



Alfa Laval Lobestar Mud Hopper

Advanced Drilling Mud Mixer

Introduction

Drilling mud mixing is a critical process in any industrial oil and gas or civil drilling application. Effective mud mixing significantly impacts operational safety, speed, and overall drilling cost. However, the perceived simplicity of this process often leads to poor, unsafe slurry mixing practices and the use of outdated or improper equipment. Venturi mud hoppers have been used for drilling mud mixing for decades and they are simple devices that are installed directly into mud recirculation lines. They have no moving parts or motors, and passively convert motive flow pressure into vacuum, inducing powdered additives directly into the motive fluid. However, they are not free from issues such as plugging, washout, and inadequate powder dispersion which makes them less than ideal when speed and fluid homogeneity are critical. The Alfa Laval Lobestar Mud Hopper is an advanced style of venturi eductor that provides all of the functional simplicity of its predecessor, but overcomes multiple issues that inhibit the traditional mud hopper.

Applications

The Alfa Laval Lobestar Mud Hopper is a high-performance venturi slurry eductor uniquely designed to operate in demanding slurry mixing jobs. Handling high flow rate requirements, high solids content, and difficult to mix additives are major criteria for meeting demanding slurry mixing conditions in applications such as oil and gas drilling fluid mixing, construction material production, chemical production, mining, liquid sugar mixing, brine mixing, cosmetics, paint pigment mixing, metal processing, and plastic production.

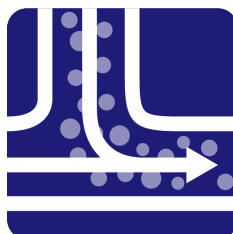
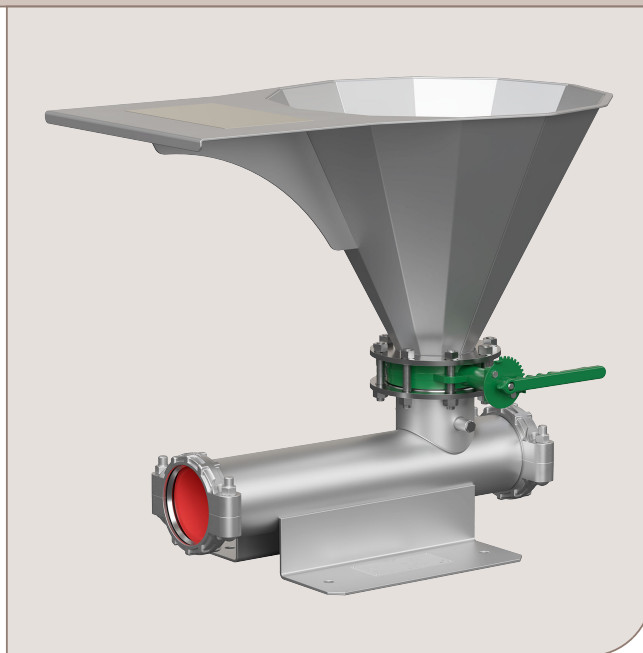
Benefits



Lobestar

Accelerated Mixing with dynamic shearing

Unique nozzle design creates high vacuum, dynamic shearing and reduces plugging



MaxiFlow

Maximized mixture and flow-through rates

Open mixing chamber significantly reduces clogging

- Robust design, no moving parts, easy to replace inserts
- Handles hard to mix additives such as bentonite or polymers
- Highly customizable to fit specific applications

Standard Design

Much like traditional slurry eductors, The Alfa Laval Lobestar Mud Hopper has no motorized or rotating components. It relies on low pressure vacuum and dynamic, hydraulic shear to easily mix additives into fluid. It outperforms traditional venturi eductors; providing higher additive loading rates and more complete additive mixing. However, unlike traditional venturi eductors, it is exceedingly resistant to plugging and downtime. The Alfa Laval Lobestar Mud Hopper is offered in 6" (152mm) pipe diameter with grooved end pipe couplings. It consists of a stainless steel body with base, molded polyurethane Lobestar Mixing Nozzle® and venturi/diffuser tube inserts, a 6" butterfly valve, and a stainless steel conical hopper with work tray.

Working Principle

Drilling mud is pumped at a high rate into the inlet of the Lobestar Mud Hopper where pressure builds behind the Lobestar Mixing Nozzle insert. The fluid's velocity spikes as it passes through the nozzle, and the resulting pressure drop creates a near perfect vacuum for maximum additive loading. The Lobestar Mixing Nozzle produces a unique jet stream that has a dual impact. First, it dynamically shears fluid, rapidly hydrating and uniformly dispersing additives. Secondly, it

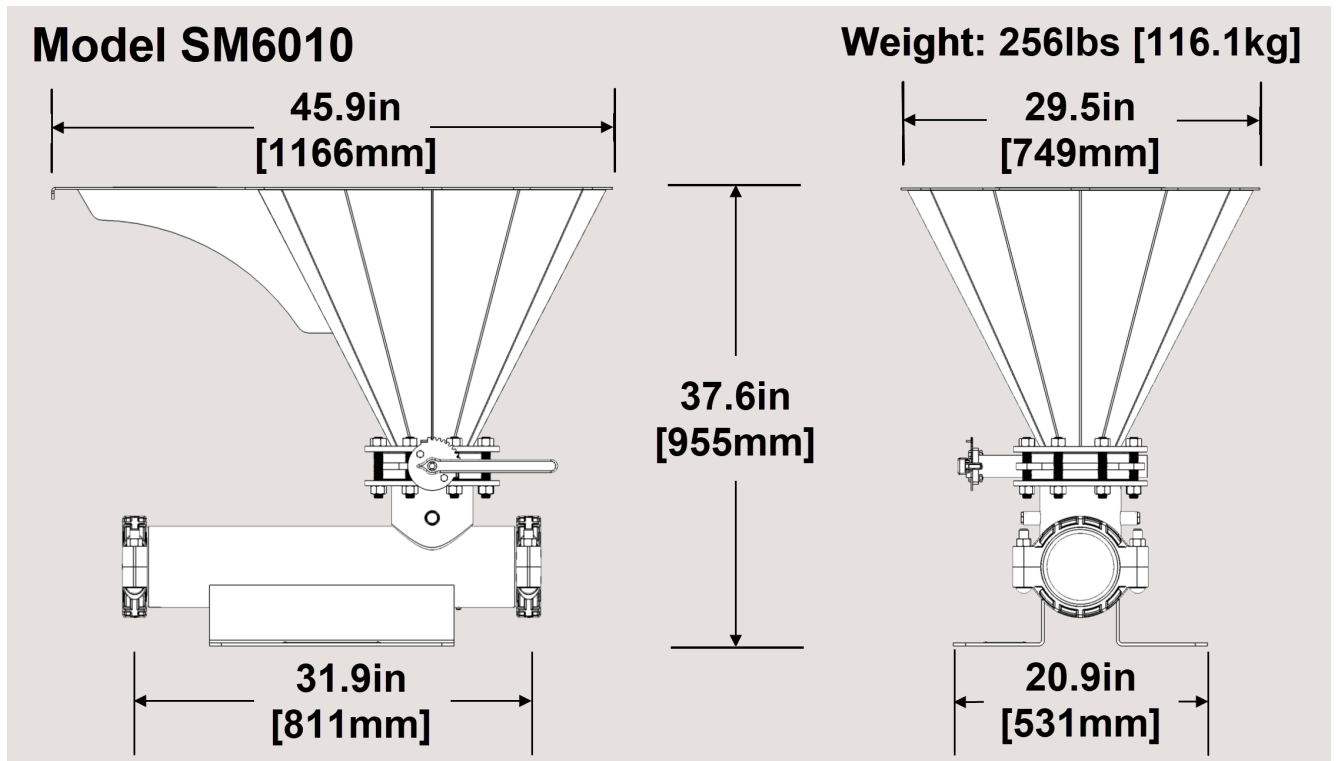
promotes a highly-energized fluid boundary layer, which when combined with the effect of the Lobestar Mud Hopper's specialized venturi/diffuser tube, minimizes the impact of pressure loss in the downstream piping and increases the distance and elevation which mud can be delivered through the discharge piping. Generally, the Lobestar Mud Hopper can be utilized in any application where the motive fluid can be handled by a centrifugal pump.

Technical Data

| Physical Attributes | | | | |
|-------------------------------|---------------------------------|---------------------|---------------------|---------|
| Inlet & Discharge Connections | Suction Connection | Body Material | Insert Material | Gaskets |
| 6" (152mm) grooved pipe | 27" Conical hopper w/ work tray | 304 stainless steel | Molded Polyurethane | Buna |

| Performance Attributes | | |
|--|------------------------------------|----------------------------------|
| Optimum Motive Flow Range | Optimum Differential Head | Design Temp. |
| 475–625gpm (108–142m ³ /hr) | 115–185ft of head (35–56m of head) | –20°F to 135°F (–28.8°C to 57°C) |

Dimensional Drawings



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