



Bulk Material Handling Solutions



"Drawing on our experience, garnered in over 50 years in the industry, Whirl-Air-Flow is uniquely qualified to design and build comprehensive systems to transport the broadest range of materials."

Since 1946, Whirl-Air-Flow has built a reputation for excellence in the pneumatic transport of dry bulk solids for a broad range of applications. Leading companies - in such diverse industries as food, chemical, fiberglass, steel, foundry, clay and cement - rely on the experience of Whirl-Air to design, engineer and fabricate highly efficient ingredient and bulk material handling systems.

Whirl-Air designs and builds a broad range of handling systems. These include:

- Dense phase vacuum and pressure conveying systems
- Dilute phase vacuum and pressure conveying systems
- Pneumatic batch blenders
- Dust Collectors
- Weigh-Veyors
- Bulk bag unloading systems
- Manual bag emptiers
- Central vacuum systems
- Industrial vacuums
- Pressure vessels and specialty fabrication

Knowledge Built On Experience

Whirl-Air has the capability to handle a diverse range of conveyable materials, thanks to our vast experience in a variety of industries. Whirl-Air conveying systems handle particulates, powders, granules, and other

materials and ingredients. These may be free-flowing, sticky, cohesive, abrasive, fragile and friable, explosive, hot or corrosive.

In most cases, Whirl-Air has experience with the unique characteristics of your products and can foresee the conveying challenges associated with the products. Working from this base of experience, Whirl-Air designs systems to specifically address potential problems and engineer logical solutions to meet customer requirements.

Hands-On Fabrication Expertise

Whirl-Air solutions begin with comprehensive engineering based on the characteristics of the products. Once an engineering solution has been devised, components are fabricated in-house by Whirl-Air technicians.

Upon completion, Whirl-Air preassembles sub-assemblies to ensure proper fit, minimizing delays at final in-plant construction. In addition, Whirl-Air also provides complete installation and start-up assistance, working with you every step of the way, ensuring your system is running smoothly and efficiently.

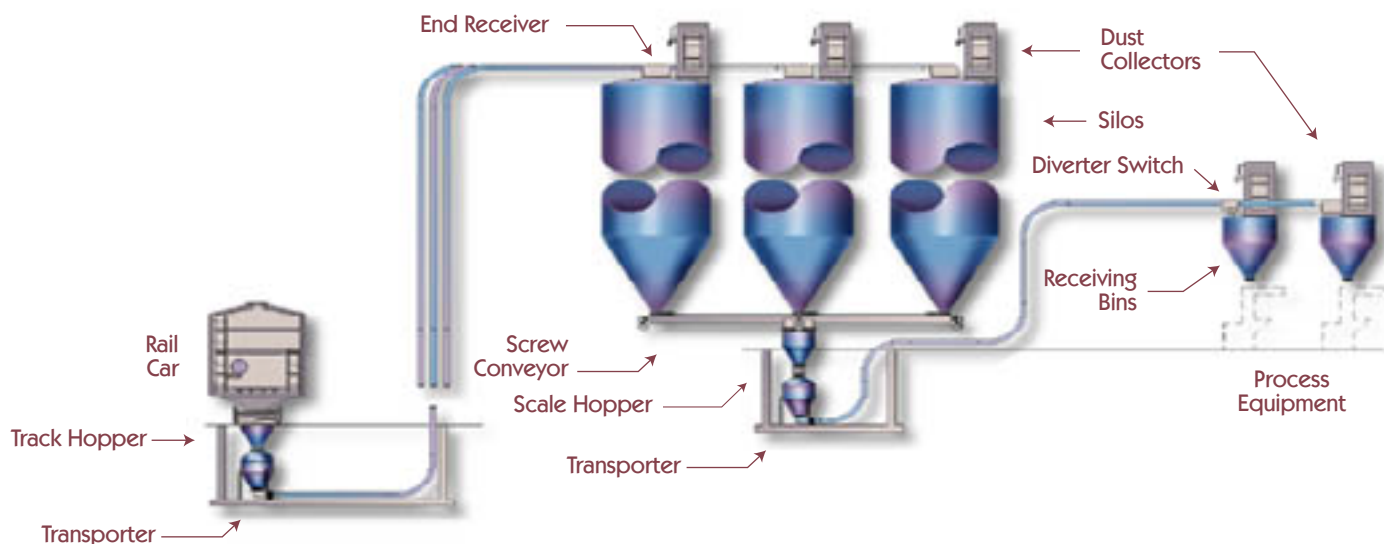
After installation, our staff of service engineers are readily available to help in every way, to ensure your system delivers the long-life and reliable performance our customers have come to expect from Whirl-Air.



◀ Whirl-Air systems range from specific point-to-point in-plant systems to complete unloading and storage facilities.

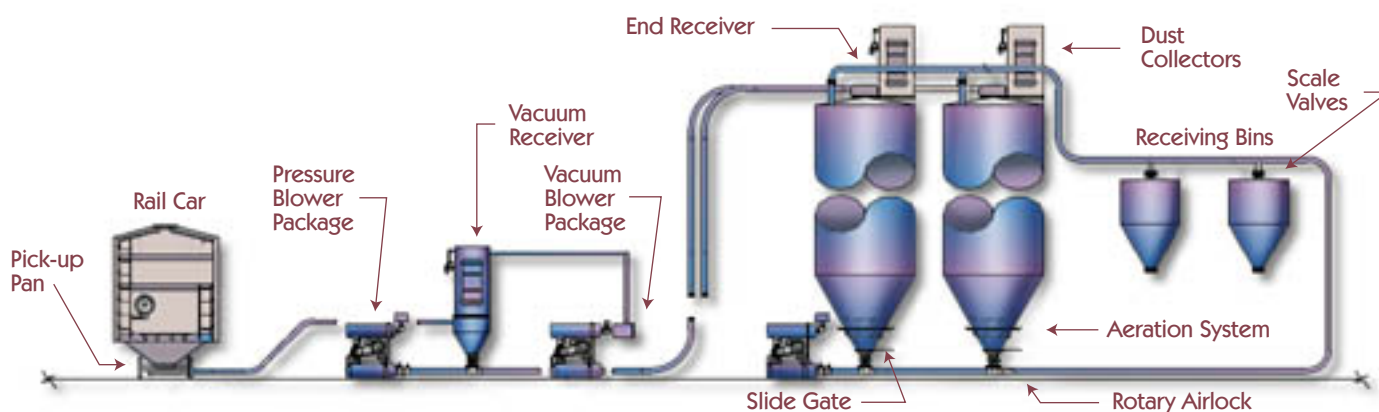
"Whirl-Air-Flow provides a diverse range of bulk material handling systems - custom engineered to your specific needs."

Whirl-Air-Flow technology provides complete project design from the entry of material, to storage, weighing, mixing and transport to final processing. Whirl-Air covers the entire spectrum in material handling, including on-site supervision during installation, system start-up and training in the operation of the systems.



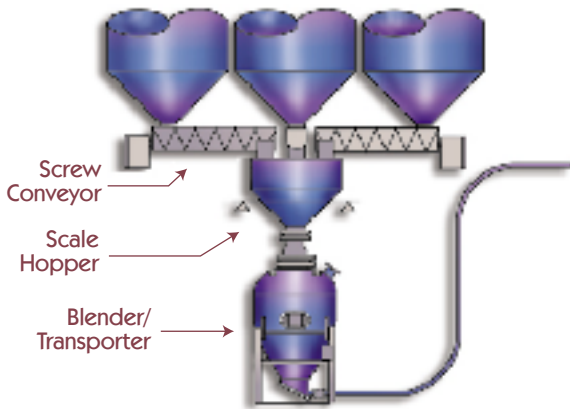
Dense Phase Conveying Systems

In this typical dense-phase conveying system, flowable products are unloaded from a rail car positioned over a track hopper and conveyed to storage silos. Products are subsequently metered and weighed from the silos and product is delivered on-demand to in-plant processing systems.



Dilute Phase Conveying Systems

In this typical dilute phase system, flowable products are unloaded using a vacuum/pressure unloading system from railcar to storage silos. Products are then conveyed from the silos to in-plant process areas using a separate pressure system. Dilute phase systems are generally used when conveying non-abrasive materials or where high material velocities are not a factor.

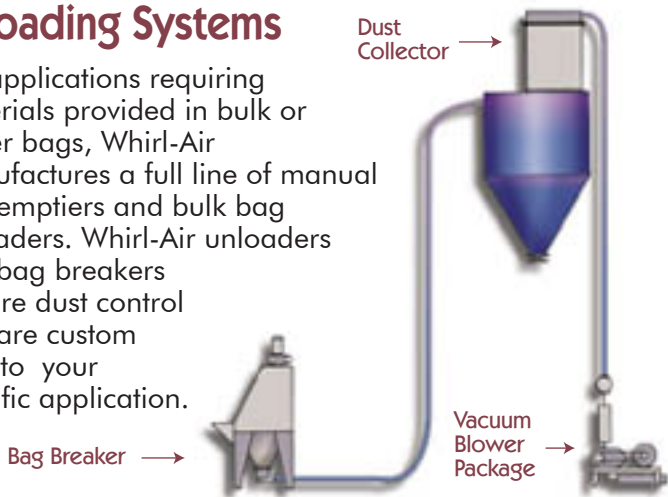


Weighing & Air-Blending Systems

The Whirl-Air pneumatic batch blending concept provides a thorough, dust-free, low-shear mix in two to five minute cycles. Upon completion, the product is conveyed to in-plant processing areas using the same Whirl-Air vessel.

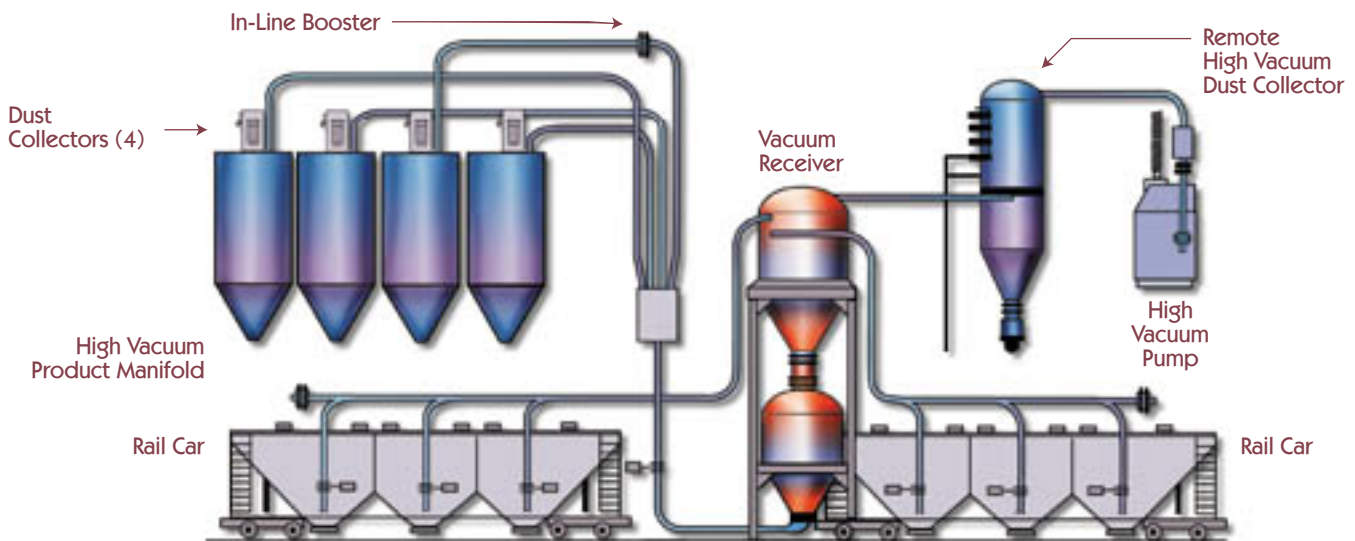
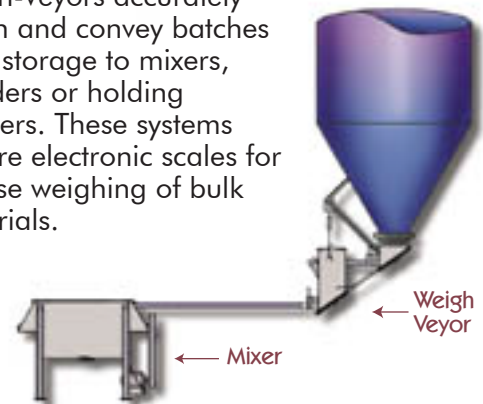
Bag Unloading Systems

For applications requiring materials provided in bulk or paper bags, Whirl-Air manufactures a full line of manual bag emptiers and bulk bag unloaders. Whirl-Air unloaders and bag breakers feature dust control and are custom built to your specific application.



Weigh-Veyors

Weigh-Veyors accurately weigh and convey batches from storage to mixers, blenders or holding hoppers. These systems feature electronic scales for precise weighing of bulk materials.



Vacuum/Pressure Dense-Phase Conveying Systems

High vacuum, dense-phase rail unloading systems allow automatic unloading of multiple railcars at the same time. This system requires no pits, and will obtain unloading rates of up to 50 tons per hour. The extremely low conveying line velocities of these systems are best suited to handling fragile or abrasive materials where product breakage or system wear is a concern. This design allows conveying of materials over extended distances.

Among the many distinguishing factors of a Whirl-Air bulk material handling system is the design and fabrication using standard components. The Whirl-Air line of components can include transporters, boosters, air blenders, dust collectors, paper and bulk bag unloaders, weigh-veyors, switches and diverter gates. Each component required to complete the system design is integrated into the overall engineered system. System controls are supplied via an electrical control panel specifically designed for each application, using commercially available electrical components.

" Whirl-Air-Flow components are custom built in our facility to suit your specific application"

Bulk Bag Unloaders

Whirl-Air heavy duty bulk bag unloading systems handle the largest range of bag sizes and weights. With a complete array of bag emptying features, Whirl-Air bag unloaders ensure complete bag emptying of product while often incorporating material conveying systems.



Bag Unloading Systems

Whirl-Air bag dump/filter systems are fully self-contained systems for manual emptying of bags and small drums. The system features a downdraft design to eliminate airborne dust, and return the dust particles to the hopper.



Transporters

Whirl-Air transporters are used in dense phase conveying systems which are specially suited for abrasive or friable materials, as well as for high capacities and long conveying distances. Transporters are ASME code vessels which require no moving parts.



Batch Blender/Transporters

Whirl-Air batch blender/transporters handle a variety of dry bulk materials in a wide range of particle sizes and densities. The pneumatic blending process provides thorough, dust-free mixing with extremely low shear in cycles ranging from two to five minutes.



Dust Collectors

Whirl-Air dust collectors are designed for ease-of-use and trouble-free maintenance. Whirl-Air units are shipped completely assembled, pre-piped and pre-wired with filters installed. We also manufacture ASME coded filters.



The integrated blender/transporter design uses one unit to blend and convey, minimizing the amount of floor space and cost required to perform these functions.

"Whirl-Air-Flow has unparalleled in-house fabricating, assembly and machining capability, ensuring precision construction and assembly of components and systems."

Whirl-Air-Flow has proven design and engineering experience to tackle the toughest material handling and transport challenges. To transform this experience from theory to a reliable, hard-working system at work in your plant, Whirl-Air uses our extensive in-house manufacturing and fabricating facility.

Most components of Whirl-Air systems are original Whirl-Air designs, manufactured in our expansive 100,000 sq. ft. manufacturing facility.

In-house manufacturing and fabricating by factory trained Whirl-Air technicians ensures your Whirl-Air system is built to spec from start to finish. Upon completion, major sub-assemblies are preassembled on our shop floor before shipment. This additional quality step minimizes downtime during installation, as the fit and finish of componentry has been confirmed well in advance of installation.

Whirl-Air in-house facilities cover all aspects of system manufacturing, including:

- Complete mechanical and electrical engineering facilities.
- Full fabrication shop for carbon steel, stainless steel and aluminum.
- ASME fabrication shop.
- Pneumatic testing lab.
- Complete machine shop.

In-house manufacturing and fabricating is just one of the many advantages Whirl-Air brings to every bulk material handling project. It is our customer's assurance of quality and reliability.



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