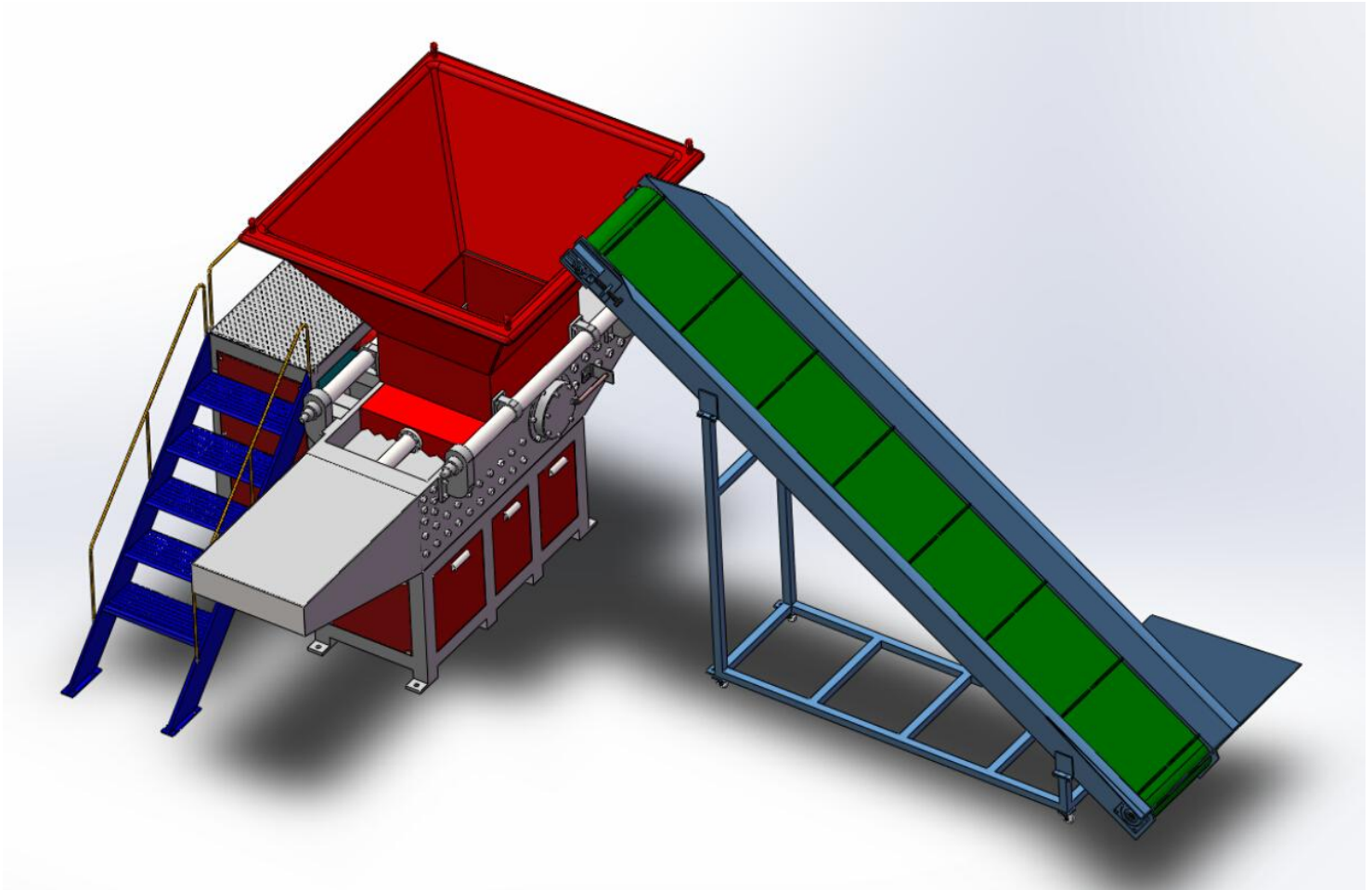


YD-850 Single-Shaft Shredder

Scrap Aluminum Parts Crushing and Recycling Solution



I. Project Overview

The YD-850 Single-Shaft Shredder is a purpose-built industrial solution exclusively tailored for the crushing, recycling and confidential destruction of unprocessed magnesium-aluminum alloy plates and scrap aluminum casings (8~10mm thickness, 30~300g/piece). This production line integrates four core functions critical to high-end manufacturing supply chains:

- Automated variable-speed material feeding

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- High-torque single-shaft shredding optimized for magnesium-aluminum alloys
- Precision particle size control via customizable screen apertures
- Complete confidential material destruction to prevent intellectual property leakage

The system is specifically engineered to address dual challenges in Apple's supply chain operations:

- Technical challenges of processing high-hardness, high-toughness magnesium-aluminum alloys, including frequent blade wear, material jamming and inconsistent shredding results
- Stringent confidentiality requirements mandated by Apple, which mandate the complete, irreversible destruction of excess manufacturing materials (such as iPhone frame and structural component blanks) to eliminate the risk of proprietary design and technology leakage
- Strict demands for 24/7 stable operation and low maintenance downtime in mass production environments
- Safety hazards from magnesium-aluminum dust and high temperatures during continuous processing

With a stable output of 300kg/h (adjustable based on material characteristics) and customizable finished product sizes ranging from 16~50mm, the XB-850 features a 42CrMo forged spindle, imported 6542 high-speed steel blades and a high-torque explosion-proof

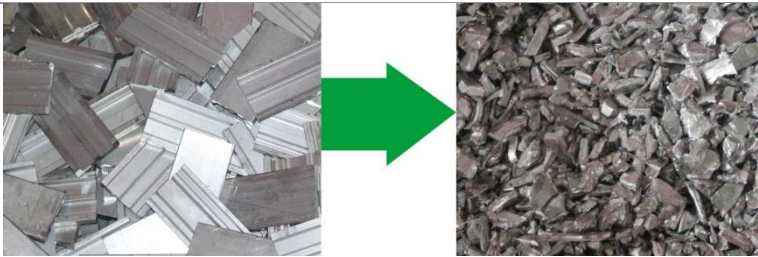
motor system. Its fully automated Siemens PLC control ensures consistent, thorough shredding with minimal manual intervention.

Notably, this model has been field-proven in Apple's supply chain since 2016, following successful on-site shredding tests conducted by Apple supply chain executives using actual production magnesium-aluminum raw materials at our factory. It has become a trusted solution for meeting Apple's exacting standards for both material recycling efficiency and intellectual property protection in manufacturing.



II. Project Evaluation

1. Basic Information:

Raw Material	Aluminum casing Thickness: 8~10mm Weight: 30~300g/pc
Process	Shred
Yield	300kg/h, adjusted according to material characteristics
Machine Color	Light gray & Dull white
Raw Material & Finished Product Images	 (Image for reference only)
Factory Building Requirements	Foundation, construction, earthwork and wall construction; We supply cranes, forklifts, and other lifting equipment; and provide installation materials and tools. Space (m x m x m): 5.1m (length) x 6m (width) x 3.5m (height);
Power Supply Voltage	Power supply voltage: 3-phase 380V 50Hz Voltage tolerance: 5% / -5%; Frequency: 50Hz $\pm$ 2% Total power: 52.7KW
Wires Water Pipes Cables Compressed Air Transformers	Wires/Cables: From the power supply to control this production line and all the cables from the control cabinet to the cabinets of each machine; Water supply: used for cooling the speed reducer and hydraulic station. Compressed air: used for opening and closing the hopper lid of the equipment, and for water vapor cooling. Transformer: 100kVA

2. Key Commercial Terms

Project Name	Aluminum parts crushing and recycling system
Price	RMB 658,000.00 (Ex-factory price including tax) In capital letters: Six Hundred and Fifty-Eight Thousand Yuan Only
Payment Methods	30% deposit, 70% full payment upon delivery
Delivery Time	40 working days
Package	PE film inner wrapping, outer ring bubble wrap
Shelf Life	12 months
Quotation Validity Period	By June 30, 2026

III. Equipment capacity introduction

Equipment Model	Applicable Products	Yield
YD-850	8~10mm aluminum parts and profiles	Maximum output: 300KG/H (Adjustments should be made reasonably based on different materials and operating conditions.)
Finished product dimensions	16~50mm (detailed dimensions, controlled by custom screen aperture according to requirements)	

IV. Equipment List

Serial Number	Name	Quantity
1	YD-850 Feeding Conveyor	1 unit
2	YD-850 Single-shaft Shredder	1 unit

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3	YD-850 Electrical Control System	1 set
4	Instruction Manual	1 copy
5	Electrical schematic diagram	1 copy
6	Certificate of Conformity	1 copy

V. Brief Description of Machine Performance



The YD-850 single-shaft shredder consists of a motor, a hardened gear reducer, a rotating cutter shaft, moving cutters, fixed cutters, a frame, a base, a housing, a hydraulic cylinder, an oil pump, a pneumatic cylinder, and a working platform.

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The frame is equipped with fixed blades, while the rotating cutter shaft is fitted with removable, embedded moving blades. The number of moving blades depends on the model and the size of the rotating cutter shaft. Each moving blade is usable at all four corners on one side; once dull, it is removed and the angles are changed until all four sides are dull before sharpening. Because it uses claw-type moving blades and rotary cutting, and both the fixed and moving blades are made of imported high-speed steel with a hardness exceeding HRC60° after heat treatment, the blade hardness can be adjusted according to material characteristics. This results in a long service life, strong cutting ability, and high production capacity. During operation, the material is propelled by a hydraulic cylinder, ensuring comprehensive shredding of the material in the hopper from multiple angles.

The electrical system uses microcomputer PLC programming control, achieving full automation. After commissioning, operators only need to press F1 to automatically start the machine and F2 to automatically stop it. This saves labor costs while ensuring a safe operating environment.

VI. Detailed Technical Specifications

Conveyor Model	YD-850	Remark
Motor Power	2.2KW	Variable frequency control
Motor Speed	2800rpm	
Inverter Brands	ABB	
Conveyor Belt Width	600mm	
Conveying Length	6000mm	
Partition Height	12mm	
Conveyor Belt Fixed	Bearing compaction	
Conveyor Belt Material	Stainless steel	SGS 304
Bracket Material	carbon steel	
Shredder Model	YD-850	Remark
Spindle Diameter	295mm	Equipped with a spray cooling system
Rotary Cutter Shaft Diameter	315mm	
Effective Length Of The Cutter Shaft	850mm	
Spindle Material	42CrMo	
Spindle Machining	Forging -- Roughing -- Quenching and Tempering -- Finishing -- Machining Center Finishing	
Number Of Cuts	39	Material: 6542 high-speed steel
Tool Hardness	HRC 60 degrees	
Cutter Spindle Speed	35rpm	
Fixed Number Of Cutters	1 piece	Material: 6542 high-speed steel

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Lock Screwdriver	M18*65mm	Level 12.9
Hydraulic Station Power	5.5KW	
Hydraulic Stroke	1050mm	
Hydraulic Power Station Solenoid Valve	Equipped with sealed interface	
Oil Pump Size	φ 150×1000mm	
Oil Pump Housing	Vertical cube structure	Built-in hydraulic station
Oil Pump Internal Push Rod	Reverse screw design	Prevent seals from falling off
Hydraulic Station Cooling Method	Water circulation cooling	
Hydraulic Pressure	6~12Mpa	Standard 7MPa
Shredded Output	300kg/h	
Shredding Chamber Size	1000L×870Wmm	
Feeding Port Size	1480L×1350Wmm	
Main Motor Power	45KW	Jiangsu Dazhong/Beineng
Motor Output Speed	960rpm	6-pole motor
Motor Type	Explosion-proof motor	
Motor Protection	Overload protection + temperature control protection	
Gearbox Brands	Guomao/Tongli	Reduction ratio 1:14
Pulley	European Standard	Adjustable structure
Bearing Brands	Wafangdian	
Bearing Cooling	Water circulation cooling	
Lubricate Bearings	Free hydraulic refueling device	

V-Belt	Imported V-belts	Type C
Seals	TTO	Taiwan
Material Of Front And Rear Baffles Of Shredder	#45 steel	
Manual Maintenance Platform	Four-sided railings	
Railing Height	1100mm	
Stair Handrail	left and right armrests	
Total Weight Of Machine	6000kg	
External Dimensions	4260L × 2450W × 2450Hmm	
Electrical Control System	YD-850	
Contactor	Schneider	
Air Switch	Schneider	
Ammeter	Ottoniks	
Document Display	Siemens	
Plc	Siemens	
Other Electrical Components	Siemens, Schneider or equivalent brand	
Total Weight Of Electrical Control Box	88kg	
External Dimensions	1200L × 600W × 900Hmm	

VII. Comparison of the new solution with improvements to the old models

Serial Number	Improvement Project	Original model (YD-850 55KW)	New model (YD-850 45KW 6-pole)	Reason
1	Shredder Spindle	Material: 40Cr	Material: 42CrMo High-precision dynamic balancing	42CrMo is an ultra-high strength steel with no obvious temper brittleness. After quenching and tempering, it has a high fatigue limit and the ability to withstand repeated impacts. During the machine production process, the impact force is relatively high and the temperature rises rapidly. The impact resistance of 40Cr needs to be improved in the early stages of its use.
2	Shredder Motor	Brand: Jiangsu Dazhong Power: 55KW, four-pole motor Speed: 1480 rpm Rated output torque: 350 N.M Non-explosion-proof motor	Brand: Jiangsu Dazhong Power: 45KW, six-pole motor Speed: 960 rpm Torque: 430 N.M Explosion-proof motor Temperature control protection	The materials in this case are large and thick, so a 6-pole motor can provide higher torque. When tearing thicker materials, the motor heats up quickly during operation, and the 6-pole motor can reduce its speed. The shredding process generates some dust, which poses a safety hazard. Explosion-proof motors are beneficial for safety. A 6-pole motor has better performance.

		Temperature control protection		
3	Shredder Speed	53rpm	35rpm	Lowering the rotation speed results in greater force during shredding, lower shredding load, and thus increases the machine's lifespan. Reducing the rotation speed can help control the rise in temperature.
4	Shredder Front And Rear Baffles	Material: A3 steel plate	Material: #45 steel	45 steel has higher strength.
5	Shredder Blades	Material: DC53	Material: 6542 high-speed steel	The strength and hardness of 6542 high-speed steel are almost higher than those of DC53. The wear and tear rate will be reduced during use, saving on operating costs.
6	Shredder Pulley	National Standards, Cast Components	European Standard	It facilitates assembly and subsequent maintenance, and improves precision.
7	Hydraulic Power Station Solenoid Valve	Open interface	Sealed interface	Aluminum powder is produced during the shredding process, and prolonged contact can easily cause damage.

8	Oil Pump	Original travel: 780mm Shell: 2mm iron plate	New travel: 1050mm New enclosure: Vertical structure, more robust, and suitable for stepping on.	The increased stroke provides greater flexibility during machine operation, making it less prone to jamming or stalling. Increasing the stroke reduces the back pressure of the oil pump, thus extending its service life.
9	Hydraulic Station Location	External	Built-in, fixed inside the oil pump housing	For easy transportation, installation of oil pipes, and installation of electrical circuits. Built-in dust effectively isolates and protects electrical components.
10	Manual Maintenance Platform, Stairs	Platform railings on both sides single-sided stair railing	Platform railings on all four sides Staircase railings on both sides	The newly added railings effectively control safety hazards; when the machine hopper is in a moving state, the railings isolate the moving part.
11	Bearings	Cooling system: None	Cooling system: Equipped with circulating water cooling Equipped with a hydraulic refueling device	Effectively control temperature rise and extend bearing life. The refueling system ensures convenient manual maintenance in the later stages.
12	V-Belt	Domestic	Import	The new V-belts are more resilient and heat-resistant, effectively extending their service life and reducing subsequent maintenance costs.

13	Electrical Control System	Standard electrical box	Explosion-proof electrical box	The shredding process involves high temperatures and dust; explosion-proof electrical components effectively ensure safety.
14	Conveyor	Conveying speed: constant speed Conveyor belt: PVC reinforced plate	Conveying speed: Variable frequency control, automatic adjustment Conveyor belt: Stainless steel	Variable frequency control, adjustable speed; in case of large-volume feeding, the machine can achieve self-protection by adjusting the feeding speed. The material is aluminum, which causes significant wear and tear on conventional PVC belts. Stainless steel belts, on the other hand, can effectively extend the service life of the belt.
15	Machine Length	Original machine: 3400mm	Current design: 4260mm	The increase in hydraulic stroke alters the overall structure of the machine, ensuring flexibility during the crushing process.

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About YUEDE Shredders

Shanghai YUEDU Technology Co., Ltd. is a **Shanghai-certified high-tech enterprise** specializing in the development and manufacturing of **shredding and destruction equipment**. We serve a wide range of sectors including **government agencies, financial institutions, military departments, enterprises, and recycling industries**.

Our offerings include **office and industrial-grade paper shredders, hard drive destroyers, plastic crushing systems, and fully customized destruction center solutions**. From design to delivery, we help clients achieve efficient, secure, and compliant material destruction.

Our Mission

We are dedicated to the shredding and destruction industry, continuously solving diverse material shredding and disposal challenges for our clients around the world.

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