

Signature features and advanced engineering for premium chromatography performance

Chromatography systems manufactured by Artesyn®, a Repligen Company, integrate multiple proprietary hardware and flow path innovations to deliver significantly higher product yields and operational success. Systems seamlessly scale from 1/4" - 1" ID tubing. Connectivity supports all major column formats, including full compatibility with OPUS® Pre-packed Columns.

- Deliver optimal process yield with expert engineering
- Reduce hold-up volume with proprietary valve technology
- Increase productivity and reduce deviations with positive software user experience
- Scale from 1/4" - 1" for development and commercial applications
- Connect seamlessly with OPUS® Pre-packed Columns
- Facilitate operation and training efficiency with platform solutions



ARTESYN®

A REPLIGEN COMPANY

Innovative design and engineering increase yield and mitigate deviations

Feature	Benefit
Proprietary valve blocks	Minimize dead legs and hold-up volume (< 2D)
Over-molded connections	Reduce shear stress with constant bore ID, minimize leaks risk and process related impurities
Chromatography-specific valve manifolds	Maximize process yield with < 50% fill volume for precision gradient control
Filter-based air trap	Reduce hold-up volume with bubble trap alternative
Diaphragm pump	Lower shear stress, increase maximum pressure, reduced pulsation
Full OPUS® Pre-packed Column compatibility	Accelerate implementation with plug-and-play columns: 10 cm - 80 cm internal diameters



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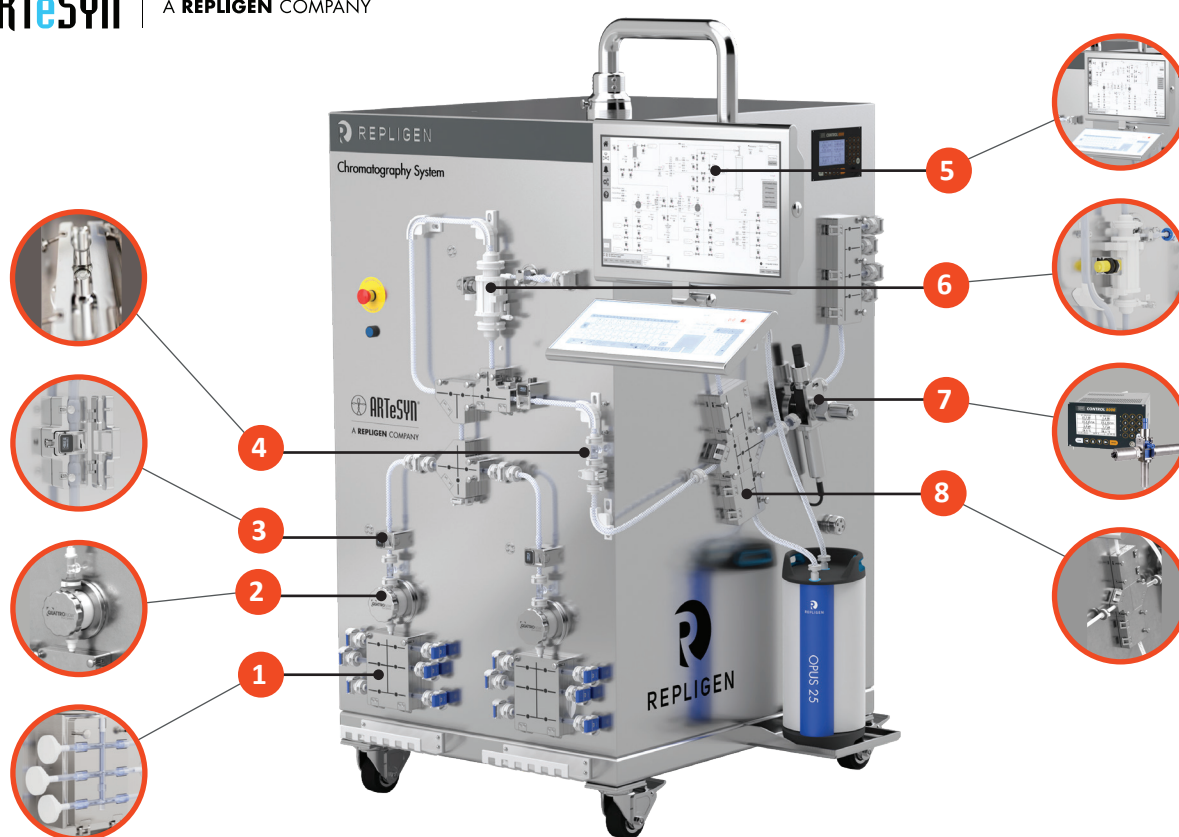
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REPLIGEN
INSPIRING ADVANCES IN BIOPROCESSING

Improve yield and simplify operation

with key hardware features

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Components

- | | |
|---|---|
| 1. Multi-valve block arrays | 5. HMI, touch screen and glass keyboard |
| 2. 4-chamber diaphragm pumps | 6. Non-product contact liquid level switch |
| 3. Non-product contact ultrasonic flow meters | 7. Multi-sensor OPTEK® converter (UV, pH, conductivity) |
| 4. Non-product contact pressure transmitters | 8. Column manifold |

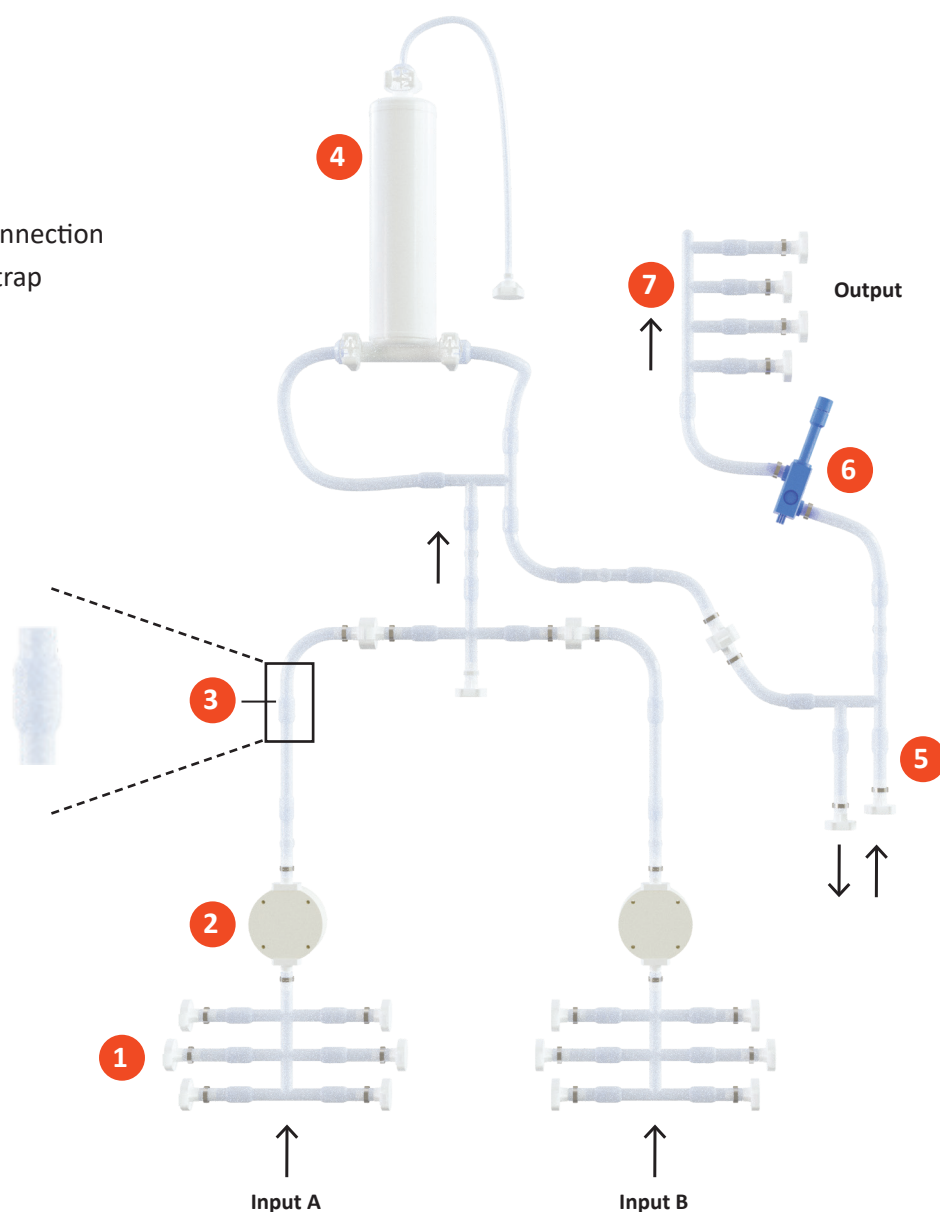
Deliver high recovery, operational simplicity and superior connector strength with engineered flow paths

Chromatography flow paths integrate advanced fluid management technologies, including over-molded connections, pump heads, tubing, filters and sensors in a strong, nearly leak-free, closed and single-use device. Flow paths easily attach to the system to simplify operation and increase process efficiency.



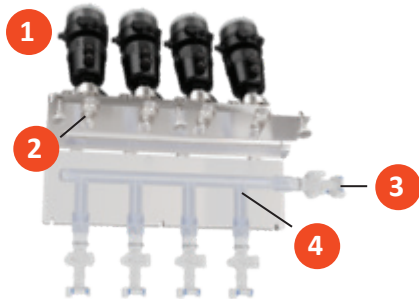
Components

1. Inlet ports
2. Pump head
3. Over-molded connection
4. Filter-based air trap
5. Column ports
6. In-line sensors
7. Outlet ports



Reduce hold up volume with synergistic valve and flow path technology

Injection molded manifold and advanced valve block



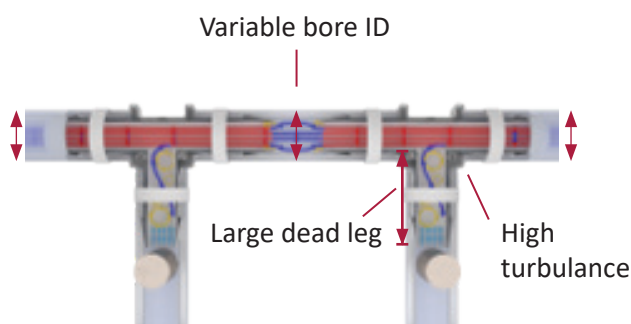
Components

1. Pneumatic actuators
2. Manifold closure points
3. Overmolded joints with sterile connectors
4. Molded single-use flow path

Innovative valve blocks direct fluids through uniform ID, crevice-free flow paths, achieving extremely low turbulence. Multi TEE injection molded silicone inserts, combined with over-molded connections minimize footprint and enable optimum closure point placement which significantly reduces dead leg.

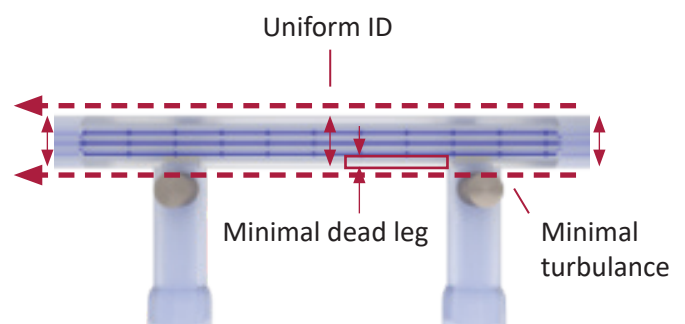


Traditional hose-barbed manifold



- Multiple ID variations promote turbulence
- Hose-barb connections foster leaks
- Large dead legs increase hold-up volume, turbulent flow
- Manifold batch to batch dimensional differences create process variations

Artesyn® molded manifold



- Uniform, crevice free ID minimizes turbulence
- Over-molded connections reduce leaks
- Minimal dead leg improves drainability and reduces hold-up volume
- Injection molded flow paths enable batch to batch dimensional and process consistency

Scale-up chromatography

Platform standardized chromatography systems scale from 1/4" to 1" flow path ID to support flow rates from 1 - 3000 LPH and OPUS® 8-80R Pre-packed Chromatography Columns. Consistent engineering design across the platform facilitates scale-up development studies and technical transfer.



- Scale from 1/4" - 1" while maintaining system architecture and control platform
- Implement off the shelf systems for fast lead times



	1/4" System	1/2" System
System flow rate	1 - 180 L/h	6 - 1000 L/h
Column ID	8 - 25 cm	20 - 45 cm
		

System specifications

Input voltage	110 - 240 VAC 50/60 Hz 1 Φ, 15A supply
Ingress protection	IP45, pump head IP25
Compressed air	5 - 6 bar, oil and particle free
Environmental conditions	
Operating temperature	2 - 50° C, Relative humidity 10 - 90% (Non-condensing)
Fluid temperature	2 - 40° C
Maximum operating pressure	4 bar
Compliance	UL and CE certified

