

Small Flow Liquid/Liquid Coalescers

IMPROVE THE PERFORMANCE OF FLUID SAMPLING SYSTEMS

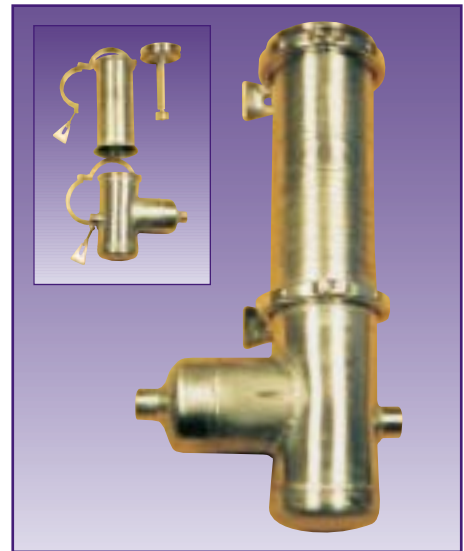
'Pall' small flow 'AquaSep' Plus & 'PhaseSep' L/L Coalescers, in conjunction with the use of a **Pall** pre-filter, have been specifically designed to improve the condition and efficiency of sampling systems and small scale pilot plants within refineries and chemical plants. Ideal for applications with flows up to 20 lpm/ 5.25 USgpm

Sampling Systems

Most sampling systems have a number of functions, i.e. withdraw sample from the process, transport the sample, clarify the fluid, pass it to some form of analyser and dispose of the fluid. In some cases the system is a miniature of the main process stream, and so poses the same reliability and operating requirements. The sampling system should generally operate for longer periods of time without operating problems.

Small Scale Pilot Plants

In order to test the process it is important that these pilot plants have the same protection as the full scale plant. Therefore, removal of contamination is as important here as in the full size systems



Liquid Conditioning

This may involve the removal of oils, water and other process contaminants such as, scale, corrosion deposits and deposits due to chemical reactions found in the main process stream

Features	Advantages	Benefits
<ul style="list-style-type: none"> Pall's specially formulated media contains no glass fibre. 	<ul style="list-style-type: none"> Does not disarm in the presence of surfactants 	<ul style="list-style-type: none"> Will continue to coalesce in the presence of fuel additives and give longer service life and efficiency than conventional coalescers
<ul style="list-style-type: none"> Separates fluids with IFT's as low as 0.5 dynes/cm 	<ul style="list-style-type: none"> Single unit could be utilised for a variety of applications 	<ul style="list-style-type: none"> Cost effective solutions not previously available
<ul style="list-style-type: none"> Utilises standard parts and can be changed from vertical to horizontal unit 	<ul style="list-style-type: none"> Spares are readily available 	<ul style="list-style-type: none"> Reduces cost of inventory
<ul style="list-style-type: none"> Easy cartridge change-out with no special tools 	<ul style="list-style-type: none"> Lowers exposure time for operators and no special training is required 	<ul style="list-style-type: none"> Reduces maintenance and training costs, and the likelihood of operator error

Small Flow Liquid/Liquid Coalescers

Vertical Aquasep Unit

Stage 1: Prefiltration and Coalescence

The hydrocarbon and water mixture enters the coalescing element and flows inside to outside. It is recommended that the particulate matter is removed using a 2µm absolute pre-filter. The small droplets of dispersed phase liquid come together, or coalesce, as the mixture moves through the depth of Pall's specially formulated coalescer medium.

Stage 2: Separation

In separating water from fuel, water free fuel and large water droplets flow toward the separator located directly below the coalescer stage. The separator medium is hydrophobic, which prevents water from entering the separator. Only water-free fuel flows through the separator. Water and fuel are removed by separate drain connections.

Horizontal Phasesep Unit

Stage 1: Prefiltration

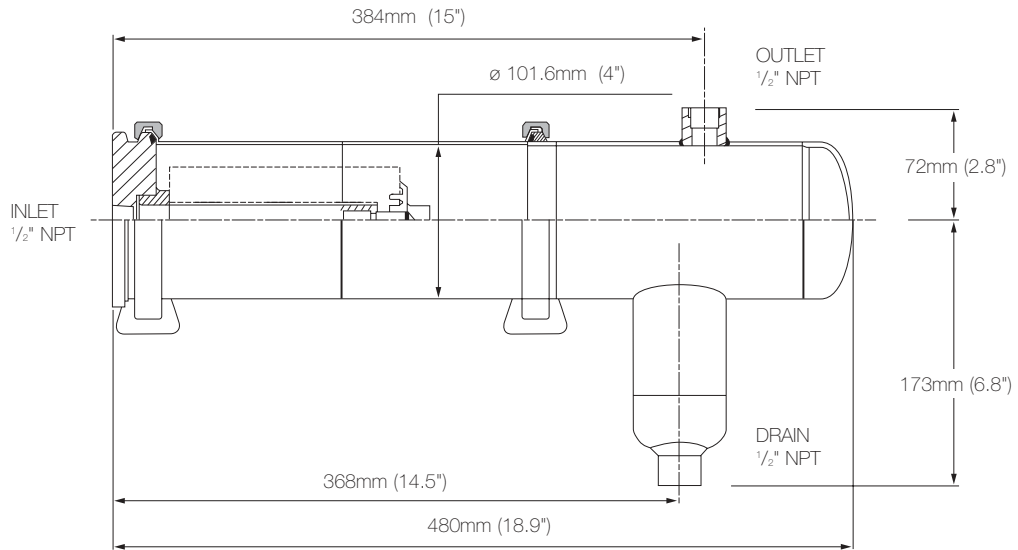
For the **PhaseSep** coalescer medium it is recommended that a prefilter with an absolute removal rating of 15 to 20 µm is installed, to properly control the particulate matter in the liquid stream.

Stage 2: Coalescence and Separation

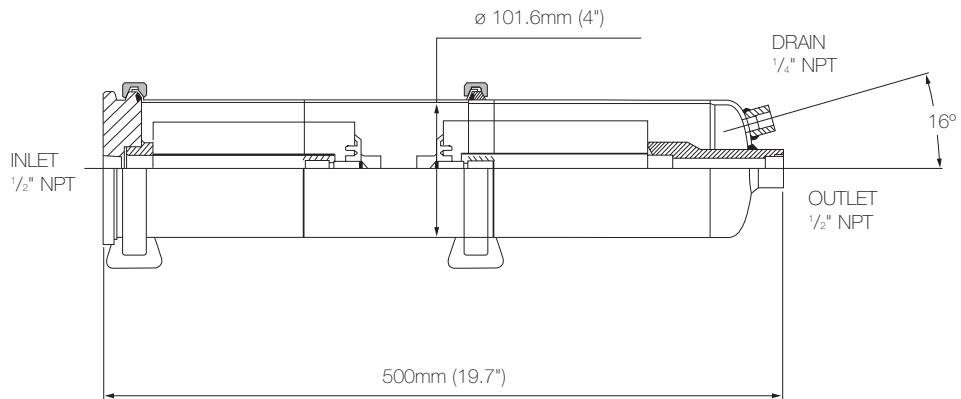
In a horizontal housing, the liquid/liquid mixture enters the coalescing element and flows inside to outside. As is the case with the Aquasep coalescer stack, small liquid dispersed phase droplets suspended in the continuous phase come together, or coalesce, as the mixture moves through the **PhaseSep** coalescer. The large coalesced droplets of the dispersed phase separate by gravity in the horizontal housing and are removed.



Part Number: 1PH4F1F11



Part Number: 1AQ4F1F11



Dimensions are in mm/ins.
In/Out and Vent/Drain connections are standard NPT female threads.

Table 1: Coalescer Selection Guide

Process Condition	Recommended Product
Dispersed phase fluid is aqueous IFT greater than 3 dynes/cm	AquaSep Plus coalescer vertical unit
Dispersed phase fluid is aqueous IFT less than 3 dynes/cm	PhaseSep horizontal unit
Both fluids are non-aqueous	PhaseSep horizontal unit
Dispersed phase fluid is oil, continuous phase is aqueous	PhaseSep horizontal unit

Cartridges

Part Number	Description	Maximum Temperature	Initial Pressure Drop	Recommended Change-out
LCS06B1AH	AquaSep Plus Coalescer	65°C	2 psid	15 psid
LSS06F1H	Separator	65°C	2 psid	15 psid
LCS06H1AH	PhaseSep Coalescer	149°C	2 psid	15 psid

Housings

Part Number	Maximum Temperature	Maximum Pressure	Material
1PH4F1F11	140°C	16 barg	316L SS
1AQ4F1F11	140°C	16 barg	316L SS



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