ASTEC BAGHOUSES

REVERSE PULSE JET BAGHOUSE

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With ever increasing specifications, dust handling has become a critical component in all asphalt plant operations. With that in mind, Astec offers the Reverse Pulse baghouse. Modular in design and created to operate at a consistently lower air-to-cloth ratio (ACR), the Reverse Pulse baghouse can be fitted to plant size requirements. The Reverse Pulse baghouse is available in a range of sizes from 45,000 to over 100,000 ACFM. It is a ruggedly constructed system; manufactured out of 3/16" corrosion resistant steel plating.

BAGHOUSE Facility Style

Whether you need the quick setup and mobility of a portable plant, the flexibility and operating capacity of a stationary, or something in-between — Astec baghouses can be configured for any of the three Astec plant styles.

STATIONARY

Stationary asphalt mixing plants provide a high degree of flexibility for customized layouts and special features. The stationary baghouse is supplied with steel legs to grade. The legs are anchored to your prepared concrete foundations.

PORTABLE

The Astec portable baghouse is designed as an integral component of the Six Pack® portable hot mix facility. Built-in running gear, high-rise air bag suspension and optional retractable plate foundations eliminate setup hassles. Portable baghouses are available in a range of capacities.


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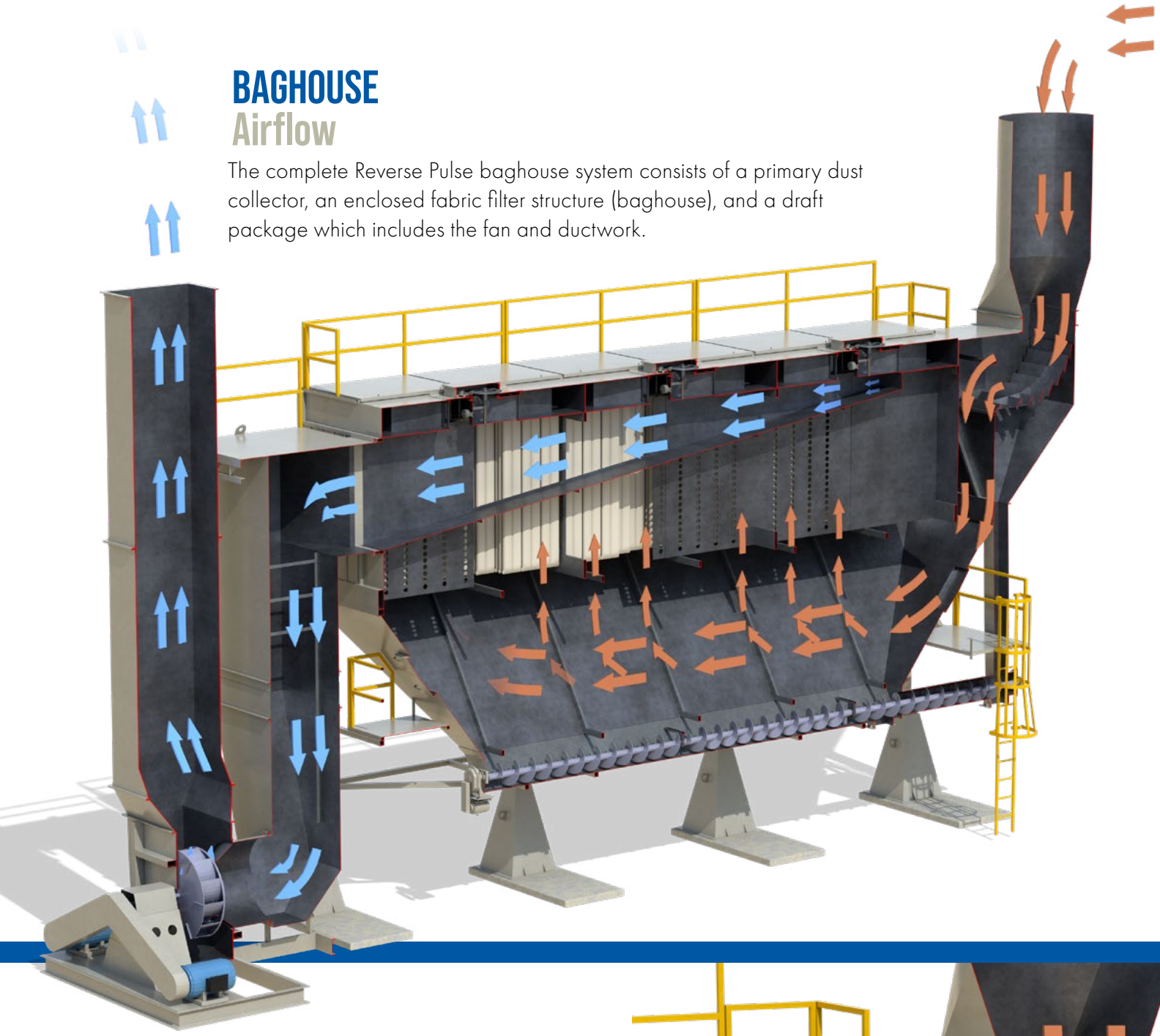
BAGHOUSE
Airflow

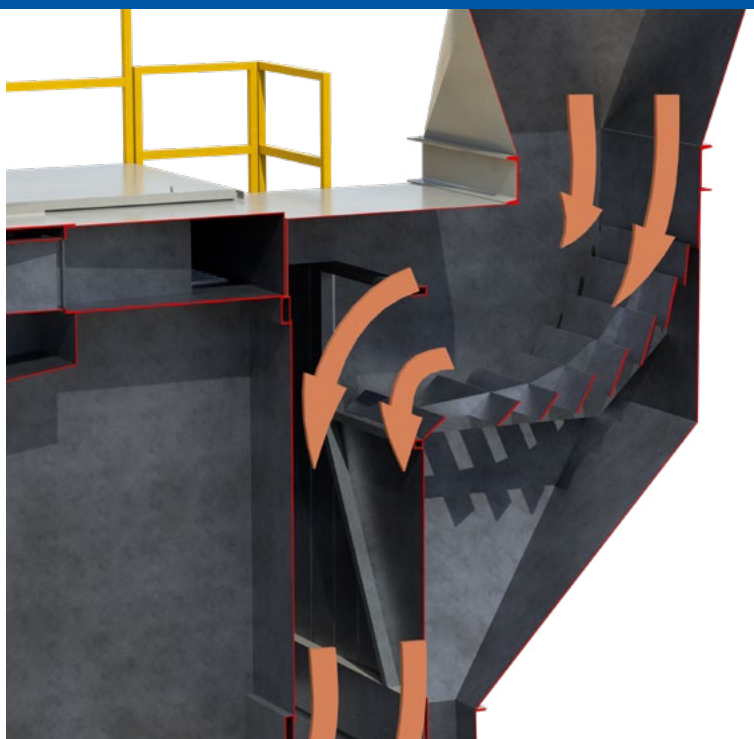
The complete Reverse Pulse baghouse system consists of a primary dust collector, an enclosed fabric filter structure (baghouse), and a draft package which includes the fan and ductwork.

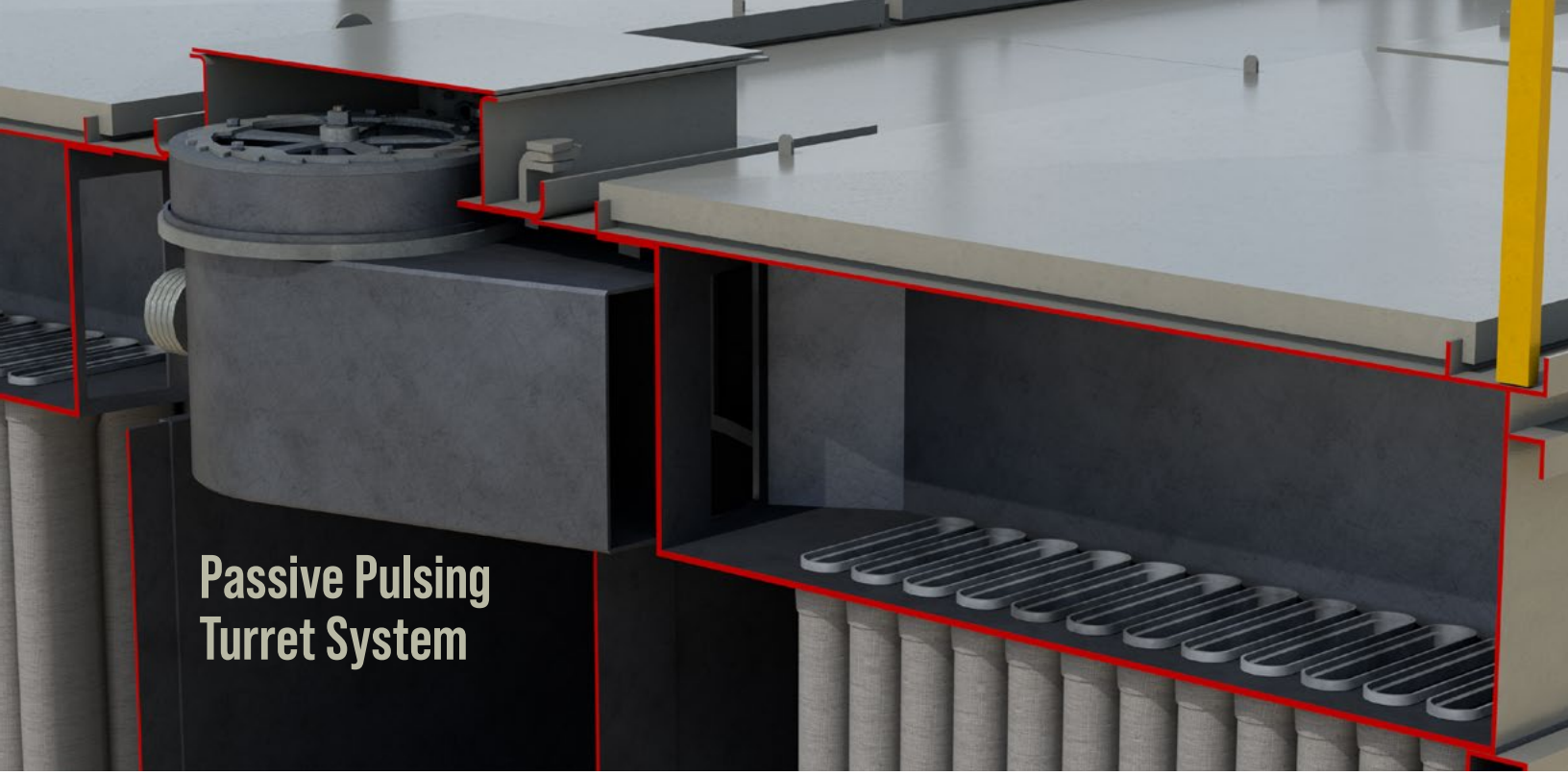


PRIMARY DUST SYSTEM

Reverse Pulse baghouses feature a primary collector, either an inertial separator or a knockout box, for removing coarse fines from the airstream before it enters the baghouse. Generally, these particles are larger than 200 mesh, while fines from the baghouse consist of particles smaller than 200 mesh. The coarse fines can be easily returned to the mix.

Since very few large particles enter the baghouse, it can collect small fines more efficiently. Removal of coarser fines also eliminates much of the wear from these particles so filter bags and other components last much longer.





PULSE AIR OPERATION

The Reverse Pulse baghouse uses a passive pulsing turret system with timed indexing and fast-acting air doors. The air doors keep outside air intake to a minimum, maintaining efficiency of the baghouse while the rotating nozzle system ensures sequential isolation and cleaning of each row of bags. The system pneumatically opens the doors on top of the baghouse, allowing the exhaust fan to pull atmospheric air into the baghouse to pulse the bags.

The turret system includes one rotating turret per baghouse module to ensure sequential isolation and cleaning of each row of bags, known as hallways. When the turret aligns to a single hallway, the door opens, providing a pulse of atmospheric air to dislodge the dust (fines) from the bags.

After the door closes, the hallway is kept offline allowing the dislodged dust to fall away from the bags.

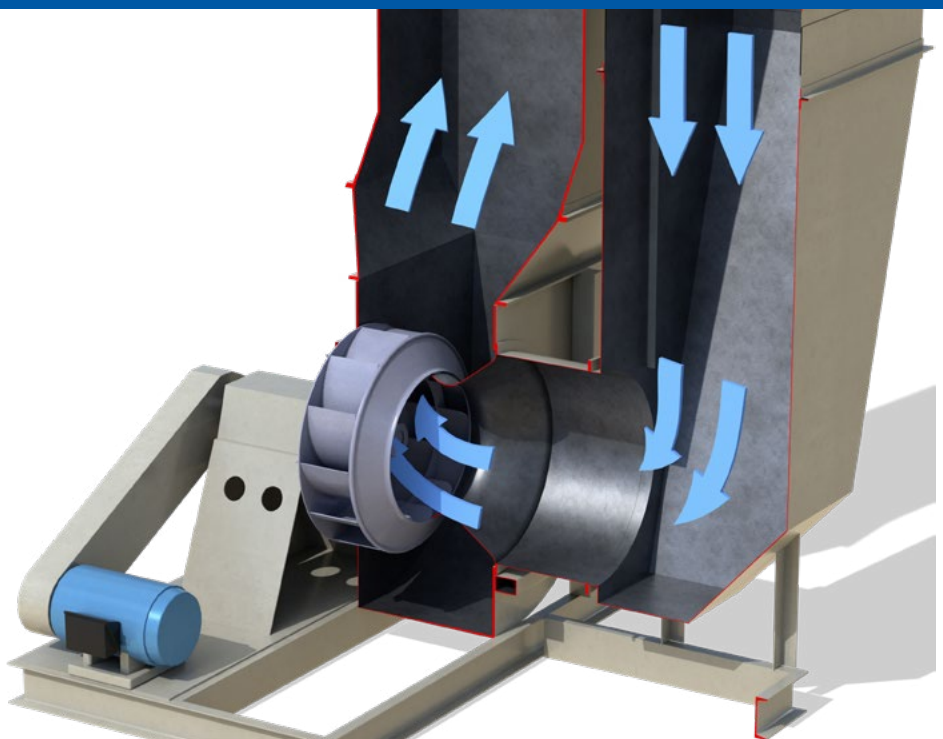
The dust falls into the hopper and is transported via auger (screw conveyor) to the discharge point.

As the turret indexes to the next hallway, the cleaned bags are gradually brought back online, reducing bag fatigue.

Individually adjustable time delays allow the operator to adjust cleaning times to maintain optimal baghouse efficiency.

DUAL-DRIVE FAN ASSEMBLIES

Precision-balanced, backward-curved dual-drive fan assemblies offer a wide range of operating conditions with higher efficiencies than other fan designs. Airflow is controlled by vane dampers or variable speed drives (optional).

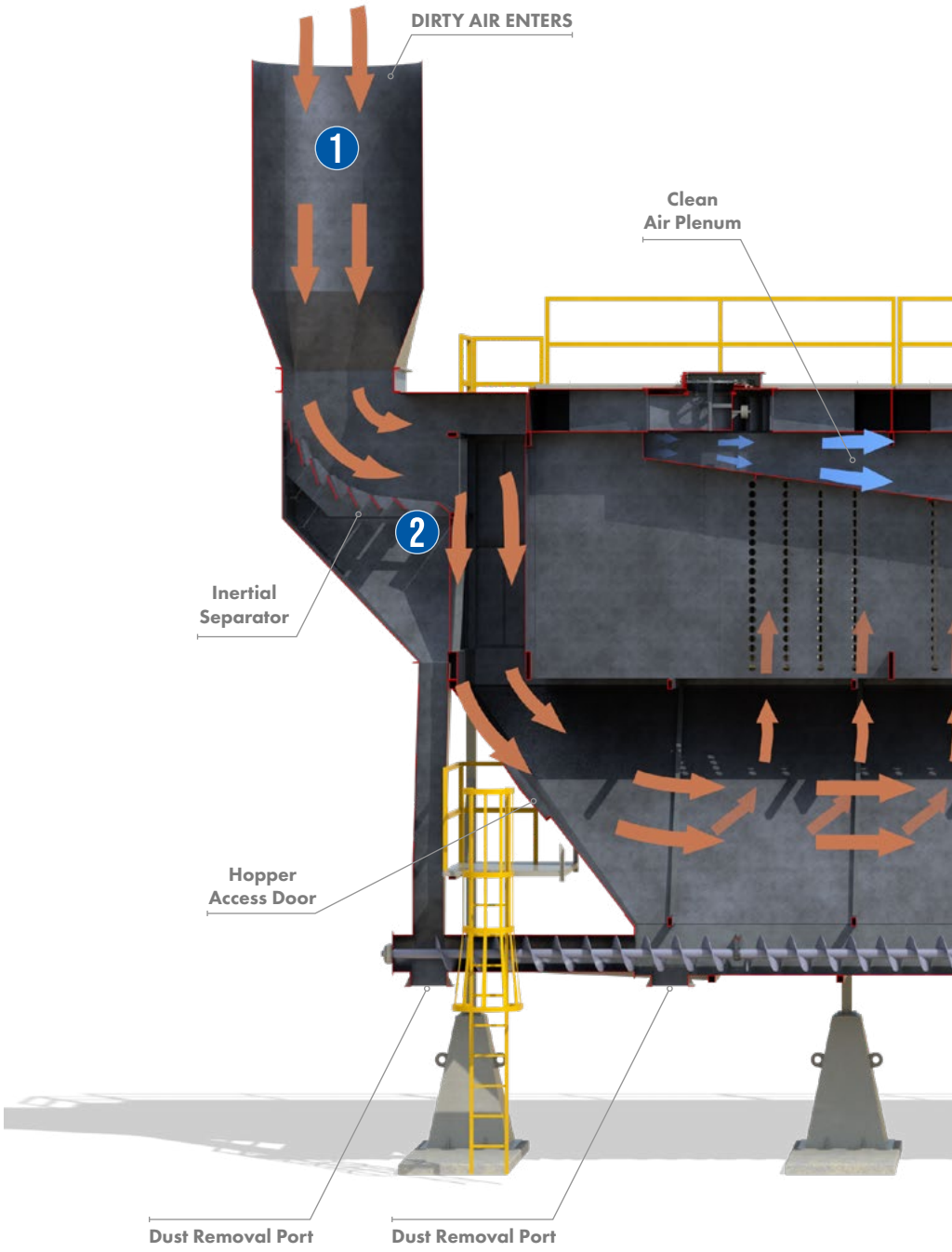


BAGHOUSE
Cleaning Process

Baghouses are required at asphalt mixing plants to meet environmental regulations. They are considered the best available control technology (BACT) for particulate matter. Astec baghouses routinely meet the most stringent emissions limits.

In addition, baghouses offer an economic advantage. The dust captured by the baghouse is valuable and can be returned to the mix.

The typical asphalt mixing plant baghouse consists of a fabric filter system enclosed by a steel structure. The basic technology of a baghouse is simple. The exhaust stream passes through the fabric filters before it enters the atmosphere. Dust is unable to pass through the felt and accumulates on the outside of the bags.

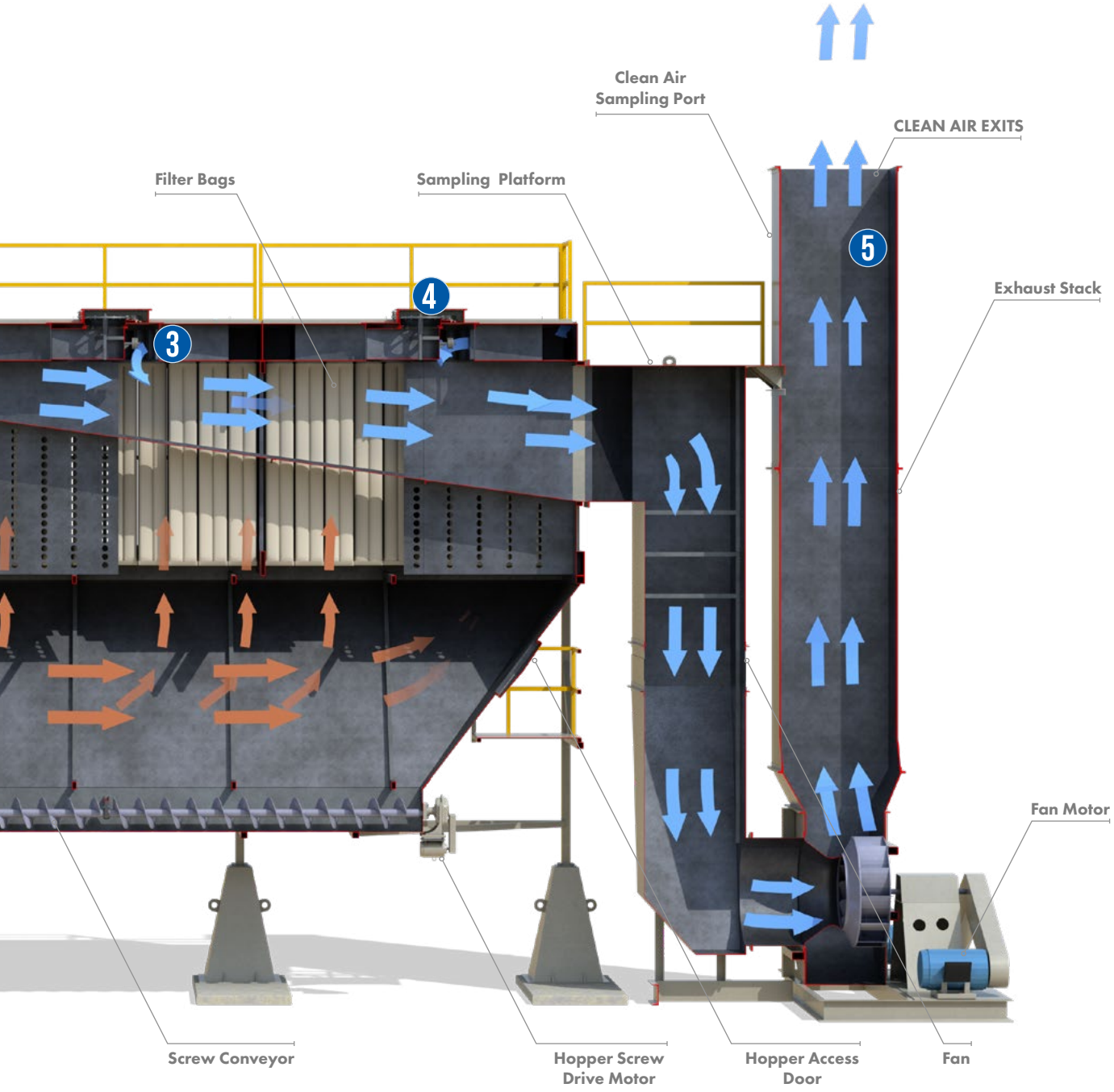


1 DUST COLLECTOR

Gas stream exits the drum mixer or dryer through the duct and enters primary dust collector (inertial separator or knockout box) for removal of coarse material.

2 SKIMMER PLATES

In an inertial separator, air flow moves through skimmer plates knocking down any "heavy dust" that can prematurely wear bags and cages.



❸ CLEANING BURSTS

Reverse pulse air causes the bags to expand and expel the collected dust cake from the surface of the bag. The dust is thoroughly flushed into the collection hopper.

Dust settles in the bottom of the hopper and then is removed by one or more screw augers to be stored, reintroduced or wasted.

❹ ROTATING TURRET

The rotating indexing system prevents "puffing" and dust release to the stack. The unique rotating nozzle assembly ensures sequential isolation and cleaning of each row (or hallway) of bags.

❺ EXHAUST STACK

The cleaned gas stream exits the baghouse through the exhaust stack.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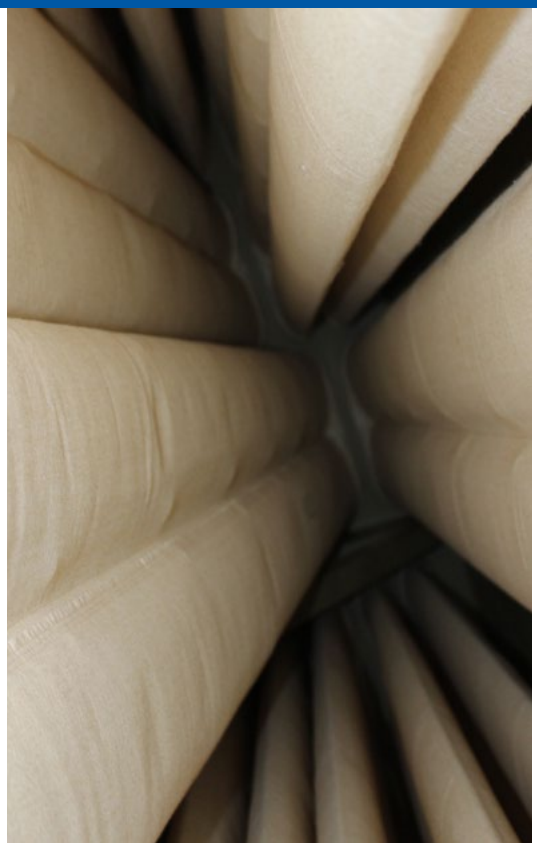
REVERSE PULSE
Bag Material

Thanks to better-quality, minimum-weight bags, Astec baghouses do a more reliable job. Astec felt is made of 2-denier virgin aramid fiber. All Astec felts are also singed for superior dust cake release. The bag material is specially made for Astec, with a guaranteed minimum density of 14 ounces per square yard consistently across the entire length of the bag. Bags of lesser quality may claim a nominal density of 14 ounces per square yard, but the bags can be thinner than that average in spots, and can exhibit uneven dust loading, resulting in faster bag wear and lower collection efficiency. The density of Astec bags is never less than 14 ounces per square yard. The Astec proprietary material conveys more uniform dust loading producing a higher collection efficiency, high strength and an excellent temperature range.



REVERSE PULSE Envelope BAGS

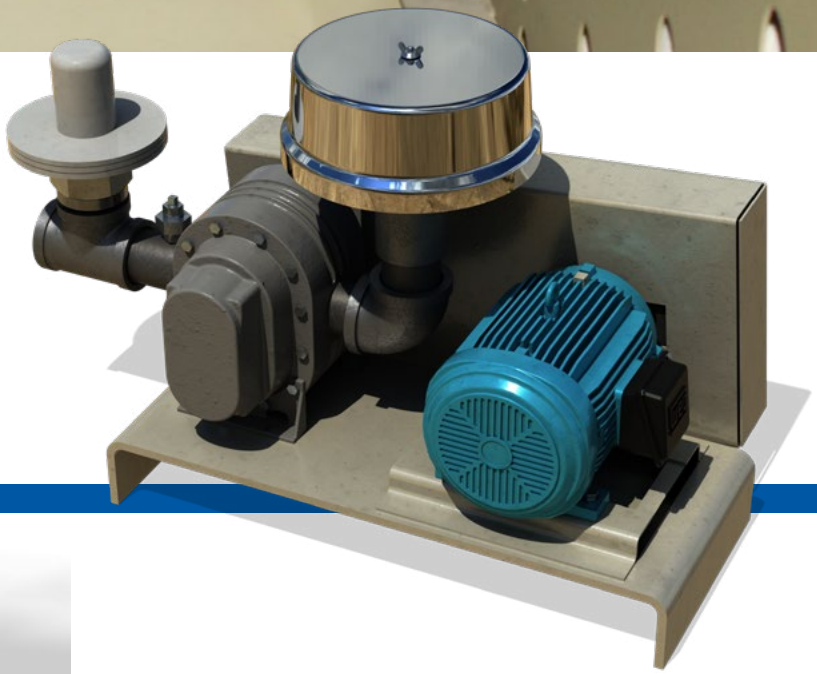
The Reverse Pulse baghouse utilizes envelope bags. These bags can be packed in close together resulting in an overall smaller baghouse footprint when comparing models based strictly on rated airflow. The upward velocity of air between bags, which is a function of bag spacing and air/cloth ratio (ACR), does not affect bag cleaning in a Reverse Pulse baghouse. For longevity, the bags for the Reverse Pulse baghouse have special wear cuffs at the top and the bottom to protect them from rubbing against the cage.

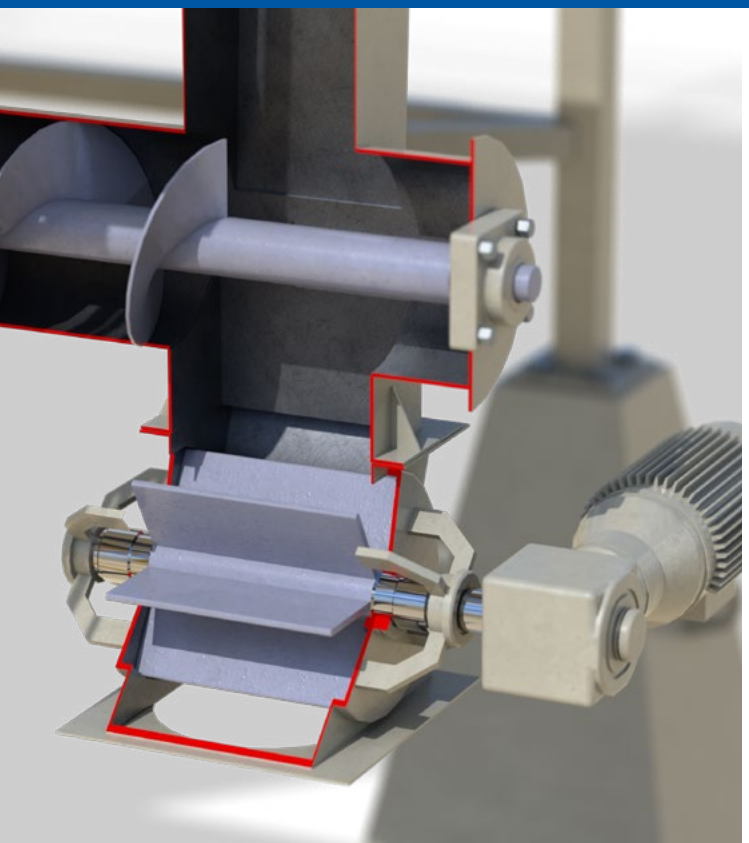
REVERSE PULSE Dust Handling

A reinforced, large capacity hopper section with powerful auger and drive system promotes quick and easy dust handling, whether storing, reintroducing or wasting the dust.

Dust Removal Ports

The Reverse Pulse baghouse system is equipped with dust removal ports for optional dust handling systems such as silos, dust run-around systems, weigh pots, etc.





DUST BLOWER

Add an optional dust blower to convey fines recovered from the baghouse hopper to a dry additive silo for storage.

ROTARY VANE FEEDER

The baghouse is equipped with one or more rotary vane feeders, also known as airlocks, to transfer baghouse fines. The feeder has rotating vanes that move the material through the baghouse hopper without allowing air to be pulled through it into the baghouse..

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