# sps
# Vibroscreens


## Vibrating, Classifying, and Clarifying Screens

PENNWALT

# SPS Vibroscreen for Wet or Dry Separation or Solids Classification

The SPS Vibroscreen is a circular unitised gyratory screen, the largest in its type available today, with three-component multiplane mechanical vibration; the motivation is through a motor with a double extended shaft, fitted at both ends with eccentric weights.

The whole drive assembly is mounted on a circular base by rugged springs which allow the unit to vibrate freely, and at the same time, the springs prevent transmitted vibration reaching the floor area on which the machine stands.

Screens can be mounted one on top of the other within the screening assembly.

The Vibroscreen is suitable for all types of screening operations within these four broad categories :-

### Dry Separation

Division of different materials on the basis of their particle shape.

### Dry Classification

Division of materials into precise sized fractions.

### Solid – Liquid – Separation

Dewatering of solids and classification of liquids.

### Solids Classification

Separation of sized fractions in a liquid medium.

Highest screening efficiency is achieved by controlling the patterns of movement of solids on the screen surface. Control is achieved by varying the position of the bottom eccentric weight as shown in the diagram.

### Vibroscreen Operation

The material is fed on to the centre of the top screen and the oversize material is moved by the multiplane motion to the periphery of the screen to be discharged through a tangential outlet. The undersize particles and/or liquids pass through the screen to produce fine sized fractions or clarified liquid.

### Top Eccentric Mass

If the mass of the top eccentric is increased, this will increase the horizontal throw on the screen and will cause the oversize material to discharge at a faster rate.

### Bottom Eccentric Mass

An increase in the bottom eccentric mass will increase the vertical component of the motion. In the case where 'near size' blinding of the screen is a possibility, it is desirable to promote maximum vertical motion in order to dislodge particles which may be held (pegged) is the interstices of the screen.

### High Capacity, Minimum Space

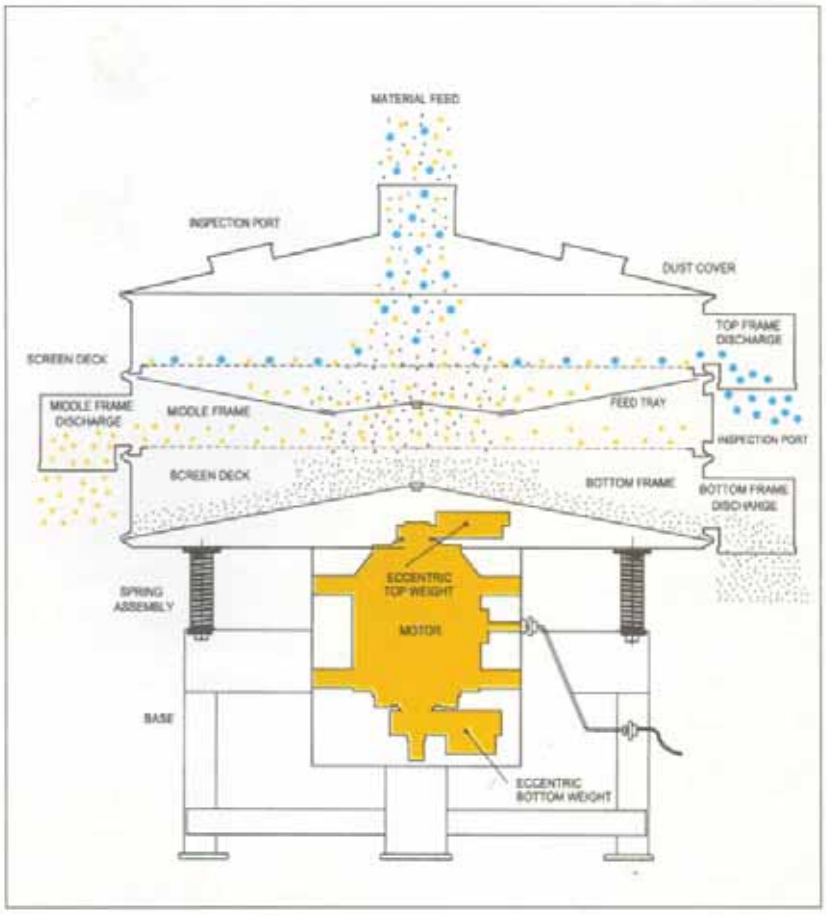
By varying the angular displacement of the bottom eccentric weight, the screening pattern can be optimised for each job, thus giving a high capacity per square foot of screen surface.

### Adaptability

Discharge ports can rotated to meet layout requirements and individual frames between screen decks can be tailored to suit the needs of that fraction.

### No Transmitted Vibration

Motion is transmitted through the screening assembly and vibration is completely absent from the screen base. No special foundations are required and many screens are operating suspended from ceiling hangers. By the same token, the



# Unique Features and Applications

machine can be made portable and its operation is silent.

### Long Screen Life

SPS have developed a special screen holding device and a taut screen cloth is achieved on assembly. The cloth does not flex and moves rigidly with the screen assembly.

### Minimum Screen Blinding

The vertical component of the vibration given by the bottom eccentric weight ensures that blinding of the screen by particles close in size to the screen cloth aperture is minimised. Ball trays/ kleen Rings can be added if necessary to alleviate screen blinding.

### Low Operating Costs

The Vibroscreen uses only low power motors, since all their energy is used to create screen motion, none is wasted in vibrating a massive frame and foundation.

### Bottom Eccentric Lead

The tangential component of the motion imparted to the solid on the screen is controlled by the angular position of the top and bottom eccentric weights. The screening pattern can therefore be controlled by altering the angle of the eccentrics and some general examples of the type of control are shown . . . .Large or small, wet or dry, there is a place for Vibroscreens in your industry. Detailed below are some of the uses that Vibroscreens have been put to. All SPS machines are backed by a full technical advisory service to help solve separational problems in industry.

### Abbrasive

Ammonium Nitrate
Baby Food
Calcined Petroleum Coke
Cattle Feed
Catalyst pellets

### Ceramics

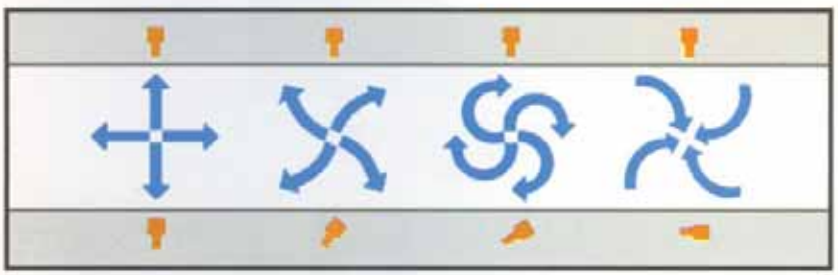
(a) Ceramic slurry
(b) Glazed Slip
(c) Ceramic Powder
Crushed Bones
Cellulose Powder
Detergent Powder
Dextrose
Insecticides
Metal Powder

### Ossein

Polymer Resin/Pellets
(nylon, PVC, LDPE, PP
Polystyrene, Polyester)
Pulp and Paper Mill
(a) Recovery of fibre
(b) Black liquor
(c) Milk of lime
(d) Starch/Talcum Slurry
(e) Paper Coatings

### Paints

Potassium Chlorate
Sand
Silicon Carbide
Starch Slurry
Steel shots/grits
Spices
Sulphur Powder
Sugar Powder
Sodium Sulphate
STPP and Soda Ash
Tea : (Black Tea)
Table Salt



*By simply turning the screen decks, the tangential product outlet can be positioned anywhere to permit easy integration into existing plants.* →

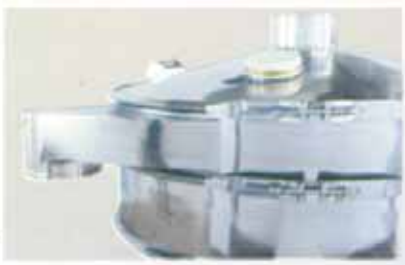
### Services

The Separation of Material either by gravity or by particle size is a specialised unity operation demanding the advice of experts. Over the years, SPS applied advanced scientific methods to the design and selection of centrifuges for separation and now this same SPS service is available for the design and election of continuous screens. Our development department is constantly handling test work, on new applications sent to us by industry. The department staffed by qualified Chemical Engineers, is augmented by the field Chemical Engineering staff who advise on problems on site, and who are backed by an extensive spares and after-sales service team.

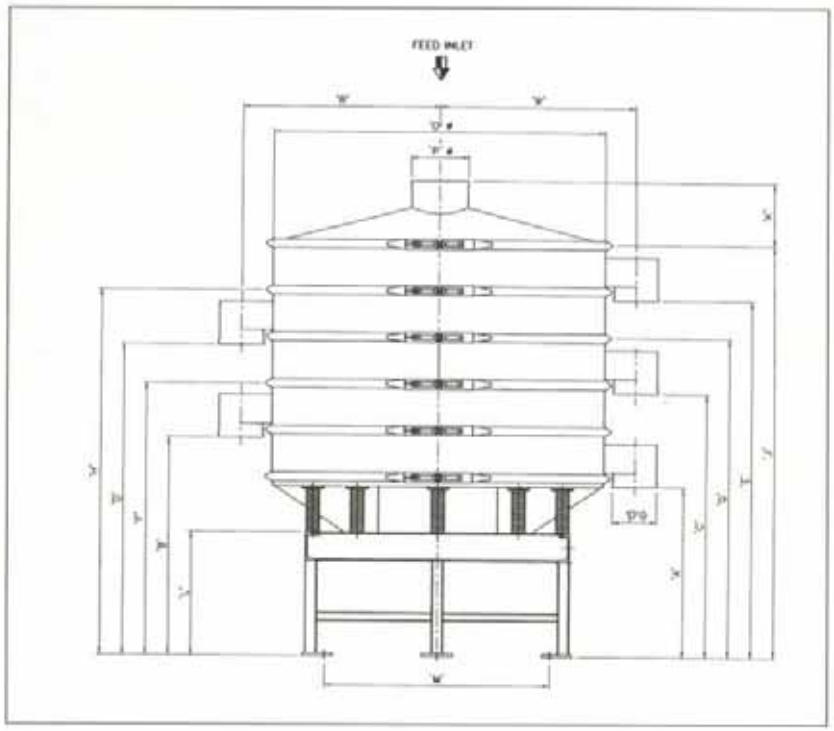

*Helical pressure springs*


*Space-saving robust base*

*Cleaning devices*



# Dimensions and Specifications




ALL DIMENSIONS ARE IN MM

| Model | 'A' | 'B' | 'C' | 'D' | 'E' | 'F' | 'G' | 'H' | 'J' | 'K' | 'L' | 'M' C/C | 'O' | 'P' | 'R' |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 24" | 437 | 551 | 666 | 780 | 895 | 685 | 799 | 913 | 1028 | 114 | 355 | 451 | 622 | 152 | 400 |
| 30" | 437 | 551 | 666 | 780 | 895 | 685 | 799 | 913 | 1028 | 114 | 355 | 559 | 762 | 152 | 490 |
| 38" | 623 | 763 | 940 | 1112 | 1283 | 959 | 1131 | 1303 | 1474 | 182 | 439 | 639 | 973 | 203 | 608 |
| 48" | 647 | 793 | 964 | 1136 | 1307 | 983 | 1155 | 1327 | 1498 | 209 | 463 | 820 | 1206 | 203 | 743 |
| 60" | 647 | 857 | 1066 | 1276 | 1485 | 1098 | 1307 | 1517 | 1727 | 172 | 463 | 956 | 1524 | 203 | 914 |
| 72" | 749 | 997 | 1244 | 1492 | 1740 | 1264 | 1511 | 1751 | 2006 | 190 | 460 | 1100 | 1803 | 203 | 1035 |
| 84" | 749 | 1084 | 1368 | 1652 | 1936 | 1338 | 1592 | 1846 | 2190 | 269 | 460 | 1330 | 2078 | 203 | 1240 |

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