

The Sheffield SS 300-LF-P2

A stainless steel, 3" separator in liquid service with 2 filters configured in parallel

Designed and built for everyday use in medium to light applications or as a replacement for the by-pass filter

The **SS 300-LF-P2** is recommended for liquid samples with light to moderate particulate or immiscible liquid contamination. These routine applications require a high performing, reliable separator with 2 excellent hydrophobic filters, providing more efficient filtration by using either two 2 micron filters or two 15 micron filters in both chambers. The SS 300-LF-P2 is recommended as a replacement for standard 2.25" by-pass loop filters. It may also be used as a light duty separator, or as a "fail-safe" filter to guard against analyzer problems during upsets or other extraordinary events. The Sheffield patented dual chamber separator provides the most economical separation and filtration with a minimum of lag time within the sample conditioning system.

Kinetic Separation Technology is the most innovative technology available today for sample conditioning.

The Sheffield patented dual chamber separator provides maximum separation of immiscible liquids and particulate. Although kinetic energy will physically separate impurities, it will not alter the chemical composition of the sample.

Features	Benefits
Small footprint separator with twice the filter surface area as standard by-pass filters	→ Fits easily into existing applications; easily installed in sample conditioning panels
Industry size filter	→ Easily replaces existing filters and is a stock item that can be quickly and easily installed
Extremely Versatile	→ Operates across a wide range of pressure, flow rates, and temperatures
Hydrophobic Fluorocarbon Teflon [®] Lined Filters	→ Can handle significant amounts of free water or particulate without clogging
Parallel Filters	→ Provides greater surface area resulting in more efficient filtration, especially in very heavy particulate loading, and less frequent filter changes
Dual Chamber Construction	→ Maximizes separation and filtration; longer filter life
No Moving Parts	→ Less maintenance, greater reliability
Straight Fittings with O-ring Seals	→ Easier filter changes



The Sheffield Kinetic Separator uses kinetic energy to separate the representative analyzer sample from impurities found in a process stream. This is accomplished by establishing a flow path through the 1st chamber and reversing the flow of a relatively small Bypass sample. Solid contaminants and immiscible liquids in the liquid samples will not negotiate this complete reversal of flow direction and exit the bottom of the separator. The Kinetic Energy caused by this reversal initially removes the impurities from the Bypass stream through gravity and inertia. To further effect this separation and filtration a second kinetic chamber with a hydrophobic filter polishes the sample. The second chamber also experiences Kinetic Energy Separation and removes the remaining impurities from the Slip Stream. The sample is lighter than immiscible liquids and solids (particulates) in a liquid sample.

How It Works

SS 300-LF-P2 Liquid with 2 Filters in Parallel

Initially, the flow path enters the first and second chamber. System pressure forces a reduced Slip Stream flow in the reverse direction; the main stream flow continues through the first and second chamber and exits the bottom of the filter housing. Gravity and inertia cause kinetic separation of the slip stream. The sample is lighter than immiscible liquids and particulate in a liquid sample.

Both Chambers of the Sheffield Kinetic Separator in this model are designed for installation in the bypass flow path. This model embodies a special 2.25 inch, 2 or 15 micron Teflon-lined (hydrophobic) self-cleaning low pressure drop Fluorocarbon filters. The Kinetic Effect acts as a pre-filter in both chambers.

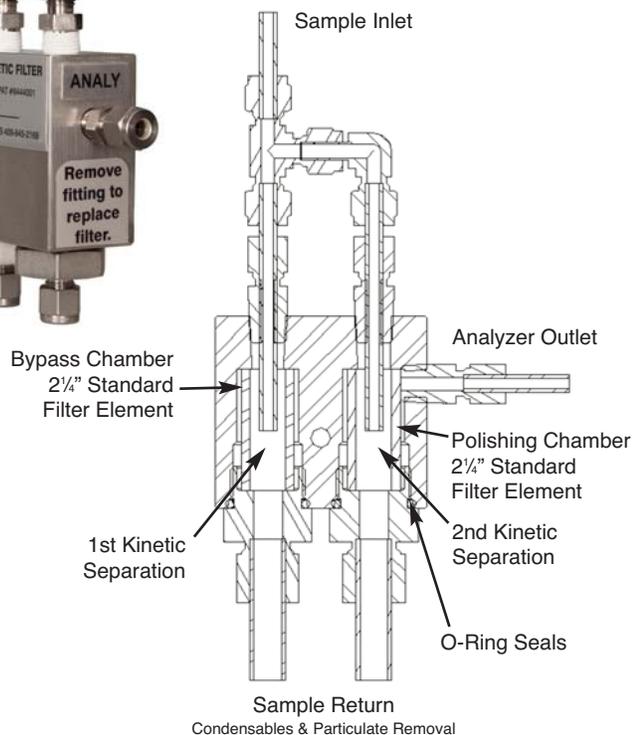
Both filter elements have a special Teflon®-lined interior, which repels water and particles as these impurities pass through with the return. Finally, both chambers exit the bottom of the Dual Filter Housing to a common juncture with the return flow. These attributes combine to make the Sheffield Kinetic Separator virtually maintenance free.

The **SS300LF-P2** is designed for Medium to Medium light particulate and low water contaminants (compared to other Kinetic Separators) in a liquid hydrocarbon sample stream. In normal operation it furnishes 2 Kinetic Energy Separations as well as twice the surface area of existing Bypass filters. It is generally installed in the Bypass Loop. The Kinetic Energy Separation acts as a pre-filter for particulate and immiscible liquid removal. It employs either a 2 or 15 micron 2.25" hydrophobic filter in parallel to accomplish longer filter life by more first pass surface area. Kinetic Energy Separation Technology has proven to be significantly superior to existing separation technology while furnishing efficient dual hydrophobic, fluorocarbon, filtration.



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SPECIFICATIONS

Max. Pressure: 750 PSIG
 Max. Temperature: 300°F
 Max. Flow: 25 SCFH - 10 GAL/HR
 Pressure Drop: 2 PSIG
 Materials of Construction: 316 SS
 Dimensions: 1.5" x 3" x 3"
 Inlet: 1/4" TUBE
 Outlet to Analyzer: 1/8" TUBE LIQ
 1/4" TUBE GAS

Glenn Sheffield



CCST Level III

Teflon® is a registered trademark of E.I. DuPont
 Kalrez® is a registered trademark of DuPont Performance Elastomers L.L.C.
 Patent # 6,444,001 of the Sheffield Kinetic Separator (other patents pending)



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