



## Paper Mill Waste Disposal System

**harden**

JUST SHRED IT

**harden**



Contact Harden for professional shredding and recycling solutions.

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## About Us

Harden Machinery Ltd. is a leading manufacturer of industrial shredder and waste disposal equipment in China. With a growing market and hundreds of successful cases we had built, Harden had became the most trustworthy brand in China, also it's being more popular worldwide. Thanks to rich experience and our strong R&D team, Harden always keeps advance in technologies.

Harden supplies competitive shredding machines worldwide, including single shaft shredder, double shaft shredder, quad shaft shredder, primary shredder and mobile shredder. We also offer a wide range of one-step solutions such as MRF system for MSW, SMP system for hazardous waste, shredding disposal system for organic waste, paper mill waste and bulky waste, etc.

## Core Advantages of Harden

### Professional Technologies

Focus on shredding technologies from beginning to now

### High Reliability

All parts in world brands / Advanced and mature designs

### Trustworthy Brand

900+ successful projects / Wide recognition in market

### Aims the best ROI for customers

Batch production saves cost / High Durability Proven





German technician guides the assembly process



N0.3 Assembly shop



German technical director supervises manufacture quality



Exchanging technical insights



A corner of workshop



A corner of warehouse

Harden has a large shredder production base, including 6 manufacturing workshops. The complete profile cutting, welding, large-scale processing, fine processing, assembly, quality inspection, testing, experiment and other work will be finished in the factory.

Harden introduces advanced quality management system, excellent design must be combined with an entire manufacturing system, quality control technology, to ensure the quality. Harden has passed a number of product certifications and established strict implementation standards for each process. The implementation of 5S visual lean management makes the factory clean and orderly. Using manufacturing level to speak for product quality.





# INDUSTRY BACKGROUND AND VALUE



Incineration power generation



Material: light rejects



Material: pulper ropes



Metal recycling



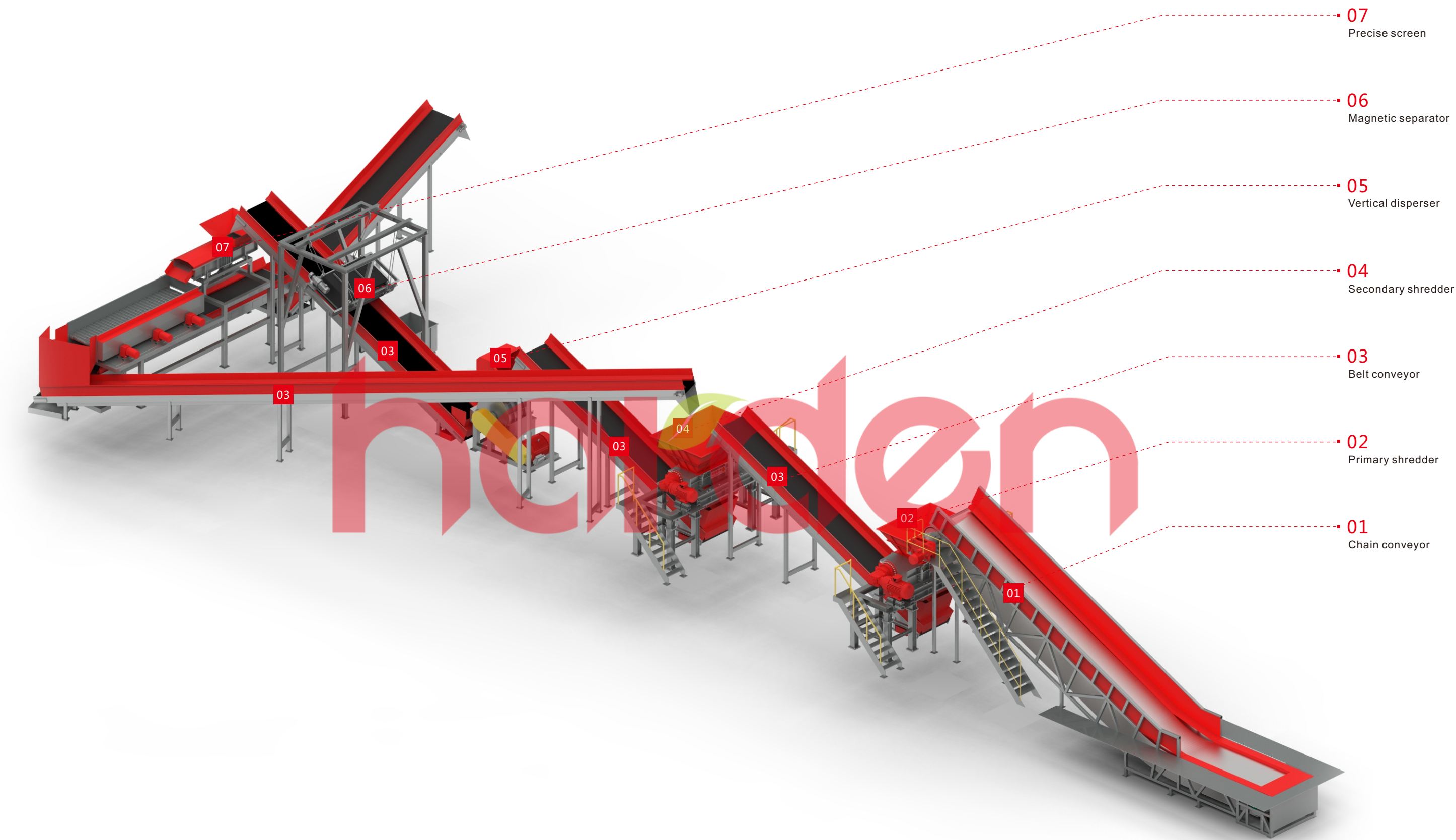
Plastics regeneration

In recent years, with the increasing efforts of environmental protection, the traditional pulp and paper making has greatly reduced, replaced by waste paper recycling. At the same time, the growing demand of cardboard in the field of e-commerce is also increasing , making the rapid rise of waste paper recycling industry. Although the replacement of raw paper by recycled paper has a certain effect on resources and environmental protection, the recycled paper may be mixed with other impurities due to the different recycling ways and quality of waste paper, and a large amount of solid waste may be generated in the process of recycled paper making, which is referred to as “recycled paper waste residue”. An annual production of 1.5 million tons of recycled paper mill produces more than 180,000 tons of “paper waste” per year. According to incomplete statistics, the waste residue produced by the production of recycled paper reaches 1,800-2,200 million tons per year.

Recycled papermaking waste can be divided into two categories: coarse and fine. The coarse material mainly comes from the pulping and residue removal stages, most of which is ropes. And the fine material mainly comes from the cleaning and screening stages, which is also divided into light reject and heavy reject. After a reasonable process, most of the waste residue after screening can still be reused in incineration power generation, metal recovery, plastics recycling and other applications.

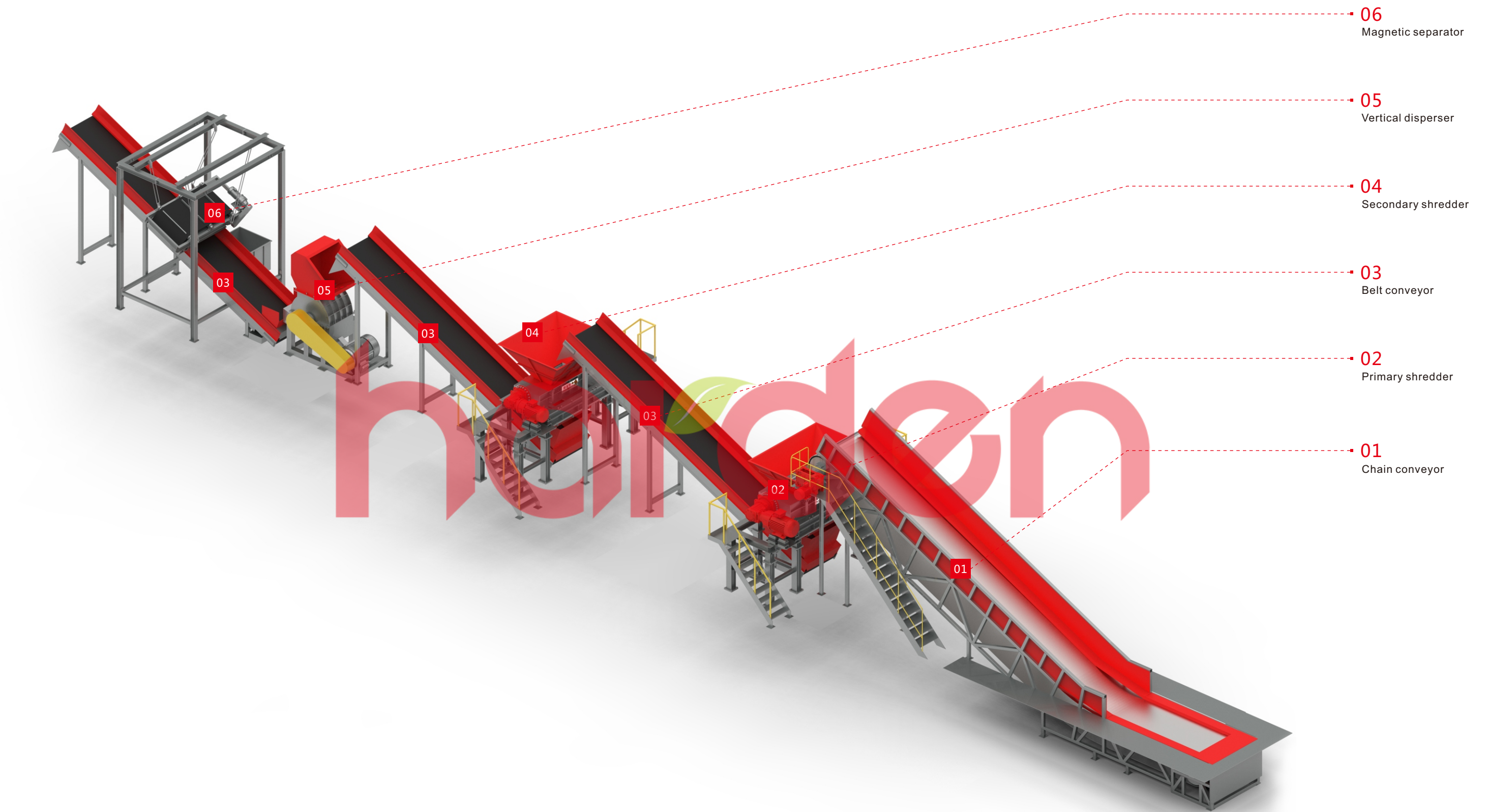


Light rejects & pulper ropes disposal system 【A】

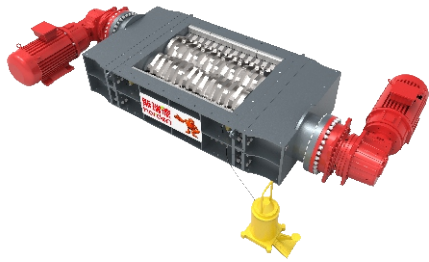




Light rejects & pulper ropes disposal system [B]

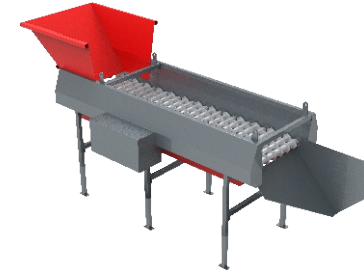






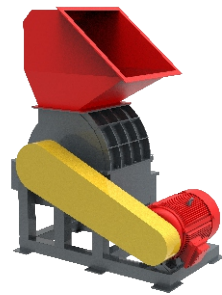
### Double shaft shredder

The intelligent double shaft shredder has the characteristics of low speed, and large torque, which can adapt to the shredding work of paper mill waste and ensure long-term stable operation. The tool adopts imported cold work die steel, which has the characteristics of high strength, high toughness, strong wear resistance, strong impact resistance and so on. The detachable tool structure can realize rapid disassembly and multiple blade surfaces can be fully used, with low maintenance cost and short replacement cycle.



### Precise screen

The working principle of disc rolling is used to screen different size of material. By adjusting the gap of disc, the undersize material which meets the size requirement can be obtained, while the oversize material will be transported to shredding system for shearing again. The screen adopts imported polymer composite material which is not easy to be damaged, is suitable for all kinds of harsh conditions. At the same time, the reasonable modular design and flexible setting of capacity adjustment avoid the case of stacking and winding in the process of screening, makes the convenient maintenance.



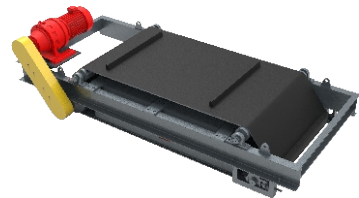
### Disperser

Because the waste from paper mill is mostly twisted ropes, light reject or mixed waste residue, there are still lumped material after shredding, so the design and application of disperser are necessary step in the process. Through the impact & shearing working principle of high speed rotating rotor to lumped material, the metal wrapped in the adhesive substance and the surface of a adhesive substance is fully broken, effectively improve the subsequent metal removal and fine screening efficiency and quality.



### Chain conveyor

Chain conveyor adopts galvanized chain plate transmission structure, which has the characteristics of strong impact resistance, large bearing capacity, strong wear resistance. The automatic lubrication system ensures great effect of lubrication, with low noise, small vibration and long service life. The speed can be regulated through frequency converter, emergency stop button included as well.



### Magnetic separator

The magnetic separator adopts permanent magnet which can efficiently remove the metal so that the metal can be recycled and will not be transported to the backend process.



### Belt conveyor

Belt conveyor with baffles on both sides, can effectively prevent the leakage of waste and residue. The cleaning device will be installed in the discharge end, also with water tray in the bottom, to prevent residue adhesion on the belt conveyor resulting in waste residue leakage, etc., ensures that the on-site waste does not fall to the ground. The conveyor adopts frequency control speed regulation, with emergency stop button.



### Electric control system

Main control cabinet and control platform are independent, touch screen + button control mode, user-friendly interface design, easy to operate; Automatic mode can realize automation operation, manual mode can control the operation of single equipment. According to the actual needs, different modes can be selected at any time to operate. Acousto-optic alarm, fault visualization, automatic reminder of equipment maintenance and other intelligent functions, easy to deal with the fault and maintenance work. The full coverage video monitoring device can communicate with the central control system, monitors the running condition at any moment.



### Remote analysis

Harden has established a monitoring and diagnosis system with a central database as the core, which can accurately provide real-time working pictures of the equipment. Component automation expert system provides basis for fault diagnosis, efficient energy saving and efficient decision making; The message push system of equipment information reminder and warning which faces to service-oriented ensures the scheduled maintenance of the equipment, and gives early warning to the illegal operation.



Client Cases



Waste disposal project, Tai shan Gypsum Co., Ltd, China



Waste disposal project, Abellon Clean Energy, Ltd., India



Waste disposal project, Lee & Man paper Manufacturing Limited



Waste disposal project , Xu Zhou Zhong Xing, Ltd.



Waste disposal project, Nine Dragons Paper (Holdings), Limited.

Cooperative Partners

