table
- Front and back injectors
- Sample tray

These parameters are saved when the GC is turned off and reloaded automatically when you turn the instrument back on. However, if the hardware has been changed while the instrument was turned off, it may not be possible to restore all setpoints in the method.

### Procedure: Storing a method

To store a method:

1. Press [Method] and scroll to the method number you wish to use.

```
1:    <empty>
2:  13:25  16 Feb 94
3:    <empty>
  STORED METHODS
4:    <empty>
5:  14:02  16 Feb 94
Set default method <
```

2. Press the [Store] key. You are then asked to confirm the store.

```
  STORE METHOD
Store method 1?
ENTER to store,
CLEAR to cancel
```

3. [Enter] stores the method using the chosen number. [Clear] returns to the STORED METHODS status table without storing the method.

4. If a method with this number already exists, this screen appears:

```
  STORE METHOD
Method 2 exists,
ENTER to overwrite,
CLEAR to cancel
```

- [Enter] to replace the existing method with the new one and return to the STORED METHODS status table.
- [Clear] to return to the STORED METHODS status table without storing the method.

### Procedure: Loading a previously stored method

To load a stored method:

1. Press [Method] to access the STORED METHODS status control table.
2. Scroll to the method you wish to load.

```
1:    <empty>
2:  13:25  16 Feb 94
3:    <empty>
  STORED METHODS
4:    <empty>
5:  14:02  16 Feb 94
Set default method  <
```

3. Press the [Load] key.

You are prompted to either load the method by pressing [Enter] or to cancel this function by pressing [Clear].

4. Press [Enter] to load the method. The selected method replaces the active method.

```
LOAD METHOD

Method 1 loaded
```

[Clear] exits this function and returns to the STORED METHODS status table.

### Procedure: Loading the default method

The GC default parameters can be reloaded at any time.

1. Press [Method].
2. Scroll to Set default method.

```
1: <empty>
2: 13:25 16 Feb 94
3: <empty>
  STORED METHODS
4: <empty>
5: 14:02 16 Feb 94
  Set default method <
```

3. Press [Enter].

See ["The Keyboard and Display"](#).

---

## Method mismatch

Method mismatch messages appear when the method you load contains parameters that do not match the GC's current configuration. If this happens, the setpoints that do not match may be ignored.

Mismatches are caused by user changes (different choice of carrier gas, etc.) or by hardware changes (replace a TCD with an FID, etc.) that are made after the method is stored.

### User-entered configuration changes

You will be warned of user-entered configuration changes between the stored method and the active method. The active method will overwrite the parameter change.

```
LOAD METHOD
Method configuration
mismatch, press
STATUS for details
```

Press [Status] to see which parameters are causing the method mismatch.

```
STATUS - Not Ready
Back det shutdown
Oven temp
METHOD MISMATCH(ES):
Oven maximum temp
Valve config
```

**Method mismatch**—message will appear if hardware or user-entered configuration has changed.

### Hardware configuration changes

If the hardware has changed, some parts of the method may be ignored. You are warned if this happens. For example, suppose you replace the front FID with a  $\mu$ -ECD. If you now load a method that uses the FID, the FID setpoints cannot load. They will be ignored and current  $\mu$ -ECD setpoints will be retained. All other setpoints that can be loaded, will be loaded.

**Procedure: Modifying a previously stored method**

When a method is loaded it replaces the active method.

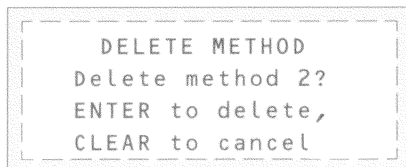
You can modify a previously stored method by:

1. Loading the desired method
2. Making the appropriate changes
3. Storing this method under the same method number (overwrite the original method) *or* store as a different method number



### Procedure: Deleting a stored method

1. From within the method status control table, scroll to the appropriate method and press [Delete]. You will be prompted with the following:



```
DELETE METHOD
Delete method 2?
ENTER to delete,
CLEAR to cancel
```

2. To delete this method, press [Enter].
3. To change your mind and not delete this method, press [Clear].

---

## Method listings

When the 6890 transmits a formatted method listing to an external device, the listing shows the pneumatics setpoints relative to the initial (start-of-run) oven temperature, regardless of the current temperature.

This provides consistent method listings that depend only on the method content and are not affected by the current state of the instrument.

As a result, the pneumatics setpoints listed on an integrator (or other products that use the formatted method listing) may differ from the setpoints that appear at the same time in the 6890 display.