

FluiBlend™ Heavy Crude Oil Blending – Technical Data Sheet

Traditionally static mixers have been used in Heavy Crude Oil blending, but this technology is greatly affected by changes in viscosity, flow rate and temperature. These effects can be dramatic either in terms of reduced mixing efficiency or dramatically increases in pressure drop across the element reducing maximum flow rate.

FluiBlend™ has been designed to enable operators to blend heavy oil with water and other diluents efficiently no matter how the flow-rate and process conditions change.

FluiMix™ is a dynamic mixing system that delivers controlled mixing to the process stream no matter how the flow conditions change without developing pressure drop. This controllable blending makes FluiMix™ an ideal technology for blending Heavy Crude Oil with diluents to achieve improved transfer viscosities.

- **Controlled Droplet Size** – FluiMix will dynamically alter the mixing energy delivered to the system so that a given droplet size can be developed for any flow rate or viscosity condition and this is done online as the process stream changes. Droplet sizes can be tailored from 10 microns upwards and for crude oil viscosities ranging from 20 cSt up to 20,000 cSt for any process flow rate.
- **Process Viscosity** – FluiMix™ can be designed to work with viscosities up to 20,000 cSt and potentially higher.
- **Dynamic Mixing** – Unlike Static Mixers - FluiMix™ will dynamically change the mixing energy delivered to the process flow to insure that constant blend viscosity and density can be achieved even when the process flow properties changes.
- **Improved Blending Accuracy** – The FluiBlend™ technology insures that the critical blend measurement whether viscosity, density or droplet size is as accurate as possible. The improvement in accuracy is made possible by a number of design features of the FluiBlend™.
- **Blending on Viscosity** – Traditional viscosity measurement blenders rely on inaccurate temperature correlations and viscosity measurement accuracy that is at best +/- 1% of scan. Both of these issues create significant error. FluiBlend™ will control the viscosity of the blend within +/-1% of the desired viscosity at the desired temperature. There are no accuracies due to viscosity temperature compensation. If the process temperature demands temperature compensation, FluiBlend™ will automatically self-recalibrate in real time so that any temperature compensation effects are negated.



Other Operational Benefits are:

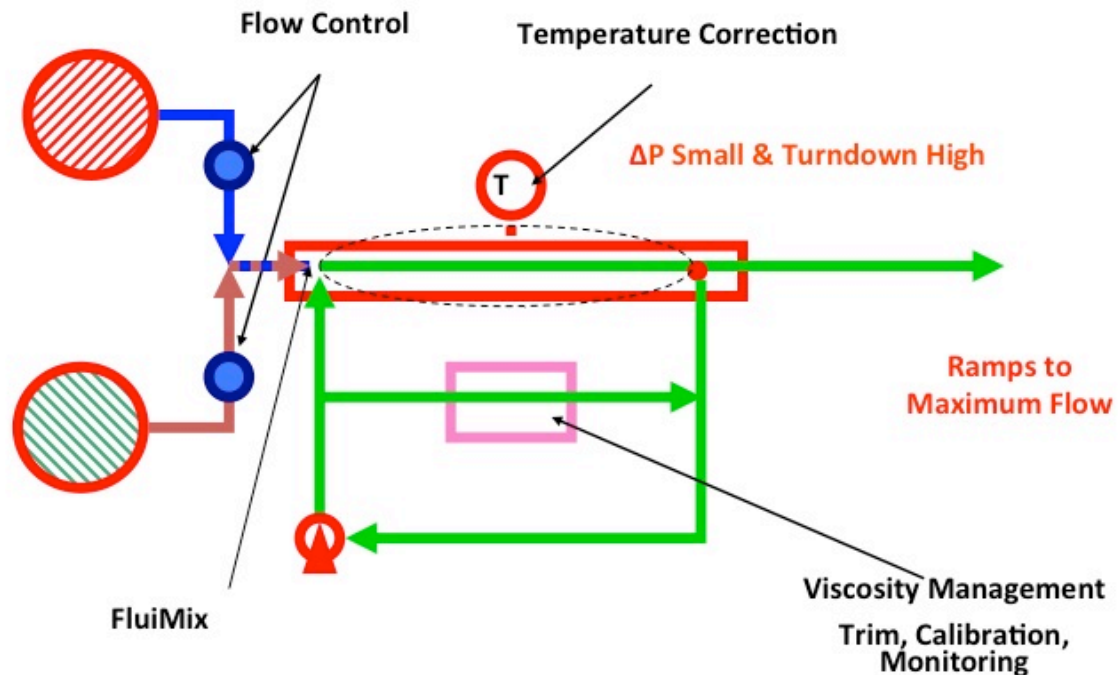
- FluiBlend™s zero pressure drop technology allows for any crude to be processed without any limitation to the throughput and can be hot tapped into the process stream.
- FluiBlend™ can be retrofitted to existing pipelines without a shut down.
- FluiBlend™ can be fitted so that a Blending Facility can blend on variables such as water droplet size, sulphur, or gravity or viscosity and can be programmed to blend on a combination of these parameters.
- FluiBlend™ will insure that the blend is always within specification.

Typical FluiMix Blending System

FluiBlend for Bunker & Crude Oil Blending



Inspec. +/- 1 Viscosity of Span



www.fluimix.com © FluiMix Ltd 2012