

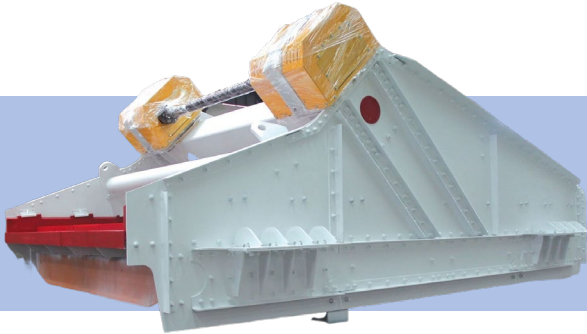
# Deep Screening Solution

Hotvibrating Screen

&

Vibrating Screen Intelligent Monitoring  
System Introduction

**HOT (Chengdu) Industries Co.,Ltd**

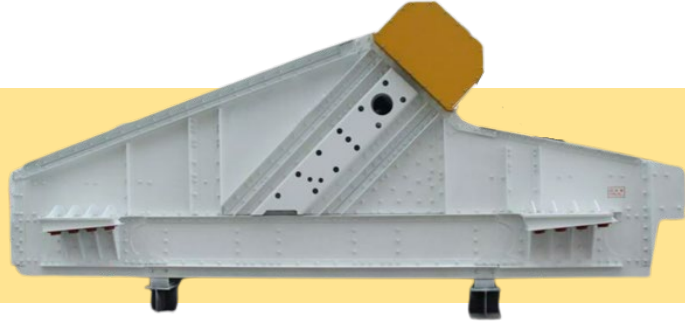


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# 1. HOT Brief Introduction

# HOT Brief Introduction

"HOT (Chengdu) Industries Co., Ltd. (formerly known as **Beijing HOT Mining Industries Co., Ltd.**, which is currently **undergoing a merger and absorption**), is committed to applying **artificial intelligence** to resource production practices, **providing full-process intelligent products** and **"one-stop"** technical services.

**Qualifications and honors:** National high-tech enterprise, Zhongguancun Golden Seed Engineering Enterprise, "Innovation Light" of the first Asia-Pacific Economic Cooperation (APEC) SMEs.

**As a digital company that understands the mining industry better:** Based on solid professional mining services, HOT has applied new technologies such as artificial intelligence and industrial Internet of Things to mining production practices. We help mining enterprises achieve energy conservation, emission reduction, cost reduction and efficiency improvement, and promote sustainable and high-quality development of mining enterprises."

"The core team has an outstanding position in the resource industry, and the company has **academicians qualified by the Australasian Institute of Mining and Metallurgy** who can sign JORC and NI43-101 for IPO purposes.

**Working style:** our footprints spread across rarely visited landscapes and integrate into primitive communities."





# Main Products and Technical Services



**X-ray** Diffraction Morphology Intelligent  
Optoelectronic Sorting Technology

**X-ray** Moisture and Ash Analyzer

AI Grinding and Classification Power  
Dynamic Optimization **Energy Saving**

Building **Block-style** Intelligent  
System for **Full-process** Mineral  
Processing



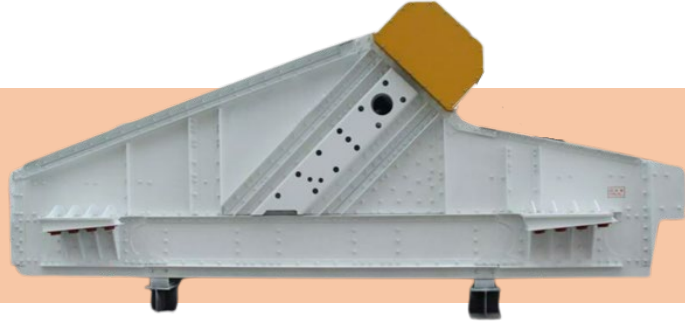
Exploration Consulting



Mining Intelligence & Technical Services

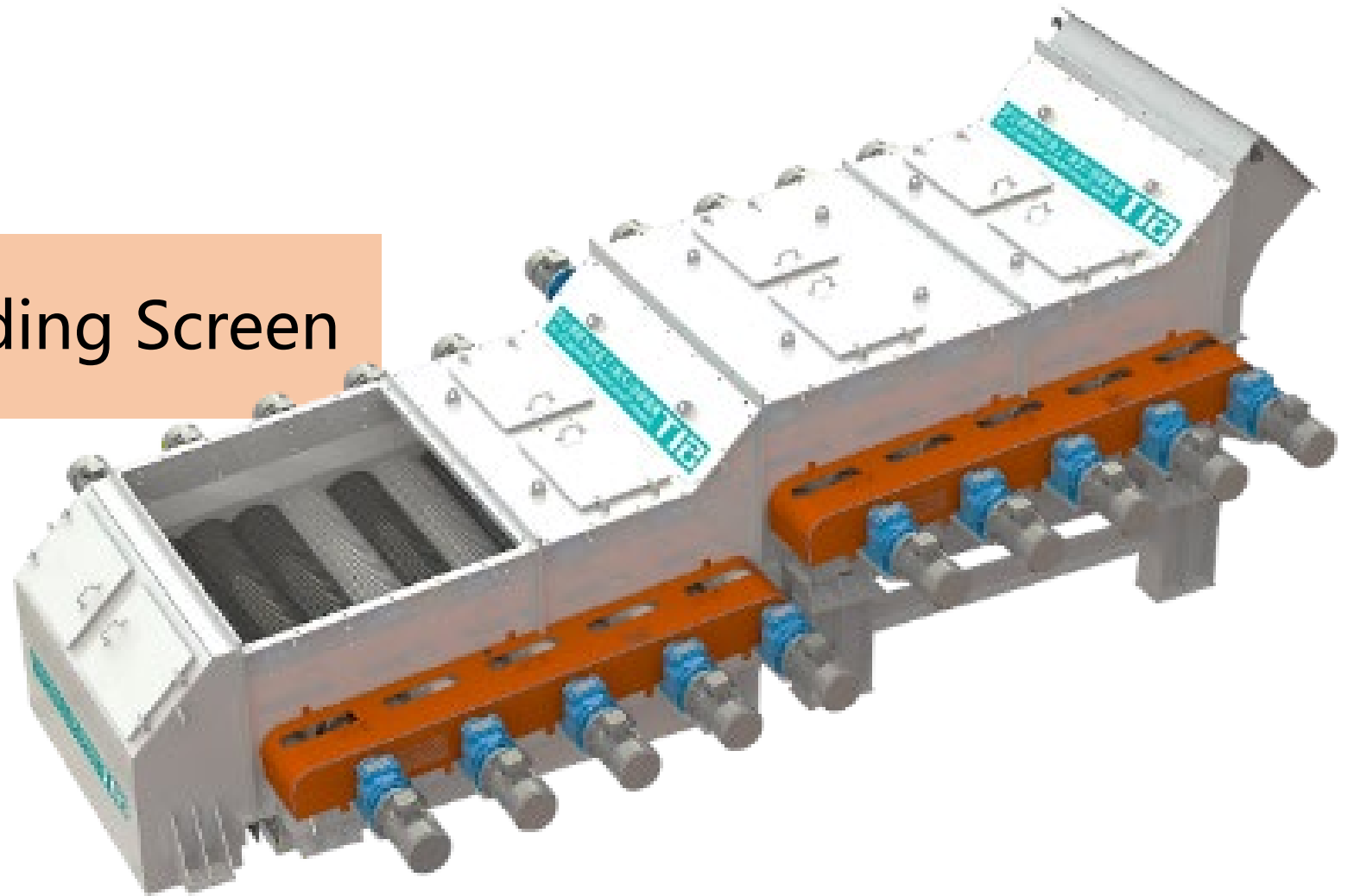


Delivery of Mineral Processing Plant



## 2. HOT Vibrating Screen Introduction

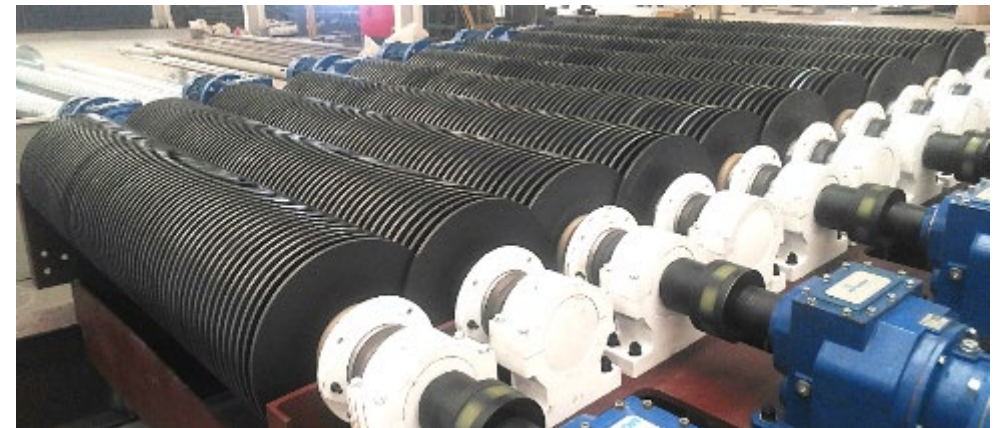
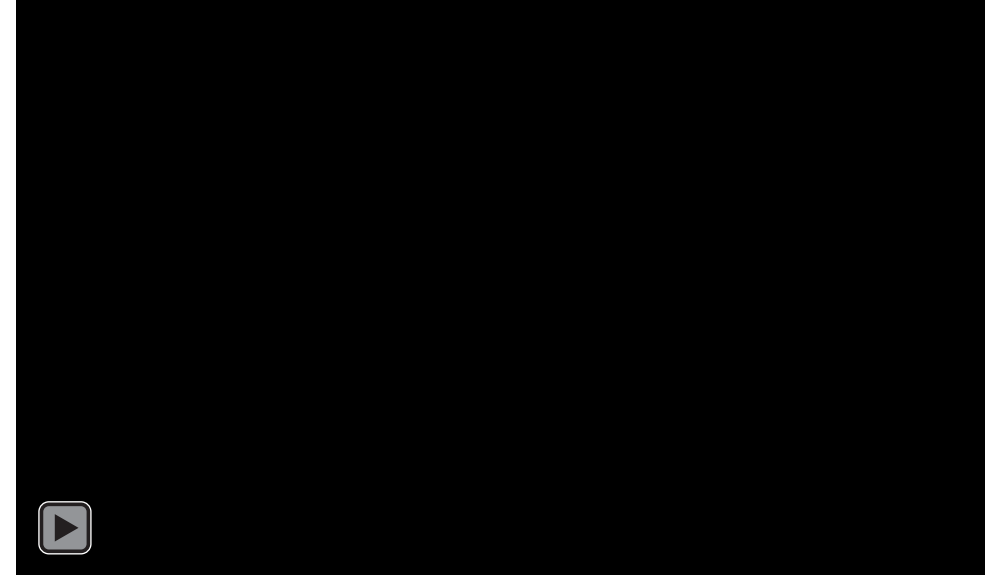
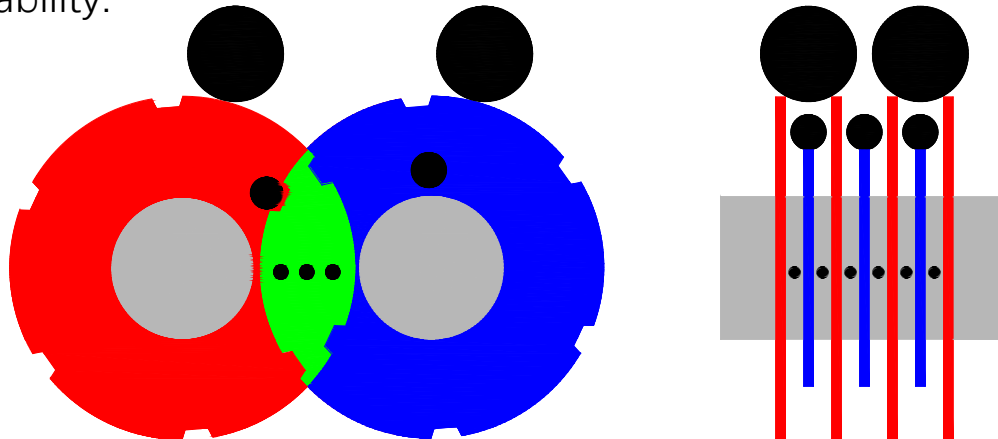
## DFRS Series Deep Grading Screen





# DFRS Series Deep Grading Screen-Screening Principle

- ◆ The screening body of the DFRS series deep grading screen adopts a structure similar to a roller screen, and the screen body does not vibrate.
- ◆ The screening shaft moves in the same direction, completing the horizontal transportation of materials.
- ◆ The adjacent shaft screens cross each other, forming gaps to create screening seams.
- ◆ The screen surface is similar to a double-layer screen, which can produce secondary stratification.
- ◆ The intersecting surfaces move in opposite directions, and the screening seams have strong self-cleaning ability.





# DFRS Series Deep Grading Screen-Advantage



## ■ High Feed Upper Limit, Low Grading Granularity Lower Limit

The maximum feed upper limit can reach 200mm. The minimum dry accurate grading granularity can reach 3mm.

## ■ High Screening Efficiency

Not clogging or sticking, with unrestricted screen length. It can achieve over 90% screening efficiency for different particle sizes.

## ■ Strong Adaptability To Wet And Sticky Materials

## ■ Large Capacity

At the same screening efficiency, the unit area processing capacity can reach more than 3 times that of a conventional vibrating screen.

## ■ No Vibration And Small Space Occupation

Under the same load, the space required for this screening machine is less than half of that required for a banana screen or conventional vibrating screen. Also, it does not vibrate, making it very easy to retrofit into existing coal preparation plants.

## ■ Good Environmental Performance

It has a good sealing effect with no dust leakage and low noise.

## HLO/HLD Series Banana Screen



# HLO/HLD Series Banana Screen-Screening Principle

**High-speed feeding layering section:** the feeding section has a large screening angle, the material movement speed is fast, and the screening material can be quickly screened, separating the large material from the fine material, and playing a layering role.

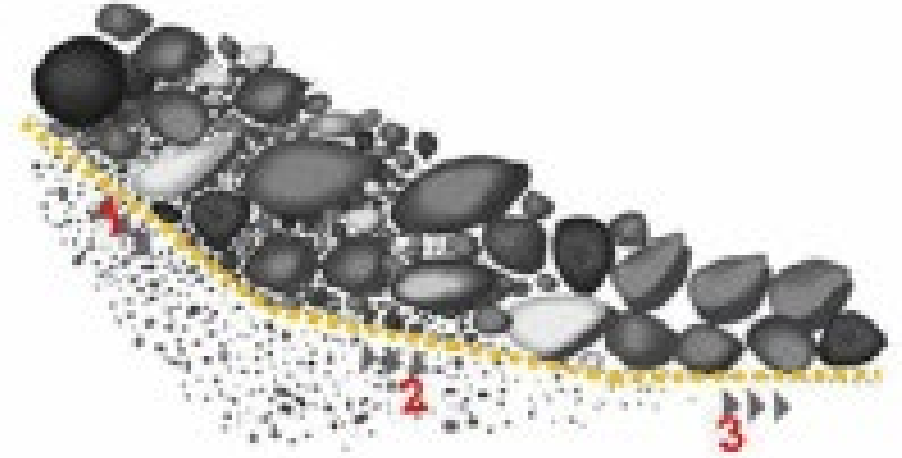
**Medium speed screening segment:** the screening angle becomes smaller to slow down the movement speed of the material, forming a material bed, the main screening through screen is completed at this stage, and there is also a partial layering effect.

**Low-speed discharge section:** the screening angle continues to become smaller, and the materials close to the size of the screen hole complete the screening in this section, mainly to check the screening effect.



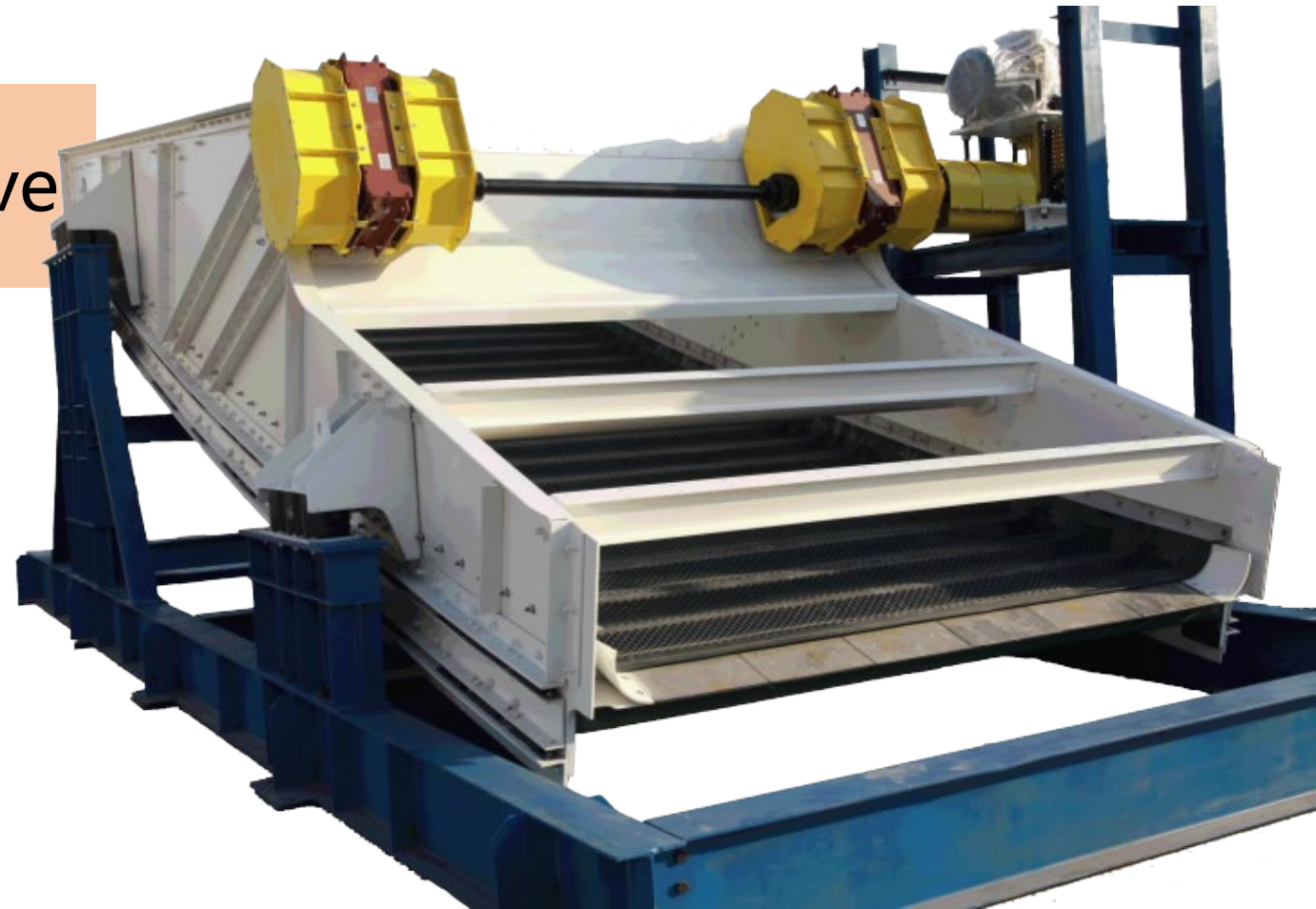
# HLO/HLD Series Banana Screen-Advantage

- Approximately 50% higher throughput than conventional horizontal or inclined screens.
- With the same screening area, the equipment takes up less space.
- Using linear vibration mode, compared with ordinary circular vibration form, the vibration intensity is large, the exciter speed is higher, the material flow is smoother, and the processing capacity is larger.
- It can be equipped with modular full polyurethane sieve plate, stainless steel strip seam sieve plate and wear-resistant plate sieve plate and other sieve plates, which is convenient for users to repair and replace.
- Suitable for wet and dry screening.
- It can replace the traditional process arrangement combination of curved and horizontal screens.
- Single-layer and double-layer screen surfaces are available.
- The maximum device size is 4.3m (width) x 9m (length).



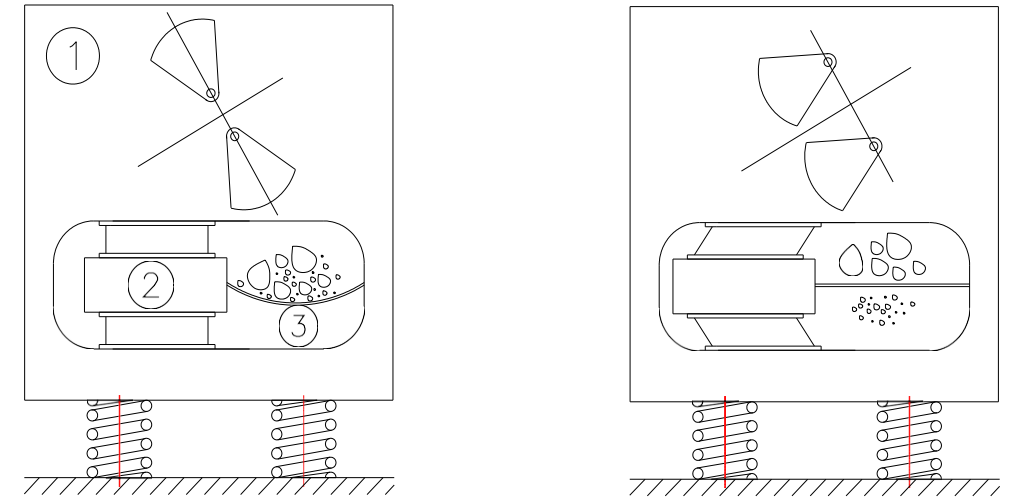


## HFS/HDFS Series Relaxation Sieve



# HFS/HDFS Series Relaxation Screen-Screening Principle

The relaxation screen is developed from the traditional circular vibrating screen, the principle is that a single drive produces double vibration, that is, through resonance, two vibrations are provided by one drive, the basic vibration is the circular vibration generated by the rotation of the eccentric block, and the additional vibration refers to the oval vibration generated by the floating screen frame. The two ends of the elastic polyurethane screen surface are installed on the fixed beam and floating beam on the floating screen frame, in the screening process, the polyurethane screen surface continuously expands and shrinks (more than 800 times per minute) to obtain high vibration strength (50g), effectively preventing the screen hole blockage.

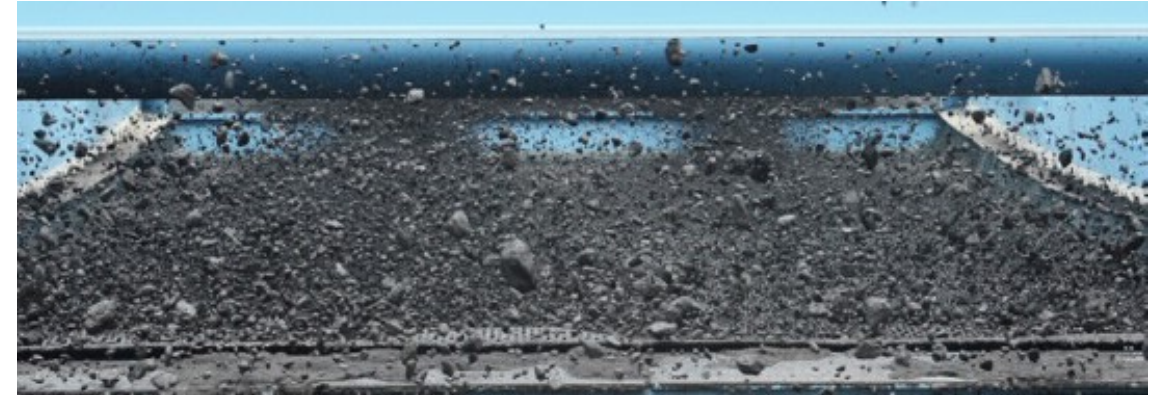


1. Fixed mass, 固定框; 2-Floating mass, 浮动框; 3-Deck panel, 筛板



# HFS/HDFS Series Relaxation Screen-Advantage

- ◆ The excitation strength can reach 50g, which can solve the screening of fine and difficult to sieve materials.
- ◆ The screening equipment with the same screening area requires the least motor power.
- ◆ Highly resilient polyurethane sieve plates are extremely resistant to wear and are designed for a service life of more than 4,000 hours.
- ◆ The sieve plate adopts press-in pry-out installation, which is convenient for the replacement and maintenance of the sieve plate.
- ◆ Low noise, design vibration isolation effect of more than 97%.
- ◆ Box type exciter or eccentric flywheel type single-axis inertial exciter is adopted; Exciter bearings are designed for a service life of more than 20,000 hours. The size of the excitation force is adjustable.
- ◆ The maximum device size is 3.6m (width) x 12m (length).
- ◆ The screening efficiency can reach more than 95%.
- ◆ It has a good self-cleaning effect.





# Applicable scenarios and applications

## Applications in the coal industry include:

- ◆ Raw coal grading (fine granularity).
- ◆ Dry desliming, wet desliming, and deashing.
- ◆ Pre-selection process of coking coal
- ◆ Lignite screening.
- ◆ Screening for coal preparation systems in power plants.
- ◆ Screening for coal conveying systems in cement plants.

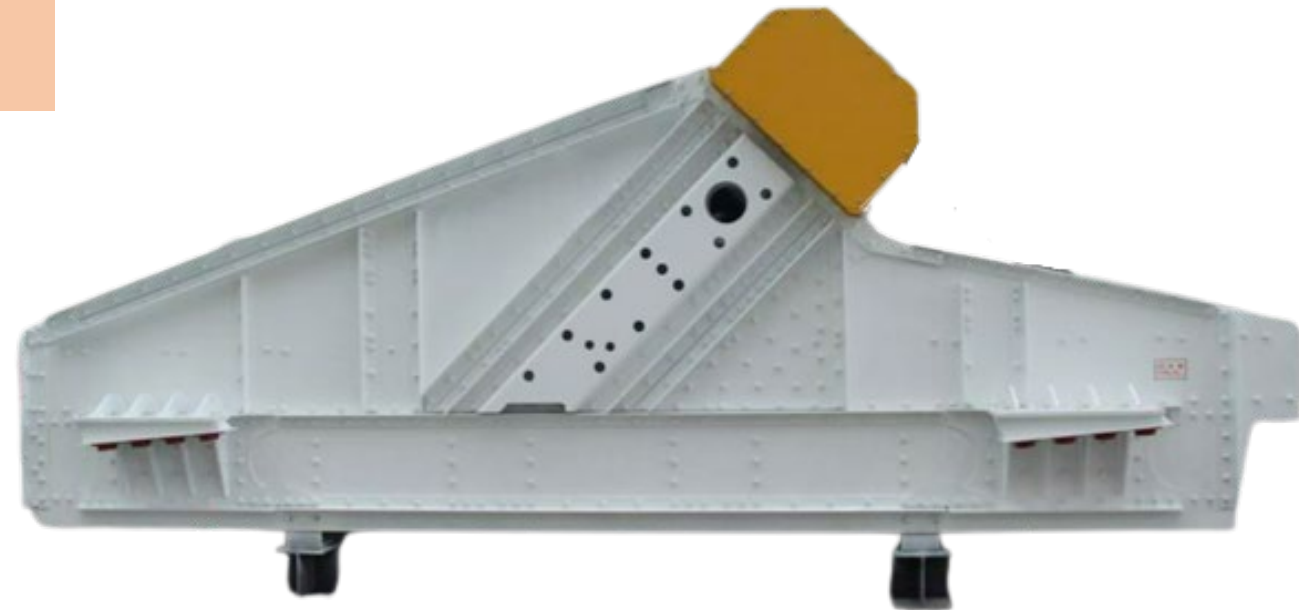


## The loose screen is widely used in :

dry screening of materials such as compost, coal slurry, sand, gold ore, magnesite, salt, coal, iron ore, sintered ore, sandstone, limestone, gravel, silica sand, clay, sawdust, construction waste, glass, fertilizer, flour, and other materials.



## HLG/HLK Series Linear Screens.



# HLG/HLK Series Linear Screen-Screening Principle

The linear vibrating screen is driven by twin vibrators. When the two vibrators rotate synchronously or in opposite directions, the exciting forces generated by the eccentric blocks on the screen are mutually offset in the direction parallel to the motor axis, and then superimposed into a combined force in the direction perpendicular to the motor axis. Therefore, this type of vibrating screen has a linear motion trajectory. The two motor shafts of the linear vibrating screen are inclined with respect to the opposite screening surface, and under the combined action of the material's own gravity and the exciting force, the material is thrown up on the screening surface, and moves forward in a linear, jumping manner to grade and screen the material.

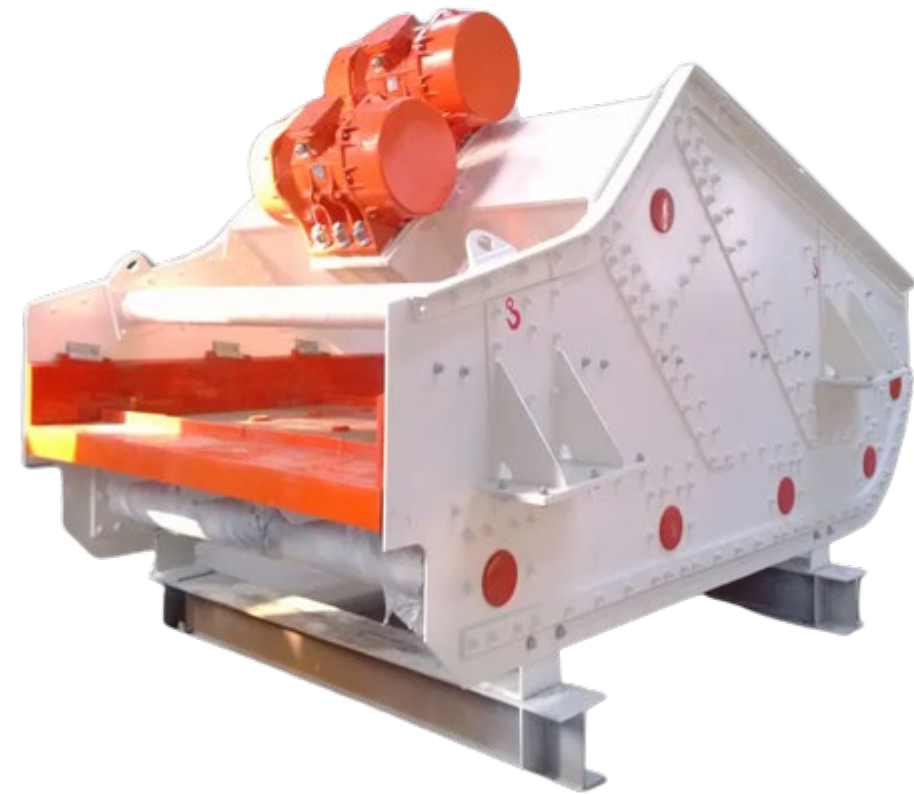


# HLG/HLK Series Linear Screen-Advantage

- Small size, light weight, simple structure, easy installation, and easy maintenance.
- Simple structure, few blockages, and an automatic cleaning anti-blocking screen device.
- Good sealing, less dust scattering, and beneficial for environmental protection.
- Low energy consumption, low noise, and long service life of the screen mesh.
- High screening accuracy, large processing capacity, and simple structure.
- Fully enclosed structure with automatic discharge.
- All parts of the screen body are made of welded steel plates and profiles (some components are connected by bolts), with good stiffness, firmness, and reliability.



## HLV Series High Frequency Screen





# HLV Series High Frequency Screen-Screening Principle

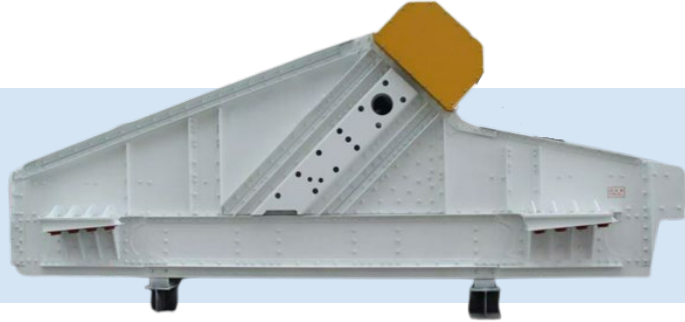
The high frequency vibrating screen uses dual-motor self-synchronization technology, with universal eccentric blocks and adjustable vibration intensity. Its main components include the screen box, motor, vibrator, and support system. The two vibrators operate in synchronized but opposite directions without direct contact. The centrifugal forces generated by the two sets of eccentric masses are superimposed along the vibration direction, while the opposite centrifugal forces cancel each other out. This produces a single excitation force along the vibration direction, allowing the screen box to move in a linear reciprocating motion.



# HLV Series High Frequency Screen-Advantage

- ❑ Lightweight, small in size, and simple in structure, convenient for disassembly, and easy to maintain.
- ❑ The vibrator has high efficiency, and the rubber spring on the base has good shock absorption effect.
- ❑ It adopts high-strength metal mesh and high-toughness steel to cast vulnerable parts, with a long service life.
- ❑ Compared with other equipment, the high-frequency screen has sufficient dewatering and a finished product screening rate of up to 99%.
- ❑ The main transmission device of the high-frequency dewatering vibrating screen adopts a sealed gearbox and pulley, increasing operational stability.





### **3. Vibrating Screen PHM System Introduction**

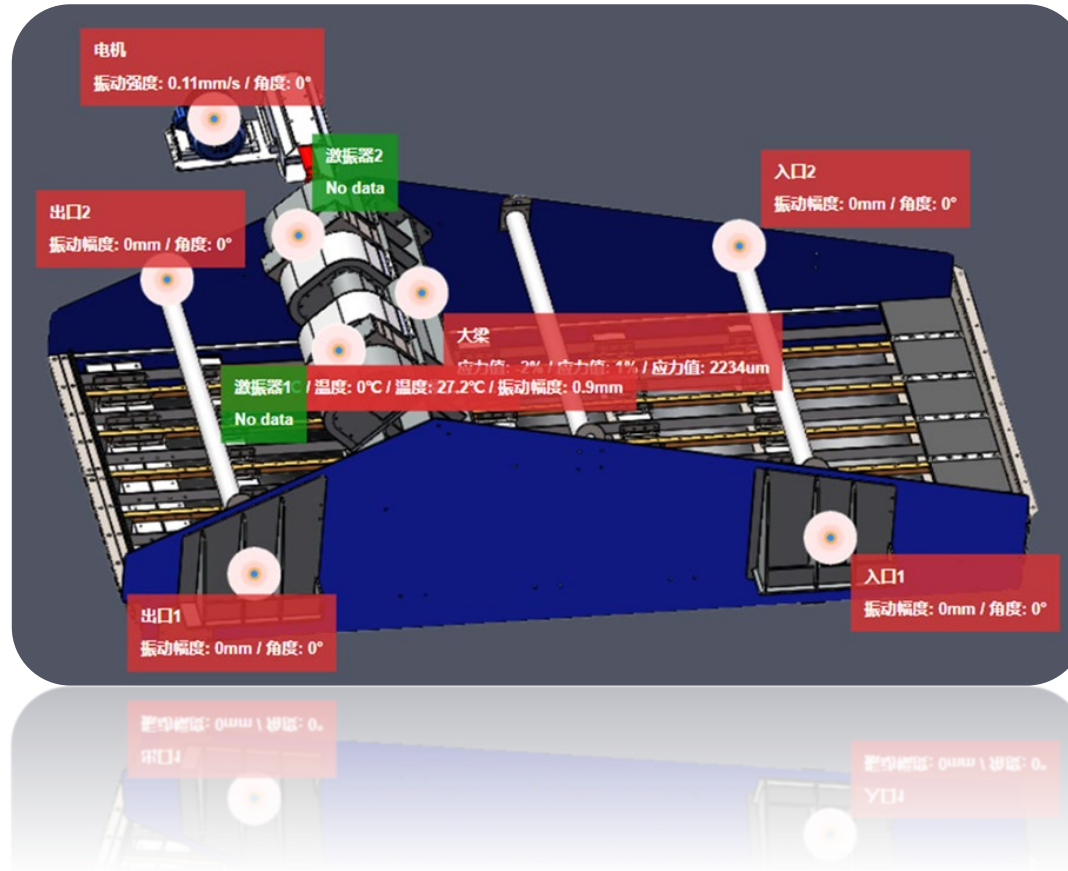
# Vibrating Screen PHM System

## Beam:

Install a wireless crack monitoring sensor (AS001) to sense the occurrence of cracks and detect the working conditions of the main beam.

## Exciter:

Install the wireless exciter sensor (AD006), monitor the temperature of the four bearings of the exciter, the lubricating oil temperature, and the vibration amplitude of the exciter, determine whether the exciter bearing is faulty, and the double exciter drives to detect the balance of vibration.



## Motor:

Install a wireless vibration temperature sensor (AD008) to monitor the temperature and vibration intensity of the motor.

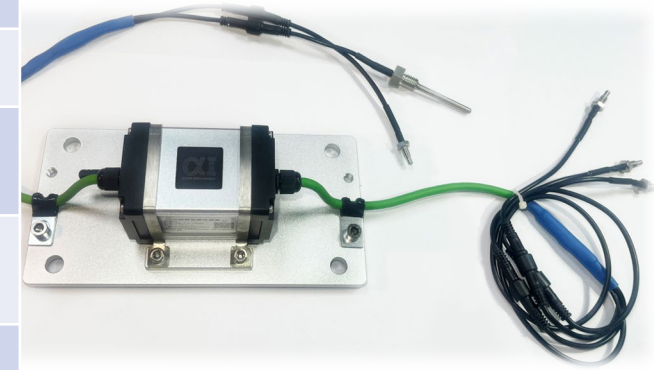
## Sieve body:

Two wireless vibration temperature sensors (AD008) are installed at the feeding end and the discharging end respectively to monitor the angle and amplitude of vibration of the screen body, and determine whether there is a problem of uneven feeding.



# Vibrating Screen PHM System

Monitoring site	Sensor Type	Monitoring items
Beam	Wireless Crack Monitoring Sensor	Beam stress
Exciter	Wireless Exciter Sensor	4 bearing temperature, 1 lubricating oil temperature, vibration amplitude of exciter, balance of vibration
Motor	Wireless Vibration Temperature Sensor	Temperature and vibration intensity
Sieve Body	Wireless Vibration Temperature Sensor	The angle and amplitude of the vibration of the screen body



- Real-time monitoring of high-incidence parts of vibrating screen, accurate perception of vibration, temperature and stress signals.
- The signal is transmitted to the local or the cloud through the repeater. Through the server-side AI machine learning algorithm and model, the equipment operation data is analyzed, the health status of the equipment is comprehensively evaluated, and the equipment failure is predicted.
- It can capture and analyze abnormal signals generated in the early stage of equipment failure, and give early warning and alarm in time.

