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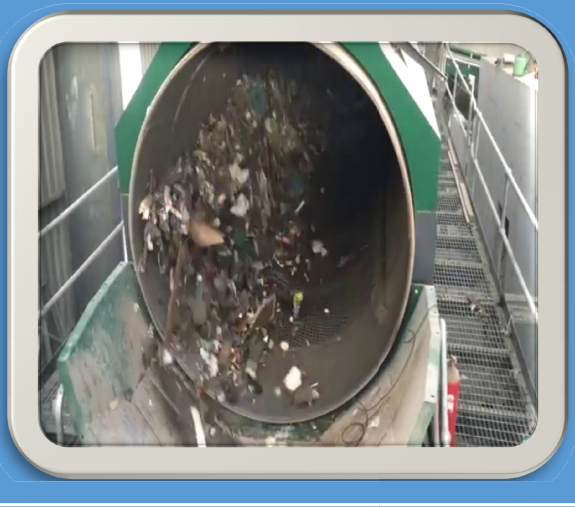
TROMMELS/SCREENING MACHINES

A mechanical solution to separating out the waste and categorize them; these machines are called Trommels or Screening machine, widely used in the waste processing industry and MSW plants to separate the different types of waste.

Trommel screen consists of a cylindrical drum which has many different size holes on its surface and works in a circular motion. As the drum rotates, the screen allows a particular size waste to be separated out forming a pile eg manure while the waste that is bigger than the size of the hole is retained at the back of the cylinder. Trommel generates two flows: the undersize flow and the oversize fraction flow. Rubber tyre of sufficient size used for the circular motion .Iron spring wire mesh is used for longer life and more perforation area. Self-cleaning brushes are installed

Trommel requires some manpower for smooth operation; It is even possible to operate a trommel for both dry and wet waste. They are highly effective machines which play an important role in our Zero Waste Management as waste recycling and waste reuse is only possible once the waste is correctly separated.



WASTE SEGREGATION CAPACITY: 50 TON – 300 TON

ADVANTAGES OF A TROMMEL :

Excellence in both wet and dry applications so it can handle waste with excess moisture also.

Trommel consists of concentric end sections and beam design with bolt-on screen plates for waste segregation.

They are available in a variety of diameters and lengths depending upon the capacity of Waste Segregation.

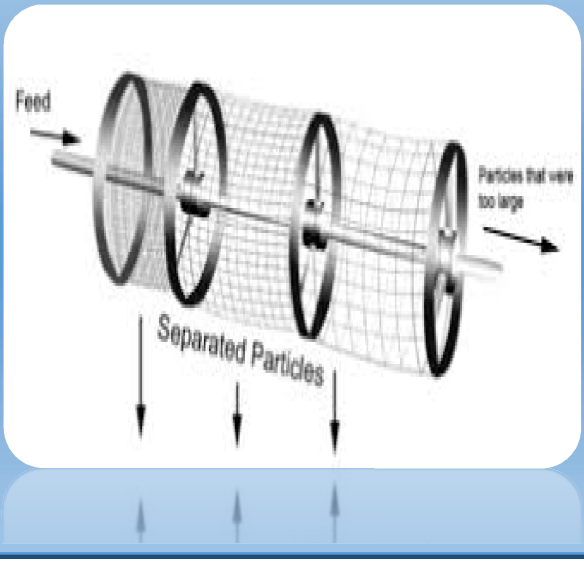
Simple to operate and handle: They can be set up somewhere near the source of the auriferous stuff, where the water can be fed into the drum unit and there is a power source to run the unit.

DISADVANTAGES OF A TROMMEL:

Portability issue: Often, larger production units are not very portable and often remain stationary when set up. It is difficult to transport them to remote areas unless they are towed to the site.

Mesh choking and cleaning is a regular process.

Only two fraction separation Wear and tear are more.



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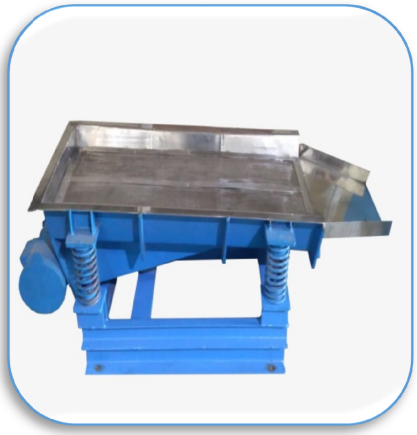
TYPES OF TROMMELS

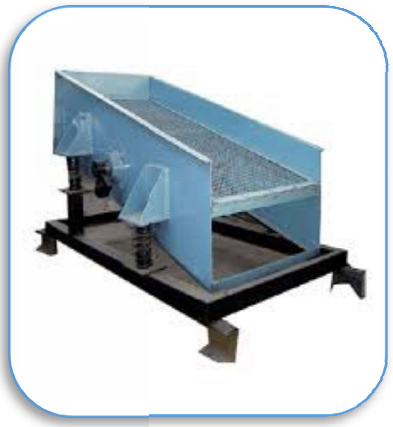
Trommel Screen VS Vibrating Screen

Screen Type	Trommel Screen	Vibrating Screen
Energy Cost	Less	High
Noise	With sealed enclosure, low noise	High
Service Life	Long	Short
Working Environment	Good, there is a sealed isolation cover	Poor, unsealed cage

Grizzly screen

A grizzly screen is a grid or set of parallel metal bars set in an inclined stationary frame. The slope and the path of the material are usually parallel to the length of the bars. The length of the bar may be up to 3 m and the spacing between the bars ranges from 50 to 200 mm. Grizzly screens are typically used in mining to limit the size of material passing into a conveyance or size reduction stage.





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RANGE OF APPLICATION

Municipal and industrial waste

Trommel screens are used by the municipal waste industry in the screening process to classify sizes of solid waste. Besides that, it can also be used to improve the recovery of fuel-derived solid waste. This is done by removing inorganic materials such as moisture and ash from the air-classified light fraction segregated from shredded solid waste, thereby increasing the quality of the product fuel.[1] In addition, trommel screens are used for the treatment of wastewater. For this particular application, solids from the entering flow will settle onto the screen mesh and the drum will rotate once the liquid reaches a certain level. The clean area of the screen is submerged into the liquid while the trapped solids fall onto a conveyor which will be further processed before removal.

Mineral processing

Trommel screens are also used for the grading of raw materials to recover valuable minerals. The screen will segregate minuscule materials which are not in the suitable range of size to be used in the crushing stage. It also helps to get rid of dust particles which will otherwise impair the performance of the subsequent machineries in the downstream processes.

Other applications

Other applications of trommel screens can be seen in the screening process of composts as an enhancement technique. It selects composts of variable size fractions to get rid of contaminants and incomplete composted residues, forming end products with a variety of uses. Besides this, the food industries use trommel screens to sort dry food of different sizes and shapes. The classification process will help to achieve the desired mass or heat transfer rate and avoid under or over-processing. It also screens tiny food such as peas and nuts that are strong enough to resist the rotational force of the drum.