



紅星篩網

RED STAR
WIRE SCREENS

— SINCE 1989 —

METAL WOVEN WIRE SCREENS

▪ *Metal Woven Screen Mesh*

- Metal woven screen mesh stands out in the sand and gravel processing and mining industry due to its efficient screening area, precise grading ability, and excellent cost-effectiveness, becoming the most widely used screen product.
- These metal screen meshes are meticulously crafted through differentiated geometric configurations (square mesh, strip slotting) and diverse weaving techniques (flat top weaving, plain weave, wave-interleaved weave, etc.).
- Relying on the precision pre-bending and pressing technology of steel wire, the mesh screening accuracy of $\pm 3\%$ reaches an industry-leading level, enabling precise control of material grading particle size.



- Red Star Wire Mesh's high-quality steel wire undergoes a special treatment process, imparting exceptional wear resistance, tensile strength, and impact resistance. This ensures stable and efficient screening operations even under high-intensity, high-load, and complex working conditions.
- Precisely controlling the tension of the mesh surface is crucial to manufacturing high-quality screens. With years of accumulated professional and technical experience, Red Star Wire Mesh is able to accurately apply the appropriate tension to effectively eliminate the hidden dangers of tiny vibrations that may cause the screen to break.
- All screens strictly adhere to the quality requirements for length, width, and diagonal measurements. Inconsistencies in these factors can lead to inefficient screen installation and may cause premature failure.

▪ *Excellent Initial Wire Properties*

Carbon (**C**) and manganese (**Mn**) are key chemical elements that affect the performance of steel wire. Red Star controls high-quality steel wire from the source. Through R&D collaboration with China's top three steel mills, we customize and produce first-class wire with the optimal ratio of manganese and carbon content.



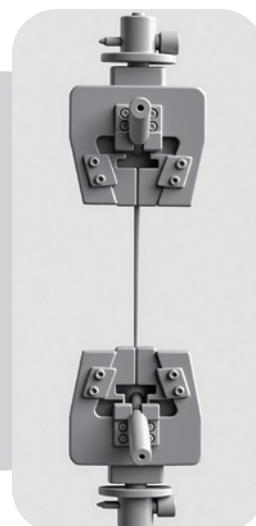
▪ *Lead Bath Quenching Heat Treatment*



Through special heat treatment and drawing process, the molecular structure is improved to produce a finer grain structure, which can reduce rust and corrosion on the surface of the steel wire, increase toughness and impact resistance, and obtain the most suitable steel wire quality and consistency for screening applications.

▪ *High Tensile Strength*

Tensile strength exceeds **1300 MPa**. The higher the tensile strength, the better the wire's resistance to stress and impact.



▪ *Optimal Ductility*

The cross-sectional reduction rate exceeds **40%**, indicating the material's capacity for plastic deformation before fracturing under stress. A low value may cause wire breakage during pre-bending. Conversely, excessive ductility reduces the wire's impact resistance.

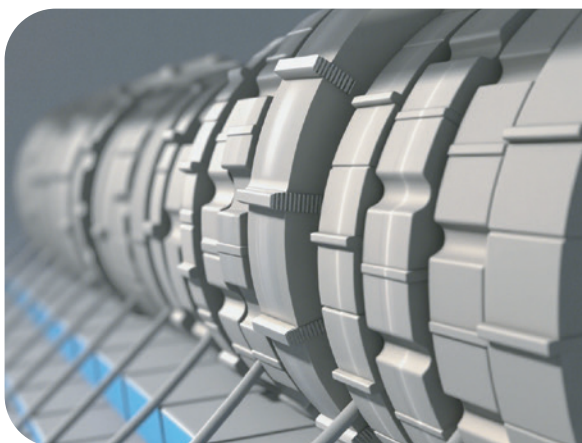


▪ *Extensive Braiding Expertise*

- Over **80%** of our employees have ten years of weaving experience.
- We have extensive experience in pre-bending knitting.
- We strive for high quality.
- We ensure consistent product quality.

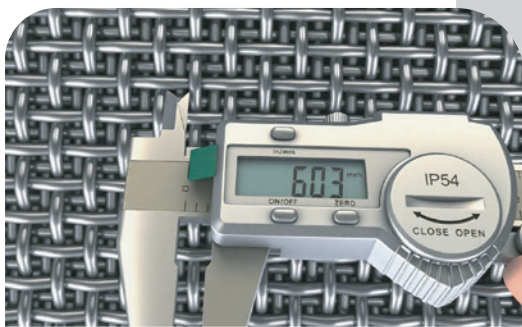


▪ *Large Mold Inventory*



Red Star Wire Mesh has **800 sets** of wire pre-bending molds, which can be matched with thousands of different product specifications while ensuring the mesh tolerance.

▪ High Mesh Precision



6mm mesh aperture inspection
deviation: 0.03mm, tolerance: 0.5%

ISO standards permit mesh aperture tolerances exceeding **3%**, meaning apertures may fluctuate above or below this limit.

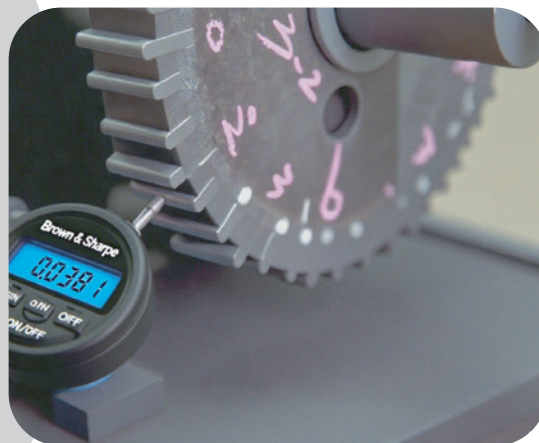
Many screen manufacturers fail to adhere to ISO standards, resulting in significant aperture variations and inconsistent mesh sizes across batches. This directly impacts the screening quality of the final product.

Redstar maintains exceptionally strict mesh tolerance standards for woven mesh production, **≤3%**, positioning Red star woven mesh as an industry leader.

▪ Mold Repair And Calibration

All the wires used in the woven mesh need to be pre-bent before weaving. Pre-bending is a mechanical rolling process carried out on the wires with gear molds, so the quality and condition of the gear molds are of vital importance.

Red Star Screen Mesh only uses the highest quality gear molds, and each production is subject to strict inspection and control to ensure the pre-bending quality of the wire.

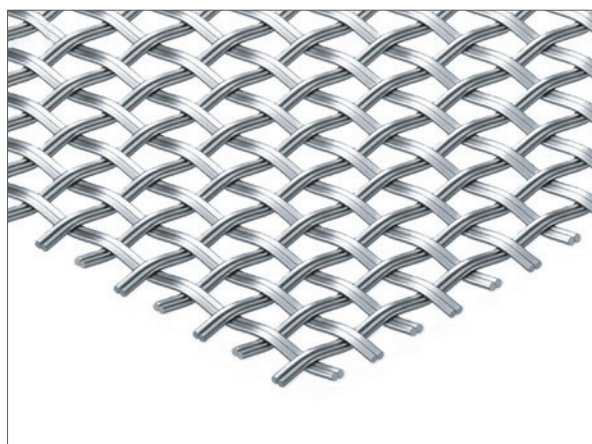
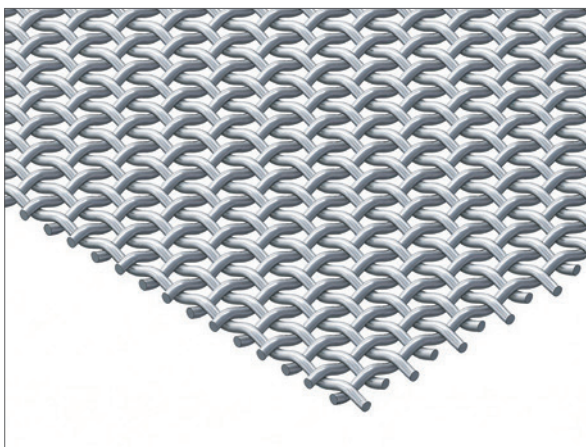


▪ Square Opening Screen Type

This is the most commonly used mesh type in screening. Utilizing high-quality steel wire produced using Red Star's specialized process, it offers excellent vibration resistance and a long service life. High-precision tools are used to create precise mesh openings. This type of screen is ideal for non-sticky materials or those prone to clogging. Its high aperture ratio allows for high-precision and high-throughput screening.

Standard Square Opening Weave

Made from pre-bent wire, this mesh features an uneven surface that imparts rotational force to the material along the mesh surface, thereby increasing its chances of passing through.



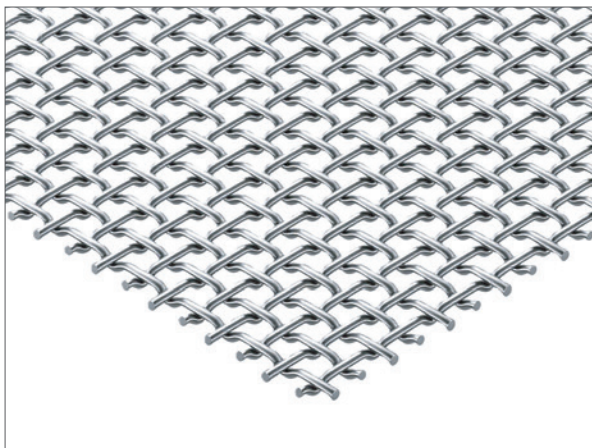
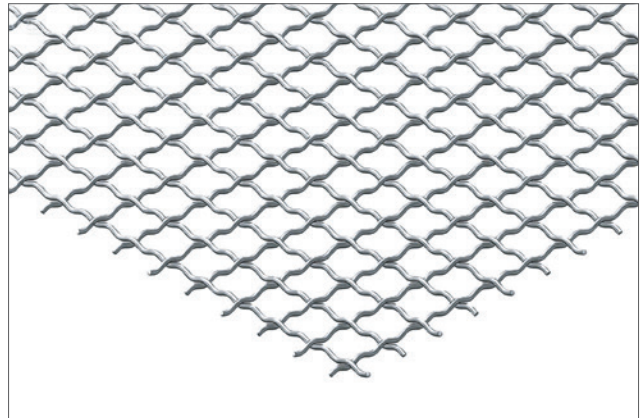
Double-wire square opening weave

Made from pre-bent wire, the uneven surface creates a rotating force along the screen surface, increasing the chances of material passing through.



Double intermediate crimped square opening woven screen

The screen mesh structure resembles standard square-hole weaving with identical production techniques, but utilizes finer wire and increased pre-bending times. This enhances wire bonding strength, yielding greater open area for the same aperture size. It is suitable for applications requiring large apertures and fine wire diameters.



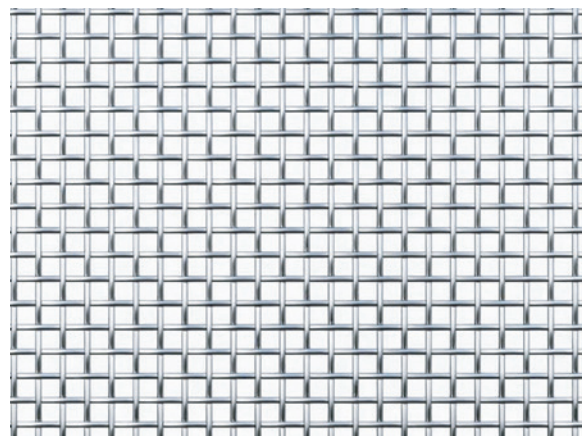
Flat-Top Square Opening Weaving

- Utilizes single-sided pre-bent wire technology to create a flat working surface. This extends screen life while achieving high precision and large apertures. This screen type is typically used for coarse-grained material screening.
- Its robust, distortion-resistant structure enables it to withstand heavy loads under extreme conditions.
- Its flat working surface resists severe wear, resulting in extended service life.



Woven Wire Fine Mesh Screen

- Woven wire fine-mesh structures typically woven from ultra-fine stainless steel; aperture ranges from 0.15 mm to 5 mm (other sizes can be customized)
- Adding a support mesh according to usage conditions effectively increases load capacity and extends service life.



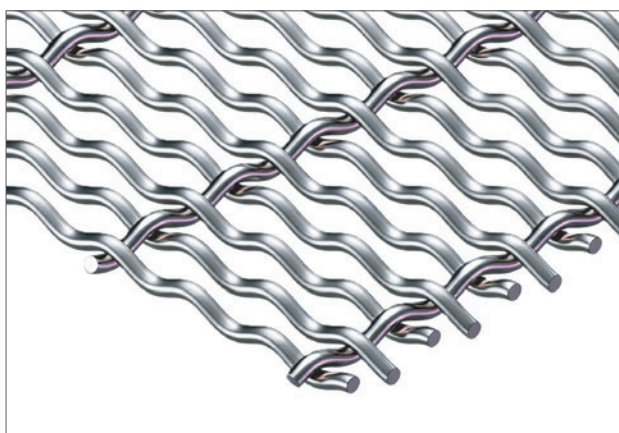
▪ Long-slot Screen Mesh Types

This aperture shape offers high open area and self-cleaning capability, allowing passage of elongated particles. While it reduces screening precision, it increases throughput and effectively removes elongated particles.

The installation orientation of elongated aperture screens yields distinct effects: When apertures are perpendicular to material flow, they reduce material velocity across the screen surface, allowing more time for particles to pass through apertures. When apertures are parallel to material flow, they facilitate material separation but decrease screening precision

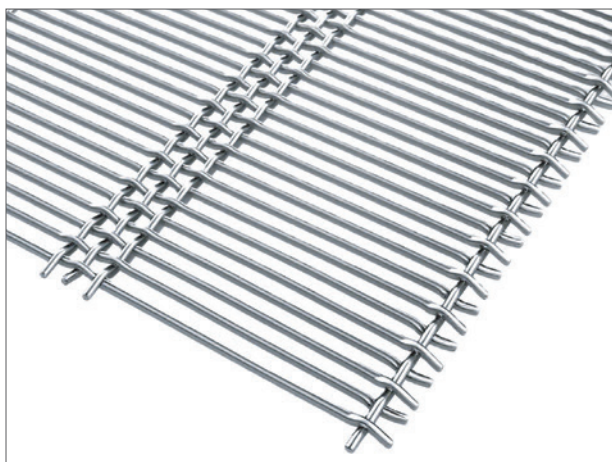
Double intermediate crimped Slotted Opening Woven Screen

Similar to the Double intermediate crimped square opening woven screen, the required long hole size can be configured by adjusting the number of pre-bent corrugations in the long hole direction.



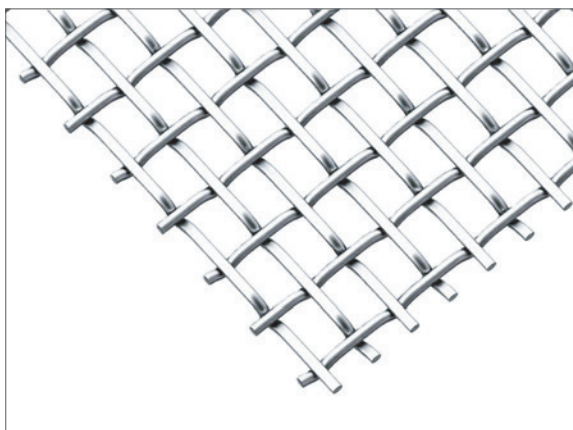
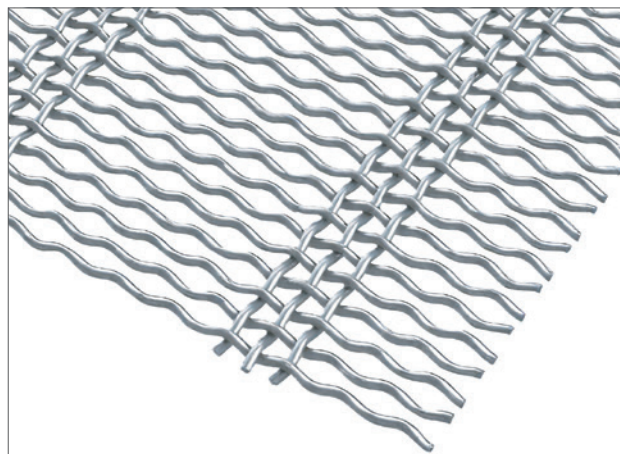
Piano Woven Wire Screen

The piano woven wire screen is constructed from steel wires using different pressing techniques. The long holes are woven using a standard square weave across the width of the holes, while the long holes are woven with straight wires. This weave offers a stronger self-cleaning effect than the wavelength-interval weave and is suitable for screening wet, sticky materials. The three-wire weave provides a more robust screen surface, offering a higher load capacity and longer service life than the wavelength-interval weave.



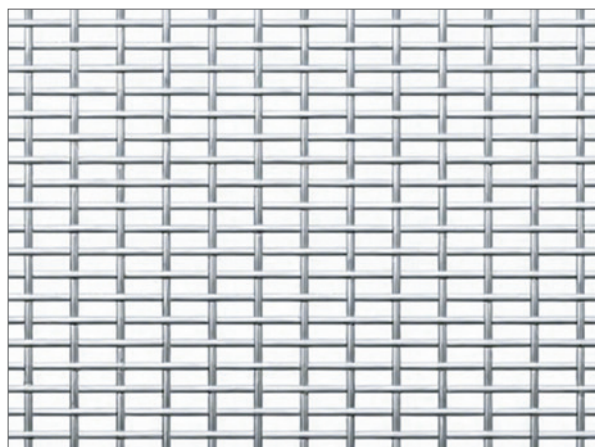
Double intermediate crimped Piano Wire Screens

It has similar properties to Piano Woven Wire Screen, but uses pre-bent corrugations instead of straight wires, resulting in higher rigidity and greater chances for the material to rotate and pass through the screen.



Flat-Top Slotted Opening Woven Screen

Similar to flat-top square opening screen, it maintains a flat working surface and resists severe wear, resulting in a longer service life.

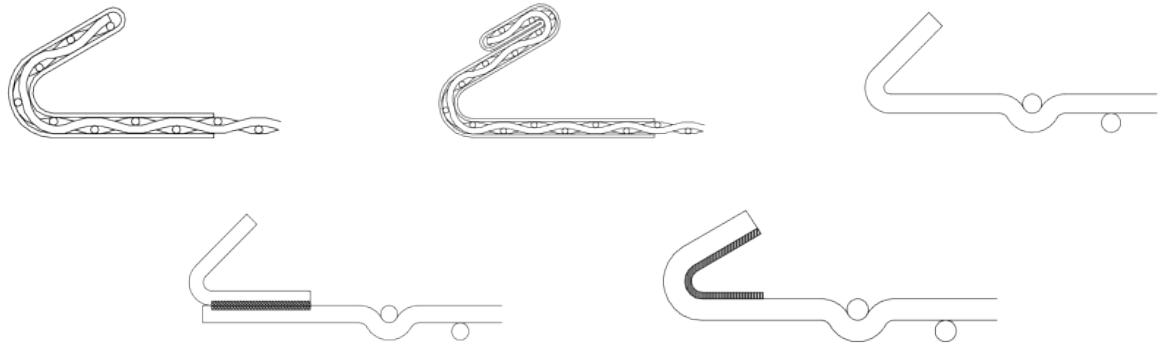


Small Slotted Opening Screen

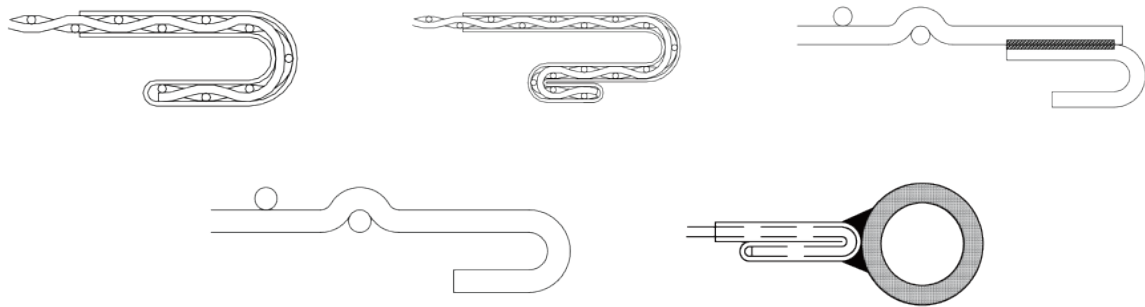
- Fine mesh structure, typically woven from extremely fine stainless steel; apertures range from 0.3 mm to 5 mm (other sizes can be customized with Red Star Screen).
- The slotted hole structure effectively increases the aperture ratio, improves the screening rate, and reduces clogging.
- Commonly used for screening fine materials and powders.
- Adding a support net can effectively increase the load capacity and extend the service life depending on usage.

▪ **Overview**

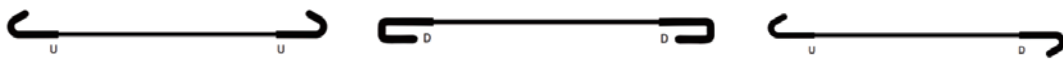
SIDE TENSIONED



END TENSIONED



HOOK DIRECTION



▪ **Guide to the Removal and Installation of Tensioned Screen Mesh**

◆ Installation Instructions

◆ Overview

Applicable to tensionable screens made of metal woven mesh, polyurethane, and rubber materials.

◆ Procedure

1. Hooked edges are typically the most effective method for securing screens to vibrating screen surfaces. When ordering screens with hooked edges, note the following points.

2. Clearance

· Allow approximately 20 mm clearance on each side between the screen machine's internal dimensions and the hook edge dimensions of the screen.



· This clearance serves two primary functions:

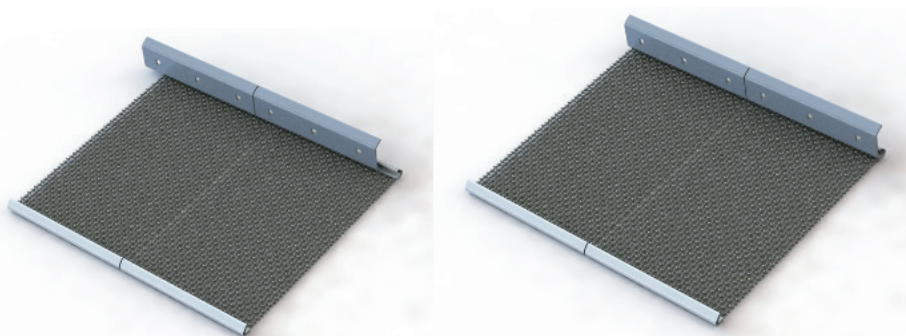
a) It ensures the screen is properly tensioned during installation.

b) Due to the screen's construction and operational characteristics, it will stretch over time, losing its initial tension. This clearance provides additional tensioning space throughout the screen's service life.

3. Tensioning Plates

· Wherever possible, the screening length of any screen surface should be divided into equal sections. This facilitates the use of standard-sized screens and allows worn sections to be replaced as a unit without replacing the entire screen surface.

· The length of the tensioning plates used should match the standard screen length and be equipped with an appropriate number of tensioning bolts, evenly distributed along the length of the tensioning plate.



▪ **Frequently Asked Questions**

1. What is the correct length of the screen mesh?

In simple terms, the length of the screen mesh should match the length of the side tensioning plates.

2. Why should the screen mesh length be the same as the side tensioning plate length?

Screen mesh widths may vary between batches or even within the same batch. When the tensioning plate is placed across two screen meshes, it will only effectively tension the slightly shorter screen mesh. Therefore, if the screen mesh widths are inconsistent, certain areas of the longer screen mesh will not be properly tensioned, leading to premature damage.

3. What is the overlap section, and when is it used?

The overlap section refers to the additional length of the screen mesh added to the screen mesh length, typically 25–50 millimeters, to prevent large particles from falling into the joints between screen meshes. The overlap section is not required when only one screen mesh is installed, or when the wire diameter of the screen mesh exceeds 6.3 millimeters, or when the aperture of the screen mesh exceeds 25 millimeters.

4. What is the correct width of the screen mesh?

The correct width of the screen mesh is the horizontal distance between the side panels of the screen machine minus 40–45 millimeters, ensuring the screen mesh is properly tensioned.

◆ **Woven Metal Screen Removal and Installation Guide**

1. Disconnect the power supply to the conveyor/screen machine and hang a danger warning

2. Remove the old screen. Precautions:

- Check for localized wear areas under the old screen.
- Check for wear at the longitudinal beam position.
- Check the outer surface of the hooks for localized wear.
- Check the inside of the hooks for uneven wear caused by the side tensioning plates.
- Inspect wear around the bolt holes to determine if the screen was centered during installation.
- Check for prematurely broken wires. Wire breakage may be caused by the following:

- Surface wear (end of service life)
- Improper screen tensioning
- Incorrect curvature
- Screen overload (exceeding design tonnage)
- Process/material defects

Note: The location of wire breaks does not necessarily indicate the specific problem area of the screen mesh.

Wires typically break near pivot points such as the hook area, longitudinal beams, and tension rods.

3. Thoroughly clean the screen surface:

Ensure all material is removed from the beams, support angle steel/channel steel, side angle steel/channel steel, and longitudinal beams.

4. Inspect the screen surface

- Inspect the entire screen surface, including the base frame beneath the screen surface, for structural damage.
- Ensure that the longitudinal beams are straight and parallel to each other, with their rubber or polyurethane coatings intact.
- Check that the curvature is correct.
- Ensure that the side angle steel/channel steel is flat and straight.
- Check that the side panels are parallel and straight with the support beams.

5. Inspect the side tensioning plates

Ensure that the tensioning plates are not excessively worn and are straight. The length of the tensioning plates should not exceed the length of the screen belt hook edge.

6. Inspect all bolts

If in doubt, replace the bolts and nuts with new ones. Ensure the bolts have sufficient thread length to provide adequate tension, but avoid using bolts that are too long.

Do not use more than one washer to raise the nut, as this may cause the bolt to loosen and reduce the screen tension. Use a sleeve instead of multiple washers.

7. Install the new screen, notes

- Ensure the selected screen matches the machine type. Check the number of tension plate bolt holes, longitudinal beam condition, and confirm the screen's load capacity is suitable for the application.
- Ensure the screen width is 40 + 5 millimeters smaller than the machine side panel width.
- Ensure the screen is evenly positioned on both sides and can be securely placed on the side angle steel/channel steel at minimum tension.
- Initial installation: Install the tensioning plate onto the hooks, ensuring it is properly seated within the hooks. The side tensioning plates must be correctly positioned below the mounting plates, and their installation direction must be correct; incorrect installation direction will result in improper screen tensioning.
- Tensioning: Begin from the center bolt and alternately tighten the bolts to apply light tension to the screen mesh. Each bolt should only be tightened with a small amount of torque. If there is a center bolt hole, ensure the screen is properly centered and apply light tension evenly across the entire screen. Position the clamping rod and tighten it using the recommended bolt torque (e.g., 140 Nm for an M16 bolt). Gradually tighten the side clamping rods in alternating increments with smaller torque increases until the screen reaches a taut state. At this point, the screen is installed but not yet ready for use.

8. Inspect the screen installation

- Run the machine for 10 minutes, then recheck the tightness of all bolts and inspect the alignment and tension of all screens.
- If adjustments are needed, run the machine for another 10 minutes and recheck.
- Re-inspect the screen after 4–6 hours of production and make any necessary adjustments.
- During each 24-hour production cycle, inspect all screening machines, bases, screens for wear, damage, bolt tightness, and screen tension.



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