

# K-Prep FC1500

K-Prep FC series

## Preparative HPLC System for Factory Scale

K-Prep FC1500 is a preparative chromatographic system for process scale applicable to columns with inner diameter of  $\phi 50$  to  $\phi 100$ . Fully automatic operation by PC is possible. Chromatograph data and instrument data can be recorded automatically. It corresponds to a GMP production plant and is capable of corresponding to validation at IQ/OQ. The software used is in compliance with "Computerized System Validation (CSV)" specified by the Ministry of Health, Labour and Welfare.

Gradient mode	Product number
Isocratic	K-Prep FC1500S
Gradient	K-Prep FC1500G

Main Characteristics	
Maximum flow rate	1500 mL/min
Maximum pressure	10 MPa
Detector	UV/VIS
Dimensions	700(W) × 750(D) × 1250(H) mm
Recommended column I.D.	$\phi 100$ - $\phi 150$ mm

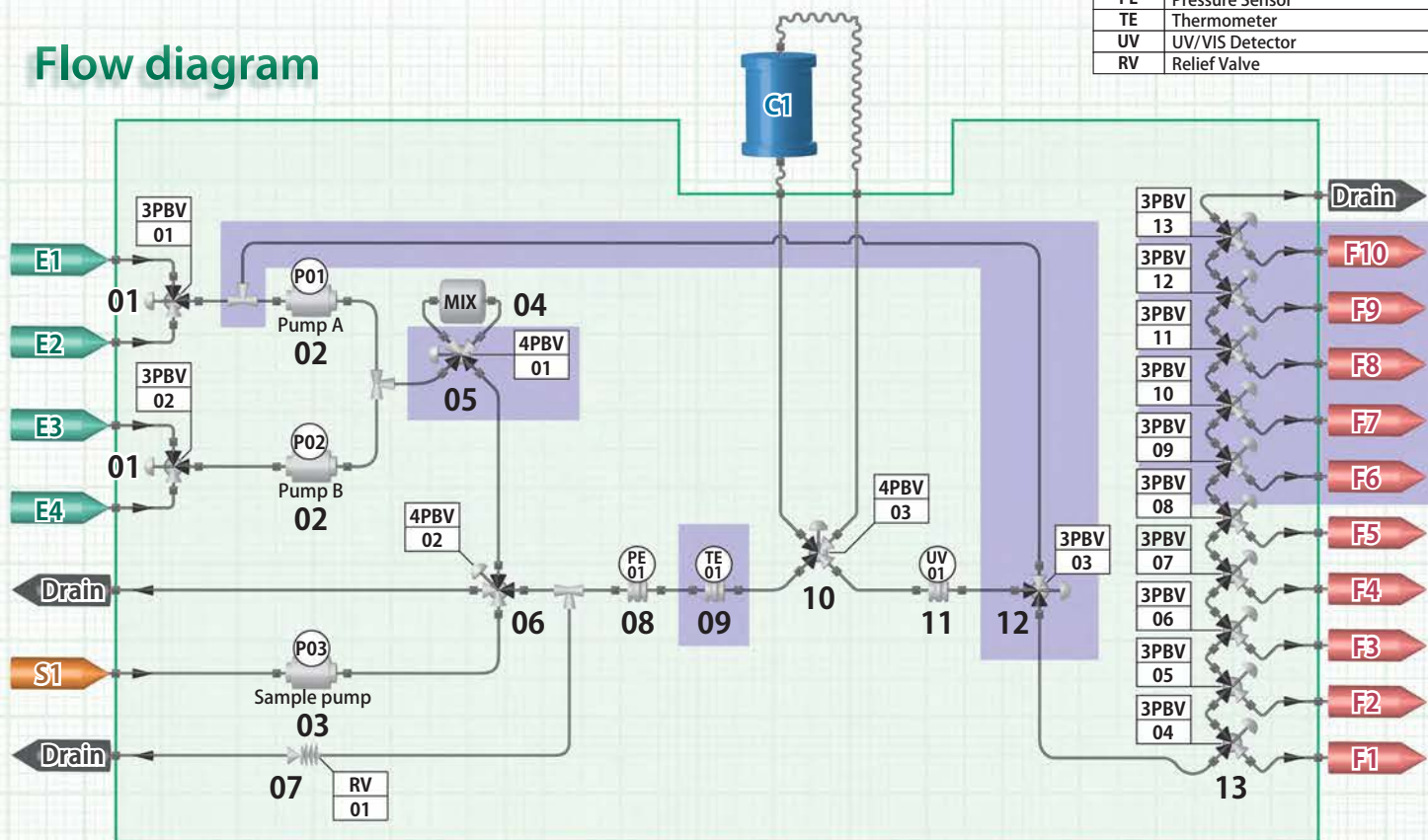


PREPARATIVE HPLC SYSTEM FOR FACTORY SCALE

MARK	NAME
E	Solvent Port
F	Fraction Port
S	Sample Port
P	Pump

MARK	NAME
C	Column
3PBV	Pneumatic Drive 3way Ball Valve
4PBV	Pneumatic Drive 4way Ball Valve
MIX	Mixer
PE	Pressure Sensor
TE	Thermometer
UV	UV/VIS Detector
RV	Relief Valve

## Flow diagram



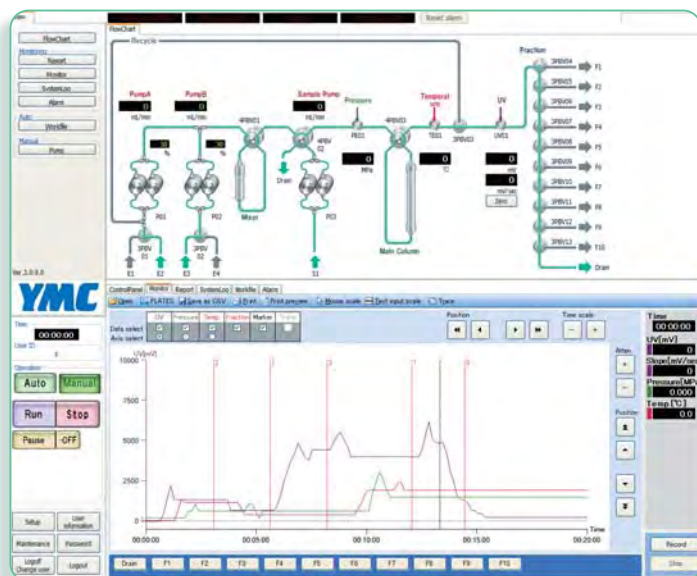
## Specifications

No.	Item	Specifications of devices
01	Inlet Valve	<ul style="list-style-type: none"> <li>Type: 3-way ball valve</li> <li>Wetted material: SUS316</li> <li>Control: Pneumatic auto control</li> </ul>
02	Main Pump	<ul style="list-style-type: none"> <li>Type: Double plunger linear cam</li> <li>Control: Servo motor</li> <li>Maximum flow rate: 1500mL/min</li> <li>Maximum pressure: 10MPa</li> <li>Wetted material: SUS316, Ceramic, UHMWPE, Zirconia, Reinforced PTFE</li> </ul>
03	Sample Pump	<ul style="list-style-type: none"> <li>Type: Double plunger linear cam</li> <li>Control: Servo motor</li> <li>Maximum flow rate: 300mL/min</li> <li>Maximum pressure: 10MPa</li> <li>Wetted material: SUS316, Ruby, PEEK, Zirconia, PTFE</li> </ul>
04	Mixer	<ul style="list-style-type: none"> <li>Type: Static mixer</li> <li>Wetted material: SUS316</li> </ul>
05	Mixer Valve (Option)	<ul style="list-style-type: none"> <li>Type: 4-way ball valve</li> <li>Wetted material: SUS316</li> <li>Control: Pneumatic auto control</li> </ul>
06	Sample Valve	<ul style="list-style-type: none"> <li>Type: 4-way ball valve</li> <li>Wetted material: SUS316</li> <li>Control: Pneumatic auto control</li> </ul>
07	Relief Valve	<ul style="list-style-type: none"> <li>Type: Relief valve</li> <li>Wetted material: SUS316</li> </ul>
08	Pressure Sensor	<ul style="list-style-type: none"> <li>Monitor Pressure of Pump-Out to Column-In</li> <li>Wetted material: SUS316</li> <li>Measurement range: 0-15MPa</li> </ul>
09	Thermometer (Option)	<ul style="list-style-type: none"> <li>Monitor Temperature of fluids passing through Flow line</li> <li>Wetted material: SUS316</li> <li>Measurement range: 0 - 80 deg C</li> </ul>
10	Column Bypass Valve	<ul style="list-style-type: none"> <li>Type: 4-way ball valve</li> <li>Wetted material: SUS316</li> <li>Control: Pneumatic auto control</li> </ul>
11	UV/VIS Detector	<ul style="list-style-type: none"> <li>Selectable wave length: 195 - 600nm</li> <li>Light path: 0.2, 1.0, 2.0 or 5.0mm</li> </ul>
12	Recycle Valve (Option)	<ul style="list-style-type: none"> <li>Type: 3-way ball valve</li> <li>Wetted material: SUS316</li> <li>Control: Pneumatic auto control</li> </ul>
13	Fraction Valve (Option)	<ul style="list-style-type: none"> <li>Type: 3-way ball valve</li> <li>Wetted material: SUS316</li> <li>Control: Pneumatic auto control</li> <li>Standard item: 1ch - 5ch, Optional item: 6ch - 10ch</li> </ul>

※ Optional item : No.05, 09, 12, 13

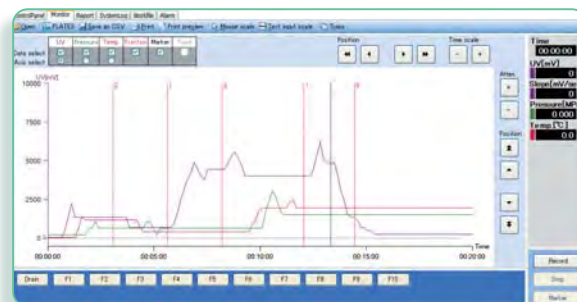
# User-friendly device developed from YMC's 30-plus years of experience in the HPLC field

## Software



### Comprehensive main control screen

Operating status necessary for chromatograph operation can be checked at a glance. Sensory operation can be done and introduced smoothly.

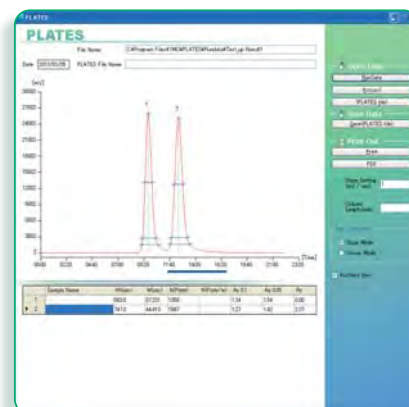


### Monitor screen showing comprehensive information

Measurement information of mounted equipment displayed constantly and is classified by color. Marking of start and completion of fraction is possible.

### Chromatograph data can be printed on site

On the data processing screen, theoretical plate number(N) and asymmetry factor(As) of each peak are displayed with all information necessary for preparative.



## Software specifications

Operational function	Information	Contents
Operation control	Automatic operation (Auto)	A wide range of operations are made possible by flow path composition, pump setting and various operations set by time unit.
	Manual operation (Manual)	Simply clicking on icons makes the pump, valves and flow paths operation easy.
Monitor display	Operating state	The state of various equipment, flow line and sensor value are displayed and renewed in real time.
	Chart	The detector and instrument data and fraction are shown in the chart in real time.
	Alarm state	At alarm occurrence, the details of troubles can be checked.
Operational program creation	Operational program preparation	Items necessary for automatic operation can be set and stored in a file. A maximum 10 files can be interlinked for operation.
Data management (Management of electronic recording)	Collection of operating data (Run data)	Detector data and instrument data are collected and recorded.
	Preparation of operation report (Report)	Reports including information necessary for operation records are automatically generated.
	Backup	Various data are automatically backed up at the time of saving data.
	Encryption	All stored files are encrypted to maintain security.
	Recording of history (System log)	Log-in information, operating state, alarm occurrence, and data storage are automatically recorded together with user information.
Security	Printing	All management data can be printed.
	User information (Management of electronic signature)	Management of user information and log-in information is possible by the combination of the ID and password. User information necessary for log-in can be registered in four steps at the operation level.
System setting	Alarm setting	Alarm of equipment and instruments can be set arbitrarily.
	Security setting	Setting of log-in security is possible.
	Others	Setting of all related systems is possible.
Maintenance configuration	Sensor calibration	Correction of equipment
	Maintenance and inspection	Confirmation of running hours and the number of times of running of equipment is possible.
Contingency preparedness	Measures for communication failures	When communication failure occurs during operation, the operation stops, but the data will be saved.

## Standard specifications

Name		Preparative HPLC system K-Prep FC1500	
Product number		K-Prep FC1500S	K-Prep FC1500G
Flow spec	Pump model	K-1500S	
	Quantity of Main pump	1 pump (No gradient)	2 pumps
	Flow rate range	1 - 1500 mL/min	
	Flow rate accuracy	±2% (over 150 mL/min)	
	Maximum pressure	10 MPa	
Tubing	Pump-Out to Fraction	1/4" × I.D.3.9 mm, SUS316	
	Suction	3/8" × I.D.7.5 mm, FEP, Swagelok fitting	
	Solvent channel	2 ch	4 ch
	Solvent changeover valve	3/8" ball valve	
	Fraction	1/4" × I.D.3.9 mm, SUS316, Swagelok fitting	
	Fraction channel	5ch + 1 drain	
	Fraction changeover valve	1/4" ball valve	
	Sample tubing	1/8" × I.D.2 mm, SUS316	
Sensor		Pressure sensor	
Sample injection		Sample pump	
Detector		UV/VIS detector	
Control		Laptop PC + Programmable logic controller	
OS		Windows 7	
Power		AC100 V 50/60 Hz	
		0.6 kW	1.1 kW
Utility		0.5 MPa dry air	
Dimensions		700(W) × 750(D) × 1250(H) mm	

Before use (installation, operation, maintenance or check-up), of our product, an instruction manual should be carefully read and understood and the safety rules and precautions followed as outlined in a manual.

**The software, "K-Prep", is developed in compliance with 21 CFR Part 11, cGMP, GAMP and CSV.**

### Electronic records

The software is designed on the premise of a closed system and complies with 21 CFR Part 11 Subpart B(a)-(e).

### Electronic signatures

Each user ID and password combination is created, which complies with 21 CFR Part 11 Subpart C and with identification components of CSV guidelines.

### System validation

Lifecycle model of development and validation is constructed and verified at each stage of planning, designing, implementation, and testing. Documents are prepared in compliance with CSV guidelines.

**For more information or to place an order, please contact us. Please feel free to ask our specialists about products or service.**



[www.ymc-group.com](http://www.ymc-group.com)



[sales@ymc.co.jp](mailto:sales@ymc.co.jp)

### Worldwide Availability

YMC America, Inc.  
[www.ymcamerica.com](http://www.ymcamerica.com)

YMC Europe GmbH  
[www.ymc-europe.com](http://www.ymc-europe.com)

YMC India Pvt. Ltd.  
[www.ymcindia.com](http://www.ymcindia.com)

YMC Korea Co., Ltd.  
[www.ymckorea.com](http://www.ymckorea.com)

YMC Shanghai Rep. Office  
[www.ymcchina.com](http://www.ymcchina.com)

YMC Singapore Tradelinks Pte. Ltd.  
[www.ymc.sg](http://www.ymc.sg)

YMC Taiwan Co., Ltd.  
[www.ymctaiwan.com](http://www.ymctaiwan.com)



### YMC CO., LTD.

YMC Karasuma-Gojo Bldg., 284 Daigo-cho  
Karasuma Nishiiru Gojo-dori, Shimogyo-ku  
Kyoto, 600-8106, Japan  
TEL: +81-75-342-4515 FAX: +81-75-342-4550  
[www.ymc.co.jp](http://www.ymc.co.jp) [sales@ymc.co.jp](mailto:sales@ymc.co.jp)

Distributor