



QuantaSep® Chromopack 100L

QuantaSep Chromopack 100L - Column Packer are Sepragen's Automated Column Packing and Qualification System meant for packing its innovative Superflo® Production and Industrial scale Radial Flow Columns. The packing system enables:

- The easy and reproducible packing of production scale Radial Flow columns to be done automatically
- Reduced reliance on “technique” and specific operator skill and ensures a standardized operation across a range of operators
- Reproducibility in column performance by using the same criteria for packing while noting any deviations
- Calculation of column bed integrity performance parameters post packing with pass/ fail criteria
- Periodic re-assessment of column performance after storage and between runs
- Data access operating parameters such as pressure trend or conductivity profile for cGMP record keeping purposes



The Skid is composed of the fluid handling module and the electronic module integrated into a single unit. The fluid handling module contains all the fluid handling components such as Pumps, valves, sensors and interconnecting pipes. The Control and Electronic module contain the PLC, I/O modules, power supplies, transmitters etc. The floor standing unit is mounted on Plastic casters for easy mobility. The Casters can be locked if needed.

The Industrial computer on which the SCADA based control software resides and controls the Skid via a PLC can be operated from a distance to provide for remote control. The software operates in a MS Windows environment and is 21CFR11 compliant.

✓ Flow rates from 10 L/min to 80 L/M.

✓ Capable of Packing 50 to 100L Columns

✓ Full Complement of Fluid control including Slurry Packing Pump and Valves

✓ Sensors for pressure, air, conductivity and optional UV

✓ NEMA 4X Enclosure for Electronic and Pneumatic Control; Optional Purged Enclosure for Hazex package

✓ Easy-to-use PC based GUI software

✓ Manual and Automated Column Packing with

✓ Protocols can be programmed for different size columns and different resins

✓ Post packing Column Integrity Check for Peak Asymmetry and HETP

✓ Onsite Commissioning and Service.

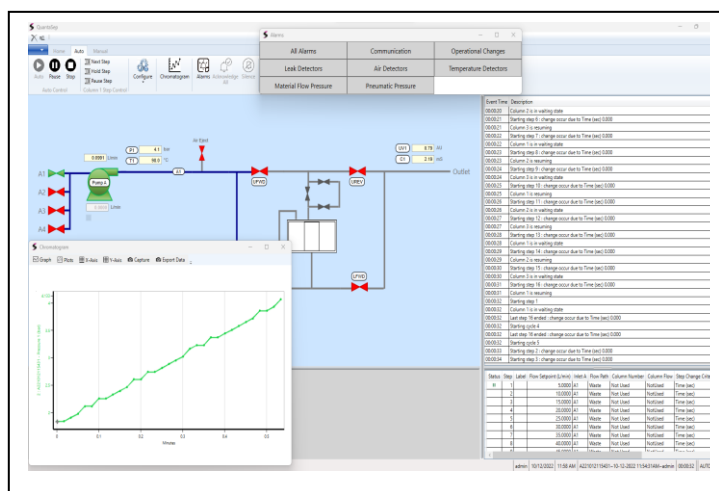


Software: The Right Combination of Simplicity and Power

The PC driven QuantaSep software enables simple and intuitive operation via a main screen that displays a flow diagram of the system with all the main components and their real time status. By simply clicking the mouse, you can open or close the buffer and slurry valves, stop or start a pump, set the flow rates and packing pressure limit. Automation is easy. Pre-Programmed steps take you through the process of Priming the column, loading resin slurry, Pressure based packing and post-packing Bed Stabilization /Cycling. A trend chart shows real time Pressure build up during packing. Once the column is packed the system can be programmed to inject a slug of Conductivity/ UV solution which is rinsed with water. The resulting Asymmetry and HETP data are calculated and checked against an acceptance value for packed bed integrity Pass/ Fail designation.

Fluid Handling Module The fluid handling module contains a diaphragm pump, 4 pneumatic inlet valves, Column flow direction change valves to ensure flow in the forward, reverse, prime and pack positions to the column. The tubing and connections are all sanitary stainless steel or plastic. Air sensor and air purge valve automatically remove air to ensure air- free packing of the column. Pressure sensor is mounted pre-column to measure packing progress and the conductivity/UV sensor is mounted post column to read the sensor value and calculate Asymmetry and HETP. The components are mounted on a mobile and easily accessible skid.

Electrical & Controls Module: This consists of Power entry, fuses, power supplies, transformers, PLC controls module, I/O, pneumatics, sensor electronics and controls and circuit boards, alarm controls. An E-Stop button, cables, computer with software are also included.



QuantaSep Chrompack 100L Specs

General

4 Selectable Buffer Ports – 1 - 1/2" Manifold of four pneumatically actuated diaphragm inlet valves
Multi-Diaphragm Pump – Buffer and Slurry delivery with flow rates from 10 LPM to 80 LPM ($\pm 5\%$ FS)

Flowmeter/Controller: 0-80 LPM $\pm 2\%$ FS

Inline Pressure sensor – Pump discharge has a pressure gauge of 0-7 Bar ± 0.1 Bar to monitor column packing progress.

1" Column Directional Diaphragm Valves - Pneumatically actuated Column slurry packing inlet, slurry waste, priming and air removal, bed stabilization by forward/ reverse flow; post detector waste valve

Auto Air Eject –uses an air sensor and three-way air ejection valve to detect and remove unwanted air before the column disruption of column packing.

Conductivity& Temp Sensor (0.1-200 mS/cm $\pm 5\%$ FS)

UV (280 nm) detector (0-2 A.U. ± 0.2 A.U.% FS) to monitor column bed packing integrity

Leak Sensor: Detects any leak and alarms and pauses run

BPE Construction: piping slopes, minimal dead-legs, drainable, tri-clamp connectors

IP 65/ NEMA 4X Enclosure for Electrical and Pneumatics; and communications cables (Optional)

PC and Software: 21 CFR Pt 11 software, manual and auto operation; controlled access; reports; alarms and event log

Flow Path Materials: Polypropylene, 316L S.S, Quartz, Platinum Cured Silicone Injection Loop

Chemical Compatibility: 1M Sodium Hydroxide, 20% Ethanol

Operating Conditions: Temp 4 °C - 40°C, Pressure 0-4 Bar
Utilities Requirement: Power 380V/ 3 Ph, 22 Amps; Air 0-6 Bar

Physical Dimensions: 48" wide x 60" long x 54" tall



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