



## Jet Shear Model 1200 HE/G00-RF-MBL

Combination High Shear/Low Shear Mixing  
Reverse Flow Clean-Out  
Main Bypass Line



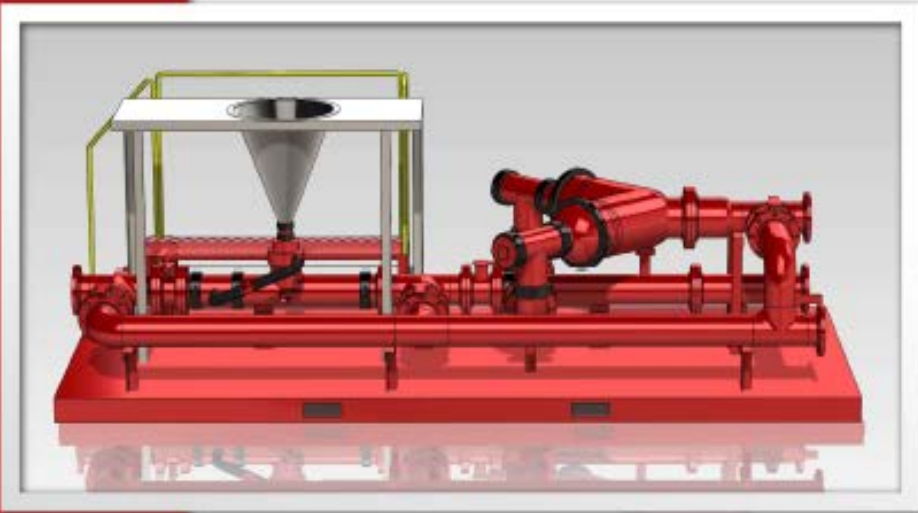
- Shearing system only (bypass of mixing Hopper)
- Mixing Hopper only (bypass of Shearing System)
- Mixing Hopper and Shearing System in series
- Bypass of mixing Hopper and Shearing unit

Cyclonic wetting collar to facilitate the addition of dry products

Polyurethane Jet Shear nozzle plates

UHMW PE Jet Hopper nozzle and venturi

Patented Double elliptical mixing nozzles



sales@flotrendllc.com  
www.flotrendllc.com

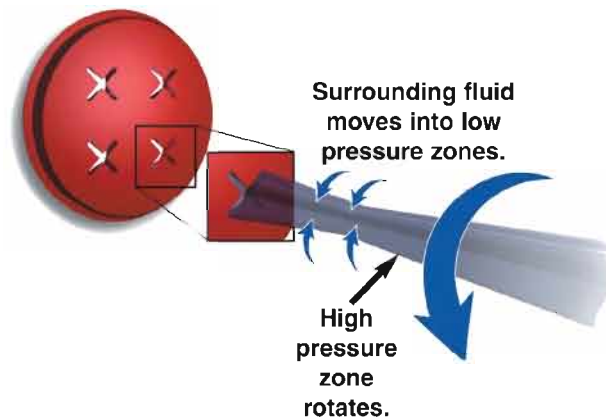
(281) 941-5559 • 1400 Kowis Street • Houston, TX 77093-3202

Engineered Drawings available Upon Request

## Mixing ■ Shearing ■ Blending

The Jet Shear® II is a new mixing technology utilizing hydraulic shear to effectively and efficiently mix dry materials with liquids, as well as blend, emulsify, and stabilize liquid/liquid phases.

The Jet Shear® II utilizes a patented concept in mixing using double elliptical orifices set at opposing angles within the mixing chamber. Each nozzle produces a stream of fluid that folds in upon itself producing moving low and high pressure zones resulting in rapid mixing.



The collision of these streams with each other at a predetermined angle further enhances the mixing-blending effect. The result is a thorough blending of chemicals into the drilling fluid.

In test after test against competitive devices (mechanical shearing), the Jet Shear® II has out performed the competition on HEC and PHPA Polymers, Drispac, Gel, and other additives.

In-Line and Combination Jet Shear Models

Model #	Inlet Size	Outlet Size	Bypass Outlet Size	Eductor Nozzle Sizes	Optimum Pressure Drop Across Unit	Flow Rate
400 B/F	2" NPT	2" Victaulic	N/A	N/A	5-10 PSI	50-100 gpm
400 HE/200	2" NPT	2" Victaulic	2" Threaded Flange	3/8", 5/8", 3/4"	45-55 PSI	50-100 gpm
800 B/F	3" NPT	4" Victaulic	N/A	N/A	5-10 PSI	100-300 gpm
800 HE/300	3" NPT	4" Victaulic	3" Threaded Flange	3/4", 15/16", 1 1/8"	45-55 PSI	100-300 gpm
1000 B/F	4" NPT	6" Victaulic	N/A	N/A	5-10 PSI	300-500 gpm
1000 HE/400	4" NPT	6" Victaulic	4" Threaded Flange	1", 1 1/4", 1 1/2"	45-55 PSI	300-500 gpm
1200 B/F	6" Flange	8" Flange	N/A	N/A	5-10 PSI	500-1,100 gpm
1200 HE/600	6" Flange	8" Flange	6" Weld Flange	1 1/2", 1 7/8", 2 1/4"	45-55 PSI	500-1,100 gpm

\* Inlet pressure after subtracting discharge head pressure.



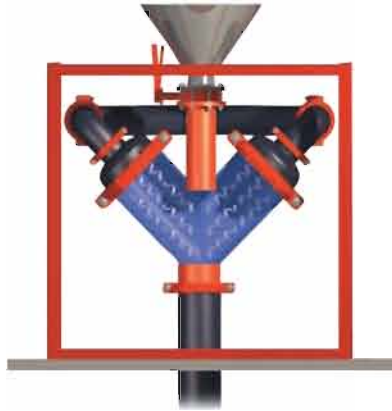
**FLO TREND®**

# In-Line Units

Double elliptical nozzles create rotating high and low pressure zones blending the dry chemical as it falls through the mixing chamber of the Jet Shear® II.



Model 1000F



Model 800F

As a wetting and mixing device for dry chemicals, the Jet Shear® II is installed over a mud pit with a chemical hopper attached directly to the mixing chamber. Drilling mud is pumped to the Jet Shear® II where it enters the mixing chamber through the feed yoke and nozzle discs. It then mixes and falls down through the outlet, creating a downward draft through the chemical hopper. Dry chemical can be added through the hopper where it is mixed with drilling mud passing through the nozzle discs. The recirculation of the drilling mud and chemicals through the Jet Shear® II further blends the mixture.



The In-Line Unit is installed parallel to the rig hopper. Chemicals are added through the rig hopper, then circulated through the In-Line Jet Shear®.

As a continuous static mixing unit, the Jet Shear® II is installed downstream from a mud pump and drilling mud is circulated through the Jet Shear®. (Chemicals are added to the mud through conventional means.)



In this rig-up, the In-Line Unit is installed directly over the receiving tank. Dry chemicals can be added through a hopper installed on the Jet Shear's® Mixing chamber.



[sales@flotrendllc.com](mailto:sales@flotrendllc.com)  
[www.flotrendllc.com](http://www.flotrendllc.com)

Engineered Drawings available Upon Request

(281) 941-5559 • 1400 Kowis Street • Houston, TX 77093-3202

# Combination Units

The Jet Shear® II, combined with the FTS Eductor and chemical hopper on one skid can be installed practically anywhere on the rig (depending on the capability of the rig pump.) This unit is typically rigged up parallel to the rig hopper and fed off the same pump. However, the Jet Shear® can be used in place of the rig hopper particularly in new installations. The efficiency of Flo Trend's® Eductor produces a velocity recovery that prevents the hopper from "backing up" with increasing discharge back pressure.



Model 400HE/200



Model 800HE/400



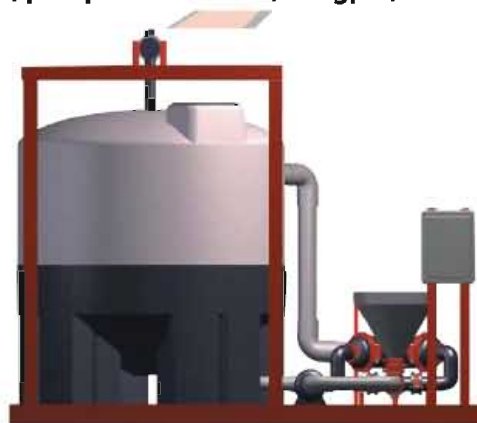
Model 1200HE/600

# Batch Systems

Flo Trend's® Batch Systems are ideal for mixing a batch of fluid to a certain viscosity, percentage, or by weight or other desired property. There are various options available with the Batch Systems including: Batch tanks from 500 to 4,200 gallons, pumps from 50 to 2,000 gpm, and Jet Shears® to match circulation flow rate



Model 800HE/400  
Jet Shear® with  
Dual 1,000 gallon  
agitated batch tanks



Model 400HE/200  
Jet Shear® with  
Single 1,000 gallon  
agitated batch tank



Model 800HE/400  
Jet Shear® with  
Single 1,000 gallon  
agitated batch tank

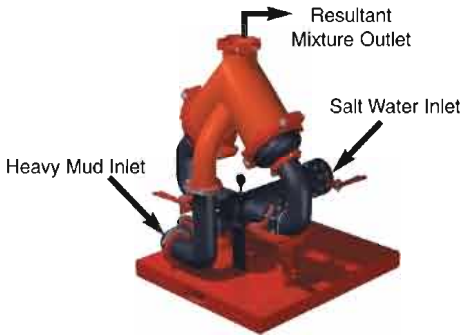


sales@flotrendllc.com  
www.flotrendllc.com

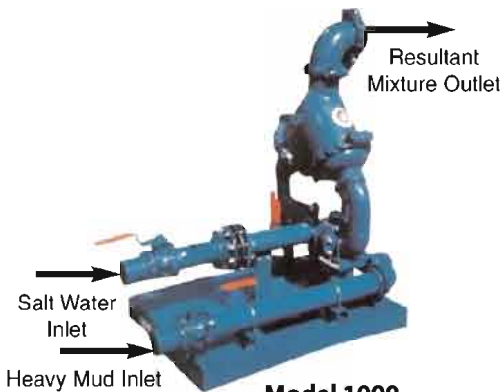
**FLO TREND®**

# Combination Units

When used as a salt water/heavy mud blending device for riser-less drilling projects where mud weights must be changed rapidly, the Jet Shear® II is configured to allow heavy mud and salt water to combine in the Jet Shear® II's mixing chamber, creating an instantaneous homogeneous blend. Thus, the mud weight is reduced by the GPM of salt water to GPM of heavy mud that is pumped through the unit. Typically, mag meters are installed on the salt water line and the heavy mud line. (A barge with 16-18 PPG mud is the usual source of heavy mud.)



**Jet Shear® II Illustration**



**Model 1000  
(300-500 GPM total flow)**

**Sample Chart**

This chart would be used to determine the final mud weight given a 300 gpm total flow rate.

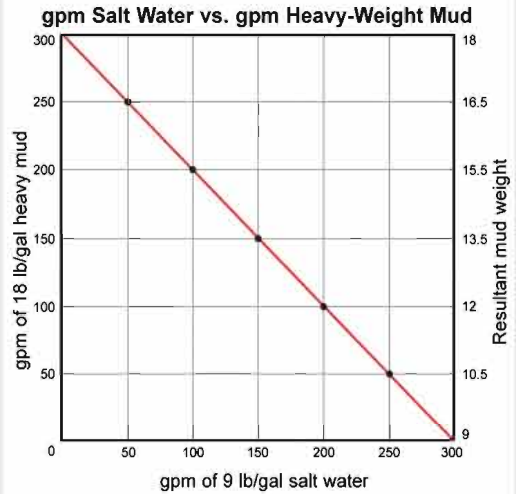
**Formula Used**

$$\frac{\text{gpm}(x) (x+y)}{\text{gpm}(y)}$$

$$\frac{\text{gpm}(x)}{\text{gpm}(y)} + 1$$

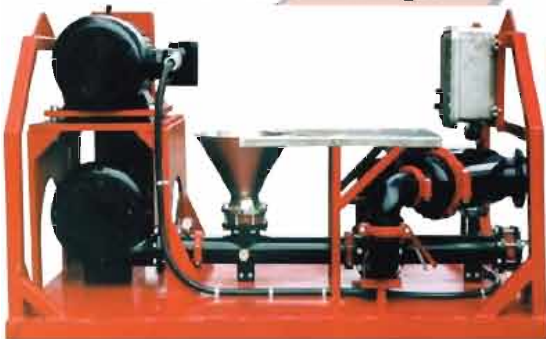
Given:

x=18 ppg (Heavy Mud)  
y= 9 ppg (Salt Water)



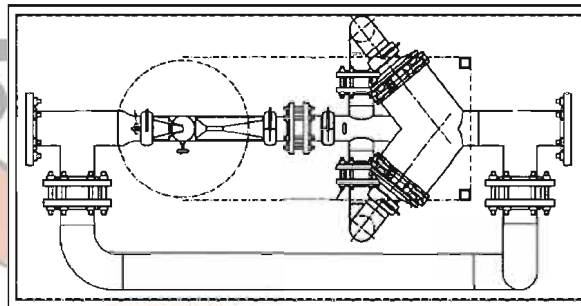
# Unitized Packages

**Centrifugal Pump and Jet Shear®  
Combination Package**



**Model 1200HE/600  
with 8"x6" Magnum Pump  
100 H.P. Motor**

**Jet Shear® with Reverse Flow  
Clean Out**



**Model HEM1000/400**

Engineered Drawings available Upon Request