EVEREST
EQUIPMENTS

LIQUID/LIQUID COALESCING PRODUCTS

For the Separation of Water and Solids from Oils and Hydrocarbons

EC Series Liquid Phase Coalescer Elements are designed to coalesce two immiscible liquid phases within a stream to aid separation. In addition to liquid coalescing, coalescer cartridges are also highly efficient particulate filters. To safe guard against solids, the coalescer elements should always be protected by a pre-filter. In installations where no pre-filter exists, the ECP Series uses an additional pleated section on the upstream side of the coalescing media to extend the effective operating life and protect coalescing media.

Coalescer Description

The coalescer is a multiple stage system. It first removes particulate matter, then coalesces and separates the dispersed phase liquid from the continuous phase liquid.
For removal of water from hydrocarbons, the EC series coalescer will remove entrained water to a level of below 15 ppmv over a wide range of conditions.

- Inlet water concentration as high as 3% water by volume (i.e., 30,000 ppmv.)

For removal of oil from water, the EC series coalescer will remove free oil from water over a wide range of conditions in the horizontal configuration.

Multiple Stage System

Stage 1 : Prefiltration

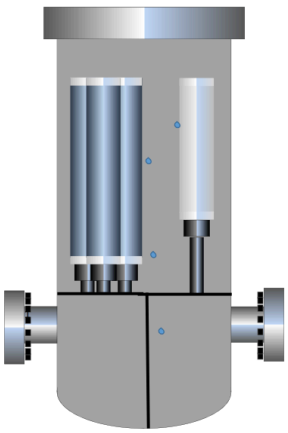
Due to the fine pore structure of the coalescer medium, It is recommended that a prefilter be installed upstream of the coalescer assembly to properly control particulate matter in the liquid stream. Installing a prefilter significantly extends the life of the coalescer and reduces particulate concentration in the filter effluent to meet customer's requirements.

Stage 2 : Coalescence

The hydrocarbon and water mixture enters the coalescing element and flows inside to outside. This is where small droplets of dispersed phase liquid come together, or coalesce, as the mixture moves through the depth of coalescer medium.

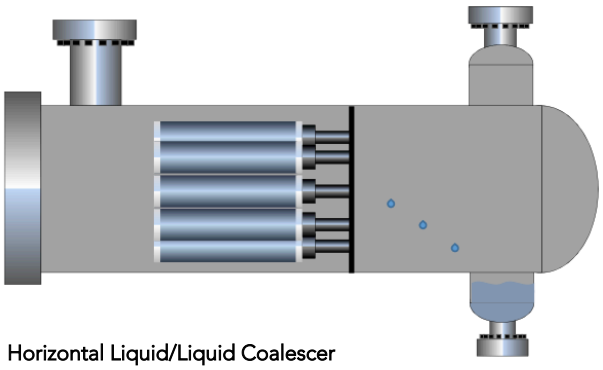
Stage 3: Separation

In separating water from fuel, water-free fuel and large water droplets flow toward the separator which is in the same vertical vessel. Flow is outside to inside. 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.
In separating oil from water, a settling zone is designed downstream of the coalescer. In the settling zone, the large coalescer droplets are separated due to gravity.



Vertical Liquid/Lquid Coalescer

Coalescing element left side & Separator element right side



Horizontal Liquid/Liquid Coalescer

Contaminant-free continuous phase exits top right, liquid contaminant, dispersed phase, bottom right.

Products Specification

- **Materials of Construction :**

Filter Media :	Multi-Layer Pleated Media & Fiberglass
Hardware :	Tin Plated Steel
Outer Wrap :	Cotton, Orlon
Seal Material :	EPDM, Silicone, Buna N, Viton, Teflon Encapsulated Viton

- **Clean Differential Pressure :**
  < 2 psid (0.138 bard)
- **Maximum Differential Pressure :**
  75 psid (5.2 bard)
- **Recommended Changeout Differential Pressure :**
  25 psid (1.725 bard)
- **Recommended Flow Rate :**
  100 GPM
- **Micron Rating :**
  0.5, 1, 5, 10, 25 µm
- **PH Range :**
  5 ~ 9
- **Maximum Operating Temperature :**
  300 °F (149 °C)
- **End Configuration :**
  DOE or Threaded Base
- **Model & Dimensions (Nominal) :**

EC Series

Model	Flow Direction	Dimensions	Effluent Residual
EC - 10	Inside to Outside	6" OD X 3.5" ID X 11.25" L	Below 15 ppm
EC - 12	Inside to Outside	6" OD X 3.5" ID X 22.25" L	Below 15 ppm
EC - 14	Inside to Outside	6" OD X 3.5" ID X 33.25" L	Below 15 ppm
EC - 16	Inside to Outside	6" OD X 3.5" ID X 14.25" L	Below 15 ppm
EC - 18	Inside to Outside	6" OD X 3.5" ID X 28.25" L	Below 15 ppm
EC - 22	Outside to Inside	6" OD X 3.5" ID X 22.25" L	15 ~ 20 ppm

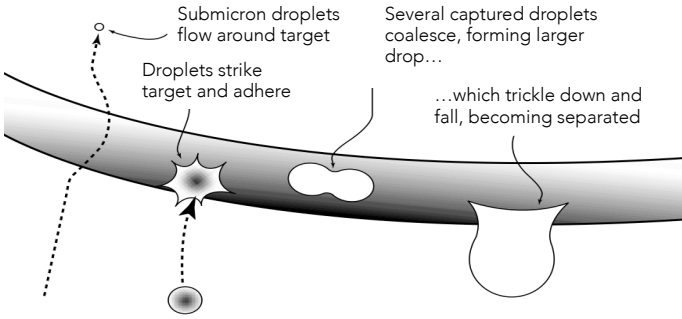
ECP Series

Model	Flow Direction	Dimensions	Effluent Residual
ECP - 611	Inside to Outside	6" OD X 3.5" ID X 11.25" L	Below 15 ppm
ECP - 614	Inside to Outside	6" OD X 3.5" ID X 14.5" L	Below 15 ppm
ECP - 622	Inside to Outside	6" OD X 3.5" ID X 22.25" L	Below 15 ppm
ECP - 628	Inside to Outside	6" OD X 3.5" ID X 28.25" L	Below 15 ppm
ECP - 633	Inside to Outside	6" OD X 3.5" ID X 33.25" L	Below 15 ppm
ECP - 636	Inside to Outside	6" OD X 3.5" ID X 36" L	Below 15 ppm
ECP - 644	Inside to Outside	6" OD X 3.5" ID X 44" L	Below 15 ppm
ECP - 656	Inside to Outside	6" OD X 3.5" ID X 56" L	Below 15 ppm

Note : Other dimensions or specification can be done to meet your specific requirements upon request.

Coalescing Principle

1) Collection of Individual Droplets
2) Combining of Several Small Droplets into Larger Ones
3) Rise/Fall of the Enlarged Droplets by Gravity



Application

- ❖ Separation of water from gasoline, jet fuel and diesel
- ❖ Separation of caustic from gasoline, jet fuel and diesel
- ❖ Separation of hydrogen peroxide from working solution
- ❖ Separation of amine from LPG
- ❖ Separation of oil from • water load to wastewater treatment plant • anhydrous ammonia
- ❖ Separation of acids from Wide Range Carryover of acids common in refinery and specialty petrochemicals and hydrocarbons
- ❖ Separation of water from light hydrocarbons (C6 and below) or added to the system, reduces interfacial tension, and petrochemicals

Part Numbers / Ordering Information

EC & ECP Series Coalescer P/N : ★ ◆ - ✚ ⊙ (e.g., ECP628-10TB)

★ ◆ - ✚ ⊙

★
Model Type

EC = Coalescer
ECP = Coalescer with Pleated Prefilter

✚
Micron Rating

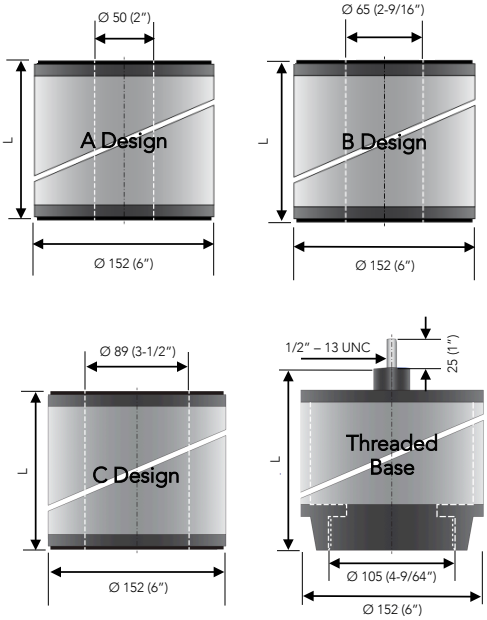
05 = 0.5 µm
1 = 1 µm
5 = 5 µm
10 = 10 µm
25 = 25 µm

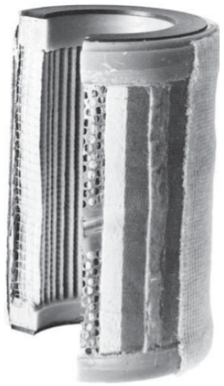
◆
Dimensional Code

10 = EC - 10
12 = EC - 12
14 = EC - 14
16 = EC - 16
18 = EC - 18
22 = EC - 22
611 = ECP - 611
614 = ECP - 614
622 = ECP - 622
628 = ECP - 628
633 = ECP - 633
636 = ECP - 636
644 = ECP - 644
656 = ECP - 656

⊙
End Configuration

A = A Design (DOE)
B = B Design (DOE)
C = C Design (DOE)
TB = Threaded Base





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