HPLC Core Fluid Components

HPLC / Ion Chromatography / Glycation

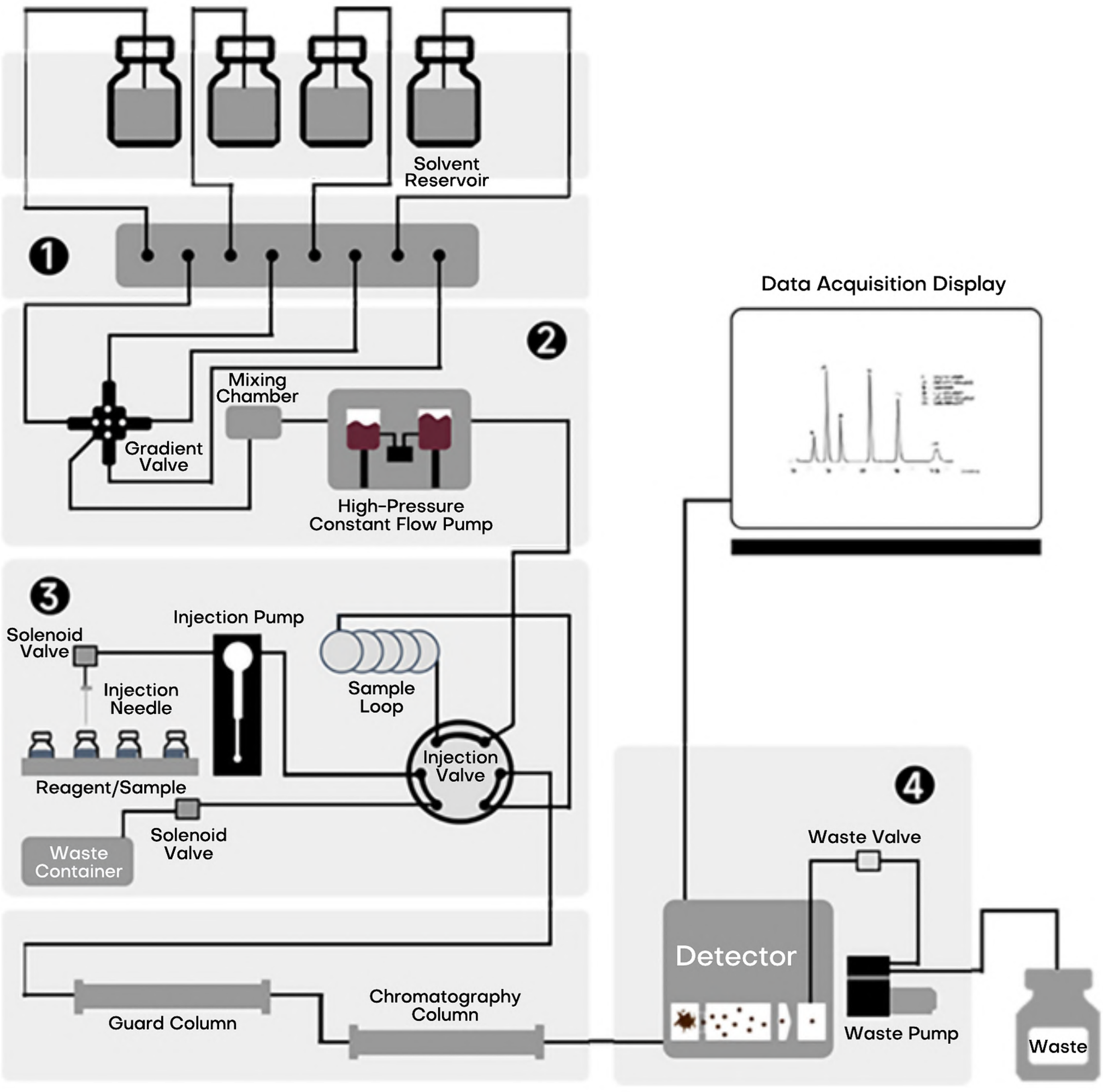
KEYTO One-Stop Solution Service Manual

KEYTO FLUID TECHNOLOGY

Solution

Product recommendations for chromatography instrument operating conditions and application scenarios

HPLC Flow Path Simulation Diagram



For reference only, actual operating conditions are subject to the manufacturer's layout.

① Vacuum Degassing Chamber Module

Removes dissolved gas bubbles from solvent, preventing pump pressure fluctuations and baseline noise

- **Product Name: Degassing Chamber**
  - Wetted Material: PPS/PEEK/FEP/AF2400
  - Thread Interface: 1/4-28 UNF
  - Internal Volume: 285 µL or customized
  - Working Pressure: 0.2 MPa
  - Storage Temperature: -20°C ~ 60°C

- **Product Name: Vacuum Pump**
  - Flow Rate: ≥ 2.5 L/min
  - Vacuum Level: ≤ -0.089 MPa
  - Voltage: DC 24V
  - Load Current: ≤ 0.4A
  - Interface Type: 4mm ID soft tube

- Product Name: **Degasser**
  - Main Channels: 2, 4, 6 channels etc.
  - Wetted Material: PPS/PEEK/FEP/AF2400
  - Voltage: DC 24V
  - Recommended Flow Rate: ≤ 3 mL/min
  - Thread Interface: 1/4-28 UNF

② Quaternary Pump Module

Achieves precise proportional mixing of mobile phases, serving as the core control component for gradient elution

- Product Name: **Gradient Valve (Liquid-Electric Isolation Type)**
  - Wetted Material: PFA, PEEK, FFKM
  - Thread Interface: M6 or 1/4-28 UNF
  - Response Time: < 5 ms
  - CV: ≥ 0.01
  - Pressure Rating: -75 kPa ~ 150 kPa

- Product Name: **Gradient Valve (Cross Type)**
  - Wetted Material: PFA/PEEK/FFKM
  - Thread Interface: M6 or 1/4-28 UNF
  - Response Time: < 5 ms
  - CV: ≥ 0.01
  - Pressure Rating: -75 kPa ~ 150 kPa

③ Autosampler Module

Controls the on/off and switching of reagent and sample flow paths, enabling mixing and dilution

- Product Name: **High-Pressure Rotary Valve**
  - Pressure Rating: 41 MPa
  - Communication: TTL/I2C/GPIO/RS232/RS485/CAN
  - Switching Time: ≤ 100 ms
  - Interface: 10-32 UNF ZDV
  - Wetted Material: PEEK

③ Autosampler Module

Controls the on/off and switching of reagent and sample flow paths, enabling mixing and dilution

- Product Name: **High-Pressure Rotary Valve**
  - Pressure Rating: 41 MPa/69 MPa/103 MPa
  - Communication: TTL/I2C/GPIO/RS232/RS485/CAN
  - Switching Time: ≤ 100 ms
  - Interface: 10-32 UNF ZDV
  - Wetted Material: Ni60/SUS316L/Coated/PEEK/PI

- Product Name: **1013 Solenoid Valve**
  - Material: Valve body PEEK / Diaphragm FFKM
  - Thread Interface: 1/4-28 UNF
  - Voltage: DC 12V / DC 24V
  - Lifespan: 5 million+ cycles
  - Valve Structure: Direct-acting type

- Product Name: **High-Purity Diaphragm Valve**
  - Valve Type: 2-way 2-position/2-way 3-position
  - Port Diameter: 1.5mm
  - Pressure Rating: 0–700kPa
  - Diaphragm Material: PTFE
  - Voltage: DC 12V / DC 24V

- Product Name: **30mm Syringe Pump**
  - Communication: RS232/RS485/CAN bus
  - Valve Type: Multi-port selector/switching type (optional)
  - Wetted Material: PEEK/UHMWPE/PCTFE/ PTFE/Alumina (optional)
  - Displacement: 50/100/250/500μL, 1/2.5/5/12.5mL
  - Interface: 1/4-28 UNF

- Product Name: **60mm Syringe Pump**
  - Communication: RS232/RS485/CAN bus
  - Valve Type: Multi-port selector/switching type (optional)
  - Wetted Material: PEEK/UHMWPE/PCTFE/ PTFE/Alumina (optional)
  - Displacement: 50/100/250/500μL, 1/2.5/5/12.5mL
  - Interface: 1/4-28 UNF

③ Autosampler Module

Controls the on/off and switching of reagent and sample flow paths, enabling mixing and dilution

- Product Name: **30mm Stroke Glass Syringe Assembly**
  - Lead Screw Pitch: 2.5mm, 6mm
  - Motor Current: 2A
  - Displacement: 50/100/250/500μL, 1/2.5/5mL
  - Interface: 1/4-28 UNF
  - Board: Optional

- Product Name: **60mm Stroke Glass Syringe Assembly**
  - Lead Screw Pitch: 2.5mm, 6mm
  - Motor Current: 2A
  - Displacement: 50/100/250/500μL, 1/2.5/5/10/25mL
  - Interface: 1/4-28 UNF
  - Board: Optional

③ Autosampler Module

Controls the on/off and switching of reagent and sample flow paths, enabling mixing and dilution

- Product Name: **Single Glass Barrel Syringe**
  - Dispensing Accuracy: ≤ 0.5%
  - Stroke: 30mm/60mm (optional)
  - Displacement: 50/100/250/500μL, 1/2.5/5/10/25mL
  - Interface: 1/4-28 UNF
  - Pressure Rating: 0.6MPa

- Product Name: **Plunger Pump**
  - Aspiration/Dispensing Repeatability CV: < 1.2%
  - Interface: M6 or 1/4-28 UNF
  - Displacement: 50/100/250/500μL, 1/2.5/5/10/20mL
  - Material: Zirconia ceramic rod
  - Lifespan: 5 million cycles

④ Detector/Waste Module

Completes waste collection and discharge, preventing detector flow path blockage or contamination

- Product Name: **Tube-Insertion Diaphragm Pump**
  - Voltage: DC 12V/DC 24V
  - Flow Rate: 300mL/600mL per minute
  - Interface: 4mm ID soft tube
  - Power: 7W
  - Output Pressure: ≥ 0.2MPa

- Product Name: **Threaded Diaphragm Pump**
  - Voltage: DC 12V/DC 24V
  - Flow Rate: 300mL/600mL per minute
  - Interface: 4 mounting holes M3×6
  - Power: 7W
  - Output Pressure: ≥ 0.2 MPa

Note: The product specifications above have been simplified.
For more detailed specifications, please contact us via email.

Flow Path Connection & Integration Components

For flow path transmission and structural integration between instrument modules

Injection Needles

Sampling needles with various tip styles and gauges

Metal Fittings

Precision metal fittings for high-pressure connections

Three-Way Adapters

Flow path branching and direction change fittings

Plastic Fittings/Tubing

PEEK, PTFE and other polymer fittings and tubing

Metal Tubing

Stainless steel and alloy tubing for fluid transfer

Custom Processing & Supporting Services

For flow path transmission and structural integration between instrument modules

Keyto Precision Processing Center comprises the Special Processing Division and the Mold & Injection Molding Division, building a full-process one-stop precision manufacturing service system from solution design, prototype development to scaled mass production.

The team has deep expertise in chromatography analysis instrument component processing, with extensive industry manufacturing experience. We undertake precision processing of multiple material categories, including metals, plastics (engineering plastics, fluororubber), and hard brittle materials (sapphire, glass, industrial ceramics). Examples include: constant flow pump precision components, chromatography cones, chromatography columns, and other core chromatography instrument components.

2024
Production Start Year

150+
Manufacturing Equipment

70 units+
Testing Equipment

190+
Factory Employees

2,000+
Customers Served

9,000 ㎡
Floor Area

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