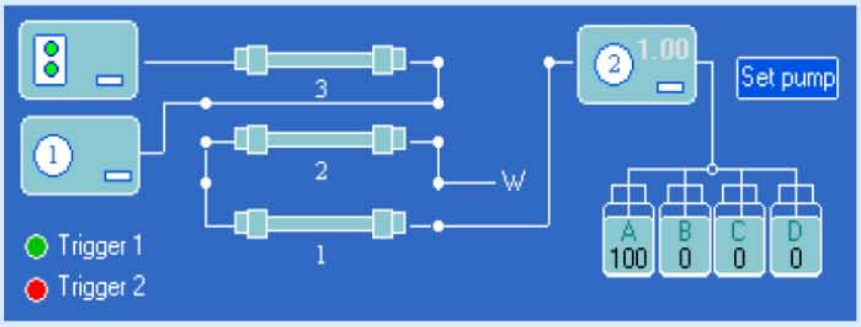
PC-Technologies

LC and LC/MS

Valve Systems



VICI : Valve S'ware Upgrade for Agilent
– Interfaces to ChemStation
Gradient Valve Sytems
Auto LC Injector
LC Column CleanUp Station
2D LC System

LC-04 Cleanup Station

LC-04 Cleanup Station includes 3 models: LC-04SP, LC-04MD, and LC-04CL. They are designed to meet different needs in application and the budget. The 3 models share the same features as follows:

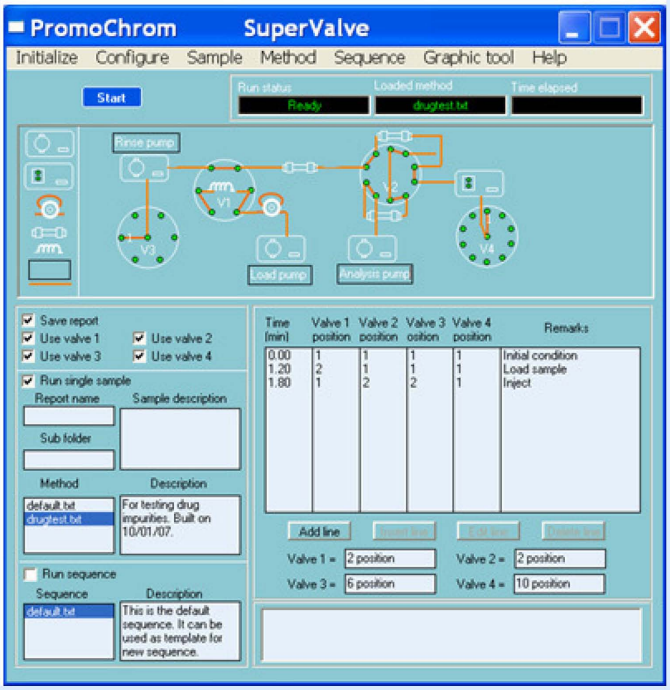
- ***Easy installation.*** The software will search for the instrument automatically. There is no need for setting the computer communication parameters.

- ***User friendly software.*** The graphical user interface provides a real time display of valve positions and services as a control panel.

- ***Easy integration with LC or LC-MS***. LC-04 can be synchronized with other instruments either using a remote cable or through dynamic data exchange. When working with an Agilent instrument, the LC-04 software will start data exchange automatically. Remote cable is not necessary.

LC-04SP valve system provides a versatile platform for building valve based solutions. It can have up to 4 valves. Each valve can be a 2-position/6-port valve, 2-position/8-port valve, 2-position/10-port valve, 6-position stream selection valve, or a 10-position stream selection valve.

The most outstanding feature of LC-04SP is its editable valve diagram. The software provides a graphic tool box. Users can design and edit the valve diagram according to their applications. The software will memorize the diagram. The other special feature of LC-04SP is its high flexibility. Users can choose the number and type of valves according to their needs and can add more valves later.



LC-04MD is a pre-configured valve system for multidimensional LC separation. It simplifies the valve control. Users only need to use simple commands (such as "load sample to column 1", "elute column 2", etc.) while the control software looks after all the necessary operations of the hardware. Now the chemists can focus on the properties of the columns in method development. The methods can also be easily understood by other users when they are transferred for routine use.

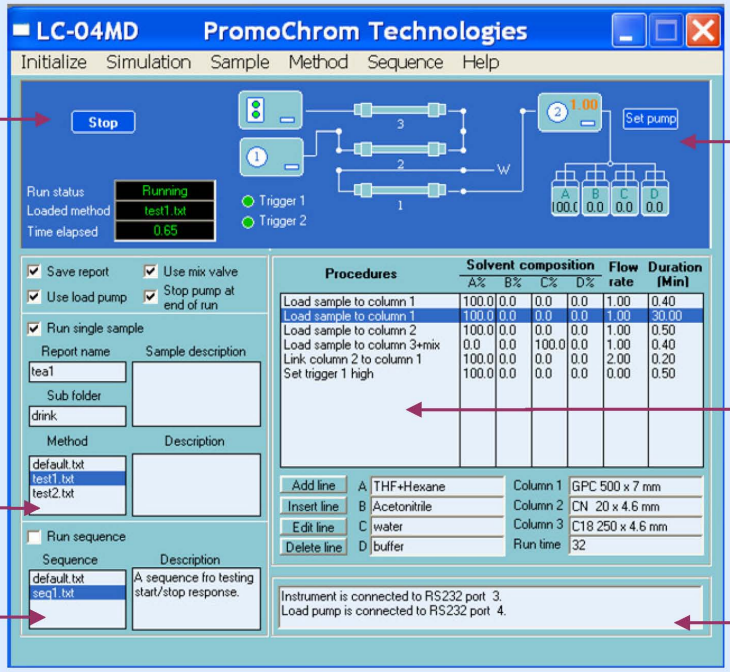
LC-04MD consists of two high pressure switching valves, a solvent mixing valve, an HPLC pump, and the control software. The solvent mixing valve is used to mix up to 4 types of solvents. The high pressure switching valves are pre-connected to fit up to 3 columns. It upgrades a normal HPLC to a multidimensional system.

A very useful feature of LC-04MD is mobile phase modification. When pump 1 is used to elute analytes from column 2 to column 3, the mobile phase may not be suitable for column 3. Then pump 2 can be connected between column 2 and column 3 to have the mobile phase from column 2 modified.

Among the typical applications of LC-04MD are protein characterization in proteomic research and sample cleanup for multi residue analysis of pesticides.

All the components of LC-04MD can be held in a container and inserted into the stack of LC or LC-MS Instruments.

A run can be started by the start/stop button, a remote signal from LC, or by dynamic data exchange



Graphical user interface not only display run status but also serves as control panel. Pump and mixing valve can be switched by a mouse click.

Parameters for a method is easy to set and easy to understand

Available methods and sequence are listed and can be loaded by a mouse click

Notice panel gives instrument status and troubleshooting tips

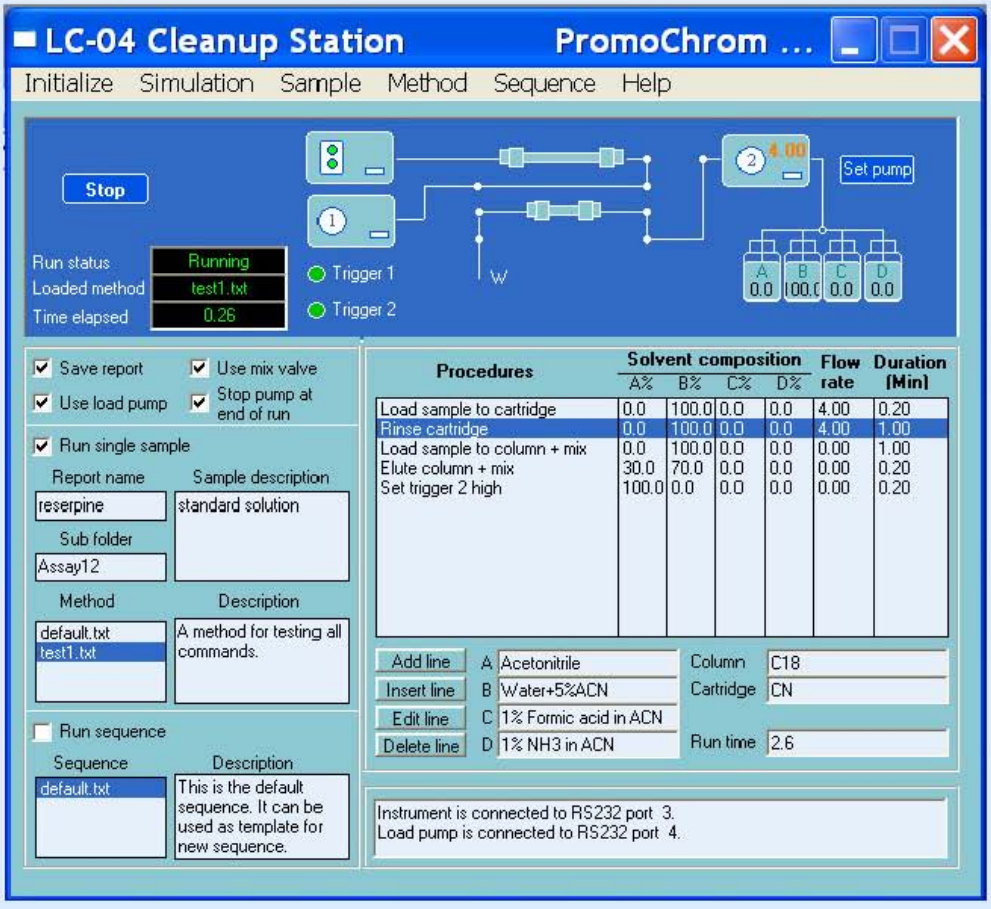
User interface of the control software

LC-04CL has similar components and features as LC-04MD. The difference is mainly in the software. LC-04CL is pre configured for on-line sample cleanup and enrichment.

So far the most successful application of on-line sample preparation is in analysis of biological fluid samples. It relies mainly on the use of restricted access material (RAM). RAM type columns have hydrophilic surface and hydrophobic pores. Small molecules can be retained in the pores like on a reverse phase column while large molecules (such as proteins) are blocked from entering the pores and removed using an aqueous solution.

In a typical application, sample from injector is loaded to the cleanup cartridge. The cartridge is then rinsed using pump 2 (from LC-04CL), while pump 1 (from HPLC) is conditioning the analytical column. After the trapped interference on the cartridge has been removed, the analytes are back flushed to the analytical column for chromatographic separation and detection.

When transferring the analytes from the cleanup cartridge to column, mobile phase modification may be used to narrow down the peaks. This can be done by simply using procedure "Load sample to column + mix" and let pump 2 to use 100% water.



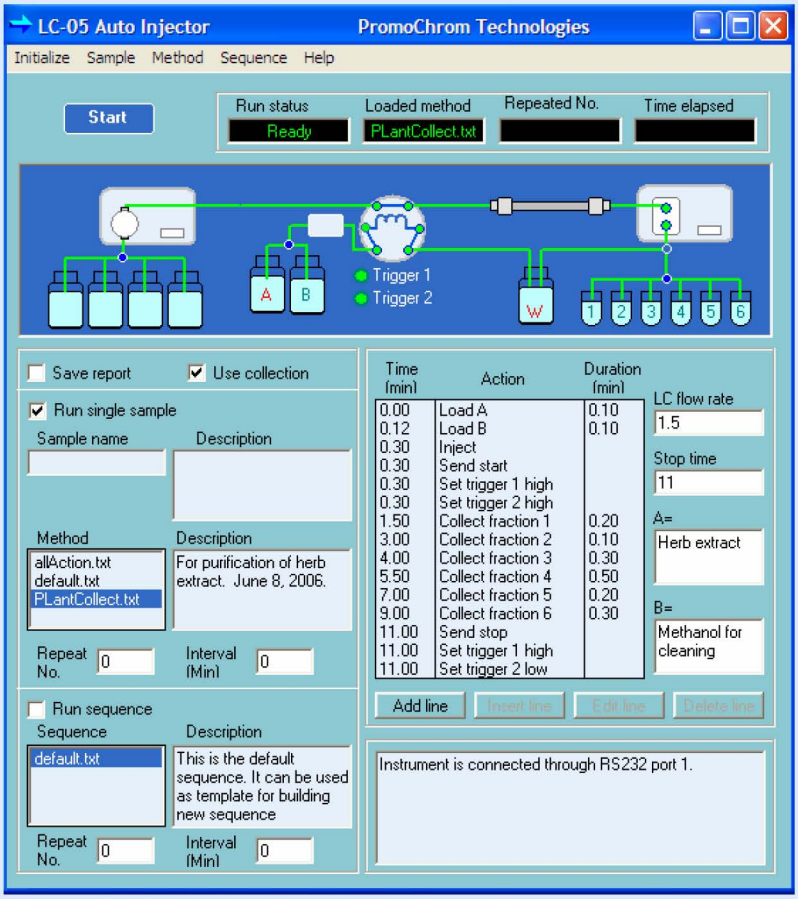
Software for LC-04CL

LC-05 Auto Injector

LC-05 Auto Injector includes an injection valve, a solvent selection valve, and a dosage pump. It is for automatic introduction of samples from a fixed source for HPLC analysis. Typical applications are on-line monitoring. It enables a normal HPLC to fulfill tasks that cannot be done using a HPLC auto sampler.

By adding a valve based fraction collector, large scale purification can be achieved using an analytical scale HPLC by repeated injection of one sample.

The instrument is designed to work with any HPLC or LC-MS that has a remote output (TTL or contact closure). In case of Agilent instruments, the LC-05 software will automatically modify the Agilent Chemstation to enable dynamic data exchange.

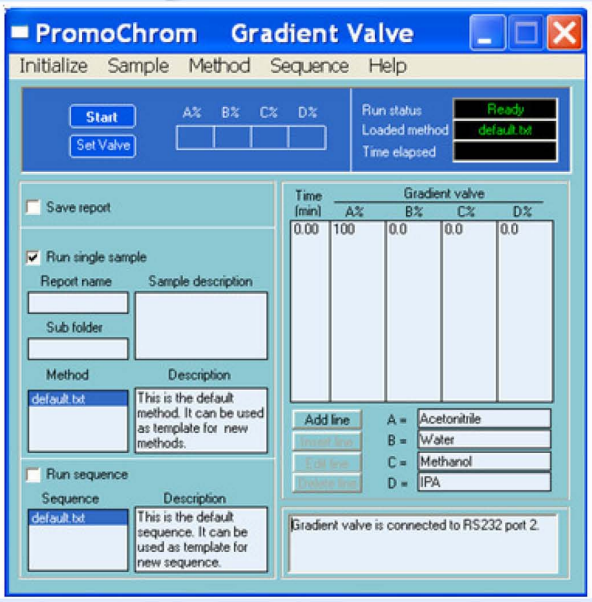


Control software for LC-05 Auto injector

Gradient Valve

Gradient valve provides an economical solution for upgrading an isocratic pump to a quaternary gradient pump. It includes a 4-channel gradient valve, a valve controller, and the control software.

It is designed to work with any HPLC pump that has a remote output. When working with an Agilent HPLC pump, it can also use dynamic data exchange for synchronization. A remote cable is not necessary.



The installation is easy. The software will search for the valve and set computer communication parameters automatically.

The user friendly design and the on-line help information make the use of the product straight forward. No special training is necessary.

Degasser

When an isocratic pump is upgraded to a quaternary pump, an on-line degasser should be used. This is because bubbles can be easily formed when two solvents are mixed during a gradient run. Our mini degasser has excellent degassing efficiency and reliability. Its attractive price and small footprint make it a nice match with the gradient valve.

Specifications:

Number of Channels: 4 or 5
Internal Channel Volume: 480 uL
Wetted Parts: Peek and Teflon® AF
Dimension: 2.9 x 5.0 x 9.8 in (W x H x D)
Power: 15 to 24 VDC @ 0.85 A max (0.5 A typical)
Weight: 6lb (2.7kg)

VICI Valve Control Software

VICI valve control software automates operation of VICI 2-position valves. It works directly with the VICI 2-position microelectric actuators through a RS232 port or a USB port with a USB/RS232 converter.

The software allows VICI valves to be integrated into an Agilent HPLC system using dynamic data exchange.

The valve control software is easy to set up. The software automatically searches for the valve. There is no need for user to set RS232 port number and other communication parameters. The software will even build macros into Agilent Chemstation for data exchange. No manual operations are involved. It is really a plug and play product.

The valve control software is easy to use. The software monitors the status of the valve regularly. The status is displayed for easy observation. The position of valve is shown using LED icons A and B. The valve can be directly switched by clicking the two LED icons. For a more automatic control, methods or sequences can be used. The methods and sequences can be saved and loaded for repeated use. A run can be started by clicking at the start button. When used with an Agilent 1100 LC or 1200 LC, the run of valve can be synchronized with the HPLC using dynamic data exchange. There is no remote cable involved.