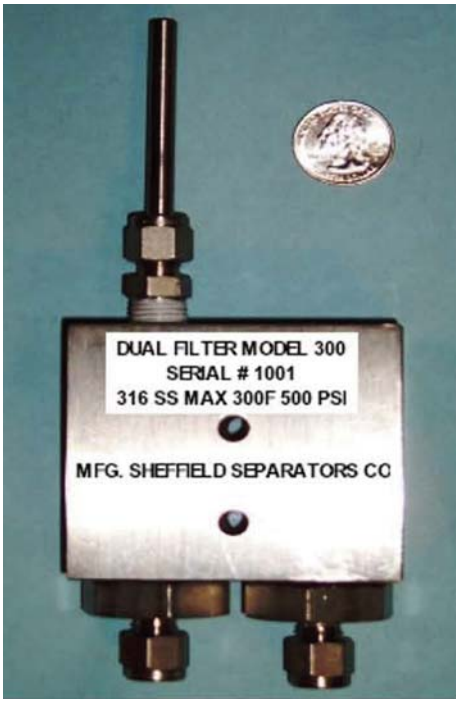
Sheffield Separator Co.

GAS & LIQUID SEPARATORS

Instruction / Installation Manual

SS300



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The Sheffield Kinetic Dual Filter -- SS-300 Series

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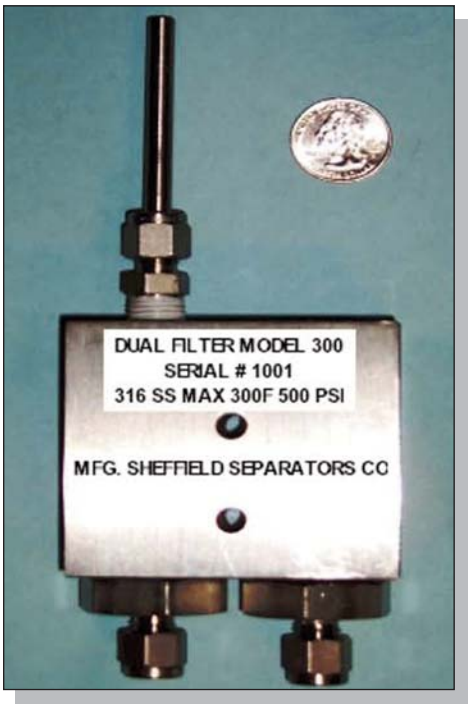
"...the process sample presented to the process analyzer should be of similar quality to the calibration material presented to the analyzer..." – from *Process Analyzer Sampling-Conditioning System Technology* by Robert E. Sherman.



Improvements to the Sample Handling System are the single most important decision concerning Analyzer System Life Cycle Cost. Most Sample Conditioning Systems employ a large filter or a separator in the fast loop to prefilter the sample before it enters the Sample Conditioning Panel. A single 2 1/4" filter is normally used in the panel which has only one choice of porosity and is very poor at removing condensables.

The **Sheffield Dual Chamber Filter** uses two (2) x 2 1/4" standard filters to provide twice the surface area without significantly increasing lag time. The filters are configured in series to allow for graduated filtration i.e., high porosity (e.g. 15 micron) followed by a polishing (e.g. 2 micron). Both filter chambers employ kinetic energy to force a complete reversal of the analyzer sample flow while the remainder of the sample is directed to low pressure return. Heavier particulate and free water will not negotiate flow reversal; clean sample will move upward. This significantly improves separation and cleaning of the analyzer sample. Condensables and particulate will be removed through the exit tubing of both chambers, adding to the efficiency and life of the filters. Although kinetic energy will separate impurities, it will not alter the chemical composition of the sample.

The **Sheffield Dual Chamber Filter** is extremely versatile. It may be utilized as a replacement for existing filters to remove solids and impurities from gas and liquid samples. It will separate liquids from gas samples and remove free water from liquid samples.

This economical replacement unit will minimize the downtime of analytical systems and decrease Gas Chromatograph valve maintenance. Replacement of existing Sample Conditioning devices requires very little manpower or cost. This is the only patented kinetic filter assembly. See **Back Side** for cut-away and installation drawing.

SHEFFIELD SEPARATOR MODEL SS300
SPECIFICATIONS 0311

MAXIMUM PRESSURE: 500 PSIG

MAXIMUM FLOW RATE:

GAS:	25 SCFH	w/ 100 psig
LIQUID:	10 GPH	w/ 100 psig

MAXIMUM TEMPERATURE: 300º F (149º C)

PRESSURE DROP: 2 PSIG (Approximate)

MATERIALS OF CONSTRUCTION: 316L Stainless Steel (Carbon content .019)
Other Materials Upon Request

DIMENSIONS: 1.5” X 3” X 3”

INTERNAL VOLUME: 16 cu. cm.

INLET: ¼“ Tube (¼” NPT-F)

OUTLET TO ANALYZER: 1/8” NPT

OUTLET TO RETURN: ¼” Tubing (1 1/16” Straight - SAE 12)

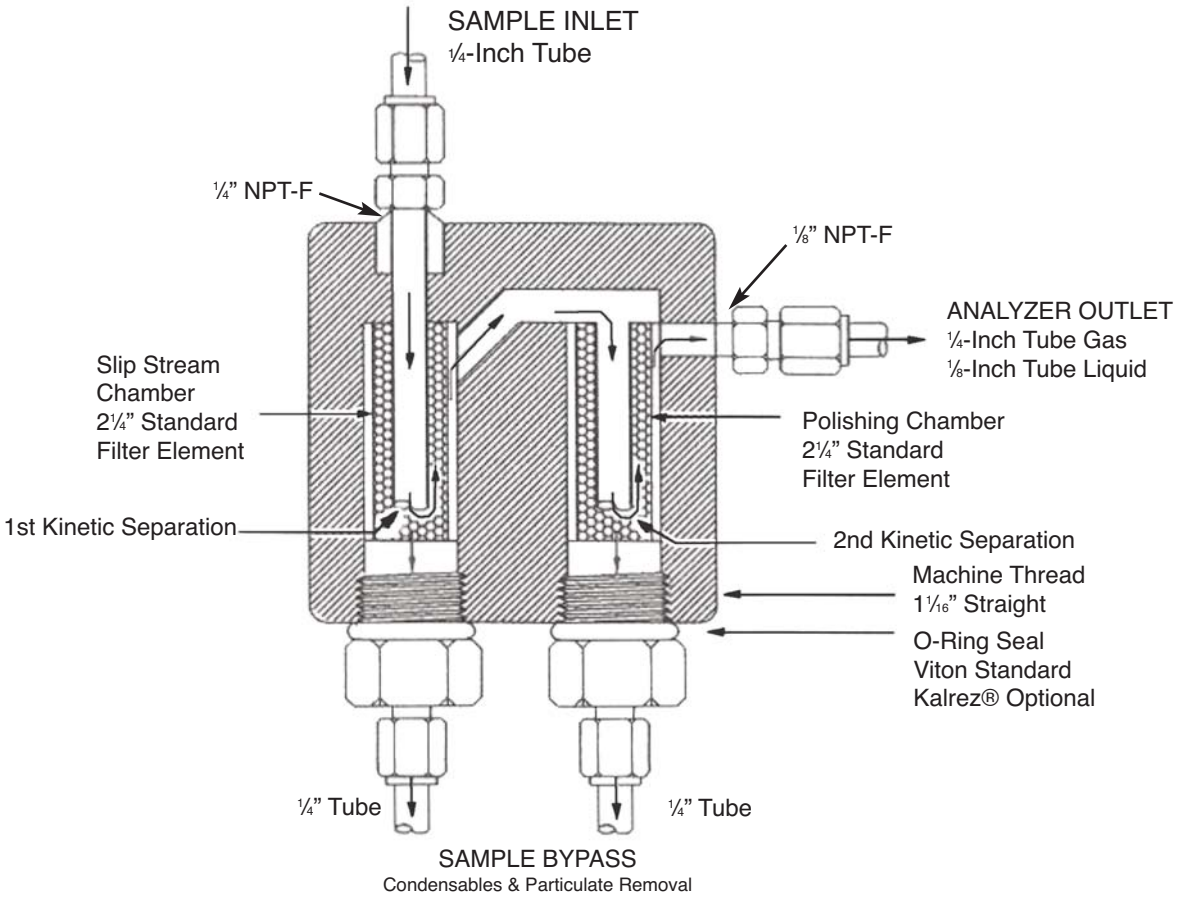
OTHER MODELS AVAILABLE WITH VARYING SPECIFICATIONS

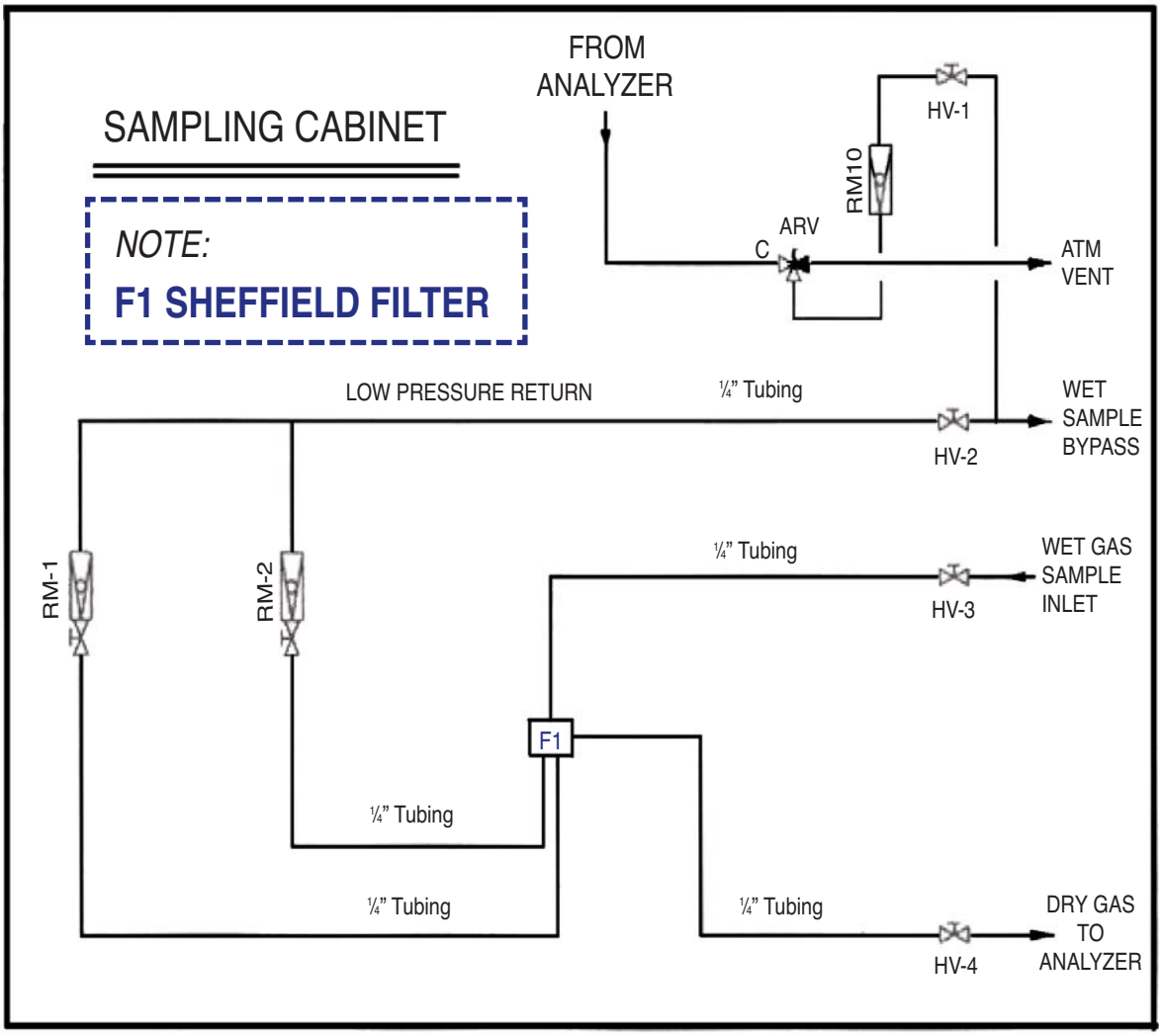
SERIES 300:
SS300: 3” Sheffield Kinetic Filter Housing for gas for liquid service.

SERIES 700:
SS700GF: 7” Sheffield Kinetic Separator for gas service with 2 – 6” hydrophobic filter
SS700LF: 7” Sheffield Kinetic Separator for liquid service with 2 – 6” hydrophobic filter

SERIES 1200:
SS1200 GF: 12” Sheffield Kinetic Separator for gas service with hydrophobic filter.
SS1200LF: 12” Sheffield Kinetic Separator for liquid service with hydrophobic filter.
SS1200LF-H2O: 12” Sheffield Kinetic Separator for removal of water from liquid hydrocarbon
SS1200PT: 12” Sheffield Kinetic Separator for removal of particulate in gas or liquid
SS1200G: 12” Sheffield Kinetic Separator for gas service with mist catcher

INSTALLATION NOTES




SAMPLING CABINET
NOTE:
F1 SHEFFIELD FILTER
FROM
ANALYZER
HV-1
RM10
ARV
C
ATM
VENT
LOW PRESSURE RETURN
¼" Tubing
WET
SAMPLE
BYPASS
HV-2
RM-1
RM-2
¼" Tubing
WET GAS
SAMPLE
INLET
HV-3
F1
¼" Tubing
¼" Tubing
¼" Tubing
DRY GAS
TO
ANALYZER
HV-4