

TECHNICAL PAPER

A COMPARITIVE ANALYSIS OF GKM'S TUMBLER SCREENING VS. TRADITIONAL VIBRATORY SCREENERS

Upending traditional vibratory screening principles with their revolutionary design, GKM's innovative Tumbler Screening sets the standard for efficiency, precision, and cost-effectiveness, outperforming traditional methods.



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Maximize Efficiency and Accuracy in Screening with Tumbler Screening

Optimizing Performance Across Industries with Precise and Scalable Solutions

Tumbler Screening is an innovative technology trusted by industries that demand precision and efficiency. From **battery materials** like lithium and graphite, to **food additives** such as starches and proteins, Tumbler Screening is making a significant impact in sectors that handle fine, friable, or **abrasive materials**. This advanced screening method not only maximizes throughput but also ensures higher purity and quality by minimizing material degradation. Ideal for applications that require stringent quality control, Tumbler Screening helps businesses achieve superior performance while reducing downtime and maintenance costs. Whether you're in **pharmaceuticals, chemicals, or abrasives**, Tumbler Screening offers a scalable and reliable solution to improve your operation's efficiency and accuracy.



Pharmaceuticals



Wood



Battery Industry



Recycling



Plastics/Rubber



Chemical



Food



Stones and Earth



Key Advantages of Tumbler Screening for Dry Material Processing

Tumbler Screening offers significant advantages, including increased throughput and reduced operational costs. Its gentle, precise motion makes it ideal for handling fine and sensitive materials, ensuring high-quality results and efficiency across various industries.

What is Tumbler Screening?

Tumbler Screening is a revolutionary approach to material separation that sets itself apart from traditional vibratory screening methods. While conventional vibratory screeners rely on intense, high-frequency vibrations to separate materials, Tumbler Screening utilizes **gentle, three-dimensional elliptical movements**. This non-aggressive motion provides a more **precise and controlled screening process**, especially for fine, sensitive, or difficult-to-screen materials. By minimizing the strain on both the equipment and the materials being processed, Tumbler Screening enhances throughput, improves product quality, and reduces operational costs.



Ultimate Tumbler Screening Machine KTS

Standout Benefits of the KTS Tumbler Screening Machine

- Modular, Self Centering & Expandable Design
- Offering Up to 6 Screen Decks
- Handles Up to 7 fractions simultaneously
- Optimized Dwell Time for Precise Screening and Maximum Output
- Designed for 24/7 Operation with Minimal Maintenance
- Fully Balanced for Vibration-Free Installation
- Quiet Operation at Approximately 75 dB(A)

This screening machine is ideally suited to separate and dedust dry, powdered and granular products. Particularly suitable for high feed rates and multi deck separations of fine, lightweight and difficult to screen products.

Industry Highlights



BATTERY MATERIALS

(Lithium, Graphite, Cathodes, Anodes)

- Superfine, high-value materials require gentle, precise handling
- High-efficiency separation of fine and ultra-fine powders
- Reduces equipment wear—extends screen life for abrasive materials



FOOD ADDITIVES

(Starches, Proteins, Powders)

- Clean, gentle processing to maintain product integrity
- Minimizes material degradation
- Sanitary, dust-controlled design meets food safety standards



ABRASIVE MATERIALS

(Minerals, Ceramics, Sands)

- Tough materials call for durable solutions
- Handles harsh media with less wear and lower energy use
- Maintains higher throughput with reduced downtime



CHEMICALS

(Fine Powders, Polymers, Granules)

- Purity and consistency are critical to product performance
- Minimizes reprocessing with precise particle separation
- Multi-deck machines boost throughput in a compact footprint
- Dust-tight design protects operators and environment



Why Choose Tumbler Screening?

Ultra-Precise Particle Sizing

Ideal for high-precision material screening with tight quality control standards.

Higher Throughput

Better utilization of the screen surface area translates into higher throughput on similarly sized industrial screening machines. The combination of lower amplitude and larger machines enables up to six screen decks with seven fractions.

Customizable Movement

Application-based, custom-engineered control of motion across three axes allows adjustable material dwell time on the screen. This results in higher-quality cuts, increased yield, and reduced product loss or reprocessing.

Reduced Equipment Wear

The gentle screening motion prolongs equipment life, especially screen inserts.

Energy-Efficient Operation

Lower power consumption and less noise pollution compared to traditional vibratory screening.

Dust-Tight Design

Improved work and safety environments with reduced contamination risk.



About GQI



Grand Quest Industries (GQI) delivers high-performance dry bulk material processing solutions through trusted partnerships with leading European equipment manufacturers. From screening and conveying to dust collection and bulk bag handling, we provide tailored solutions, aftermarket support, and expert service across North America.

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**Innovative Solutions.
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Always a Step Ahead.**



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