National the 1st
Walnuts Shelling Production Line

One-key Automatic **Walnuts Shelling Kernels Separation**

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Hefei Zhongan Intelligent Vision Technology Co., Ltd.

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Company Introduction

Set Sailing to Create a new Era of Nuts Shelling Process & AI Sorting

Hefei Zhongan Intelligent Vision Technology Co., Ltd. is located in Hefei China. It is a national high-tech company specializing in R&D, production and sales of artificial intelligent sorting equipment. Our company owns an AI sorting equipment production base covering an area of 60,000 sq.m with more than 200 employees. Our annual output has exceeded 100 million. We focus on the AI sorting equipment industry, and have won honors of AKSTSPE (Anhui Key Science and Technology Special Project Enterprises), ASE (Anhui Software Enterprises), AADEoFUMTE (Anhui Application Demonstration Enterprises of First Unit Major Technical Equipment), AADEoICIP (Anhui Application Demonstration Enterprises of Information Consumption Innovation Product), HBDE (Hefei Big Data Enterprises), HHDGE (Hefei High-tech District Gazelle Enterprises). Meanwhile, our company attached great attention to product quality since its establishment, and passed Three System Certifications of QMS (Quality Management System), EMS (environmental management system) and OHMS (occupational health management system) in 2020.

Zhongan is a tech-oriented technology enterprise, it owns a R&D center, of which staff proportion hits 40% among the company, including more than 50 Doctors & Masters. Our R&D team has 20 years' experience in optical sorting section, dozens of long-term core tech members engaged in visual sorting, all of them is competent with rich practical experience and strong R&D, possessing core independent intellectual property rights in new technologies and new fields. By using new generation of deep self-learning system and FPGA fusion algorithm, through industrial grade ultra-HD digital cameras, materials are 360° rotational captured, and sorting simultaneously with multiple wanted discharges only one time after special computer data model processing. We have achieved nearly 100 intellectual properties so far.

Zhongan AI Sorting Robots with complete models have superior performance, which can meet different processing requirements from different type of companies. According to different sorting requirement, we are able to provide complete tailored production line. Our robots are widely used for sorting various Fruits (such as Apples, Oranges, Pears, Kiwis, Plums) and various Nuts & Dried Fruits (such as Dates, Chestnuts, Hazelnuts, Lotus, Walnuts, Pistachios). Our strict QMS guarantees the qualities of our products and services, which have been exported to many countries and regions around the world. In 2021, Zhongan successfully developed complete production lines for Walnuts/Pecans cracking & shelling processing, they are used to replace labor work and increase efficiency and yield, breaking foreign monopoly, realizing localization of cracking shelling processing equipment, and widely praised by our customers.

HEFEI ZHONGAN
PROFESSIONAL MANUFACTURER
WALNUTS SHELLING EQUIPMENT

Company Culture

Corporate Vision: focus on user experience's value, strive to be a leader in AI sorting
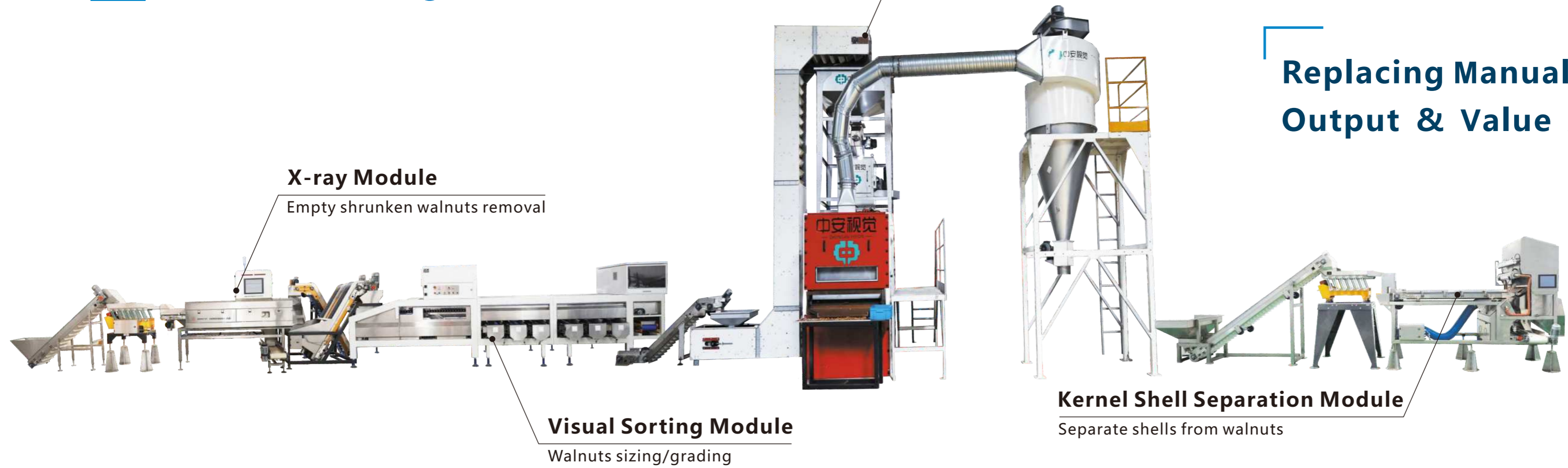
Company Philosophy: co-create a healthy ecological environment for the Internet of Things (IoT) with partners on basis of open and win-win platform

Company Purpose: user value oriented, satisfy user needs with excellent products and services

Company Spirit: dare to be the first, pursue excellence, and achieve the mission

National the 1st Walnut Shelling Production Line

Shelling module
Automatic walnuts shelling

Replacing Manual Labor Output & Value Added

X-ray Module
Empty shrunken walnuts removal

Visual Sorting Module
Walnuts sizing/grading

Kernel Shell Separation Module
Separate shells from walnuts

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REPLACING MANUAL LABOR ONE-KEY AUTOMATIC WALNUTS SHELLING /KERNEL SHELL SEPARATION

Features

01   5ᵗʰ generation FPGA chip and AI deep learning algorithm fusion technology

02   360° rotating scan, one-key multiple configurations adjustment
High accuracy and easy operation

03   0.6-1 tons each hour, high output and high kernel rate

04   One-key quick kernel shell separation, subdividision available

05   High-speed high-resolution industrial HD cameras, stable and clear imaging

06   National the 1st America introduced vibration feeding technology
Larger amplitude and better uniformity, vibration noise reduced greatly

Machinable Types

Xinjiang Walnuts

Yunnan Walnuts

Shandong Walnuts

Other Walnuts

Walnut Raw Material

1st Channel Kernels

2nd Channel Kernels

3rd Channel Kernels

Chopped Kernels

Walnut Shells

Walnut Shelling Production Line Introduction

X-ray Module (empty & shrunken walnuts removal)

Walnuts Inlet
high-speed reciprocating feeding system

Good Walnuts Discharge
Intact walnuts automatically enter visual sorting module

Bad Walnuts Discharge
empty shrunken walnuts removal

Technical Parameters

Model	JSDX5T-HT	JSDX6	JSDX8T-HT	JSDX8	JSF6
Standard dimension	2880*1360*2343 (2343=2008 hosts+335 lights)		2880*1360*2343 (2343=2008 hosts+335 lights)		2880*1360*2343 (2343=2008 hosts+335 lights)
X-ray output	350W (max)				
Conveyor speed	10-120 m/min				
Output	50-5000 kg	50-5000 kg	50-7000 kg	50-7000 kg	50-5000 kg
Conveyor belt width	710		710		710
Total power	< 3kW		< 3kW		< 3.5kW
Power supply	Host AC220 single phase Ac220				
HMI	17 inch LCD touch screen				
X-ray leakage	up to European standards				
Protection	Transmission part IP54 , other IP53				
Environment requirements	Ambient temperature 0 -40, relative humidity 30-85 % without condensation				
Best detection accuracy	0.3 mm Stainless steel ball, 0.2 *2 mm stainless steel wire				
Case material	304 stainless steel				

Remarks: X-ray module is outsourced, above data for reference only

Empty Shrunken Walnuts Removal Effect

Visual Sorting Module (walnuts sizing)

AI Material 360° Rotating conveyor
Algorithm fusion AI technology

Automatical feeding system
Suitable for mass production

Intelligent one-key operation mode
Responsive-simplified and easy to use

Finer sorting with multiple channels
& multiple expectation discharges

360° material scanning system
High-precision industrial cameras
Superior to ordinary color sorter
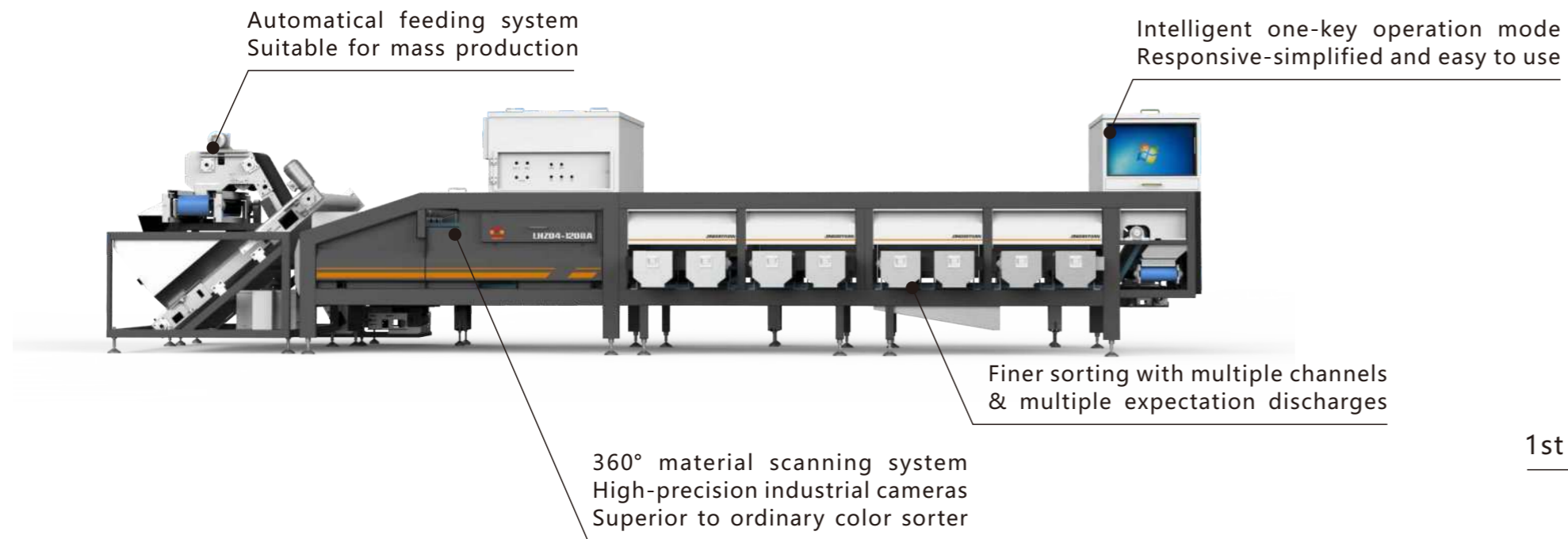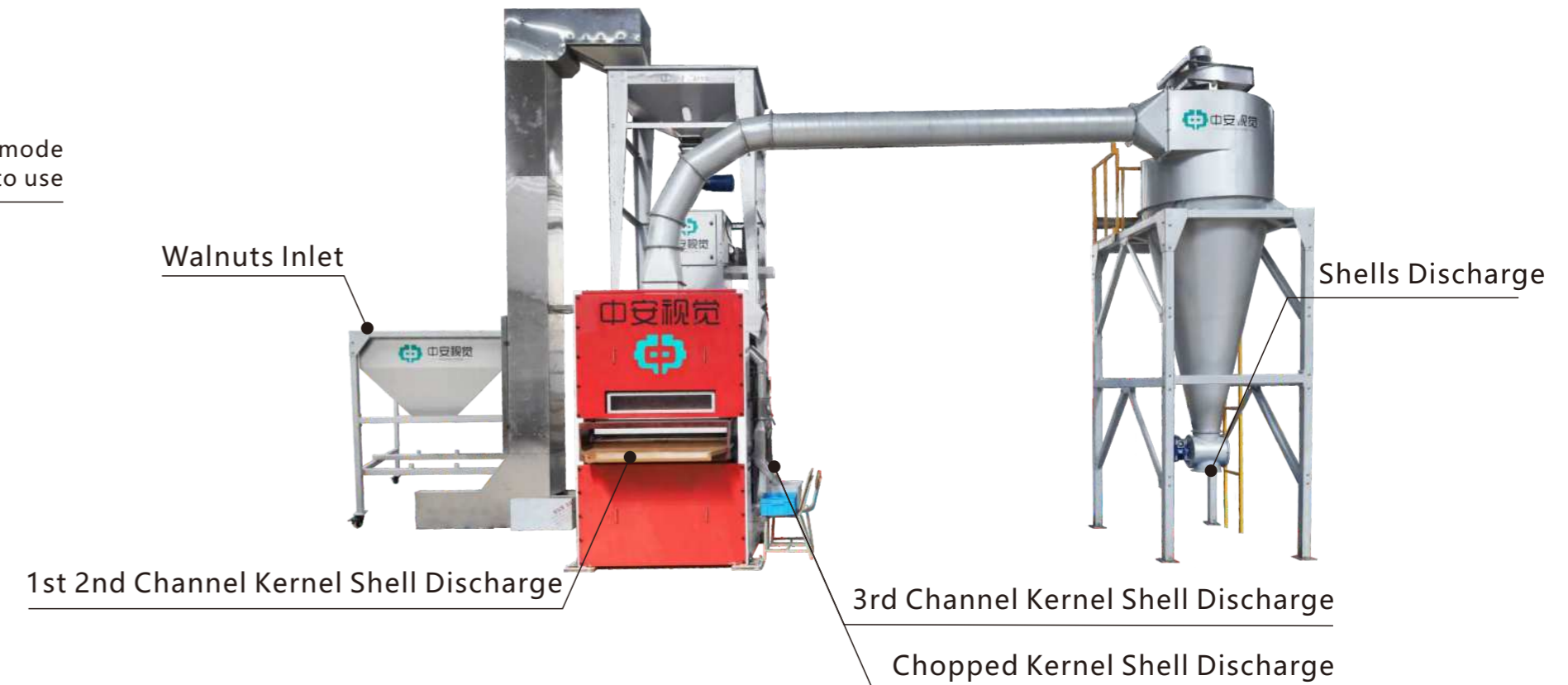
Visual sorting module technical parameters

No.	Channel	Output (t/h)	Voltage (V/Hz)	Power (kW)	Air pressure (MPa)	Air consumption (m3/min)	Dimension (LxWxH mm)	Weight (kg)
LHT04-0608A	6	2-2.5	380/50	6.8	>0.6	1.2	7366×2740×1672	2500
LHT04-0808A	8	2.5-3	380/50	7.5	>0.6	1.6	7366×3325×1672	3150

Remarks: output and air consumption change according to the states of raw materials, finished materials and channel division. Above data are for reference only.

Sorting Effect

28 mm   28-30mm   30-32 mm   32-34mm   34-36 mm   36+mm

Shelling Module (shells kernels separate)

Walnuts Inlet

Shells Discharge

1st 2nd Channel Kernel Shell Discharge

3rd Channel Kernel Shell Discharge

Chopped Kernel Shell Discharge

Shelling Module Effect

1st 2nd CH Kernel Shell   3rd CH Kernel Shell   Chopped Kernel Shell

Remarks: walnuts kernel shells automatically enter next separation module.

Kernel Shell Separation Module

Walnuts Kernel Shell Inlet
High-speed Reciprocating Feeding

Walnut Kernel Shell Sorting System
Suitable for High Output Sorting

Intelligent one-key operation mode
Responsive-simplified easy to use

Separation Module Technical Parameters

No.	Output (t/h)	Kernel rate	Bring out ratio	Power (kW)	Weight (kg)	Air consumption (m3/min)	Dimension (LxWxH mm)
K320I-S	0.3~0.6	>99.8%	>500：1	3.9	970	0.5~1	5306*1315*2408
K640I-S	0.5~1	>99.8%	>500：1	5.8	1200	1~1.5	5306*1635*2408
K960I-S (2:1)	0.5~1	>99.8%	>500：1	7.9	1500	1.5~2	5306*1955*2408

Remarks: kernel shell separation module is a purchased product, above is the test of 10% impurities in walnut kernels.Differences may occur in output and kernel rate from different walnut types. Above data for reference only.
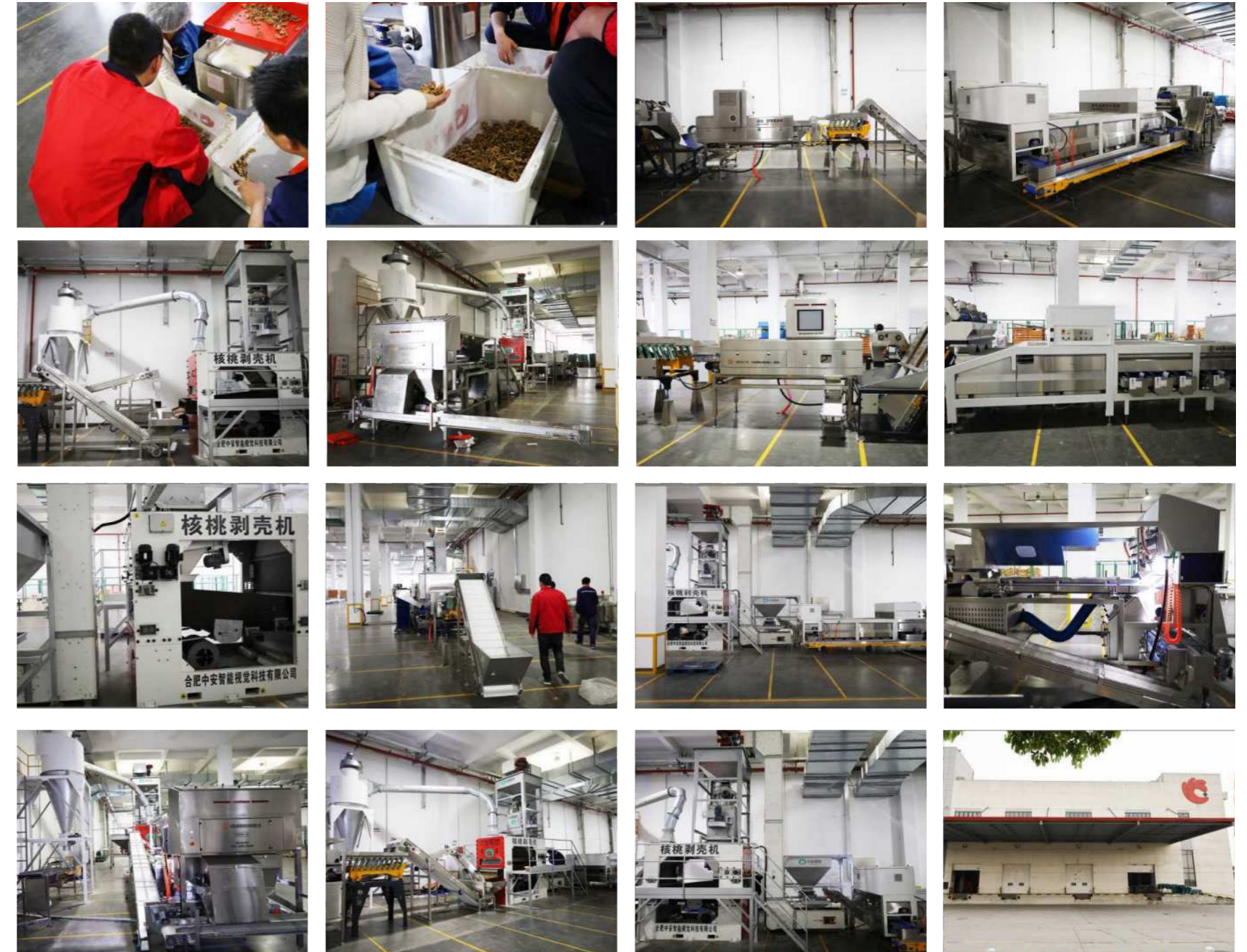
Separation Effect

1st 2nd CH Kernel Shell	3rd CH Kernel Shell	Chopped Kernel Shell

1st CH Kernels	2nd CH Kernels	3rd CH Kernels	Chopped Kernels

Cha Cha Nut Pie Case

Comprehensive Cases

Business Procedures

Consultation → Needs Analysis → Proposal & Quotation → Contract Signing

After-sales ← Acceptance ← Shipment ← Verification ← Production
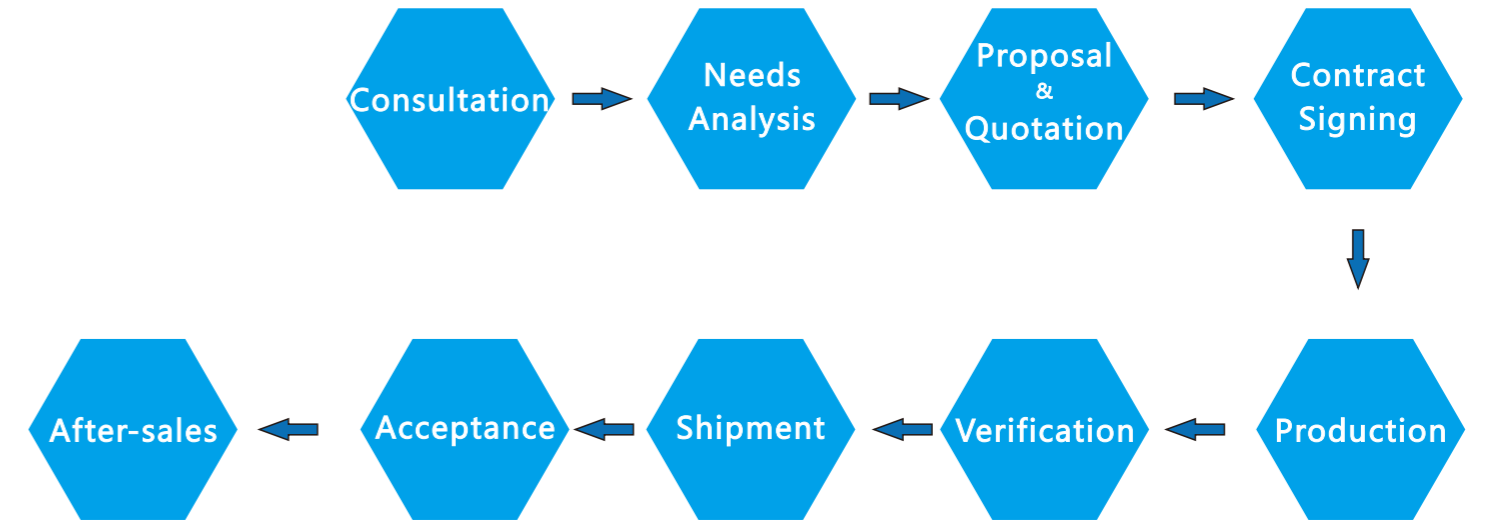
Business Partners

Company Horons »

3A Enterprise Certificates

Software Test Certificates

Computer Software Copyrights

Software Certificates

Invention Patents

Utility Model Patent Certificates

Management System Certificates

Anhui Science & Technology Major Special Project

Other Honors Certificates