



THAYER SCALE RESIN HANDLING SYSTEMS FOR THE OSB INDUSTRY



THAYER SCALE-HYER INDUSTRIES, INC.
91 Schoosett St.
Pembroke, MA 02359



OSB Powdered Resin, *Dilute Phase* vacuum conveying system

Thayer Scale provides complete powdered resin handling and feeding systems for the OSB and MDF Industries.

Phenol-formaldehyde resin is a spray dried powder that is fine, fluidizable, adhesive and temperature sensitive. It also must be contained to prevent fires and is considered a potential hazard to workers.

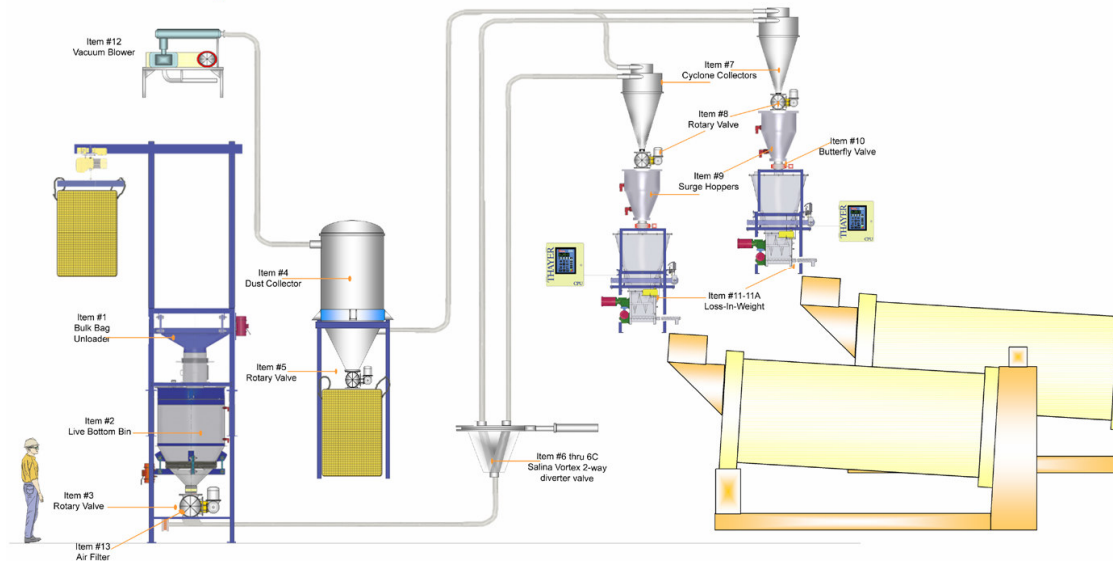
Most all system design incorporate some type of Bulk Bag Unloading Station, surge bin, conveying system and Loss-In-Weight feeder.

The configuration of the system is typically dictated by the preferences of the end user.

Since the material is heat sensitive, the type of conveying system used, is critical to the performance of the system. Typically a dilute phase POSITIVE pressure system should not be used do to the temperature rise of the conveying air when compressed by the blower. This compressed motive air temperature can rise to a point that the resin can begin to melt and adhere to the conveying line surfaces, eventually choking off the line.

Thayer can provide three different conveying packages.

A) Dilute phase VACUUM conveying system where the material is discharged from the bulk bag unloader, into a surge hopper, through a rate controlling rotary valve and into the convey line which transfers the material a cyclone or filter receiver. Once the material has been conveyed to the receiver it can be discharged to the Loss-in-Weight feeder when called for by the controller refill cycle.

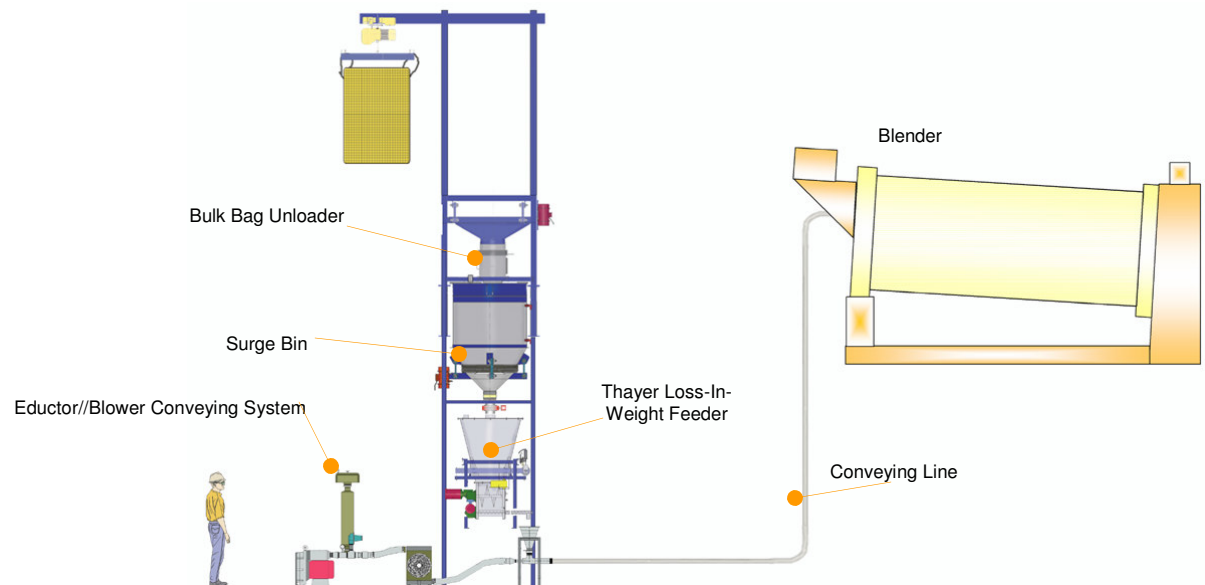


OSB Powdered Resin, *Pressure Blower/Eductor* conveying system

B) Blower/Eductor conveying system where the material is discharged from the bulk bag unloader and into a surge hopper. The surge hopper discharges the material into a Thayer Loss-In-Weight feeder where it is accurately fed into an eductor. The eductor, using pressurized air, blows the material through the conveying line and directly into the blender.

Note the following.

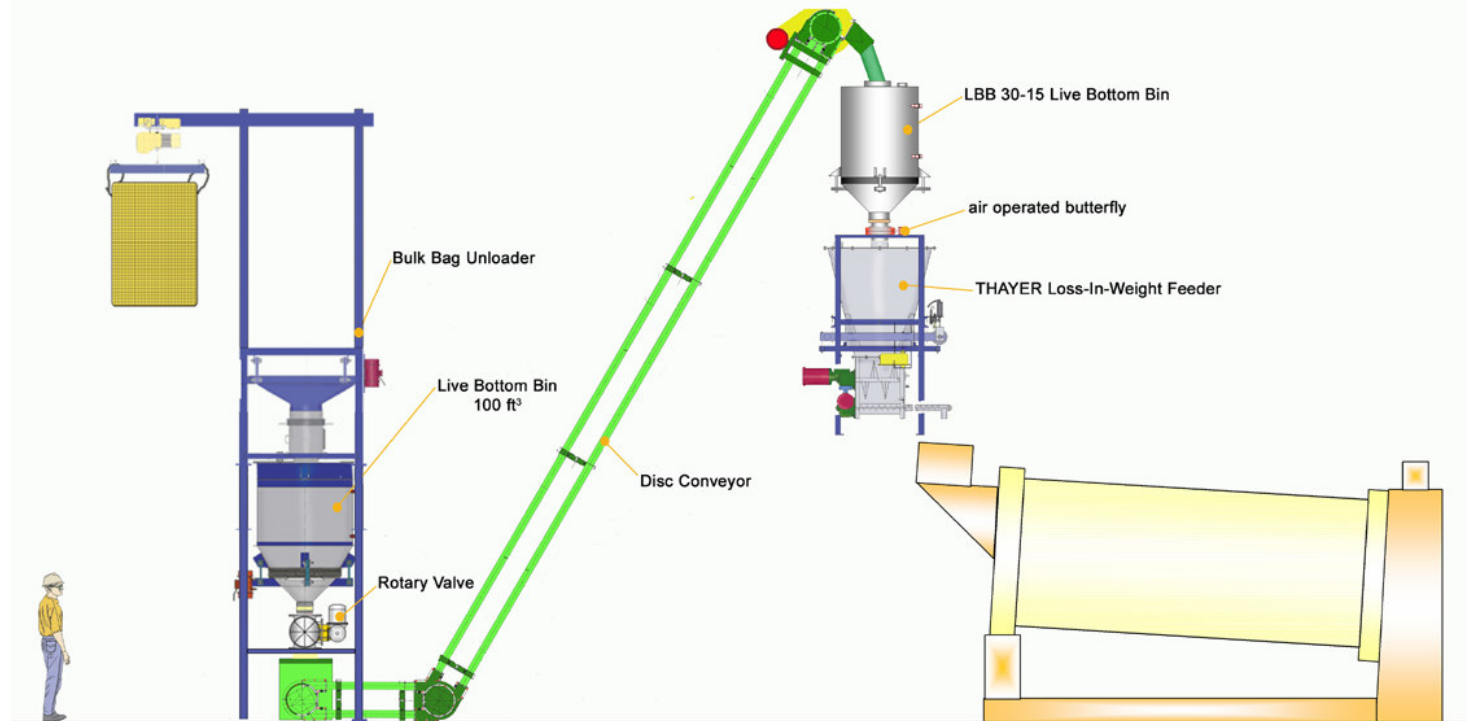
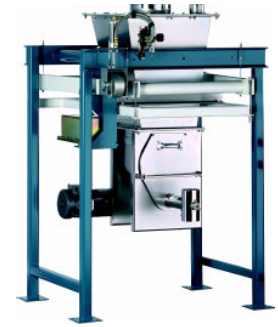
- 1) This conveying system design has limitations on distance from the in-feed of the eductor to the discharge of the conveying line.
- 2) This system, since it uses either a Regenerative Blower or Positive-Displacement Blower will increase the ambient temperature possibly pushing it above the melting point of the material. To prevent this from occurring a heat exchanger needs to be used to drop the material temperature to ambient.
- 3) Some companies do not like the additional pressurized air entering the blender.

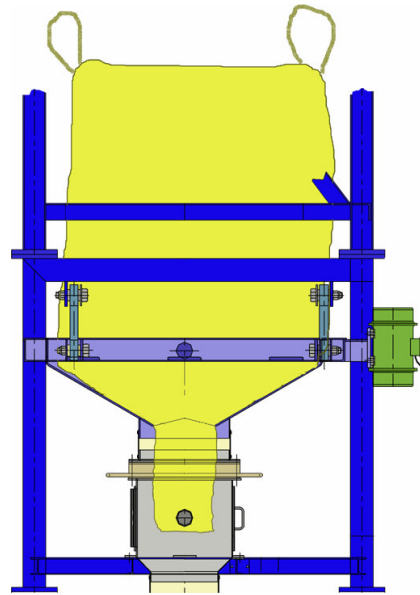
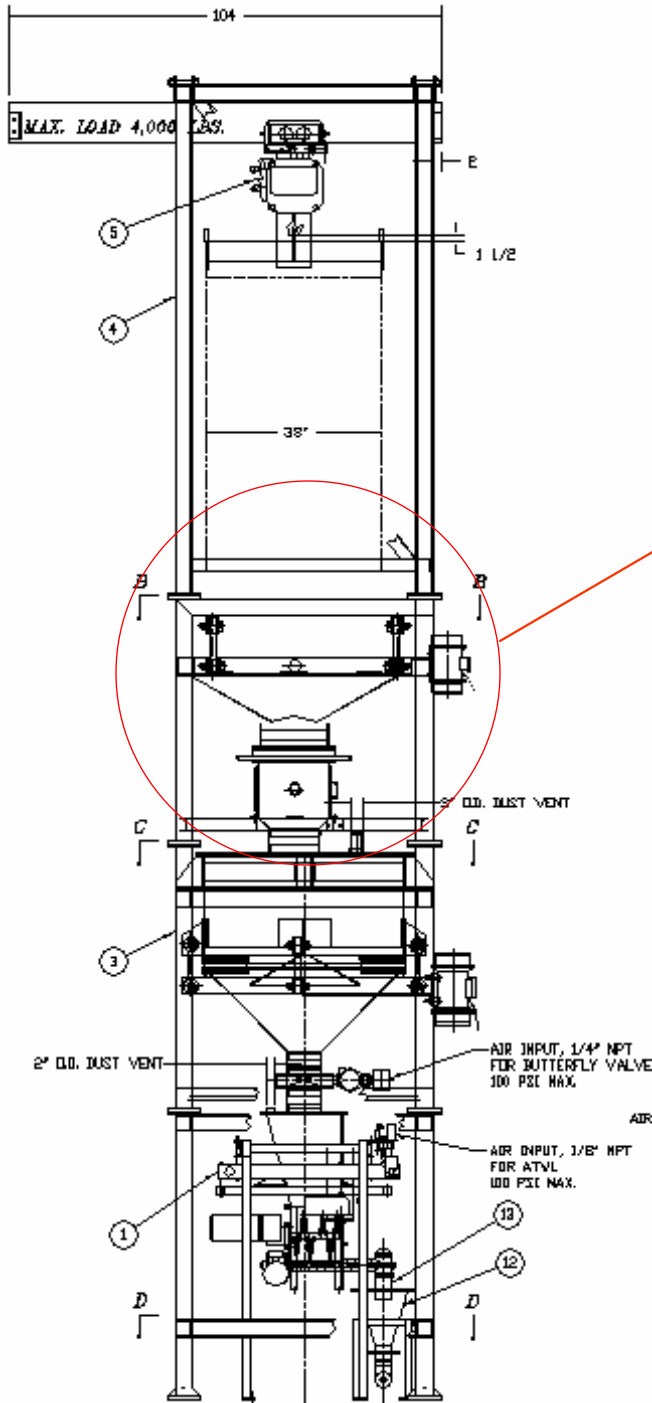


OSB Powdered Resin, *Mechanical Conveying* system

C) Mechanical conveying system where the material is discharged from the bulk bag unloader, into a surge hopper, through a rate controlling rotary valve and into mechanical disk conveyor which transfers the material to a surge hopper above the Loss-In-Weight Feeder. Once the material has been conveyed to the surge hopper it can be discharged to the Loss-in-Weight feeder when called for by the controller refill cycle.

****All the above described Resin Handling Systems can be modified and reconfigured to meet a customers particular application.**





Bulk Bag lifting loops are attached to bag lift adapter . The bag is raised and put into place via a 2 ton electric hoist & trolley.

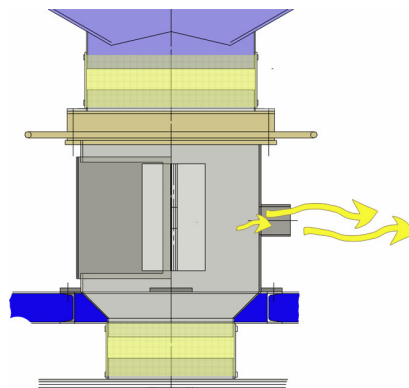
At no time does the operator need to get under the bag to untie the bag spout. This is done after the bag is placed on and supported by the unloader pan.

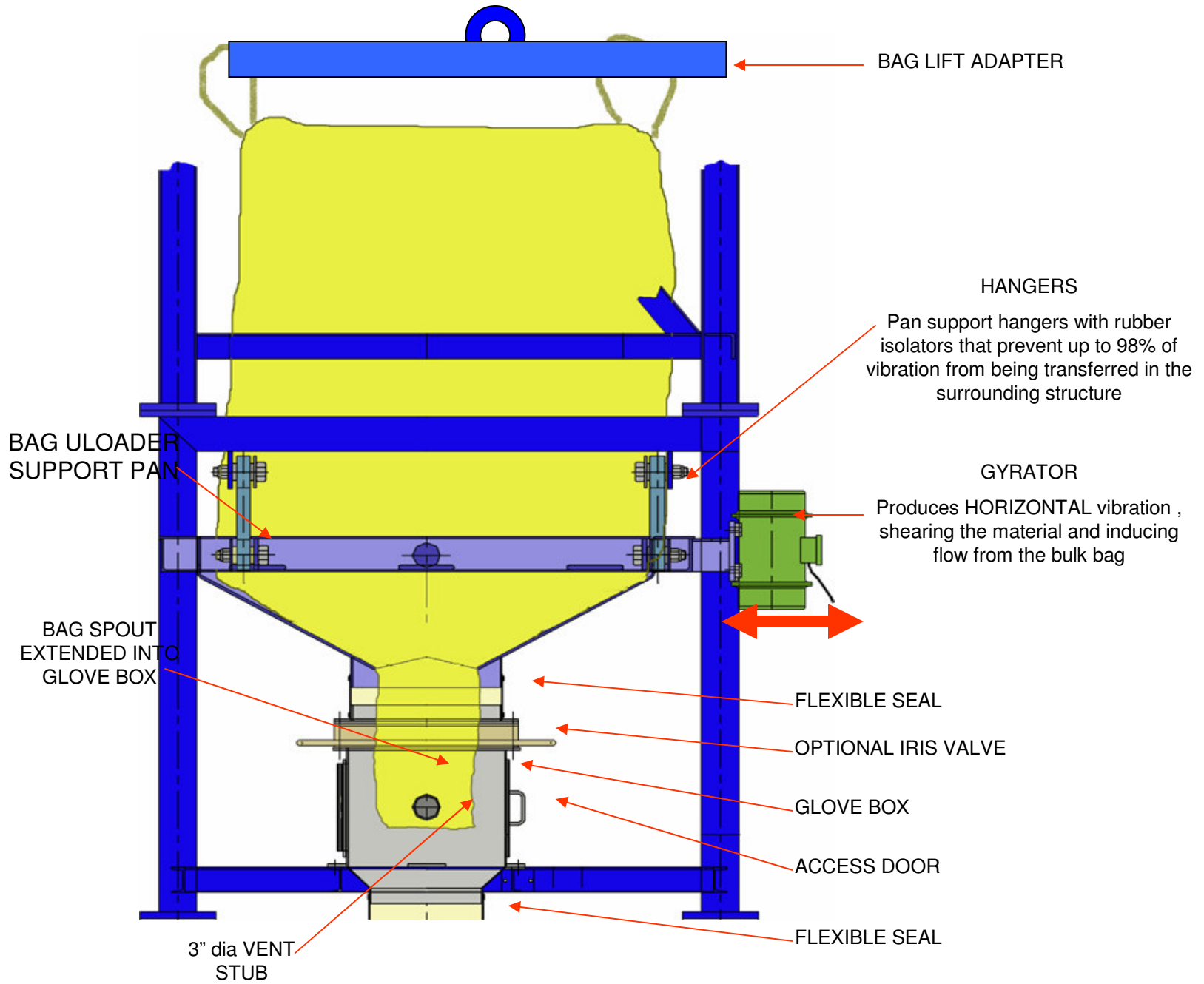
The bag rests on the Bag Unloader pan. A seal is made between the bag and pan preventing dust from escaping when the bag spout is opened.

To open the bag spout the operator opens a large access door in the unloader "glove box". He reaches through the door, unties both the outer bag tie and the spout tie. He then pulls the spout down into the "glove box".

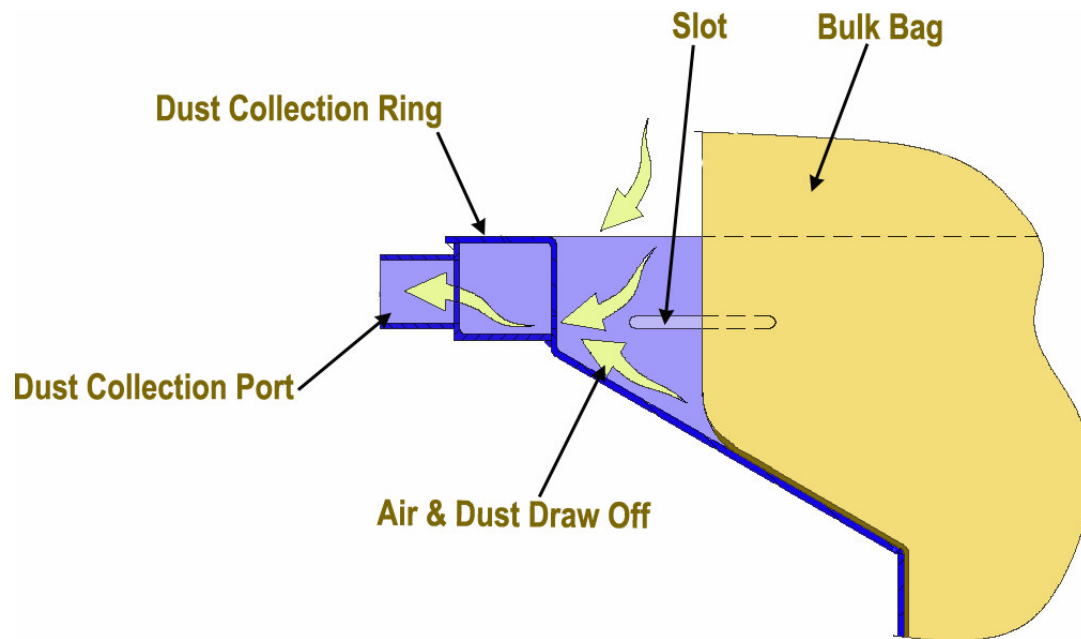
The glove box is equipped with a 3" dia. vent stub for connection to a dust collection system. This vent is used to pull dust away from the operator when he opens the access door.

Some bag unloaders are equipped with a manual IRIS valve located between the unloader pan and the glove box. This valve is used to seal off the surge bin below if it is filled with material and there is no bulk bag un place.



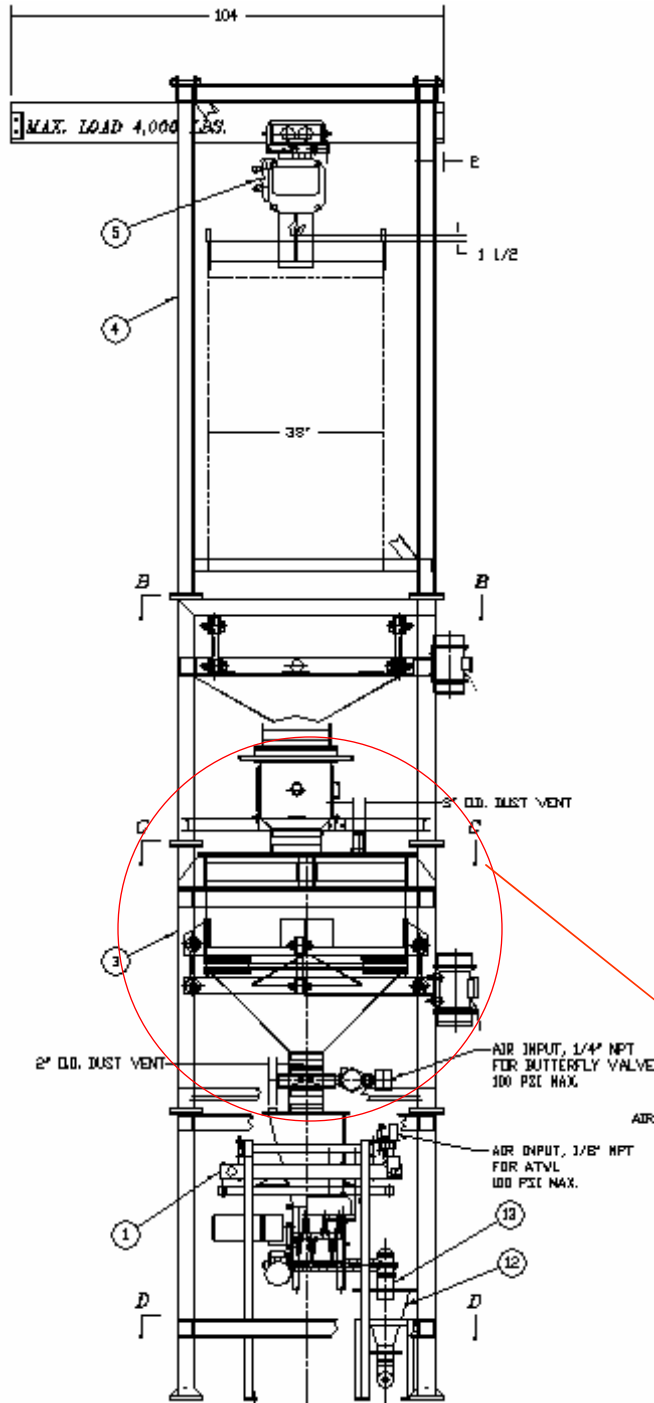


DUST COLLECTION RING



When a full bulk bag is placed on the unloader it makes a dust tight seal between the bag and unloader pan. When the volume of material in the bag decreases (approx 80% empty) the seal can be broken. The potential for dust to escape is small but real so the dust collection ring draws of any nuisance dust.

Also if the bulk bags are reused, the bag stretch and over time the bag cloth can become porous allowing dust to escape. Again the dust ring will collect this dust.



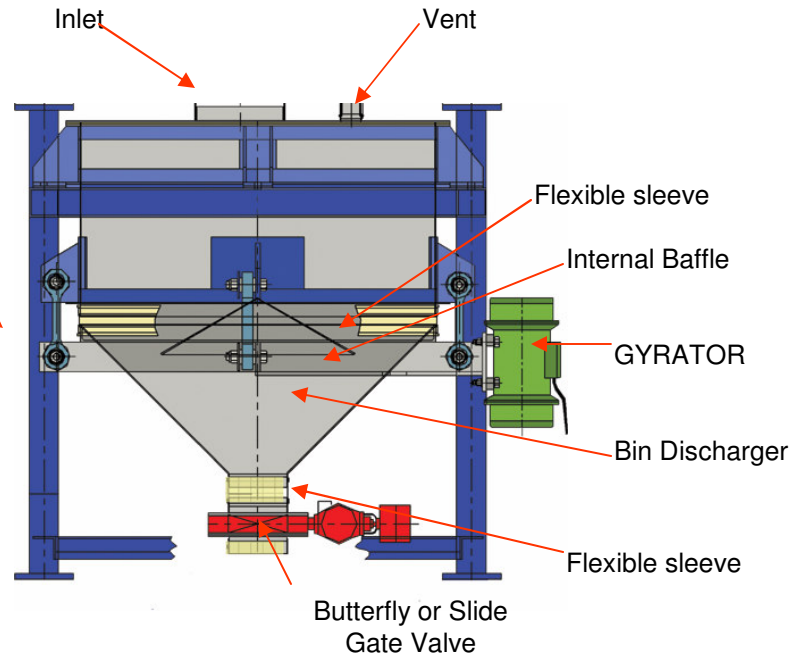
SURGE BIN.

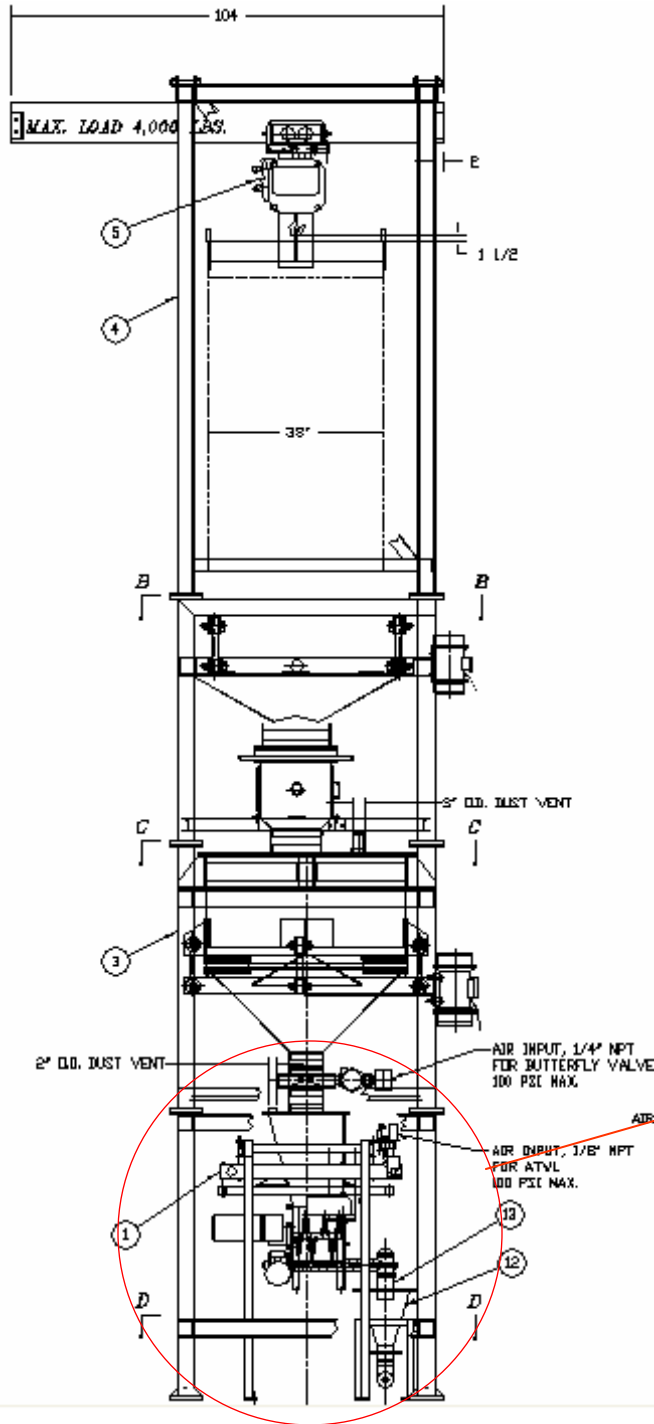
THAYER supplies a surge bin generally sized to hold one full bulk bag. The size can vary depending on the application requirements.

The surge bin is constructed from a static bin (typically 4 ft dia.) supported off the bag unloader legs. Attached to the bin is a BIN DISCHARGER. The Bin DISCHARGER'S size can be the same size as the bin or smaller depending on the system requirements.

Like the Bag Unloader Pan, the Bin Discharger is flexible hung from the surge bin via forged steel hangers with vibration isolators. The gap between the bin and Bin Discharger is sealed with a Neoprene flexible sleeve held in place with two stainless steel band clamps.

In operation the Bin Discharger vibrates in a horizontal plane. The discharger is equipped with an internal baffle that supports the head load of material. When turned on the gyrator vibrates the discharger (high frequency, low amplitude vibration) which transfers the vibration through the internal baffle and into the material breaking bridges and assuring uninterrupted flow of material.

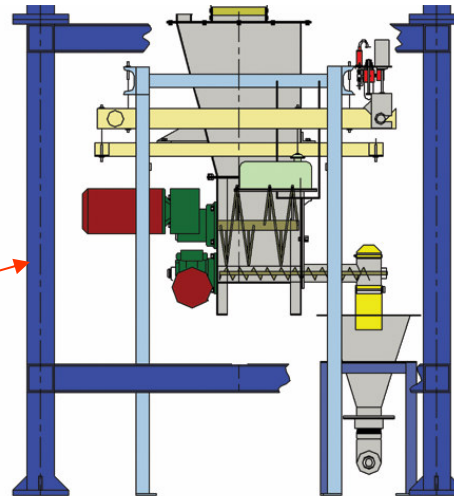


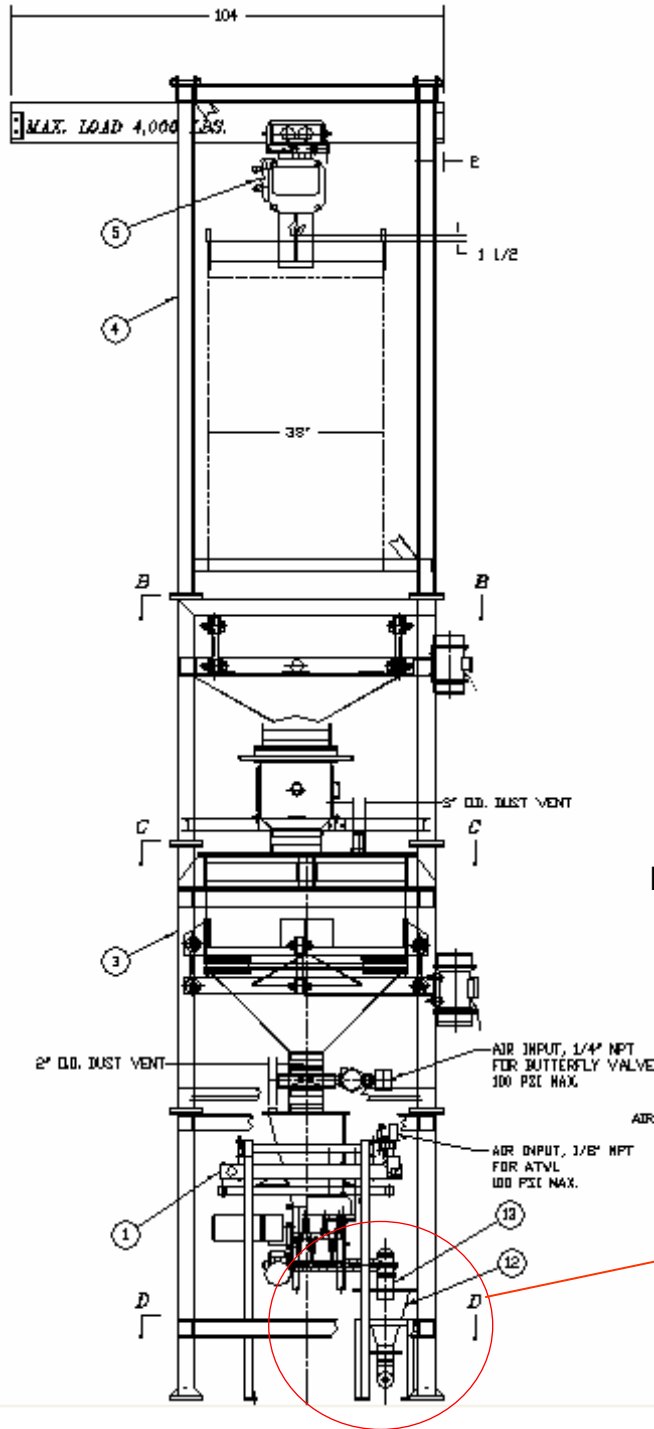


THAYER Loss-In-Weight Feeder

See accompanying literature for details on Thayer's line of Loss-In-Weight Feeders

Thayer Loss-In-Weight Cable Scale





Eductor/Blower package
 Pneumatic conveying system

