

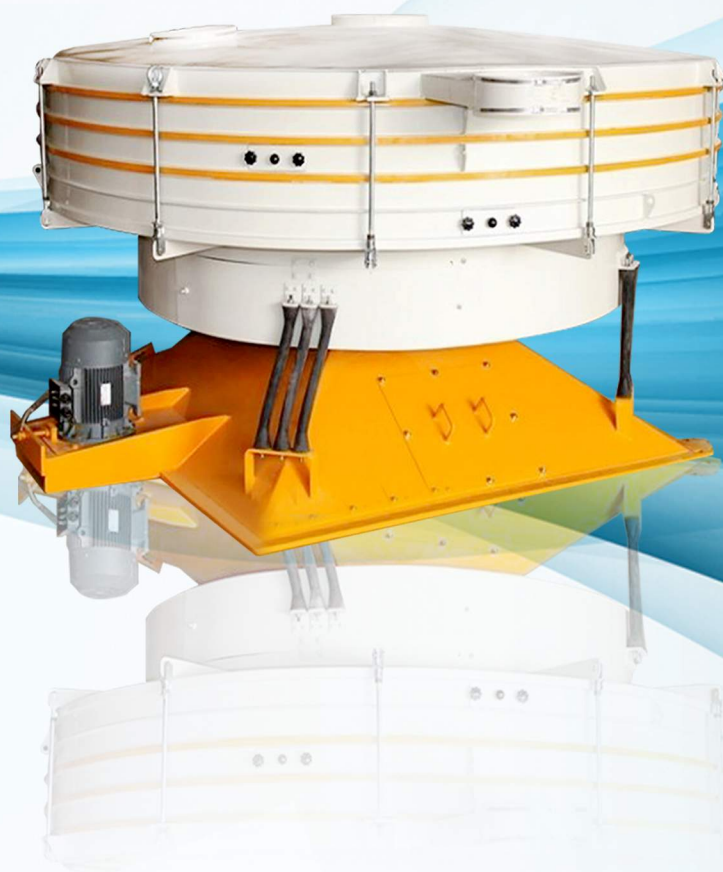


# Sievex



**SEPARATION EXPERTS**  
MATERIAL SEPARATION MADE EASY

## Tumbler Screening Machine



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# What is Tumbler Screening?



**T**umbler screening is an improvised technique to the other screening techniques in which product on the screen is moved from the center by radial inclination while the tangential inclination leads to circular motion of the product. Thus, tumbler screening provides min. 90% screening efficiency with gentle screening of delicate particles to prevent particle destruction.

**T**he complicated circular three dimensional screening actions is adjustable to accommodate different material characteristics and is mainly independent of the material load, improving the separation process.

**T**umbler screening is a multi-deck elliptical action in which speed can be adjusted such that it has a faster travel rate at the feed and is slow at the discharge side, which can help increase in screen efficiency, so that products can be screened at high capacity to very fine separations.

**T**umbler screening machines have the advantage of container barrel with different outlet doors at each of the sorting levels. Thus, they can be used for sorting mixture of particles. The advantage of a tumbler screening machine is that it has the ability to run in a range of angular velocities.

**T**umbler screening machines have higher output per meter square of screening than the other vibratory screening machines. They require lower power consumption and have lower maintenance requirements.

## Area of Usage

**G**ranules, lightweight and small sized materials, ultrafine powders. Effective and widely used in mining, aggregate, food processing and pharmaceutical industry. Full range of usable industries and products are listed below...

Chemical Industry  
Pharmaceutical Industry  
Aggregate & Food Industry  
Animal Food Industry  
Tobacco Industry  
Metal Industry  
Wood Industry  
Mining & Minerals Industry  
Pharmaceutical Industry  
Industrial Sand  
Glass Industry  
Ceramics Industry  
Detergent Industry  
Recycling Industry  
Cement Industry  
Building Materials Industry

## Some Examples of Screening Products

Quartz Grits & Quartz Filler  
Silica Flour  
Mica Powder & Mica Scrap  
Potash Feldspar & Sodium Feldspar  
Dolomite Powder  
Limestone & Quick or Hydrated Lime  
Calcite Powder  
Bentonite Powder  
Talc Powder  
Soap Stone Powder  
Barytes Powder  
Red Ocher Powder  
Graded & Dried River Sand  
China Clay & Ball Clay



# Sievex TSMs

**T**umbler Screening is an improvement on vibration, vibratory, and linear screening. Tumbler screener uses elliptical action which aids in screening of even very fine material. As like panning for gold, the fine particles tend to stay towards the center and the larger go to the outside. It allows for segregation and unloads the screen surface so that it can effectively do its job. With the addition of multiple decks, ball cleaning decks and ultrasonic vibration systems even difficult products can be sieved at high capacity to very fine separations.



**T**umbler screening technique are widely used in chemistry, pharmaceutical, food processing, mining, plastics, stone and soil, metallurgy, recycling industries in order to sort small, heavy, light, dry, dusty, wet and sticky materials which are less than a millimeter.

**S**ievex Tumbler Screening Machines (Sievex TSM) is the ultimate supplier for micron level sorting demands. As low as 20 micron to 20 millimeter (0.020 – 20 mm) products can be sieved by Sievex TSMs.

**1**00 micron to 20 millimeter throughput can be obtained by conventional tumbler screening machines; however, 20 to 100 micron throughput can be achieved only by the unique Ultrasonic Sieving System of Sievex Tumbler Screening Machines. Feel free to ask any questions for Ultrasonic Systems.

**F**or example, for mining industry, the main sieved ore materials are dolomite, calcite, kaolin, feldspar, gypsum, olivine, graphite, coal and heavy minerals.

**L**eading advantage of the Sievex TSMs is; sieving and sorting up to 5 different size of a product in the range of up to 25 ton/h feeding. For this outcome, 4 decks and 2660mm diameter tumbler screening machines is manufactured.

# Features of Sievex TSMs



- Easy to use instantly - Plug & Play.
- Provide very high screening characteristics.
- 90% efficiency in thin or small products.
- Min. 20% more efficient compared to conventional screening.
- Min. 50% lower motor power compared to conventional screening.
- Manufactured up to 4 Decks and 5 different sized products.
- Modular structure which allow deck insert or extract easily.
- 7/24 - 365 days operation.
- Very low maintenance requirements.
- 100% dust proof design.
- Approx. 80 dB low noise.
- Low "G" force to products which allows no damage on products.
- Dynamic balance adjustment provides min. vibration to basement.
- 7/24 - 365 days provided technical service and spare parts.



# Technical Specifications



Model	DE 900	DE 1350	DE 2000	DE 2300	DE 2660
Screen Diameter [mm]	900	1350	2000	2300	2660
Screening Surface [m <sup>2</sup> ]	0.64	1.43	3.14	4.15	5.56
Motor Power [kW]	1.5	2.2	4	5.5	5.5
Weight [Kg]	750 – 900	970 – 1150	1740 – 1960	1840 – 2220	2000 – 2600
Particle Feed Sizes [mm]	0 – 20				
Feeding Capacity	Products -20,+5mm up to 25 ton/h & Products -5, +0.1 mm up to 20 ton/h				
Mesh Openings	100µm - 20mm (-100µm with Ultrasonic Cleaning Option)				
Structure Material	SS: Stainless Steel - MS: Mild Steel				
Decks Available per Machine	1 – 4 decks				
Product Sort Variety	2 – 5 different fractions				
Mesh Hole Openers	Polyurethane Injection Balls (standard) or Ultrasonic Cleaning System (optional)				
Screen Movements	Eccentric, Radial and Tangent				
Adjustable Amplitude [mm]	5 – 40 Vertically & 60 – 80 Horizontally				
Acceleration [g]	1.3 – 1.8				
Leakproof System	100% Dust Proof Sealed Closed Loop				



# Ultrasonic Tumbler Sieving

## Ultrasonic Technology in Sieving at a glance;

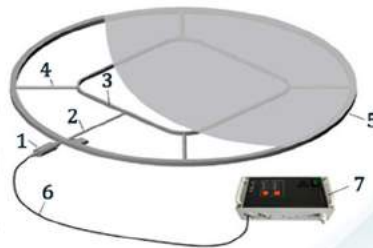


The ultrasonic generator generates high-frequency electrical oscillations in the 30 KHz – 38 KHz range which are converted by the ultrasonic converter into sinusoidal, mechanical longitudinal or transverse oscillations. These oscillations are transferred by the sound conductor to the mesh screen which is then forced to vibrate with the same frequency and amplitude as the sound conductor. The special type of generator excitation allows the sound conductor to align itself to the system. As the mesh screen on which the sieving material is placed is a poor sound conductor, the ultrasonic intensity on the mesh screen grows weaker as the distance to the sound conductor increases. The ultrasonic oscillations are additionally dampened by the sieving material on the screen. The shape and the size of the sound conductor can be selected to ensure even distribution of the ultrasonic oscillations across the screen. The entire surface of the screen becomes an active ultrasonic sieve in this way.

Sieving system consists of an ultrasonic converter (1) and a sound supply conductor (2) which is firmly connected to the rectangular screen sound conductor (3). The sound conductor is mechanically supported by the support members welded to the stainless steel ring frame (4/5). An insulated HF cable (6) provides the electrical connection from the generator (7) to the converter



- 1 Ultrasonic Converter
- 2 Converter Waveguide
- 3 Screenmesh Waveguide
- 4 Support Members
- 5 Ring Frame
- 6 Insulated HF Cable
- 7 DGS Generator



# Ultrasonic TSM Models



Model	UL 0901	UL 1351
Screen Diameter [mm]	900	1350
Screening Surface [m <sup>2</sup> ]	0,64	1,43
Motor Power [kW]	1,5	2,2
Weight [Kg]	750 - 950	900 - 1100
Height [cm]	114	118
Particle Feed Sizes [mm]	0 - 1	
Feeding Capacity	Up to 1 ton/h	
Mesh Openings	20µm - 1000µm	
Structure Material	Stainless Steel or Mild Steel	
Decks Available per Machine	1 deck	
Product Sort Variety	2 diffent sized products	
Mesh Hole Openers	Ultrasonic Vibration System	
Screen Movements	Eccentric, Radial and Tangent	
Adjustable Amplitude [mm]	5 - 40 Vertically & 60 - 80 Horizontally	
Acceleration [g]	1.3 - 1.8	
Leakproof System	100% Dust Proof Sealed Closed Loop	



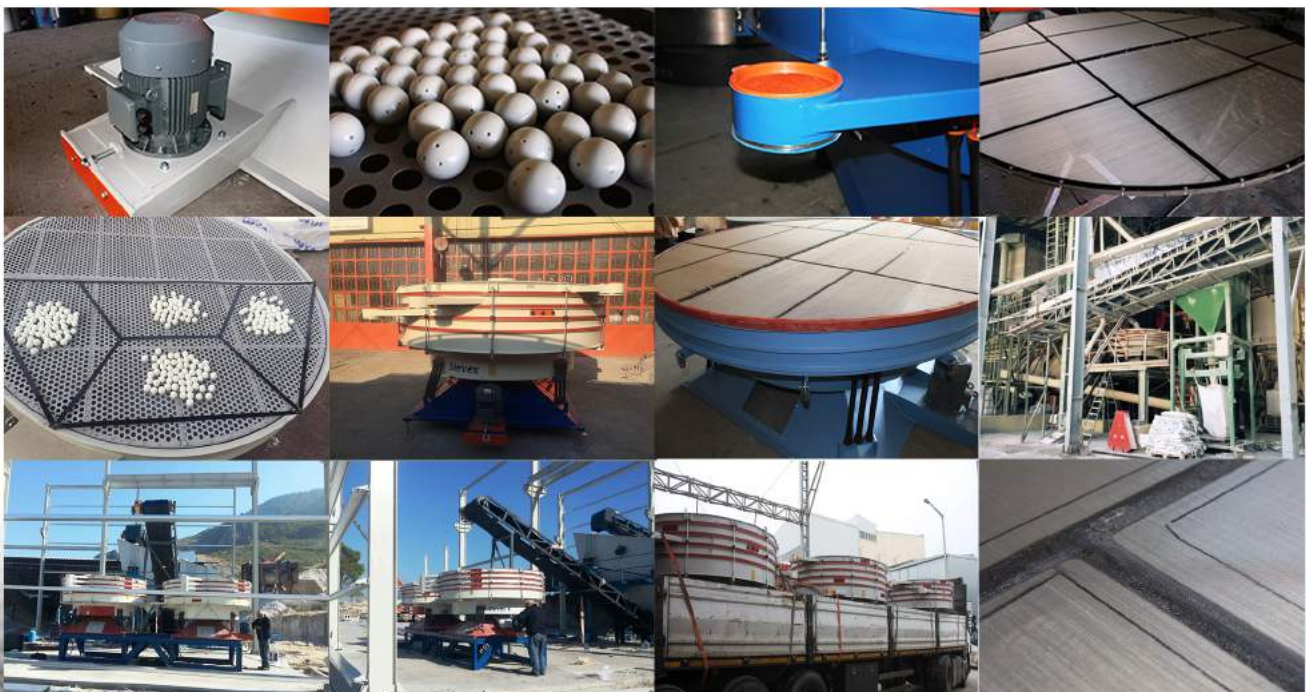


# Spare Parts

**R**eliability and quality are the main factors that we guarantee to our customers. We are always ready to provide spare parts in the shortest time possible to solve any possible problem of our tumbler screening machines.

**W**e are aiming to use obtainable materials in local markets so that our customers no need any special effort to solve any possible malfunction of the screening machines. This type of design and manufacturing approach also significantly shortens the delivery time of spare parts needed.

**D**o not hesitate to contact with us for your needs on spare parts of Sievex Tumbler Screening Machines. We are always ready for help.





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