

The ChemFlex IC is designed to contain both a drum and daytank within the cabinet. It provides continuous chemical dispense in a reduced footprint package, and enables the unit to be placed in non-HPM environments.



Product Overview

The ChemFlex IC offers all the benefits of a chemical dispense system and daytank in a small footprint configuration. The cabinet has two large compartments, one containing a permanent daytank and the other a supply drum. The drum can be changed without interrupting the flow of chemical to the Points of Use (POUs). As the daytank is internal, the ChemFlex IC eliminates the need for additional floor space and separate daytank utilities. The redundant dispense engine compartments are isolated from each other and the drum/tank compartments.

Features and Benefits

- Cost and size-conscious design
 - Internal daytank reduces footprint and facilitization costs
- Configurable platform
 - Multiple pump size options
 - One or two 10" or 20" filters in each engine
 - Can be operated in single-pass or stabilized filtration modes
- Built in a center of manufacturing excellence
 - ISO9001 certified
 - Formal QA/QC procedures, documentation standards, and final test procedures

Performance and Reliability

- Uptime >99.95%
- MTBF >4000 hours
- MTTR <2 hours
- 10-20 LPM dispense rate

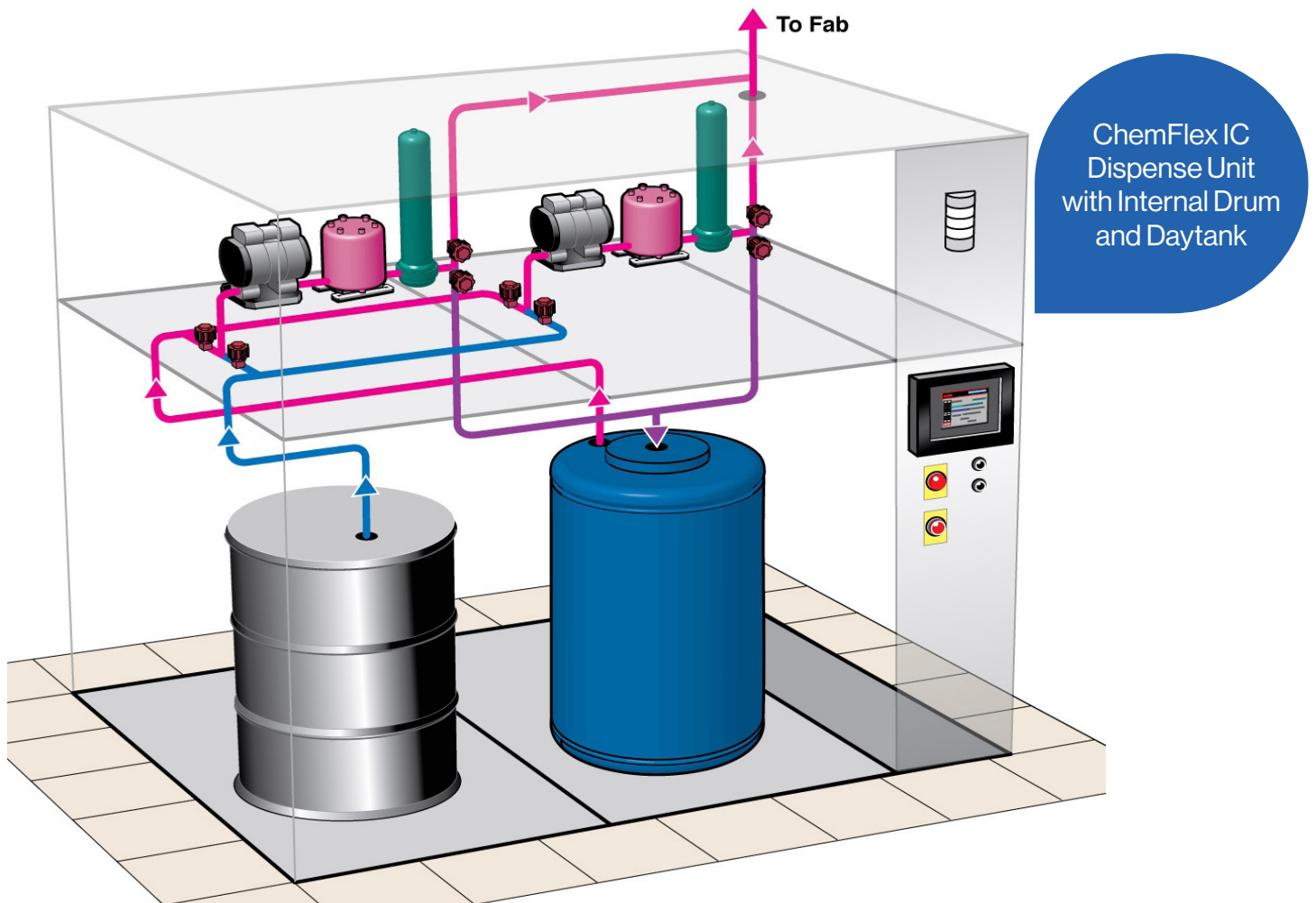
Theory of Operations

The ChemFlex IC has four separate compartments: a supply drum compartment, a daytank compartment, and two isolated engine compartments. Each engine compartment contains a pump, pulse dampener and filter bank. During normal operations, the engine designated as the secondary transfers chemical from the supply drum to the daytank through a filter bank. The primary engine dispenses chemical from the daytank to the POUs. Either engine can be designated as the primary. The secondary engine switches into primary mode on a user-defined schedule, when an operator manually initiates the switch via the HMI, or if there is a fault in the primary engine.

The dual engines provide full redundancy because both pumps can draw from the drum and daytank. The engine isolation enables pump maintenance and filter changes while the ChemFlex IC continues to supply the fab with chemical.

The supply drum is mounted on a scale platform in one cabinet compartment. When the drum is empty, the operator is notified to change the drum while the ChemFlex IC continues to dispense chemical from the daytank to the POUs. A roller assembly enables easy drum changes. In the event of a daytank fault, chemical can be dispensed directly from the supply drum to the POUs. The ChemFlex IC can be user-configured for either single-pass or stabilized filtration. In addition, the secondary engine can be configured to polish the supply drum when it is not transferring chemical.

Example Flow Path



Safety Features

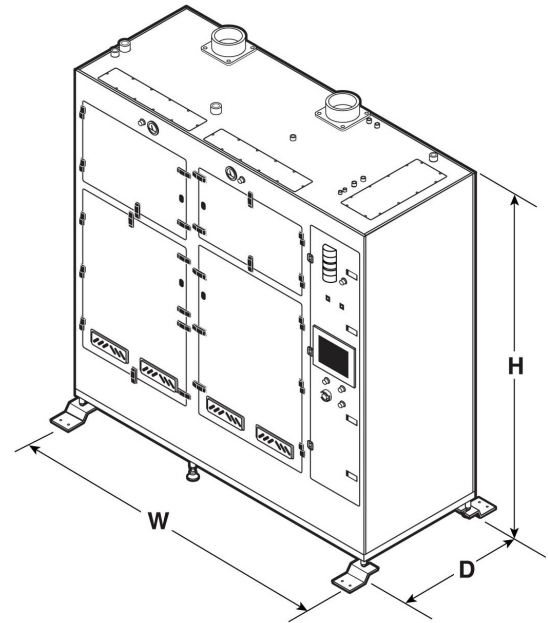
- Segregated cabinet compartments with 110% volume containment
- Dual-level cabinet leak detection
- Door interlocks
- DIW or N₂ spray-guns
- CDA or N₂-purged electrical compartment
- Audible and visual warnings and alarms
- Local and remote EMO
- Transparent door panels for safe viewing and trouble-shooting
- Options for exhaust sensor type, high-flow sensor and other instrumentation
- Designed for compliance with SEMI S2, S8 and S14 guidelines, and CE low-voltage, Machinery and EMC directives
- Optional UV/IR fire detection and CO₂ fire suppression for solvent systems

Typical Utility Requirements

Utility	Connection Type	Flow/Pressure
Electrical	N/A	24 VDC, 7A
UPW Supply	½" Flaretek	40-60 psi
UPW Return	½" Flaretek	<25 psi
CDA	½" SST compression	100-125 psi
Process N ₂	½" SST compression	100-125 psi
Exhaust	Dual 6" connections	0.5" WC minimum

Cabinet Layouts & Dimensions

Cabinet Type	W x D x H in Inches (mm)
ChemFlex IC	96" x 38" x 94" (2439 x 965 x 2388)



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