



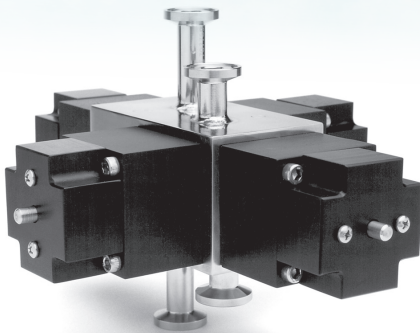
# DELCO

Making Your Products Possible

Made in America

## Smart Fluid Management™ with Delco Valves

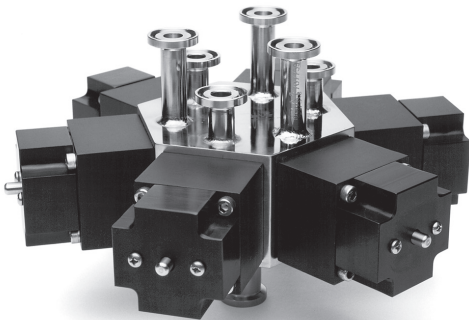
Delco's multi-ported valves optimize clean chromatographic operations



Delco's MarcWorks modular valves are specifically engineered to optimize clean chromatographic operations by improving product purity and increasing product recovery in less time.

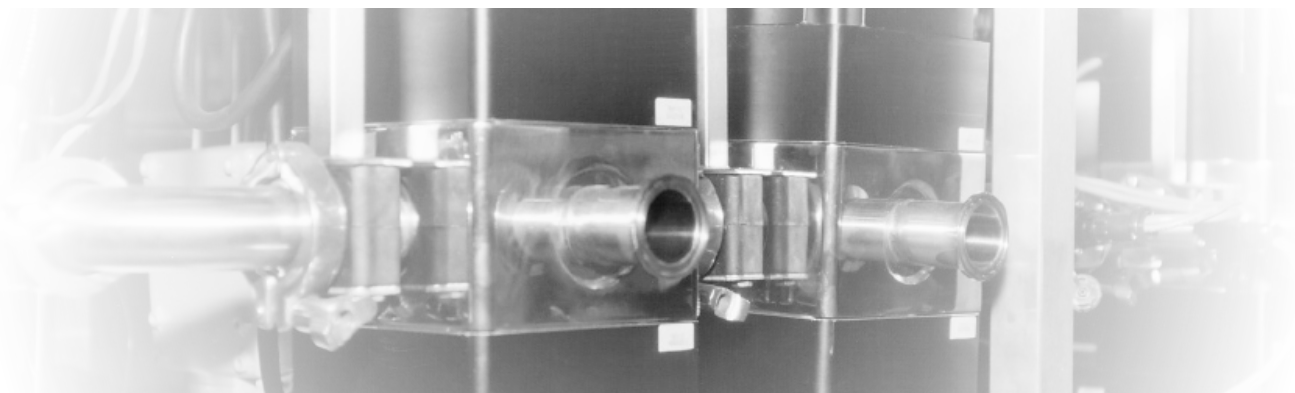
The unique valve body and diaphragm design minimizes total system hold-up volume, eliminates dead legs, and reduces contamination.

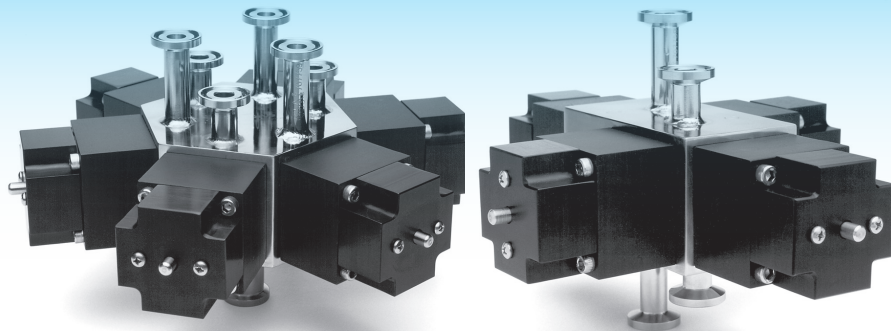
Traditional weir-style valves are not the cleanest approach for directional flow control. Using Delco's diagram valves, complete systems can be constructed with as few as five valve bodies and still provide the functionality for process scale chromatography.



### Advantages of Delco's valves

- Simplifies the complexity of system construction
- Reduces the number of valves needed by up to 50%
- Fewer tees, crosses, elbows, and pipe runs
- Eliminates blocking valves
- Minimal hold-up volume
- No pipework dead legs
- Small footprint and compact size
- Teflon® diaphragm rated at 2 million cycles
- Eliminates chromatographic noise and product contamination





## Optimizing a chromatography system using Delco Valve Smart Fluid Management

### 3-way to 6-way valves

Multi-ported valves are ideal for gradient mixing and fractional collection to reduce contamination and increase yields. The fast-positive action of the valve guarantees an accurate repeatable mix using constant pressure and time pulsing.

### 3-way bypass valve

Bypass valves are typically used for isolating bubble traps, filters or other devices, and can easily be piped directly to a filter housing. The unique 3-way design reduces piping and unions, and reduces the overall system hold-up volume.

### 4-way reverse flow/isolate valve

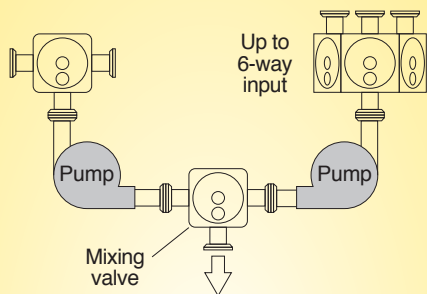
This valve allows the user to reverse flow a chromatography column or other device. With the addition of a 2-way valve, the component can also be isolated from the rest of the system.

### Other valves to improve system performance

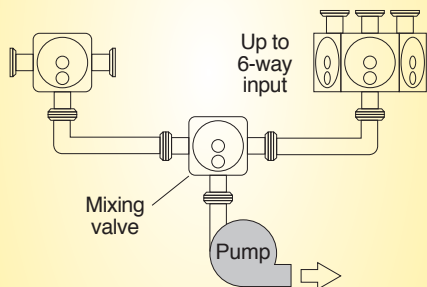
A Delco Valve is easily converted to a completely sanitary back pressure regulator to give better control in the system. Two-way tee valves make ideal drain ports at strategic points in a system.

DELCO VALVE

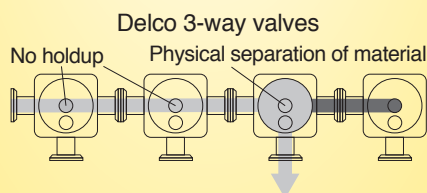
### Traditional gradient mixing



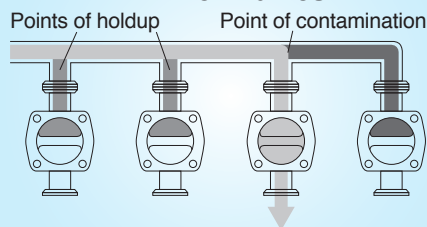
### Time/pressure gradient mixing



### Fractional collection



### Fabricated piping manifold with weir valves



Weir Style



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