

Air-Cone[®]

Hopper



Semi-Bulk Systems, inc.

We'll make a believer out of you

Benefits of the **Air-Cone®** Hopper

Getting fine powders to flow effectively can be a big challenge in most manufacturing processes. Bridging, rat holes, and other problems can be a costly, time-consuming nuisance.

AT SEMI-BULK SYSTEMS WE HAVE BEEN developing effective solutions to the challenges of handling and mixing powders and liquids for more than 25 years. The result is a patented, state-of-the-art technology that is faster, cleaner, easier, and more economical than any other in the industry. Whether you are looking for individual components or a totally integrated system, we offer custom-designed solutions to meet your specific manufacturing needs.

The Air-Cone® Hopper is designed for complete discharge of dry ingredients, including the most difficult powders that typically cause delivery problems.

High Quality

- **Accuracy and product consistency** – Batch-to-batch variations from material remaining in typical hoppers are virtually eliminated due to the Air-Cone® Hopper's unique aeration process.
- **Bridging and rat holes eliminated** – The hopper's inner membrane wall covers the complete cone surface to ensure smooth and complete flow of powders.

Improved Efficiencies

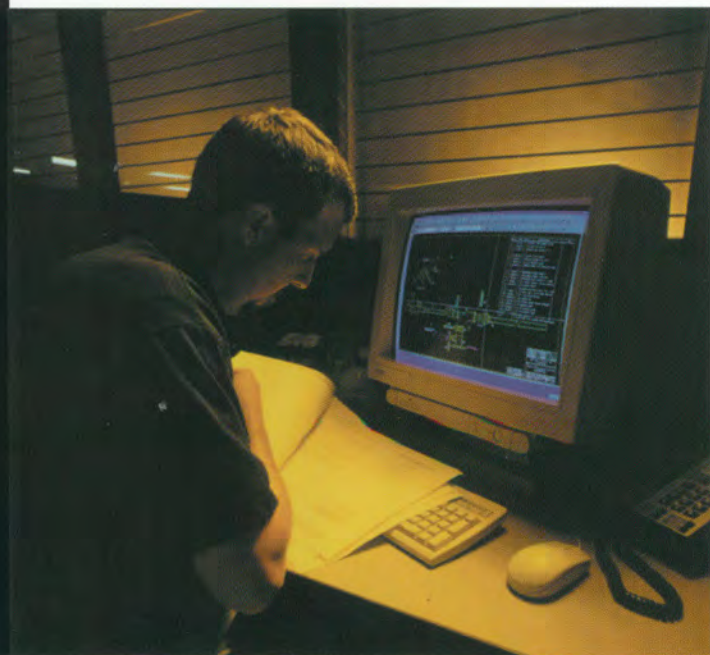
- **Waste reduction** – Total discharge results in less product loss.
- **Increased Productivity** – Reduce downtime by providing dependable powder flow and discharge.

Flexibility & Convenience

- **Easily integrated** – The Air-Cone® Hopper can be installed in numerous processes due to available variations in size and configuration, compact design, and availability of transitions and different construction materials.
- **Versatility** – The Air-Cone® Hopper can be used as a weigh or scale hopper in pneumatic convey processes.

Sanitary Design

- **CIP/COP quick disassembly** – Carriage allows for easy one man removal and connection to bin bottom



Optimal

Particle Separation

OUR CUSTOM-DESIGNED DRY INGREDIENT HANDLING SOLUTIONS ARE THE MOST COMPREHENSIVE IN THE INDUSTRY.

of Powders

We offer complete design engineering, including initial ingredient evaluation and characterization. All fabrication and assembly are done in our manufacturing facility, and systems are tested in our production-scale pilot plant before they are placed into your operations. Then we supervise your installation and start-up and provide ongoing training and service.



The Air-Cone® Hopper is designed to interface with the VACUCAM® Ejector Mixer to create a totally integrated system for handling and mixing powders and liquids in virtually any type or size of manufacturing process.

Air-Cone Specifications

	INDUSTRIAL	SANITARY
SIZES	Diameter (ft.) 2, 3, 4, 5, 6 (cm.) 61, 91, 122, 152, 183	Diameter (ft.) 2 (cm.) 61
OUTLET	5", 8" 12.7 cm, 20.3 cm	5", 12.7 cm 8", 20.3 cm
HOPPER ANGLE	30°, 60°	45°
MEMBRANE	Woven Polyester	Stainless Steel
MATERIALS OF CONSTRUCTION	Carbon Steel Carbon steel with Stainless Steel Contact	304 Stainless Steel
OPTIONS	304 Stainless Steel	316 Stainless Steel Electro Polished Interior

Typical Applications

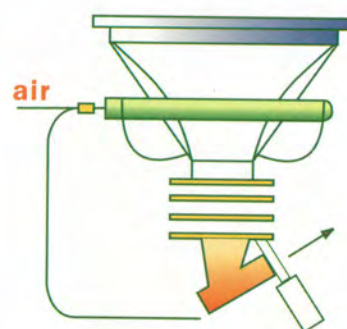
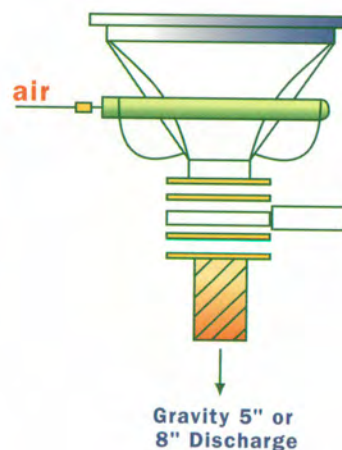
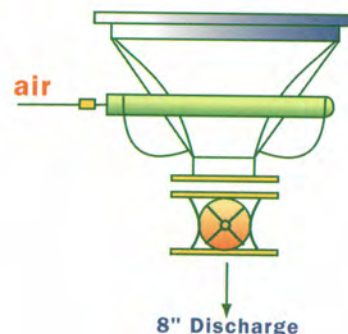
Custom-designed applications are being developed on a regular basis as we work to meet each client's distinctive, individual needs. The following applications are examples of how our Air-Cone® Hopper is currently being used in both Industrial and Sanitary processes.

- Examples of Air-Cone® Hopper installations include day bins, silos, surge hoppers, scale hoppers, weigh hoppers, receiver/separator hoppers, bulk bag unloaders and paper bag dump stations.
- Examples of products for which the Air-Cone® Hopper is used include clay, starch, pigments, dairy powders, catalysts, resins, iron oxides, titanium dioxide, calcium carbonate, and similar types of difficult materials

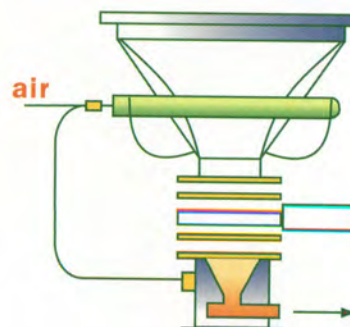
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Discharge Options

The Air-Cone® Hopper is available with 5" or 8" discharge ports, affording several discharge options and making the system compatible with different types of equipment in existing or new processes.



Feed to VACUCAM® Ejector Mixer or vacuum conveyor 5" Discharge via 30° aerating pick-up transition



Feed to VACUCAM® Ejector Mixer or vacuum conveyor 8" Discharge via aerating pick-up transition

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Complete, Accurate and Efficient Discharge of Powders

The Air-Cone® Hopper's ability to condition difficult powders makes it ideal for applications where dependable flow and total discharge are critical. Batch-to-batch variations due to material hold-back are virtually eliminated when it is used as a weigh hopper.

SINCE THE CONDITIONED POWDER IS ABLE TO FLOW freely, the Air-Cone® Hopper is an excellent feed source for vacuum conveyors and for the VACUCAM® Ejector Mixer manufactured by Semi-Bulk Systems. Here's how the system works.

An inner membrane completely covers the surface where product comes into contact with the cone. Low pressure "conditioning" air or inert gas is distributed by an air supply manifold and diffused through the membrane wall. When the dry ingredients are conditioned, they assume the properties of a liquid and can then flow smoothly and accurately into your manufacturing process. This aeration process eliminates some of the typical production problems with difficult powders such as bridging and rat holes.



Product contact membrane is available in polyester and nylon fabric or stainless steel.

Inner membrane covers the complete surface where product comes into contact with the cone.

Carbon or stainless steel construction.

Several options are available for discharging powders and other dry ingredients.

Conditioning air or inert gas is distributed by an air supply manifold and diffused through the membrane wall.





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**Manufacturing custom-designed
systems for dry and liquid mixing
processes and dry ingredient handling**

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25 Years
Semi-Bulk Systems
incorporated