



Ultra-Fine Screening and Precise Particle Classification for High-Value Recycling Applications SRV

Maximizing Product Quality Through Precision Screening

As recycling technologies continue to advance, the demand for highly defined particle size fractions is increasing. Whether processing non-ferrous metal concentrates, electronic scrap, battery materials, mineral products, or fine recycling streams, downstream separation technologies can only achieve their full potential when supplied with accurately classified material.

The SRV Round Vibrating Screen from TST Overseas has been specifically developed for control screening, fine screening, ultra-fine screening, and product dedusting. Through its three-dimensional vibratory motion and modular multi-deck design, the machine delivers exceptional screening accuracy while maintaining high throughput and operational reliability.

For applications requiring precise particle size classification, the SRV provides an ideal solution for producing highly consistent fractions and improving overall process efficiency.

The Principle of Circular Vibratory Screening

The SRV utilizes a free-swinging circular screening system driven by a vibration motor that generates a three-dimensional screening motion.

Material is continuously fed into the center of the machine and distributed evenly across one or multiple screen decks. The circular vibratory movement transports the material over the screening surfaces, allowing particles to be classified according to their size.

Depending on the application, up to five screening decks can be installed, enabling the simultaneous production of multiple particle size fractions. The modular design allows flexible adaptation to changing process requirements and product specifications.

To ensure consistent screening performance, each screen deck is equipped with an integrated ball-cleaning system, while ultrasonic cleaning can be added for particularly demanding ultra-fine screening applications. This minimizes screen blinding and maintains high separation efficiency even with difficult materials.

Fine Screening of Non-Ferrous Metal Concentrates

One of the most important applications in modern recycling plants is the classification of non-ferrous metal concentrates.

Following shredding, milling, screening, and eddy current separation, valuable materials such as:

- Aluminium
- Copper
- Brass



- Zinc
- Stainless steel particles
- Precious metal-bearing concentrates

must often be classified into narrow particle size ranges before further upgrading.

Typical fractions include:

Particle Size Fraction Typical Application

< 0.1 mm	Ultra-fine metal concentrates
0.1 – 0.5 mm	Fine recovery fractions
0.5 – 1.5 mm	Density separation feed
1.5 – 3 mm	Metal concentrate upgrading
3 – 6 mm	High-purity metal recovery
6 – 12 mm	Coarse concentrate processing

By producing highly defined particle size distributions, the SRV creates ideal feed material for downstream density separation tables, air classifiers, and sensor sorting systems.

Processing Battery Recycling Materials

Battery recycling presents increasingly demanding requirements for particle size classification.

Black mass, electrode materials, and liberated metal particles often require highly precise screening in order to separate valuable materials and optimize downstream recovery processes.

The SRV is capable of producing narrow fractions while simultaneously removing dust and oversize particles, improving the efficiency of subsequent recovery stages.

Its enclosed design also minimizes dust emissions and supports cleaner processing environments.

Product Dedusting and Quality Improvement

In many recycling applications, the removal of dust and ultra-fine particles is critical for product quality.

The SRV can be used as a control screening and dedusting unit to remove unwanted fines from:

- Non-ferrous metal concentrates
- Copper granulate



- Aluminium granulate
- Battery materials
- Plastic flakes
- Mineral products

By removing dust fractions, operators can improve product specifications, increase market value, and enhance the performance of downstream processing equipment.

Flexible Multi-Deck Configuration

A major advantage of the SRV is its modular deck structure.

Available with up to five screen decks and various screen media options, the machine can be configured to produce multiple fractions within a single screening stage.

Benefits include:

- Reduced equipment footprint
- Fewer transfer points
- Lower operating costs
- Increased process efficiency
- Simplified plant layouts

The adjustable vibration parameters allow operators to optimize screening performance for different materials and changing production requirements.

Built for Continuous Industrial Operation

The SRV has been engineered for demanding industrial environments where reliability and low maintenance requirements are essential.

Key design features include:

- Fully enclosed dust-tight construction
- Integrated ball cleaning system
- Optional ultrasonic screen cleaning
- Modular screen deck arrangement
- Stainless steel execution available
- Quick screen replacement systems
- Adjustable vibration settings

These features ensure reliable operation, high screening efficiency, and minimal downtime even in continuous processing applications.



Key Benefits of the SRV Round Vibrating Screen

- **Precise fine and ultra-fine screening**
- **Particle size separation below 100 µm possible**
- **Product dedusting capabilities**
- **Up to five screening decks**
- **High screening efficiency**
- **Flexible configuration options**
- **Low maintenance requirements**
- **Enclosed dust-tight design**
- **Improved downstream process performance**
- **Suitable for a wide range of recycling applications**

Typical Applications

The SRV is successfully used in:

- **Non-ferrous metal recovery plants**
- **Battery recycling facilities**
- **Electronic waste recycling**
- **Copper and aluminium granulate processing**
- **Precious metal recovery operations**
- **Mineral processing**
- **Product dedusting applications**
- **Fine and ultra-fine particle classification**

Conclusion

Accurate particle size classification becomes increasingly important as recycling processes move toward higher product quality and greater resource recovery.

The SRV Round Vibrating Screen from TST Overseas provides a highly efficient solution for control screening, fine screening, ultra-fine screening, and product dedusting. By generating precisely defined particle size fractions and removing unwanted fines, the SRV helps recycling operators improve recovery rates, increase product value, and maximize overall plant performance.