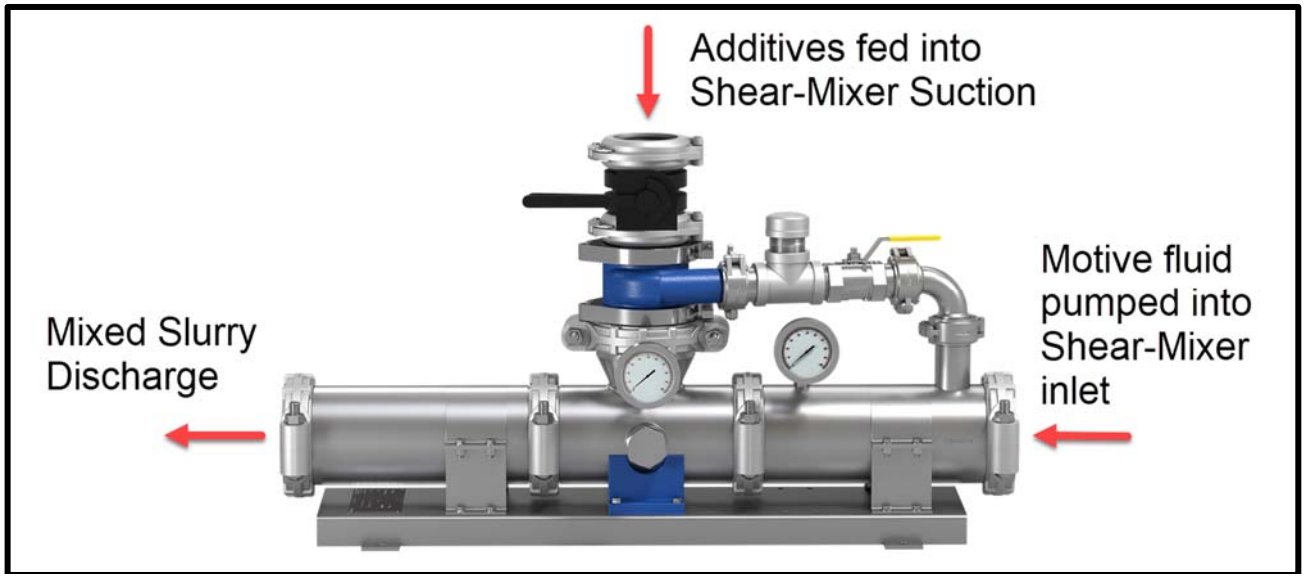
Vortex Shear-Mixer Application Questionnaire

The Alfa Laval Vortex Shear-Mixer is a simple, effective venturi style slurry eductor that uses vacuum and dynamic shear to easily mix solid and liquid additives into slurry. It outperforms traditional venturi mixers through higher additive loading rates, thorough additive mixing, and resistance to plugging.



1. Shear-Mixer Construction material:

The chemical compatibility of the motive fluid and mixed slurry determine the materials of construction needed.

What is the motive fluid? (i.e. water, drilling mud, ethanol, diesel etc.)

(required field)

What is (are) the additive(s)?

(required field)

What is the max fluid temp range? *(required field)*

2. Additive properties:

In what form is the additive material?

Additive behavior with atmospheric exposure or long-term storage in bins or bags

How does the additive behave when it becomes wet by the motive fluid?

3. Fluid Properties:

Shear-Mixer performance can become unpredictable in applications where the motive or discharged fluid viscosity exceeds 300 centipoise (cp.)

Blended fluid viscosity range in cp.

Slurry specific gravity range ($s.g = \frac{weight\ in\ lbs\ per\ gallon}{8.33}$)

4. Shear-Mixer connection type:

Connection type:

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5. **Shear-Mixer feed hoppers and systems:**
   Is a hopper required for introducing additives from small bags or sacks? ☐

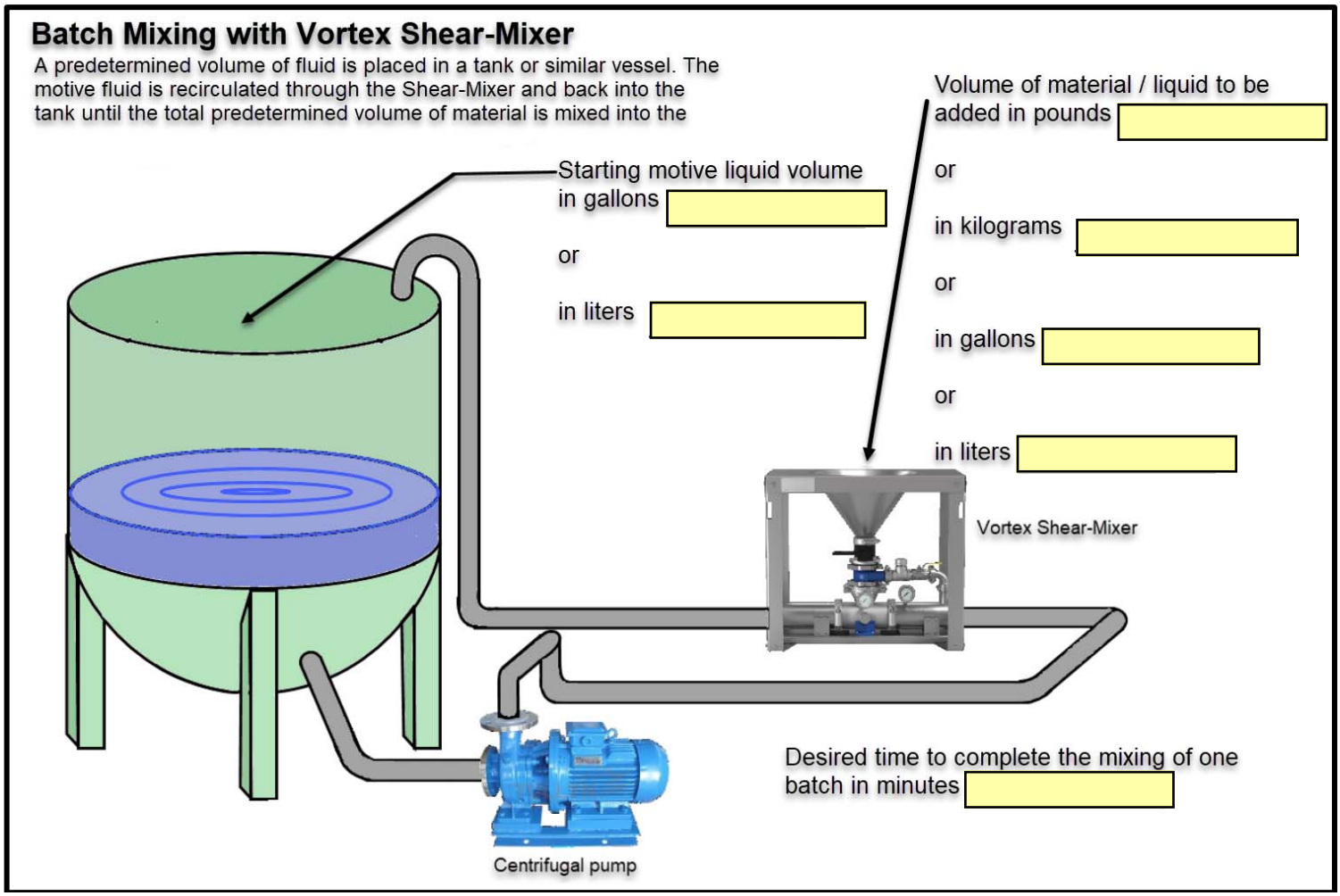
   The **Shear-Mixer BBS (Bulk Bag System)** features a heavy-duty, bulk bag hopper with bag spreader bar for quick, easy mixing of bulk bag material with minimal dusting. Are you interested in this type of system? ☐
   The **Shear-Mixer DFS** bulk additive mixing system combines Vortex Shear-Mixers, with surge tanks, and other proprietary components to provide rapid mixing of bulk material with no dusting. Are you interested in this type of system? ☐

6. **Dual suction Shear-Mixer:**
   Are you interested in a dual suction model that can be connected to two separate additive sources? This is available in 4” and 6” sizes ☐

7. **Mixing type and Shear-Mixer Sizing:**
   Select “Batch Mixing” or “Continuous Mixing,” depending on your application, and populate the fields that correspond with your preferred units of measurement.

Batch Mixing with Vortex Shear-Mixer

A predetermined volume of fluid is placed in a tank or similar vessel. The motive fluid is recirculated through the Shear-Mixer and back into the tank until the total predetermined volume of material is mixed into the



Desired time to complete the mixing of one batch in minutes ☐

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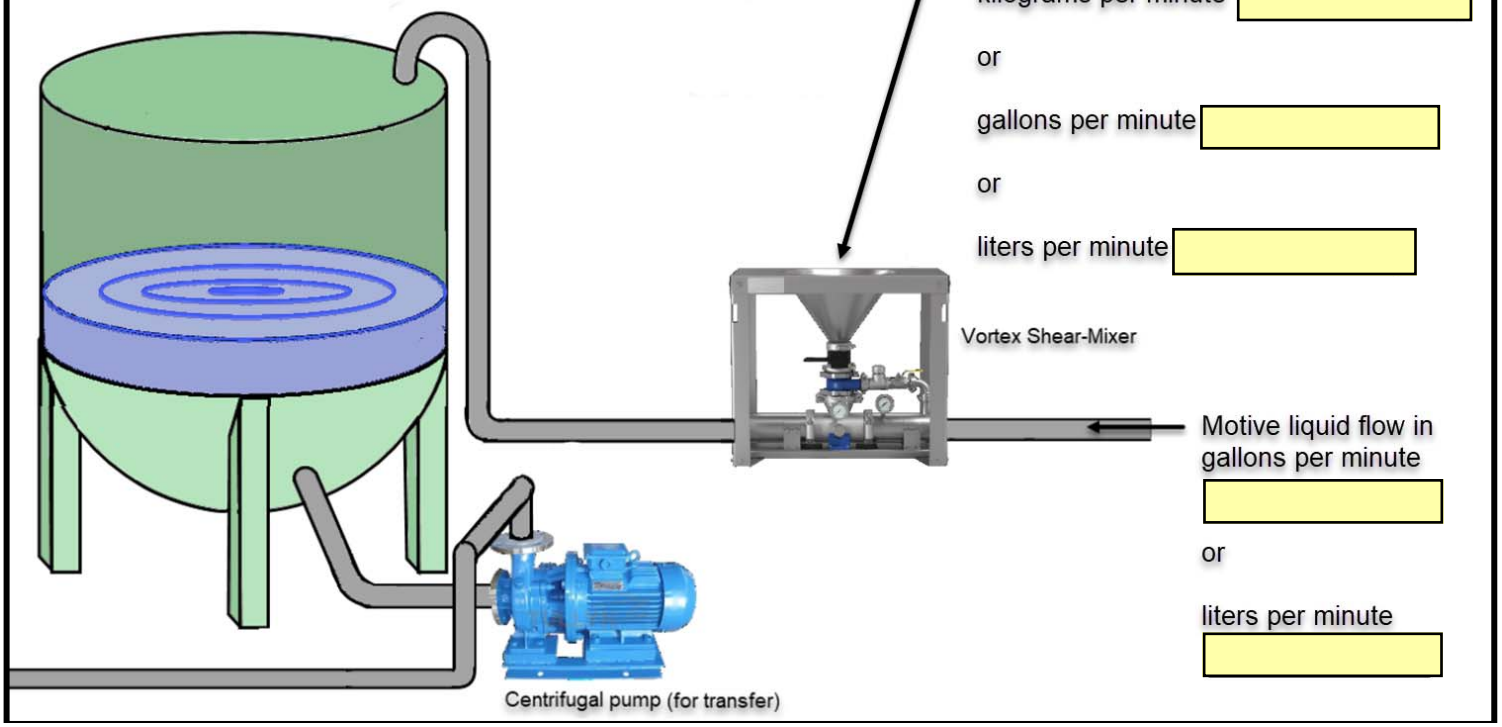
Continuous Mixing with Vortex Shear-Mixer

Motive liquid comes from an upstream source such as a plant, process water supply or a transfer pump from a containment vessel. The motive fluid makes one pass through the Shear-Mixer where solid or liquid additives are introduced to produce a mixture of a specific ratio. This often requires a means of metering the introduction of the additives.



8. Additional comments about the application or questions:

Notes:

- In most applications, maintaining steady, constant motive flow, with a minimum pressure differential of 50 psi across the Shear-Mixer is recommended for optimum suction and mixing.
  The main factors impacting Shear-Mixer performance are:
  - Sufficient pump sizing, head output, and horsepower for the required processing rate and system.
  - Proper discharge line plumbing that is at least the same inner diameter as the Shear-Mixer for its entire length, minimizes vertical lift and restrictions to flow such as bends and valves, and minimizes overall back pressure as much as possible.
  - Some back pressure is necessary to prime the Shear-Mixer and achieve optimum performance. The minimum back pressure is achieved by allowing 6 pipe diameters of straight pipe downstream of the Shear-Mixer without obstruction. *i.e. a 6" mixer needs 6" X 6 pipe diameters = 36" OR 3 ft of straight run pipe downstream before any bends, elbows or valves.*