## eCLIP

## efficient Compact Lightweight Injection Port Increase your efficiency, CLIP your OPEX

ProSep's patented eClip Mixers provide chemical savings in a compact, easy-to-install, and cost-effective product.

#### FEATURES

ProSep has optimized its ECLIPSE mixing technology to address specific geographical market needs including North America. The eCLIP provides injection, dispersion, and high efficiency mixing in a compact form. Clients will benefit from faster delivery time and flexible designs including wafer, threaded, and hammer union.

#### DESIGN

The eCLIP is provided in a series of compact designs for 2 to 6 inch production pipelines. Whether threaded or wafer designs are used, ProSep has a unit that quickly retrofits into existing pipeline infrastructure. The compact nature of the eCLIP unit allows for easy installation for field operations and when process conditions change, the eCLIP can be easily changed out to match the new production conditions to ensure the maximum performance is achieved.

#### **APPLICATIONS**

- Gaseous flows
  - H2S scavenging
  - Natural gas dehydration
  - Amine injection

#### BENEFITS

- reduced by 20 40% • ROI < 1 year
- Low differential pressure

Chemical consumption

- Inline solution easily retrofitted
- No moving parts low maintenance
- Reduced CAPEX & footprint – replaces
- contacting towersDe-bottlenecks stressed
- process equipmentLow injection rates achievable
- Optimization of chemical use

#### THREADED MODEL



Threaded Model



Threaded Model Installed

#### WAFER MODEL



Between the Flange



Wafer Model Installed





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#### THE MIXING PROCESS

**Process flow velocity increases through restriction:** Local dynamic pressures increase.

**Inverted cone allows for centralized fluid injection:** Even fluid distribution into high velocity zone. Inertial force over surface tension favors droplet breakup: Slip edge allows inertia to disperse injected fluid.

**Turbulent mixing conditions created:** Expanding pipe diameter creates turbulent mixing conditions.





eCLIP Sizing Chart				
Inches	Min Flow MACFD	Max Flow MACFD	Mixer Length (inches)	Approximate Weight (Ibs)
2"	50	120	4-6	15-25
3"	100	200	5-8	25-50
4"	180	500	6-10	45-90
6"	420	750	8-12	55-130

Specifications included in above chart are provided as reference only. ProSep Mixers are fully customizable based on customer requirements.

Weights and dimensions provided in this document are approximate and vary depending on eCLIP model.

## Unparalleled Performance: eCLIP mixer efficiently disperses quench water to cool hot gas within mixer body.

- Evenly Distributed at Steady State
  - Red/White indicates pipe surface temperature (220F) of the upstream hot gas (300F)
  - Yellow/Green indicates the pipe surface temperature (150F) just downstream of Quench Water injection is uniform.
- eCLIP mixers achieve uniform dispersion and homogenous mixing in every application

#### **QUENCH WATER INJECTION**



**HOT GAS FLOW**