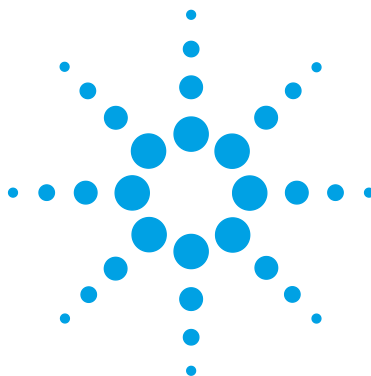




**Agilent
7200 Accurate-Mass
Quadrupole
Time-of-Flight (Q-TOF)
GC/MS System**

Quick Start



Agilent Technologies

Notices

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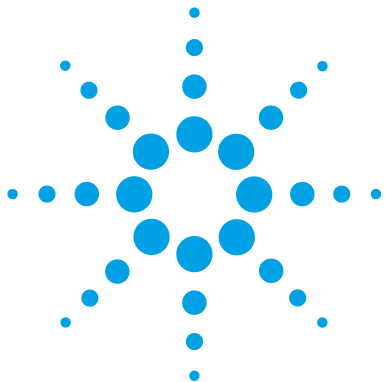
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This book provides a brief summary of your Agilent 7200 Accurate-Mass Quadrupole Time-of-Flight (Q-TOF) GC/MS system and each document written about it.



Overview

Hardware

The **Agilent 7200 Accurate-Mass Q-TOF GC/MS** is a quadrupole time-of-flight mass spectrometer for use with the Agilent 7890 Gas Chromatograph. The 7200 Q-TOF features:

- Three turbomolecular vacuum pumps
- A rotary vane foreline pump
- A quick change independently heated removable ion source (RIS)
- A proprietary internal reference mass (IRM) delivery system for “on the fly” mass axis correction
- A high temperature heated hyperbolic quadrupole mass filter
- A single hexapole collision cell blanketed with nitrogen gas
- A constant temperature flight tube with dual-stage ion mirror
- Fast electronics, allowing fast sampling rates
- An analog-to-digital detector
- An independently heated GC/MS interface
- New ion optics for focusing the ions prior to the flight tube and detector

Documentation for the Agilent 7200 Accurate-Mass Q-TOF GC/MS system includes the Concepts Guide, Operation Manual, and the Troubleshooting and Maintenance Manual. Each of these are described later in this document.

Software

Your Agilent 7200 Accurate-Mass Q-TOF GC/MS system comes configured with the powerful **MassHunter Workstation** software which includes:

- Data Acquisition
- Qualitative Analysis
- Quantitative Analysis
- Unknowns Analysis
- Library Editor
- Report Designer Add-in

Online Help, software demonstration videos, and familiarization guides are provided for each of these, and are described later in this document.

Online Help



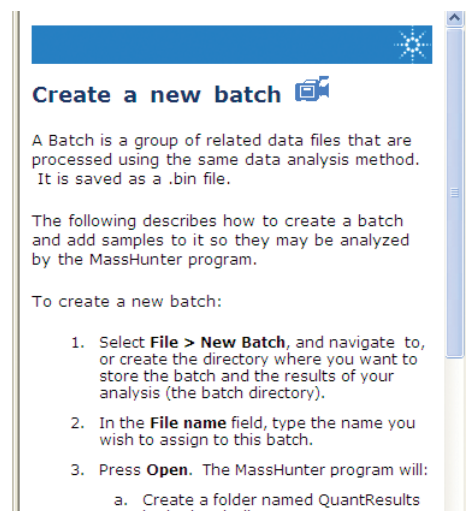
Software demonstration videos

Your online **Help** system includes beginner to advanced software demonstration videos.

- The **Getting Started** videos are designed to give you the information you need to start using your system quickly and efficiently.
- The **Advanced** videos explain some of MassHunter's more intricate, but perhaps less frequently used functions.

Step-by-step instructions

Most Help topics are written as detailed step-by-step instructions which walk you through routine daily tasks. Also included are links to other relevant material and video demonstrations.

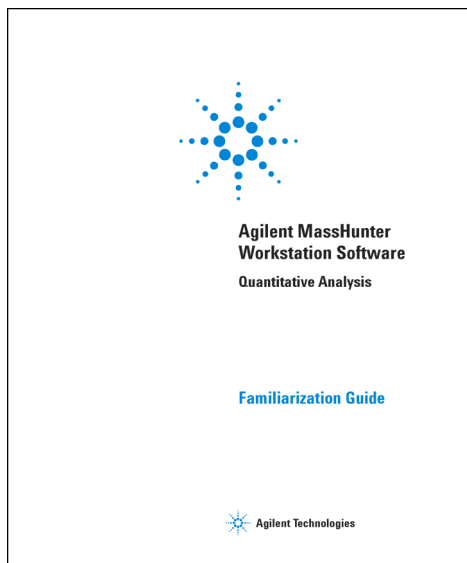


Camera icon



Any topic with the camera icon has a video linked to it. Watch these videos to see a demonstration of using the described feature in your MassHunter software.

Familiarization Guides



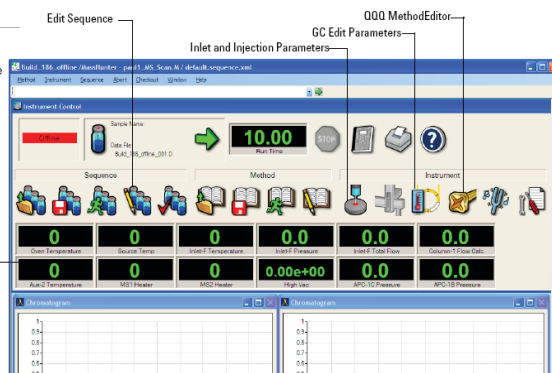
There are several familiarization guides available for your system, including one for:

- **Data Acquisition**
- **Quantitative Analysis**
- **Qualitative Analysis**
- **Unknowns Analysis**
- **Reporting**

These guides provide detailed step-by-step instructions on how to prepare your system for data acquisition, how to create acquisition methods, qualitative methods, and quantitative methods, how to use the Unknowns Analysis software, and how to use the MassHunter reporting features.

The familiarization guides are provided as PDF files, accessible from online Help.

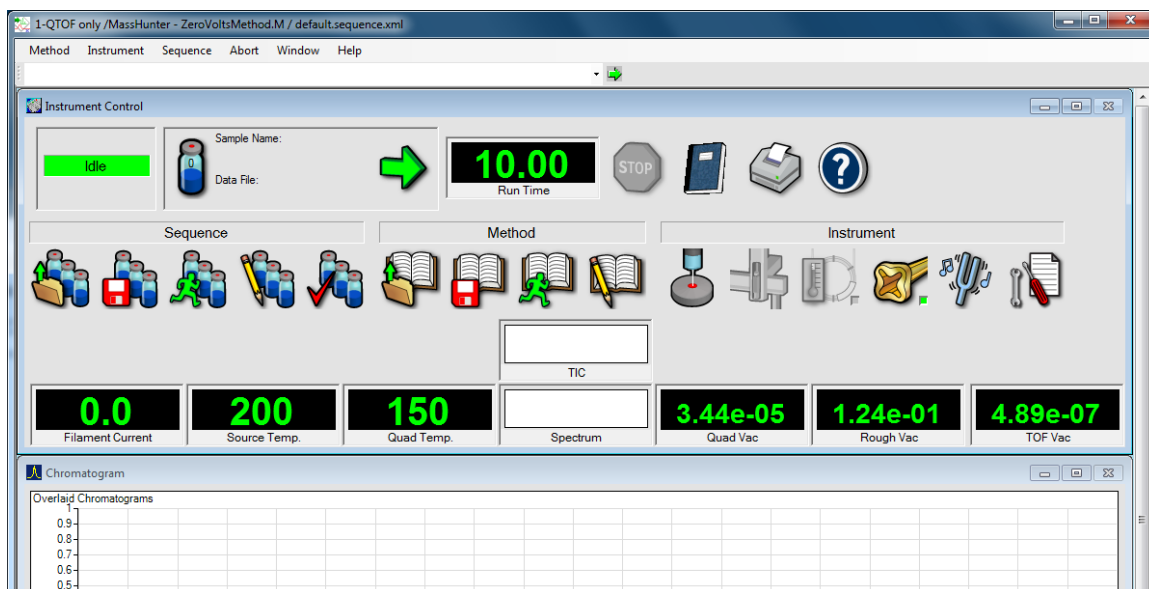
Steps	Detailed Instructions	Comments
2 (optional) If you see a different layout than the one in the figure on the previous page... • If fewer than three windows are present in the main View, or they are in a different arrangement, restore the default layout. • If the column settings are different than those you see in the figure above, restore the default column settings. • If panes other than the Chromatogram pane are present in the Compound Information window, hide the other panes. 3 Scroll from sample to sample until you reach the end of the Batch Table, and then return to Cal-L5. • Use the Next Sample and Previous Sample arrows on the toolbar. • Note the changes in the Batch Table and Compound Information of amphetamine for each sample. • Select sample Calib L4 in the Batch Table to view the Batch Table and Compound Information changes.	• To restore the default layout, click Restore Default Layout on the toolbar before scrolling from sample to sample. • To restore the default column settings, right-click anywhere in the Batch Table window and click Restore Default Columns. • To hide extra panes, click the highlighted icons other than the Show/Hide Chromatogram icon  in the Compound Information toolbar. a Click the Next Sample arrow  in the Batch Table Standard toolbar until the system displays the desired sample. Inspect the changes in the Compound Information window. b To return to Cal-L5, click the Previous Sample icon  in the Batch Table Standard toolbar. c Select any cell in the row for sample Calib_L4 in the Batch Table window to view the changes.	• The default layout is set at the factory and cannot be changed. If you want to create your own layout, see "Task 2. Change result window layouts" on page 49. • Note the linkage between the highlighted data file in the Batch Table and the chromatogram in the Compound Information window.



Data Acquisition Software

From one screen in the **MassHunter Data Acquisition** software you can:

- Start and stop the instrument
- Download instrument settings in real time
- Load, edit, create, or run a method
- Load, edit, create, check, or run a sequence
- Evaluate the MS parameters
- Autotune the MS parameters
- Monitor the real-time conditions of the instrument parameters
- View the instrument logs
- View and print the real-time plot for chromatograms and instrument spectra
- Use the interactive video to help you quickly change the ion source
- Enter acquisition method parameters for the GC and the Q-TOF
- Select and label the total ion chromatograms (TIC) or extracted ion chromatograms (EIC) that you want to appear in the real-time plot
- Press **F1** to see context sensitive online Help



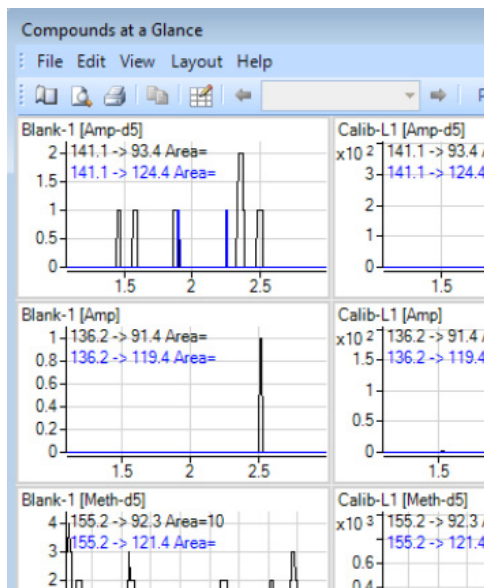
Online Help (**F1**) for the **MassHunter Workstation Data Acquisition** software includes:

Step-by-step detailed instructions

Software demonstration videos

Data Acquisition Familiarization Guide

Quantitative Analysis Software



The **MassHunter Quantitative Analysis** software will quantify very low amounts of sample.

From one screen in the MassHunter Quantitative Analysis software you can:

- Import information directly from the acquisition method
- Use the curve-fit assistant to test all fits and statistics on the calibration curve quality
- Integrate signals with an automated, parameter-free integrator that uses a novel algorithm, optimized for Q-TOF data
- Use the Compounds-at-a-glance feature to review all the chromatograms in your batch at once, side-by-side.
- Quickly scan the batch table and see your quality metrics such as high outliers (in red) or low outliers (in blue)
- Press **F1** to see context sensitive online Help

Amp											ISTD: Amp-d5																					
Amp Method			Amp Results									Qualifier		Amp-d5 (				Qualifier														
Exp. Conc.	IPM	Noise Alg.	RT	Resp.	MI	Calc. Conc.	Final Conc.	Accuracy	Int. Metric	Ratio	MI	RT	Resp.	Ratio	M																	
		RMS																														
2.5000		RMS	2	658		2.4161	2.4161	96.6	Accepted	24.3		2	1397	25.9																		
5.0000		RMS	2	1059		4.8556	4.8556	97.1	Accepted	33.5		2	1298	25.9																		
12.5000		RMS	2	2673		12.8162	12.8162	102.5	Accepted	26.7		2	1377	26.3																		
25.0000		RMS	2	4952		25.9394	25.9394	103.8	Accepted	29.1		1	1304	28.8																		
125.0000		RMS	2	186		124.0262	124.0262	99.2	Accepted	27.0		2	1053	26.4																		
5.0000		RMS	2	1006		4.3336	4.3336	86.7	Accepted	27.7		2	1356	31.1																		
25.0000		RMS	2	4716		26.9911	26.9911	108.0	Accepted	25.6		2	1196	31.1																		
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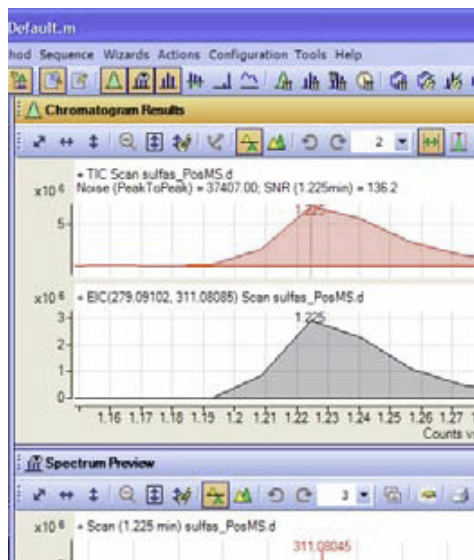
Online Help (**F1**) for the **MassHunter Workstation Quantitative Analysis** software includes:

Step-by-step detailed instructions

Software demonstration videos

Quantitative Analysis Familiarization Guide

Qualitative Analysis Software

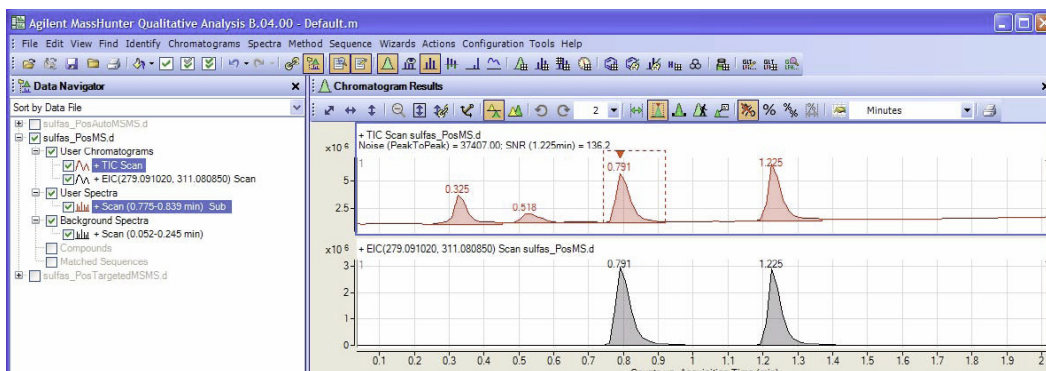


The **MassHunter Qualitative Analysis** software uses advanced data mining and processing tools, including integrated deconvolution algorithms, to rapidly and accurately find all detectable compounds in your samples and easily confirm targets or identify unknowns.

This software presents large amounts of data for review in one central location. From one screen you can:

- Extract chromatograms
- View and extract peak spectra
- Subtract background
- Integrate the chromatogram
- Find compounds and generate formulas
- Press **F1** to see context sensitive online Help

You can also set up methods to automatically do the tasks in the above list, as well as others, when you open the data files.



Online Help (**F1**) for the **MassHunter Workstation Qualitative Analysis** software includes:

Step-by-step detailed instructions

Qualitative Analysis Familiarization Guide

Report Designer Add-in

MassHunter stores all results in XML format and uses Microsoft Excel and the **Report Designer Add-in** for reporting. Many application-specific templates and customized reports, including custom calculations for your specific application needs, are available in the familiar Excel environment.

Using these preconfigured templates, you can easily create reports in the **Data Acquisition** software, the **Qualitative Analysis** software, and the **Quantitative Analysis** software.

You can also customize many of the application-specific templates, including the custom calculations, with the **Report Designer Add-in**.

The image displays the Report Designer Add-in interface, which allows users to create and customize reports using Microsoft Excel. The interface includes a menu bar with options like File, Home, Insert, Page Layout, Formulas, Data, Review, View, Developer, and Add-Ins. A ribbon at the top provides access to various report design tools.

Key features and annotations include:

- Add tables and graphics using tool buttons:** A callout points to the ribbon buttons for adding tables and graphics.
- Drag and drop columns from XML source:** A callout points to the XML Source pane on the right, which lists available data columns for dragging into the report.
- Print preview:** A callout points to the Print Preview button in the ribbon.
- Format headers and footers using Excel:** A callout points to the Excel spreadsheet area, indicating that users can format report headers and footers directly in Excel.
- Use Excel number formatting:** A callout points to a table of data, indicating that users can apply Excel's number formatting to the report data.
- Use conditional formatting for outlier flagging:** A callout points to a table of data, indicating that users can apply conditional formatting to highlight outliers.

The interface shows two report templates: "Quantitative Analysis Sample Report" and "Accuracy Outlier Report". The "Quantitative Analysis Sample Report" displays a chromatogram and a table of peak data. The "Accuracy Outlier Report" displays a table of peak data with conditional formatting for outlier flagging.

Online Help (F1) for the **MassHunter Workstation Report Designer Add-in** includes:

Step-by-step detailed instructions

Software demonstration and training videos and quizzes with instant feedback

Reporting Familiarization Guide

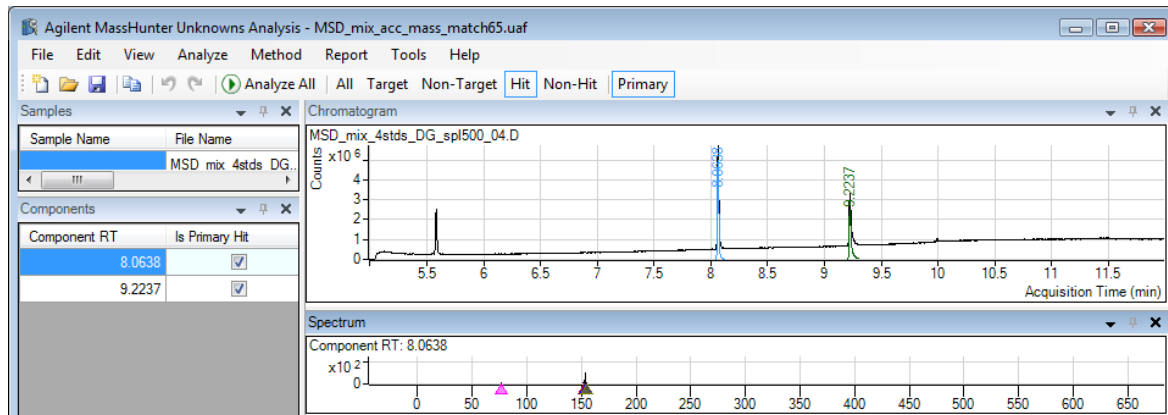
The **Reporting User Information** DVD also includes extensive software demonstrations and training videos.

Unknown Analysis Software

The **MassHunter Unknowns Analysis** software identifies compounds that may be present in a sample batch beyond those that have been identified in the MassHunter Quantitative Analysis software.

From one screen in the MassHunter Unknowns Analysis you can:

- Import data directly from the MassHunter Quantitative Analysis software.
- Use optimized deconvolution and library match algorithms to identify target and non-target hits
- View chromatograms, component lists, spectrums, ion peaks, and molecular structures side-by-side.
- Easily review library match and peak shape metrics of unknown components in table and spectrum formats.



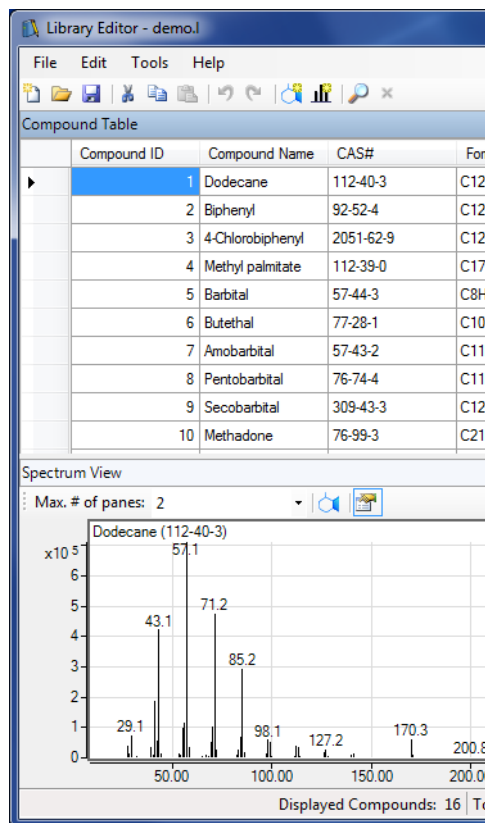
Documentation for the **MassHunter Workstation Unknowns Analysis** software includes:

Step-by-step detailed instructions in online Help

Unknowns Analysis Familiarization Guide in online Help

Software demonstration videos on the Installation DVD

Library Editor Software



The **MassHunter Library Editor** software customizes libraries used to identify compounds and components in the MassHunter Qualitative and Quantitative Data Analysis software.

From one screen in the MassHunter Library Editor you can:

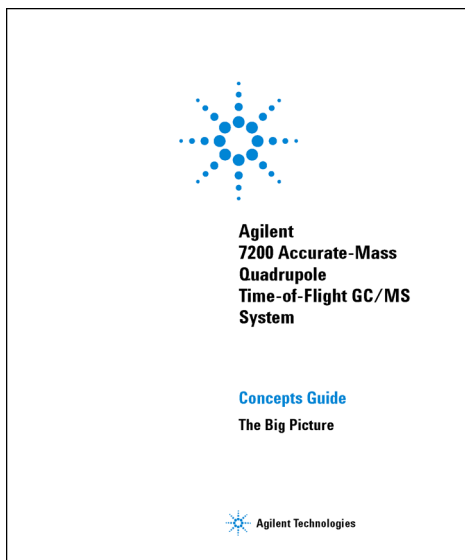
- Add compounds to a library
- Copy spectral data from your data analysis software to a library
- Add a structure to your custom library
- Import JCAMP files into a custom library
- Create a reference pattern library

Documentation for the **MassHunter WorkStation Library Editor** software includes:

Step-by-step detailed instructions in online Help

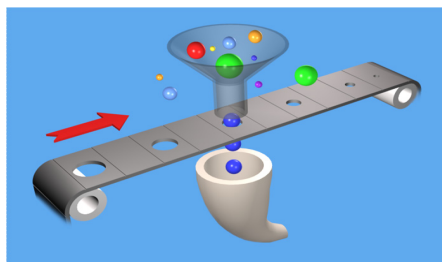
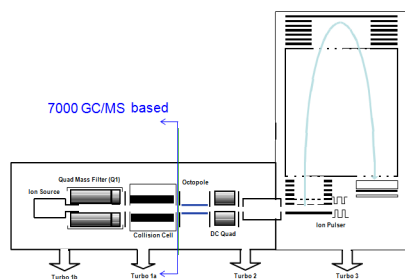
Software demonstration videos on the Installation DVD

Concepts Guide



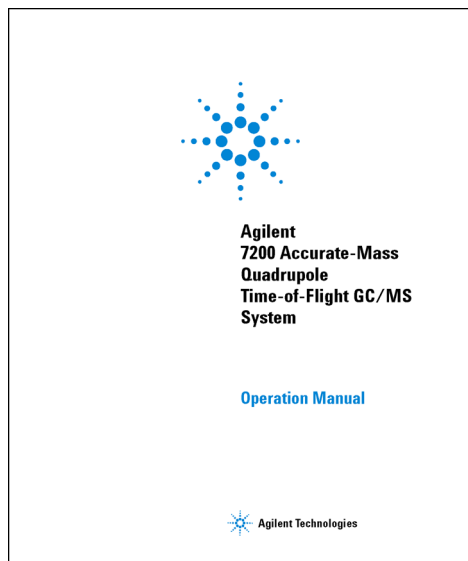
To learn how your Agilent 7200 Accurate-Mass Q-TOF GC/MS system works in conjunction with the MassHunter software, take a look at the **Concepts Guide**. This document includes:

- Conceptual models
- Illustrations
- Screen captures
- An overview of how the 7200 Q-TOF works
- Concepts behind the design of the Agilent MassHunter Workstation software
- Explanations on how the 7200 Q-TOF achieves high sensitivity
- Plus a lot more



The Concepts Guide is included on the **GC and GC/MS Hardware User Information & Utilities DVD**.

Operation Manual

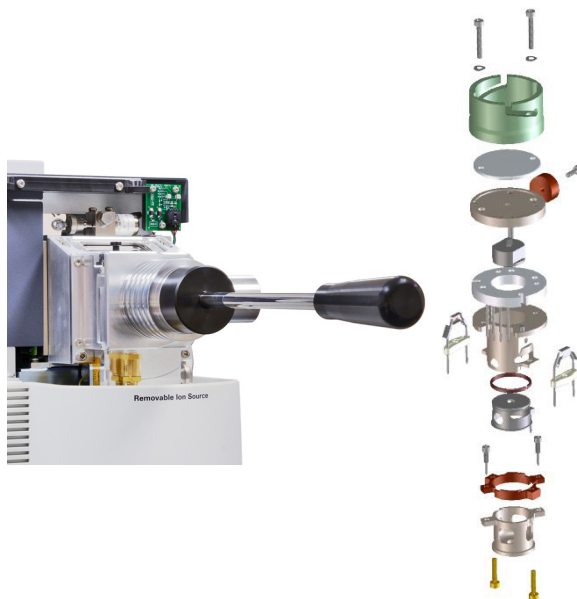
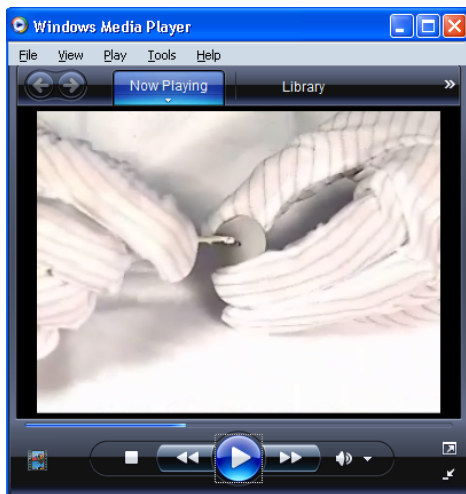


Your Agilent 7200 Accurate-Mass Q-TOF GC/MS system is extremely powerful and flexible.

Refer to the **Operation Manual** for extensive information on operating the instrument and performing routine maintenance on it. Included are **step-by-step instructions and videos** on installing GC columns, operating in electron impact (EI) mode, general maintenance procedures, and more.



Any topic with the camera icon is linked to a video. Watch these videos to learn more.



The **Operation Manual** is included in the online Help.
A copy is also on the **GC and GC/MS Hardware User Information & Utilities DVD**.

Troubleshooting and Maintenance Manual



**Agilent
7200 Accurate-Mass
Quadrupole
Time-of-Flight GC/MS
System**

**Troubleshooting and
Maintenance Manual**



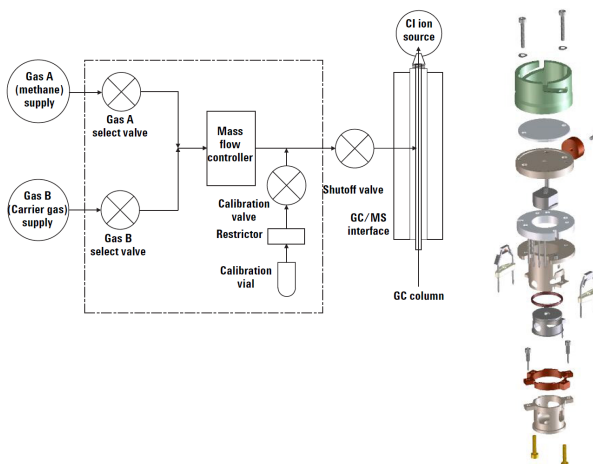
Agilent Technologies

The Agilent 7200 Accurate-Mass Q-TOF GC/MS system consists of a 7890 Gas Chromatograph (GC) and a 7200 Accurate-Mass Q-TOF MS.

The **Troubleshooting and Maintenance Manual** for your system includes step-by-step instructions along with videos, IPBs, and annotated high-resolution photos to help you identify the cause of problems in your system. Also included are detailed procedures for completing common maintenance tasks, sections on the components of the GC/MS vacuum system and analyzer system, and a listing of parts.



Any topic with the camera icon is linked to a video. Watch these videos to learn more.



A copy of this manual is included on the **GC and GC/MS Hardware User Information & Utilities DVD**.

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