

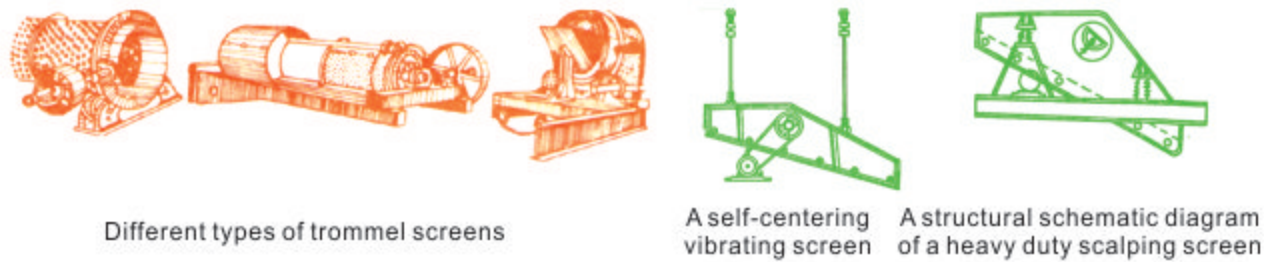
# Screens and Screen Panels and Plates

Naipu Company manufactures flat type screens and circular type screens.

## Part I : Flat Screens

### I . Application and Principle:

Vibrating screens are widely applied in industrial sectors of metallurgy, coal, building material, and road construction. The screen panels and plates on screening equipment can separate mixed material of different kinds into different classes of particle sizes through the combination of single-deck or multi-deck screens, so as to meet the requirements of a certain ore dressing process.



Different types of trommel screens

A self-centering vibrating screen

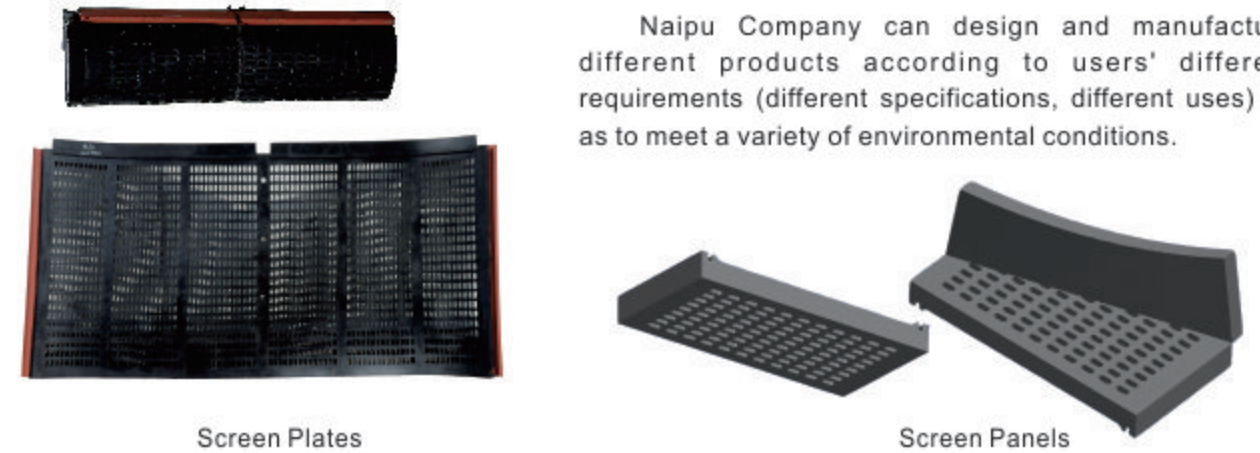
A structural schematic diagram of a heavy duty scalping screen

### II . Features of Rubber Screen Panels and Plates:

Abrasion between material and plates wears away the screen plates. Rubber screen plates and panels manufactured by the Company, compared with metal ones with apertures formed with metal bars, have advantages as follows:

1. Light in weight, easy for strip down and reassembling;
  2. High damping capacity resulting in reduced noise;
  3. New structure, offering an easy assembling and disassembling;
  4. Good resilience leading to a higher jump frequency of materials and an increased screen efficiency;
  5. Apertures of screen can be deformed within a certain limit, resulting in a reduced probability of aperture blockage by the material;
  6. Screen panels and plates may be framed with different material in the pressure molding process, extending the service life;
  7. Products with a service life between 6 and 24 months can be designed depending on the user's requirements and the opening conditions;
  8. Different apertures of screen can be designed per the user's requirements.
- (Note: in principle the diameter of sizing with rubber plate screening shall be greater than 6mm.)

## III. Pictures of Screen Panels and Plates



Screen Plates

Screen Panels

Naipu Company can design and manufacture different products according to users' different requirements (different specifications, different uses) so as to meet a variety of environmental conditions.

## Part II : Trommel Screens

### I . Usage

Trommel screens have been getting popular around the world nowadays as classification equipment, associated with the features of simple structure, easy installation, reliable operation, and high efficiency. They are broadly applied at the discharge ends of AG mills, SAG mills and ball mills for classification of material. They are a success in mineral processing plants in non-ferrous metals mines.

### II . Features

Trommel screens manufactured by Naipu Company have combined characteristics of those trommels around the world with the technology uniquely developed by the Company, resulting in a product with features such as:

1. Simple structure, less space demanded, easy for installation and maintenance, no driving device or energy source needed;

### Shapes of holes in various sieves

Staggered round holes	Staggered hexagon holes	Square holes	Staggered square holes	Rectangular holes staggered at bottom	Rectangular holes staggered at sides	Straightly-arranged rectangular holes
Mostly applied and accurate, suitable for screen-separating of regularly-shaped particles		When thicker screen wires are used, the precision rate drops due to high hole-opening rate and high throughput		It has the highest hole-opening rate, but has a poor precision rate; if it is used by shifting it by 90 degrees, the precision rate will be improved; owing to the long holes and the vibration of screen wires, blockage does not tend to occur		
Square holes	Rectangular holes		Long three-weft holes			
Round	Triangle	Equilateral triangle	Grizzly type	Guide-track type	Angled arrangement	Loose rod arrangement
Long service life, fixed precision, easy to be blocked, poor efficiency and low conveying capacity	Good precision, high efficiency, but low capacity in anti-blockage and conveying, holes enlarged after wears	The conveying capacity increases with the increasing of the height of rods, and the efficiency slightly drops when the rods become straight at both sides, and blockage gets worse		Normally it is cooperated with a grizzly in order to protect the rods and reduce the wear	It can be used on any rod in any horizontal screen so as to increase the conveying capacity	It can decrease blockage, but has a poor precision rate

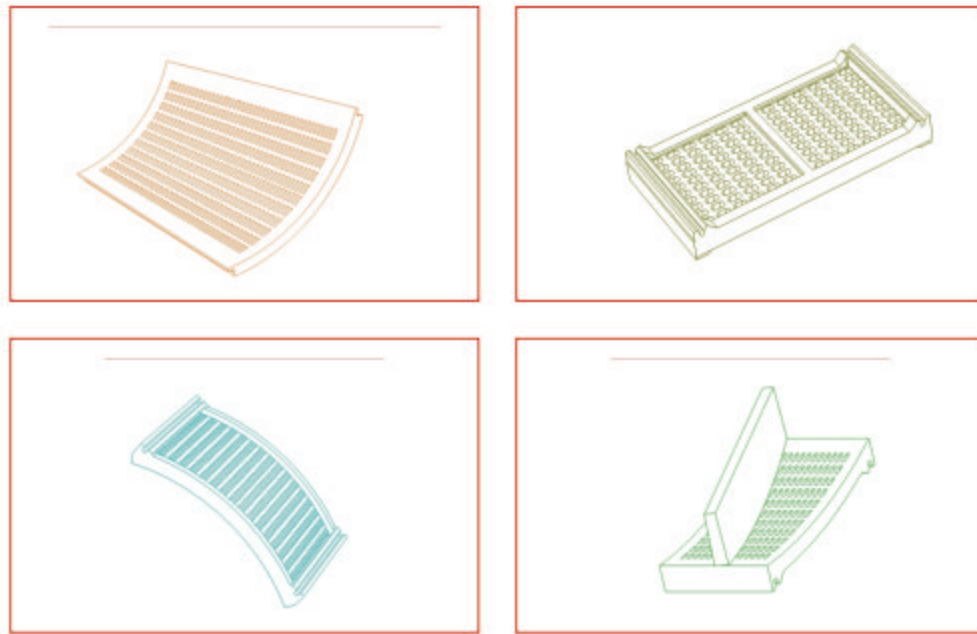
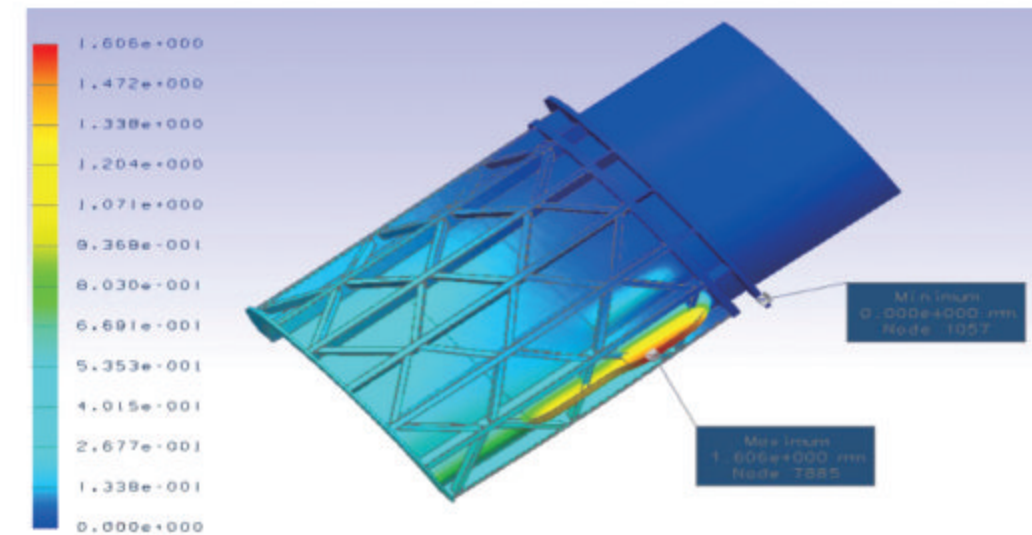


Figure 3

2. Trommel screen panels and bafflers are made of high abrasion resistant rubber. Different apertures can be made on the panels according to clients' requirements; Materials and designs are available per customers' requirements. Service life lasts between three quarters of a year and two years.

### III. Design Capacity

- 1) Naipu Company is capable of manufacturing super large rubber-plated trommels in various types, with independent R&D, design and fabrication, with team work by our quick response experts by means of advanced 3D software to shape the products and design the molds;
- 2) With preliminary design of the product completed, FEA and wear analysis are conducted for optimization before the design option is finalized and the product is determined.



3. Screen panels are inlaid. No bolts are used, making an installation easy and reliable. Frame bars are stainless steel made, requiring no replacement for a long time. It is a structure with the least frequency of screen panel replacement around the world at present (Figure 4).

### IV. A Reference List

Model of Grinder	Specification of Trommel	Client
Ø7.9 x 13.6m ball mill	Ø3500 x 3605mm	WA Iron Mine, Australia
Ø7.32 x 10.68m ball mill	Ø3000 x 3940mm	Dashan Concentrator, JCC, China
Ø5.5 x 8.8m ball mill	Ø3000 x 3605mm	Vargem Grande, Vale, Brazil
Ø7.32 x 12.5m ball mill	Ø2300 x 3741mm	TaiSteel, Taiyuan, China
Ø9.15 x 5.03m SAG mill	Ø3000 x 3605mm	Mt. Wulugetu Mining Co., China Gold Group
Ø8.5 x 4.0m SAG mill	Ø2300 x 3741m	Dongguashan Concentrator, Tongling Copper, China

### V. Data Sheet for Trommel-attached Mill:

Different operators have different process conditions, operating parameters and targeted figures for mineral processing, so they may require trommel screens with certain parameters. Naipu Company is professional and can select an optimal solution to meet a client's process conditions, operating parameters and throughput.

A client is to provide operating parameters as follows regarding the grinding mill (for details refer to Data Sheet for Trommel-attached Mill).

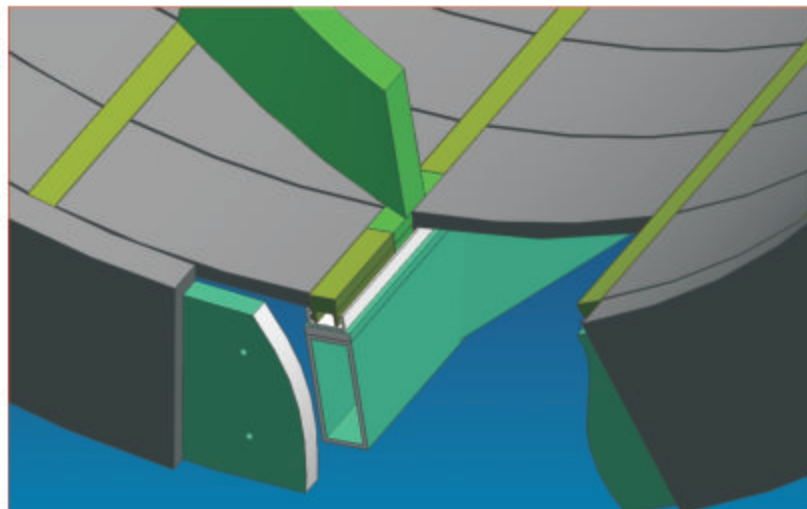
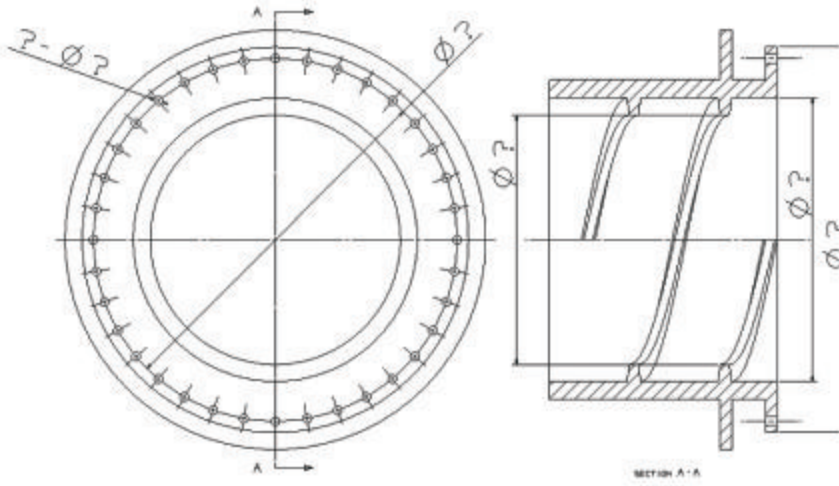


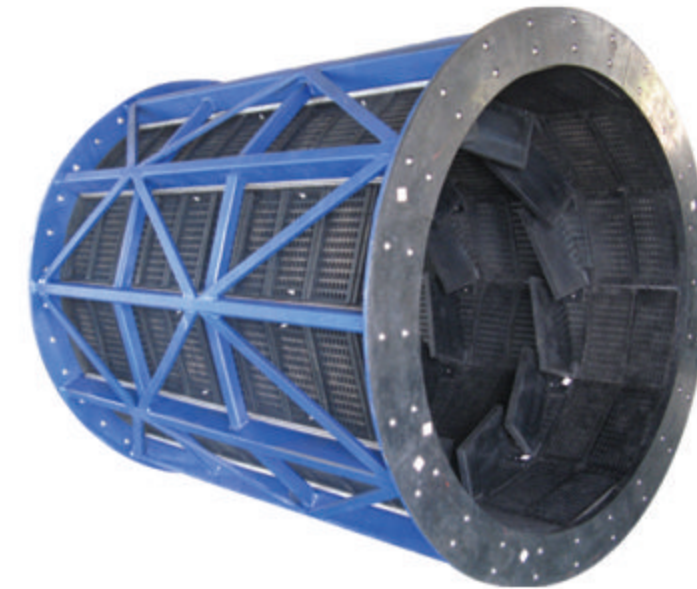
Figure 4

Note: Naipu Company can design Central Circular (internal circular) Trommel Screens per customers' requirements. (Refer to pictures)

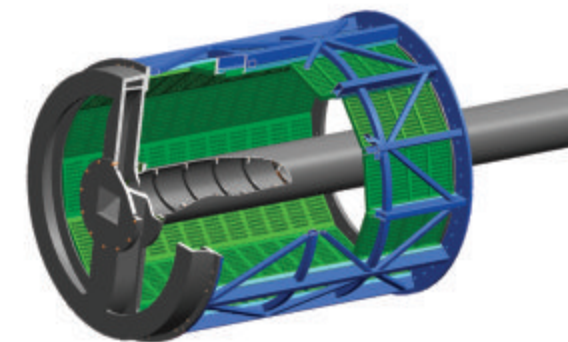
### Data Sheet for Trommel-attached Mill

Name of grinding mill			
RPM		Material passing rate(tph)	
Throughput(tph)		Material bulk density(t/m <sup>3</sup> )	
Screening sizing(mm)		Ore hardness	
Slurry density (%)		Screen service life required by client(month)	
Mating measurement (DE trunnion)			

### VI. Pictures of trommel screen assembly and rubber components



A Trommel and Wet Parts of Ø8500 x 4000mm SAG Mill



Sketch of Internal Circular Trommel Screen(Figure 1)



Sketch of External Circular Trommel Screen(Figure 2)



**Global Cooperation Jointly Shared Future**

## **NSH Series Rubber Screen Panels and Plates**



**Product Introduction**

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