The Complete Line of Sifting, Screening and Scalping Equipment

Great Western Manufacturing

Introduction to Great Western Gyratory Sifters

Sifting or screening is a mechanical process that separates material according to individual particle size. This is done by moving the material over a screen having openings of an appropriate size. Sifting can essentially be divided into 3 different categories according to the process objectives.

Scalping removes a small amount of oversize material from the product;
Grading separates material by particle size using appropriate mesh sizes; and
Fines Removal or de-dusting removes a small amount of undersize material.

Why Horizontal Gyratory Sifters?

There are several different motions and combinations of motion employed in sifters. Among them are: Reciprocal, gyratory (or circular), and vibratory. All motions, regardless of name, are a result of a given amplitude and speed in a particular alignment or plane. For good sifting performance to occur, the material should be well distributed over the full screen surface with minimal agitation. The particles can then naturally stratify, with the finer particles falling towards the bottom of the bed of material, thus giving them maximum exposure to the screen openings. Where accuracy and efficiency of particle separation must be at its greatest, equipment which employs a horizontal gyratory motion is generally acknowledged as having the best performance.

Our horizontal gyratory motion is gentle. It reduces product degradation and is superior to designs using vibratory or centrifugal action.

- Vibratory designs bounce materials vertically which shortens the time they are in contact with the screen and reduces efficiency. Oversized elongated particles pass through the screen when they are upended impairing separation quality.
- Our gentle gyratory sifting action is less severe than centrifugal sifters. Separation of near sized particles is more precise and the risk of fracturing oversize impurities and forcing them through the screen is diminished.

Our stacked screen construction offers many advantages over single deck screening equipment.

- Vertically nested series of frames will conserve your valuable plant floor space while offering you maximum grading flexibility.
- Multiple screen frames allow you to proportion the sifting surface of each specific mesh for highly efficient grading of materials.
- Smaller frames and screens are easier for you to handle, change and store than large unwieldy single bed screens.
- Smaller screens are less likely to sag and form pockets that collect material.
- Our Tru-Balance counterweighted drive neutralizes frame and mounting vibration allowing you to attach the unit to the floor or ceiling with minimal footings or supports.

All models are available with pneumatic sieve compression for easy maintenance.

Great Western has developed a pneumatic sieve compression system for our line of sifters. This system replaces the standard cable or rack and pinion compression system and provides several important benefits that ensure a rapid return on your investment. These benefits are:

- **Uniform & constant sieve compression.** Gasket wear and the chance of leakage are minimized. There is no need to guess if the sieves are properly and sufficiently compressed.

- **Rapid access for sieve removal and replacement.** The machine can be opened effortlessly in seconds for inspection, cleaning, or maintenance. This results in a significant time savings when opening and closing the machine.

"HS" Free Swinging Sifter

High capacity machine made in two, four, six, or eight sections with nominal sieve stack heights from 17 to 30 sieves utilizing three different square sieve sizes: 24 11/16", 28 3/4", or 30 7/8". Each machine is custom engineered to suit the product characteristics, load demands, and customer requirements. Sieve housings are constructed of kiln dried maple and birch plywood with painted exterior finish or finished with moisture resistant lacquer. Dust-tight doors and crevice free joints assure sanitary operation. Interiors are bonded with white plastic laminate as standard to meet sanitary requirements. For more demanding applications the sifter interiors can be bonded with stainless steel. Dependable operation is assured due to the HS Sifter's proven smooth starting and stopping drive which features high capacity bearings and a box-mounted drive motor.

Tru-Balance Models

The Great Western Tru-Balance sifters each feature a perfectly balanced drive which ensures vibration free performance. The Tru-Balance sifter is available in four different models:

- Box Type
- Modular
- Stainless Steel
- In-Line

Each model is custom designed to match the customer's specific requirements for screening dry products ranging in size from ¼" to 400 mesh. Each model can be mounted on the floor or ceiling suspended...to suit the installation requirements.

Box Type Tru-Balance

The original Tru-Balance features a dust-tight sieve housing fabricated from kiln dried maple and birch plywood. The interior is free of cracks and crevices and is lined with plastic laminate or stainless steel for sanitation and abrasion resistance. This sifter uses from 4 to 14 sieves in four different sizes to provide from 10 to 127 ft² of screening area. Up to 6 separations can be obtained. Many sieve construction options are available and include stainless steel lining or plastic laminate lining of the standard hardwood sieve, easy to maintain and exchange lift-out screen trays, and an all stainless steel sieve. These options, plus many others, coupled with the flexibility in separations and the sifter's large capacity, make it the most versatile sifter available in the processing industries.

Modular Tru-Balance

The Modular Tru-Balance was developed to provide a simple and economical machine with reliable performance and excellent sanitation features when conditions do not dictate stainless steel construction or require complex separations. The Modular Tru-Balance, like the Stainless Steel model, has a box-less design with nest-together sieve frames and utilizes the same pneumatic sieve clamping system or reliable cable clamping system. The wooden frames are bonded with plastic laminate on all exposed surfaces. The sifter uses from 4 to 9 sieves in two different frame sizes to provide from 15 to 100 ft² of screening area. Up to three separations can be obtained.

Stainless Steel Tru-Balance

The Stainless Steel Tru-Balance is the ultimate in a sanitary gravity flow, atmospheric pressure sifter. It features easy to access and maintain sieve frames in a reliable vibration free drive mechanism. The Stainless Steel Tru-Balance has a box-less design with nest-together sieve frames and utilizes a pneumatic sieve clamping system which maintains constant dust-tight operation and makes access for sieve inspection and maintenance as easy as the turn of a key. The sieve frames are fabricated from precision laser cut stainless steel and assembled without rivets, nuts, or bolts. The sifter uses from 4 to 9 sieves in three different frame sizes to provide from 15 to 58 ft² of screening area. Arrangements can make up to five separations.

In-Line Tru-Balance

Designed for direct insertion into a vacuum or pressure pneumatic conveying line as a quality assurance tool for removing a small amount of oversized impurities from the product.

Placed in pneumatic unloading or transfer systems, it eliminates equipment such as cyclone receivers, airlocks, receiving hoppers and blowers which would be required if a standard (atmospheric pressure) sifter were utilized.

All product contact surfaces are fabricated of stainless steel which ensures compliance with the most stringent sanitation standards. Built in three different models to achieve capacities from 250 to 1,000 lbs/min. of hard or soft wheat flour on a 30 or 40 mesh screen.

Indicative Sifter Configuration and Product Flow

Raw material from inlet deflected to head end of sieve #1

Oversize from sieve #1 exit sifter.

Thrus of sieve #1 fall to sieve #2.

Overs from sieve #2 fall to sieve #3.

Thrus of sieve #2 fall to pan, exit side of sieve.

Thrus of sieves #2 & #3 flow onto sieve #4.

Thrus of sieve #4 fall to pan, exit side of sieve.

Thrus of sieve #5 fall to pan, exit side of sieve.

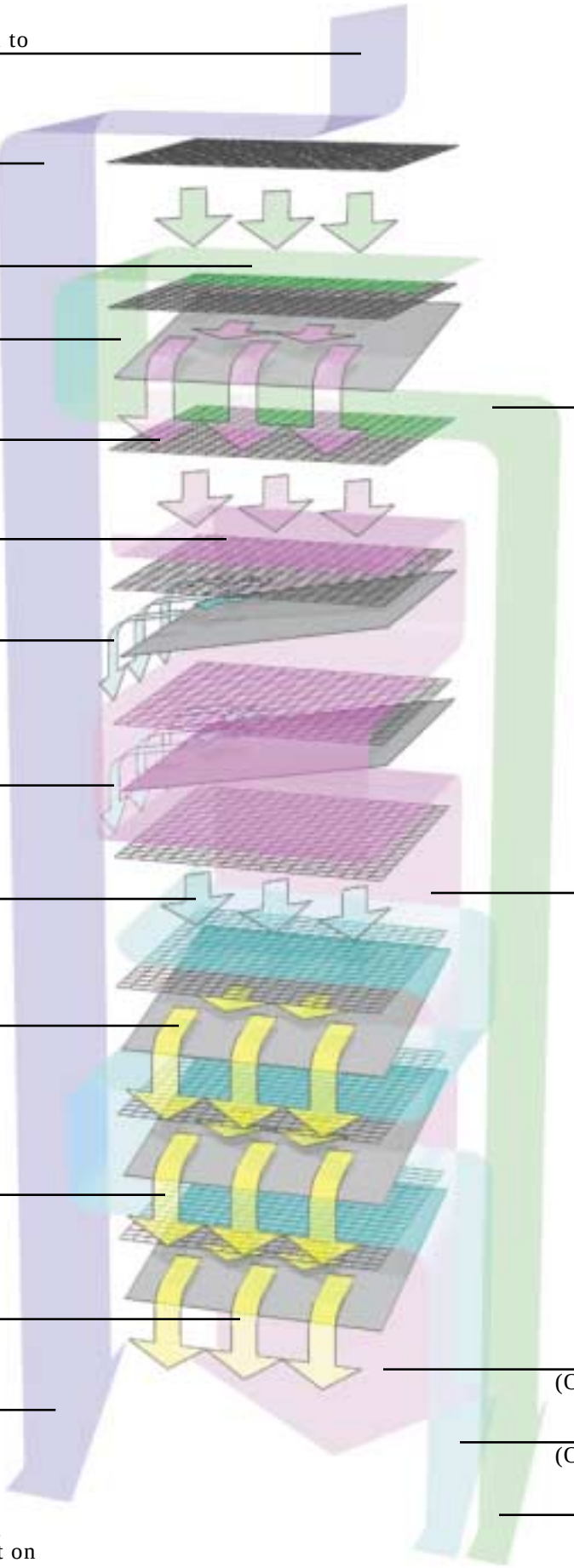
Thrus of sieve #6 join thrus of sieves #4 & #5. They flow onto sieve #7.

Thrus of sieve #7 fall to pan, exit side of sieve.

Thrus of sieve #8 fall to pan, exit side of sieve.

Thrus of sieve #9 fall to pan, exit side of frame. Joined by thrus from sieves #7 & #8 they exit the sifter.

Oversized material (Overs of sieve #1)



Sieve #1 - No Pan
Scalping screen

Sieve #2 - With Pan
Coarse mesh screen

Overs of sieves #2 & #3 exit sifter

Sieve #3 - No Pan
Coarse mesh screen

Sieve #4 - With Pan
Medium mesh screen

Sieve #5 - With Pan
Medium mesh screen

Sieve #6 - No Pan
Medium mesh screen

Overs of sieves #4, #5, & #6 exit sifter.

Sieve #7 - With Pan
Fine mesh screen

Sieve #8 - With Pan
Fine mesh screen

Sieve #9 - With Pan
Fine mesh screen

Medium material (Overs of sieves #4, #5, & #6)

Small material (Overs of sieves #7, #8, & #9)

Coarse material (Overs of sieves #2 & #3)

Flow for illustrative purpose only.
Number of separations dependent on specific application requirements.

Agitator/Blenders

Designed for efficient flour bleaching or enrichment addition in flour mills or blending facilities. The Agitator/Blender is built for long-lasting, dependable service. Three different capacity sizes, built in four different arrangements, allow the machine to be tailored to your specific requirements.

Sampl-Sifters

Sample size sifter is widely used in the cereal processing industry to determine break release, monitor sifting performance, and to perform other quality control testing. Operated with a standard single phase motor and controlled with an adjustable built-in electronic timer, the Sampl-Sifter is available in a table top version or installed in a work table.

Stream Dividers

Great Western Stream Dividers are the ideal choice for precision division of a single gravity-flow product stream into two to twelve separate streams. The housing and internal turnhead are built from sanitary and durable stainless steel mounted in a tubular steel frame for floor or ceiling installation. Standard models or custom designed units to suit any requirement.

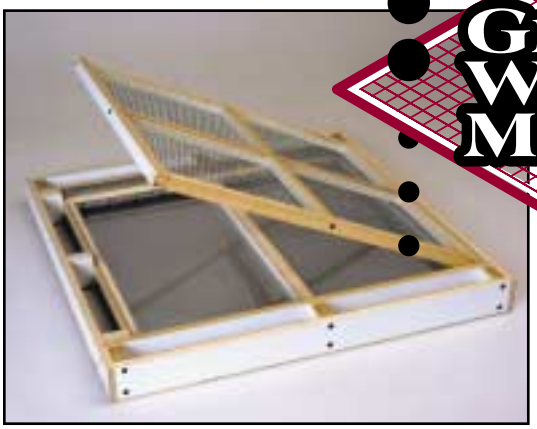
Screen Stretchers

Designed to stretch clothing for uniform and consistent tensions on sieve or purifier frames. They offer non-contact stretching and screen elongation control. Two different pneumatic models each feature horizontal stretching without contact with the sieve tray/frame during the primary stretching phase. Our manual stretcher is a reliable economical solution.

Free Testing Service

Great Western maintains a complete testing laboratory to evaluate product samples and make equipment recommendations. Testing will determine how your product handles and what difficulties might be encountered. Test results state area requirements and serve as a guide in determining the optimum equipment size and specifications. There is no charge or obligation for this service.

Frames, Cleaners, Clothing and More!



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