Nuts & Dried Fruit Sorting Solutions

AI Sorting Key to Future

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CONTENTS

CONTENTS

Company Introduction
Set Sailing to Create a new Era of AI Deep Learning Sorting Equipment

Hefei Jinguoyuan 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.

Jinguoyuan 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.

Jinguoyuan 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, Jinguoyuan 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.

JINGUOYUAN
PROFESSIONAL MANUFACTURER
NUTS & DRIED FRUIT SORTING 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

Nuts & Dried Fruit Cases

Each One Fine Selected

Series A Sortable Materials

Jujubes   Medjool Dates

Series B Sortable Materials

Pistachios   Walnuts   Macadamia Nuts   Hazelnuts   Lotus Seeds   Chestnut Kernels
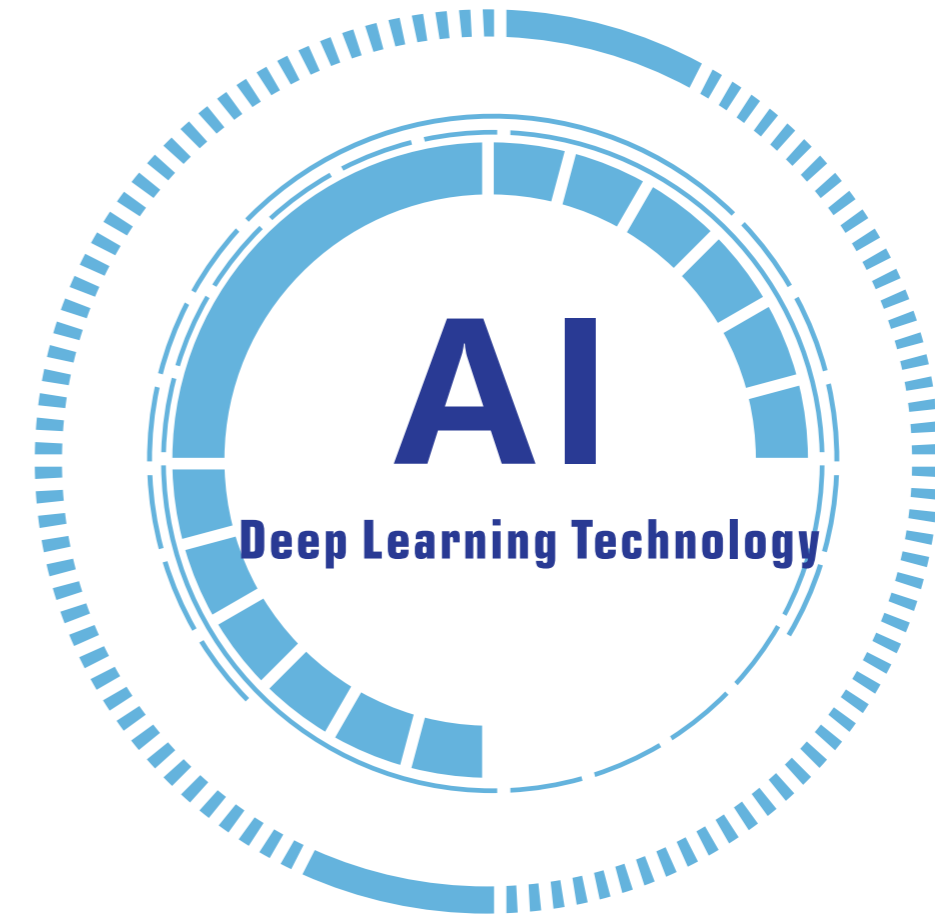
Pecans   Almonds   Ginkgos   Brazil Nuts   Pili Nuts   Chestnut

AI

Deep Learning Technology

Our advantages

20 years
20 years of experience in sorting industry advanced technology

360°
360° rotating scan sorting simultaneously with multiple discharges with different expectations only one time

AI deep learning
AI deep learning technology, simulates human brain for analysis superior to ordinary color sorters

Accurate
high-end nuts & dried fruit sorting system with high accuracy

Farewell to Manual Sorting

Manual Sorting
- Labor intensive
- Low efficiency
- High cost
- Poor accuracy
- Concerned hygiene quality

NO

Jinguoyuan AI Sorting
- High intelligence
- High accuracy
- High speed
- AI deep learning technology
- One-time materials sorting

Core Technology

Core Technology

1 Deep Learning Technology

Based on the deep learning technology developed for nut & dried fruit sorting, it simulates the neural network of the human brain for analysis, parse image data and solves the problem that ordinary color sorters cannot recognize

2 5th Generation FPGA Core Processor

Extract sample information at high speed

3 360° Non-blind Area Scan

360° rotational captured for sorting material

4 High-precision Image Processing Technology

High-precision image processing technology scans material information and identifies small defects quickly and accurately

5 Automatic Feeding

Reciprocating feeding, fast and convenient, improves sorting efficiency

6 High-frequency Solenoid Valve for Nuts & Dried Fruit

Specific high-frequency solenoid valve developed based on the requirements of nut & dried fruit sorting

7 High Resolution Industrial Camera

High-resolution industrial-grade HD cameras are used to capture material movement trajectories with high accuracy efficiently

8 Anti-material Breakage

Minimize material breakage

9 One-key operation

Jinguoyuan independently developed modern interface, intuitive to use, no need for complex operator training

Dates Sorting Robot

Series A

Sortable Materials

Jujubes
(Chinese Dates)

Medjool Dates

Jinguoyuan Series A Dates Sorting Robot

High Quality   High Efficiency   High Output

Nuts Sorting Robot

Series B

Sortable Materials

Chestnuts   ChestnutKernels   Pistachios   Walnuts   Macadamia Nuts   Hazelnuts

Lotus Seeds   Pecans   Almonds   Ginkgos   Brazil Nuts   Pili Nuts

Jinguoyuan Series B Nuts Sorting Robot

High Quality   High Efficiency   High Output

Series A Dates Sorting Robot

AI Material 360° Rotating Scan
AI Deep Learning Technology

Precise
High-speed
Dates Sorting

Jujubes   Medjool Dates

◆ Dates can be divided into large, medium and small grades. Jujubes, Medjool Dates can be sorted.
◆ One-time sorting: bird pecked dates, split dates, shrunken dates, rotten dates and other defects
Advanced with high efficiency, high precision, high output etc.

Automatic feeding system
Suitable for mass production

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

LHZD4-1208A

360° material scanning system
High-precision industrial cameras

Multiple channels & discharges
Simultaneous with finer sorting

Sortable Expectations

Accept quality dates

Remove defects effectively

Large Dates   Medium Dates   Small Dates   Deformed Dates   Pecked Dates   Split Dates   Shrunken Dates   Rotten Dates
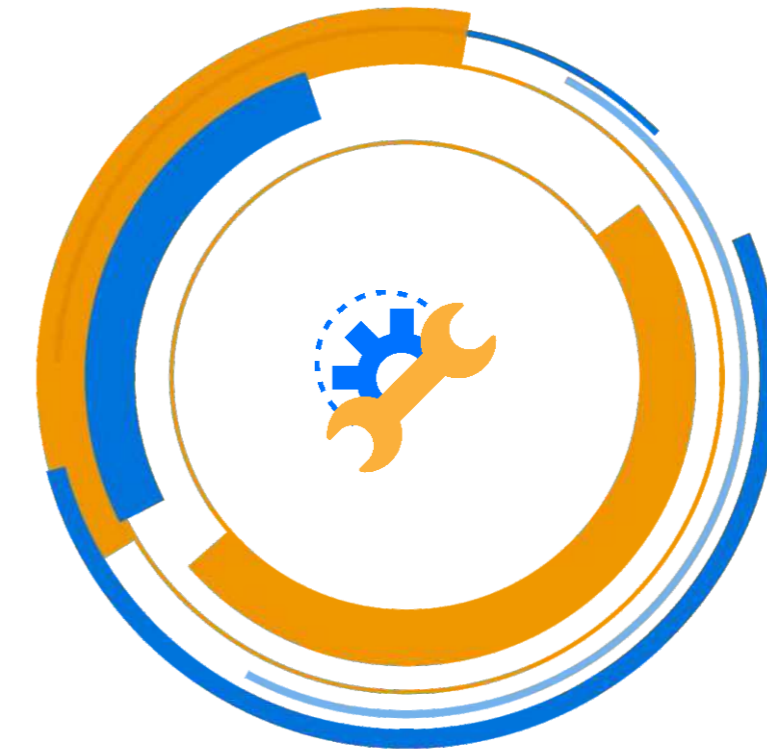
SeriesA Technical Parameters

No.	Channels	Output (t/h)	Voltage (V/Hz)	Power (kW)	Air pressure (MPa)	Air consumption (m3/min)	Dimension (LxWxH mm)	Weight (kg)
LHZ04-1208A	12	1.2-1.8	380/50	7.8	>0.6	2.4	8230×2960×1672	4485
LHZ04-1608A	16	1.6-2.4	380/50	8.5	>0.6	3.2	8230×3603×1672	5980
LF04-0608A	6	1.6-2.0	380/50	6.8	>0.6	1.2	7366×2740×1672	2500
LF04-0808A	8	1.8-2.2	380/50	7.5	>0.6	1.6	7366×3325×1672	3150
LF04-1008A	10	2.0-3.0	380/50	8.2	>0.6	2.0	7366×3910×1672	3900

Remarks: data takes jujube as an example. The output and air consumption change according to state of raw materials, finished materials and channels division. Above data for reference only.

Series A Sorting Robot Advantages

◆ Innovative, compact and stable structure design, occupying small and meeting mass production sorting needs

◆ Food-grade PP material, meeting food safety standards and protecting human health

◆ Closed sorting cabinet, effective dust-proof and closed transmission design, ensure safe operation

AFTER SALES

First-class After-sales Service   Quick Response

Series B Nuts Sorting Robot

AI | Material 360° Rotating Scan
AI Deep Learning Technology

Roasted
Seeds & Nuts
Wisdom Choice

◆ **Exclusive products customized according to actual needs**
◆ **Advanced with high efficiency, high precision, high output etc.**

High-end visual inspection system
360° rotating scan

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

Specific fast feeding system

Expectations discharges

Sortable Materials

Chestnuts   Chestnut Kernels   Pistachios   Walnuts   Macadamia Nuts   Hazelnuts   Lotus Seeds   Pecans   Almonds   Ginkgos   Brazil Nuts   Pili Nuts
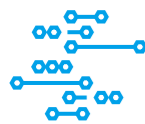
Exclusive Nuts Sorting Structure Design

Reciprocating 360° Material Conveying Structure without Blind Area
Increase output substantially

Streamline Diversion Trench as per Material Removal Trajectory
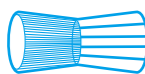Higher and more uniform removal rate

Shadowless Lamp Optical Design
Reduce the impact of shadows on sorting effect

Collision Prevention Ejectors
Precise yet low air consumption

Dual Sprockets Dual Channels
Ensure high-speed smooth operation and high output

Special Roller Drive
Faster speed and more than 30% output increased

Series B Technical Parameters

No.	Channels	Output (t/h)	Voltage (V/Hz)	Power (kW)	Air pressure (MPa)	Air consumption (m3/min)	Dimension (LxWxH mm)	Weight (kg)
LJG04-0608B	6	0.8-1.0	380/50	6.3	>0.6	1.2	9276*2780*2004	2200
LJG04-0808B	8	1.2-1.6	380/50	7	>0.6	1.6	9276*3074*2004	2912
LJG04-1208B	12	1.8-2.5	380/50	7.8	>0.6	2.4	9276*3662*2004	4250
LKXG04-2008B	20	0.8-1.0	380/50	7.93	>0.6	5	8722*2975*2004	5980

Remarks: data take chestnuts and pistachios as examples, and the output and air consumption are based on the actual tested materials. Above data for reference only.

Series B Sorting Effects
(Partial)
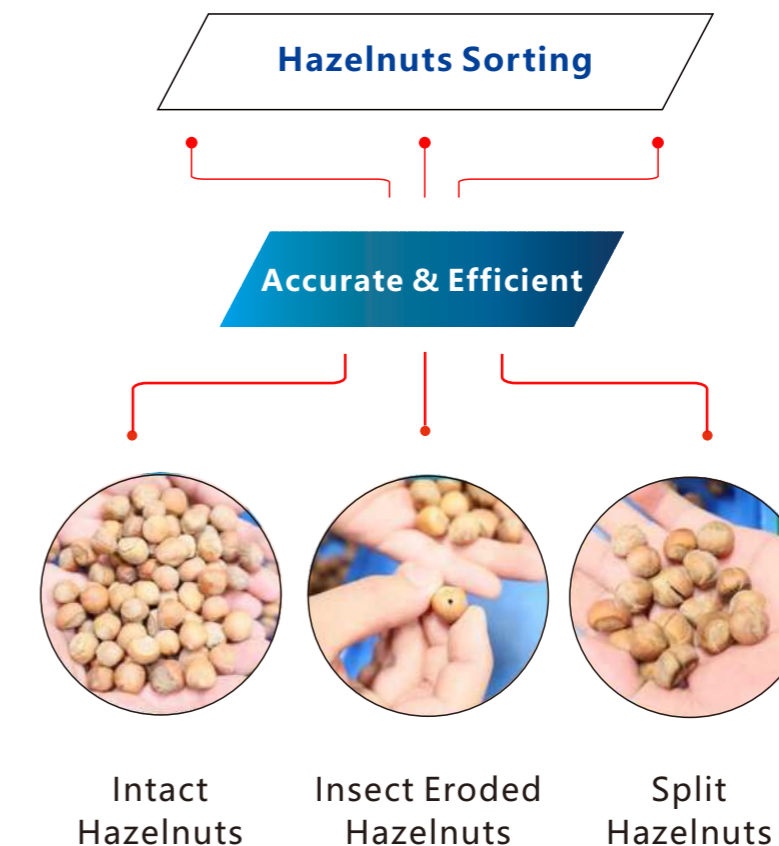
AI Material 360° Rotating Scan AI Deep Learning Technology

Hazelnuts Sorting Effect

One-time Sorting   **Multiple Configurations**   **Switching Freely**

◆ Exclusive sorting equipment customized according to actual needs

◆ It can sort intact, insect eroded, and split hazelnuts simultaneously advanced with high efficiency, high precision and high output
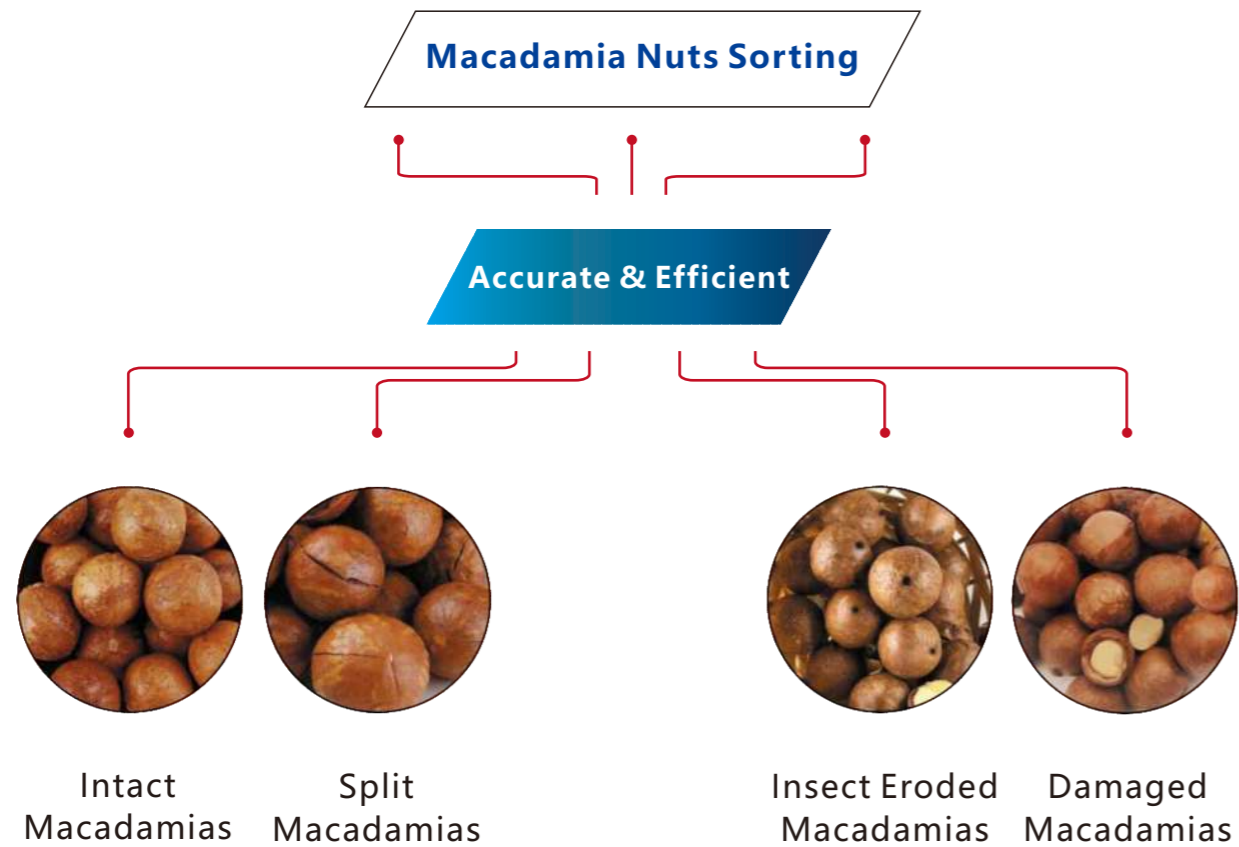
Hazelnuts Sorting

Accurate & Efficient

Intact Hazelnuts   Insect Eroded Hazelnuts   Split Hazelnuts

Macadamia Nuts Sorting Effect

One-time Sorting	Multiple Configurations	Switching Freely

◆ Exclusive sorting equipment customized according to actual needs

◆ It can sort intact, split, insect eroded and damaged macadamias simultaneously
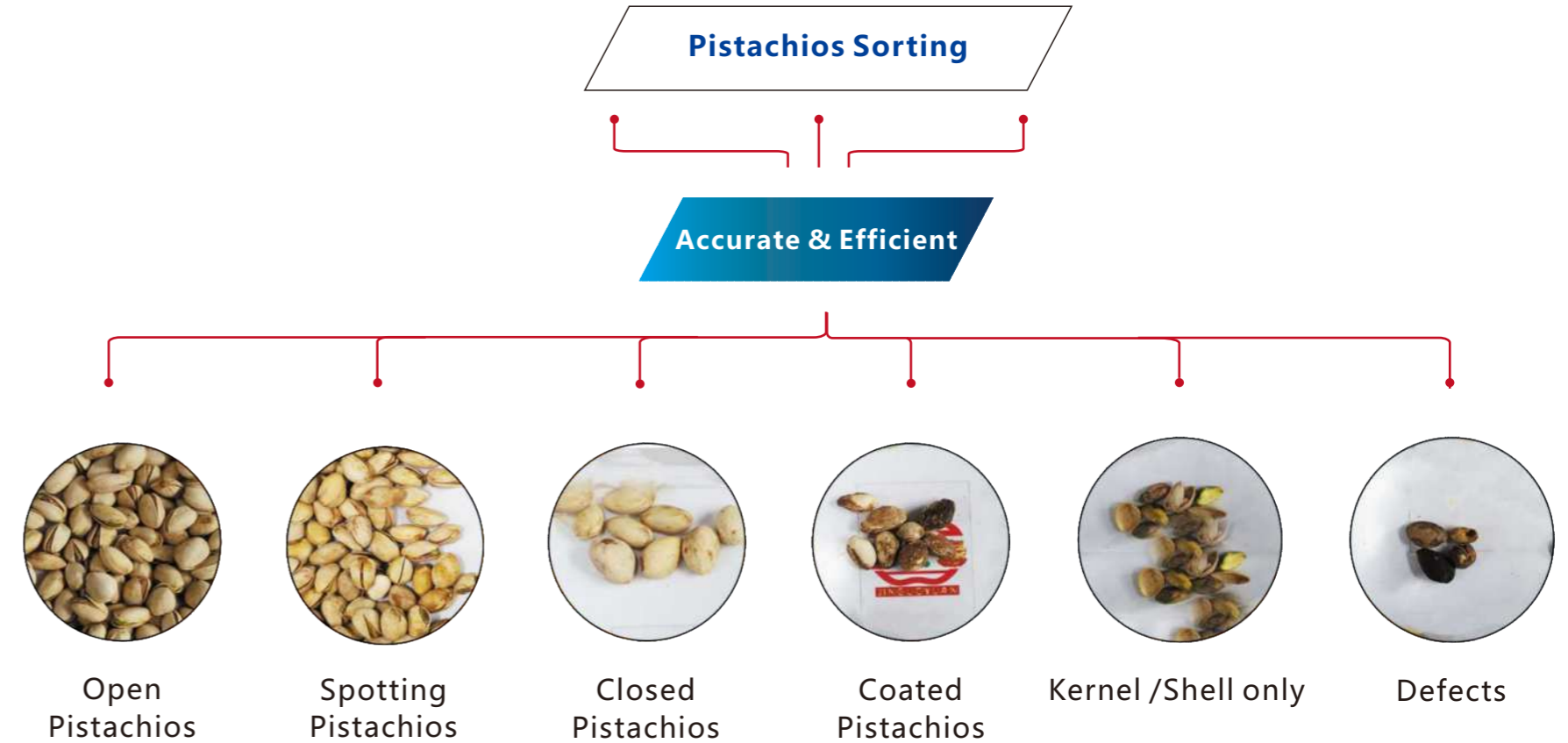advanced with high efficiency, high precision and high output

Macadamia Nuts Sorting

Accurate & Efficient

Intact Macadamias	Split Macadamias	Insect Eroded Macadamias	Damaged Macadamias

Pistachios Sorting Effect

One-time Sorting	Multiple Configurations	Switching Freely

◆ Exclusive sorting equipment customized according to actual needs

◆ It can sort open shell, spotting, closed shell, seed coat, kernel only, shell only, defects
simultaneously, advanced with high efficiency, high precision and high output
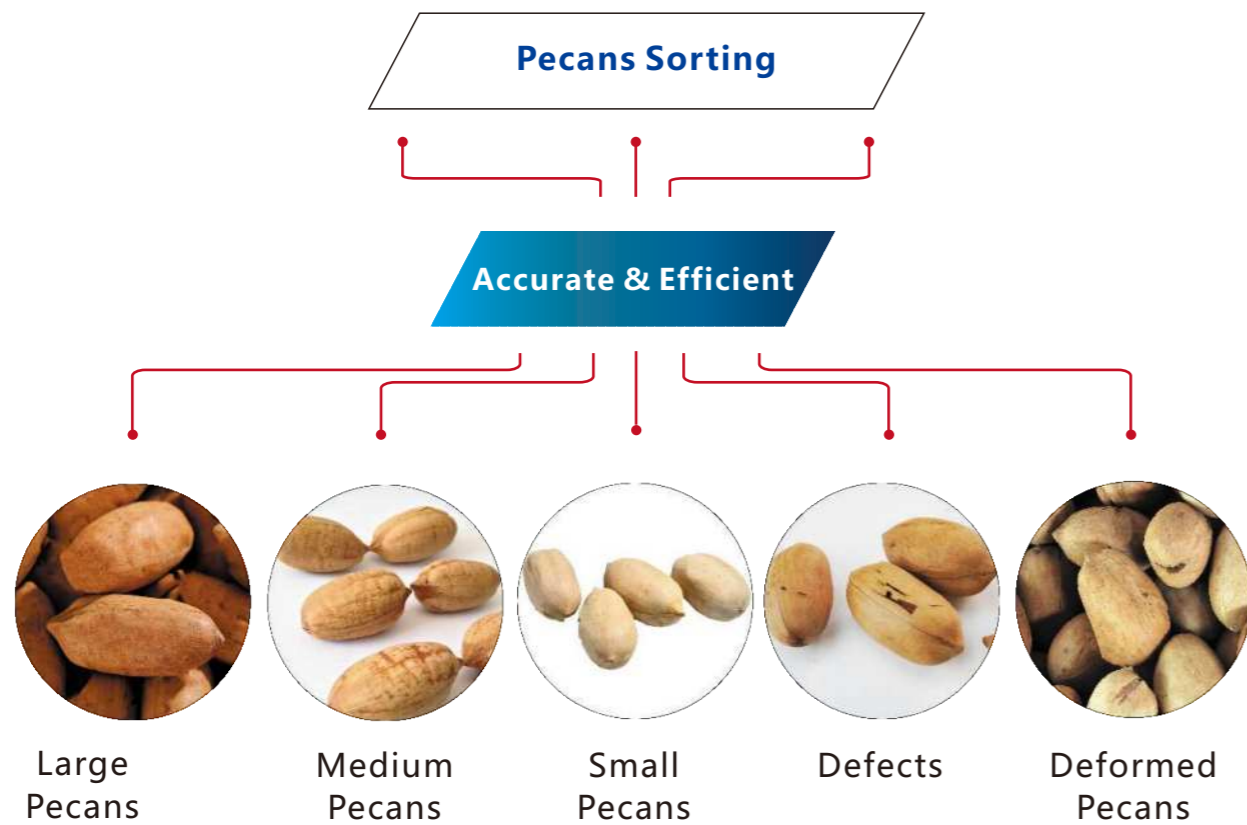
Pistachios Sorting

Accurate & Efficient

Open Pistachios	Spotting Pistachios	Closed Pistachios	Coated Pistachios	Kernel /Shell only	Defects

Pecans Sorting Effect

One-time Sorting	Multiple Configurations	Switching Freely

- Exclusive sorting equipment customized according to actual needs

- It can sort large, medium, small, deformed and defects simultaneously advanced with high efficiency, high precision and high output
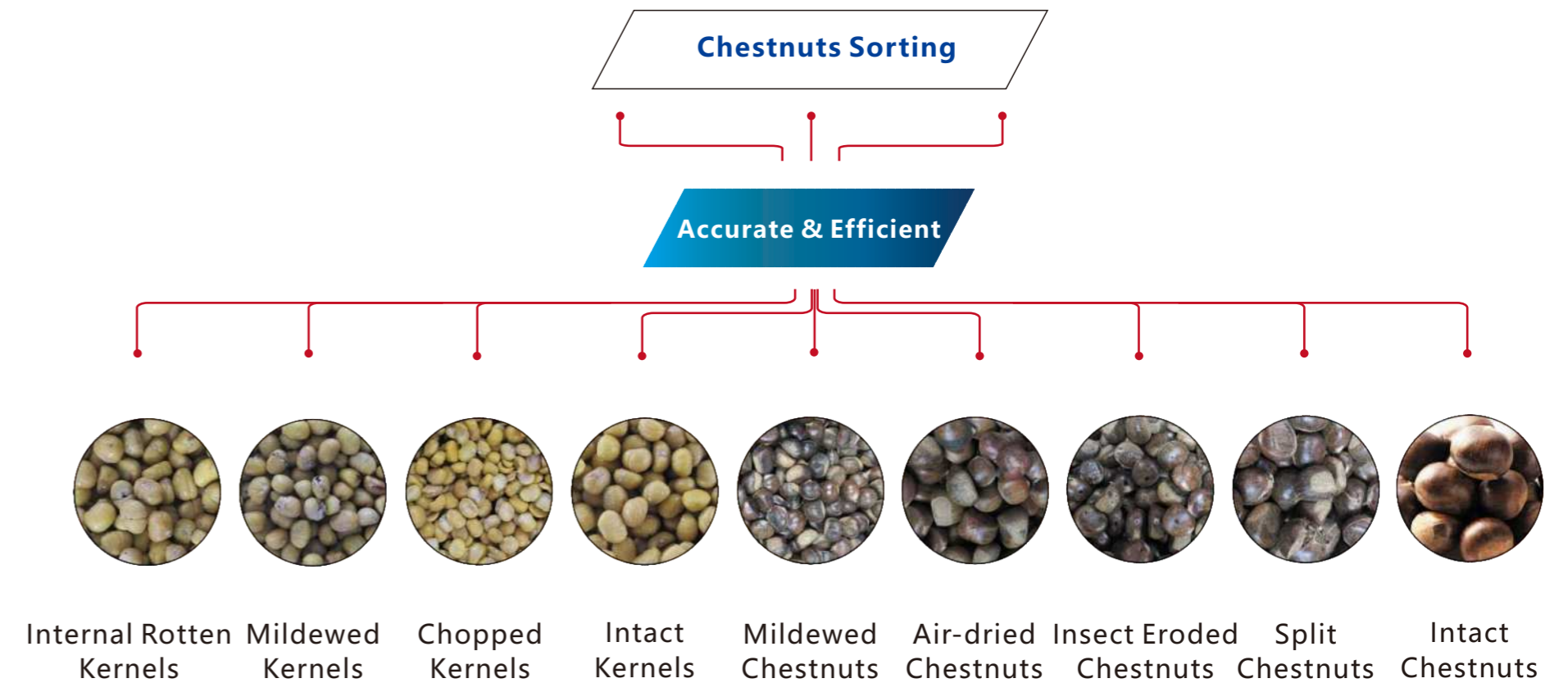
Pecans Sorting

Accurate & Efficient

Large Pecans

Medium Pecans

Small Pecans

Defects

Deformed Pecans

Chestnuts Sorting Effect (including kernels)

One-time Sorting	Multiple Configurations	Switching Freely

- Exclusive sorting equipment customized according to actual needs

- It can sort mildewed, air-dried, insect eroded, split and intact chestnuts; internal rotten, mildewed, chopped and intact kernels simultaneously, advanced with high efficiency, high precision and high output
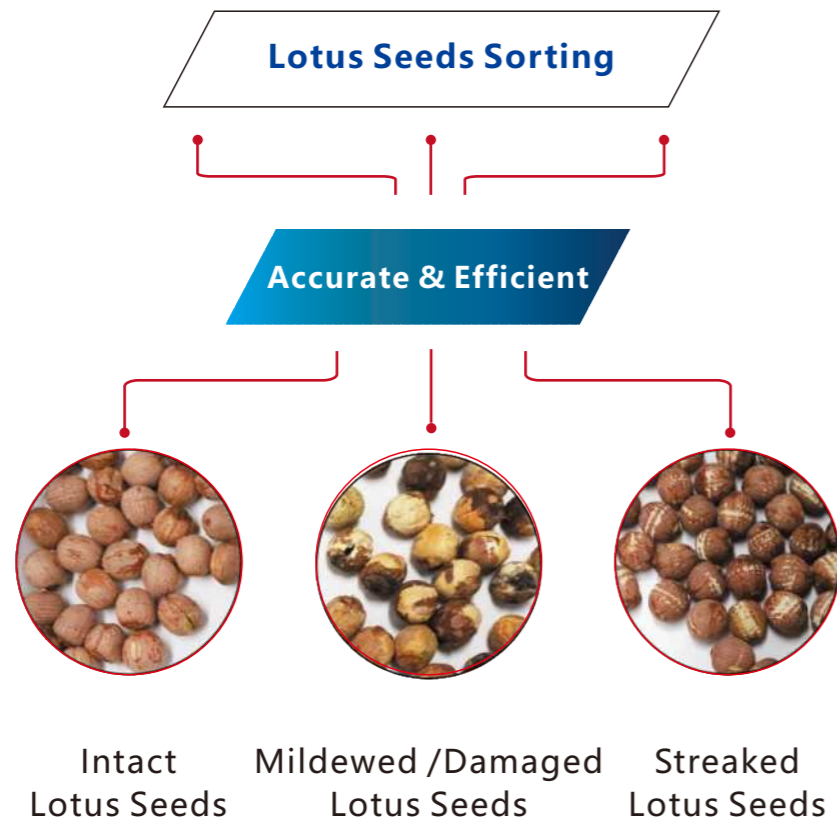
Chestnuts Sorting

Accurate & Efficient

Internal Rotten Kernels

Mildewed Kernels

Chopped Kernels

Intact Kernels

Mildewed Chestnuts

Air-dried Chestnuts

Insect Eroded Chestnuts

Split Chestnuts

Intact Chestnuts

Lotus Seeds Sorting Effect

One-time Sorting	Multiple Configurations	Switching Freely

- ◆ Exclusive sorting equipment customized according to actual needs
- ◆ It can sort Intact, mildewed /damaged and streaked lotus simultaneously advanced with high efficiency, high precision and high output
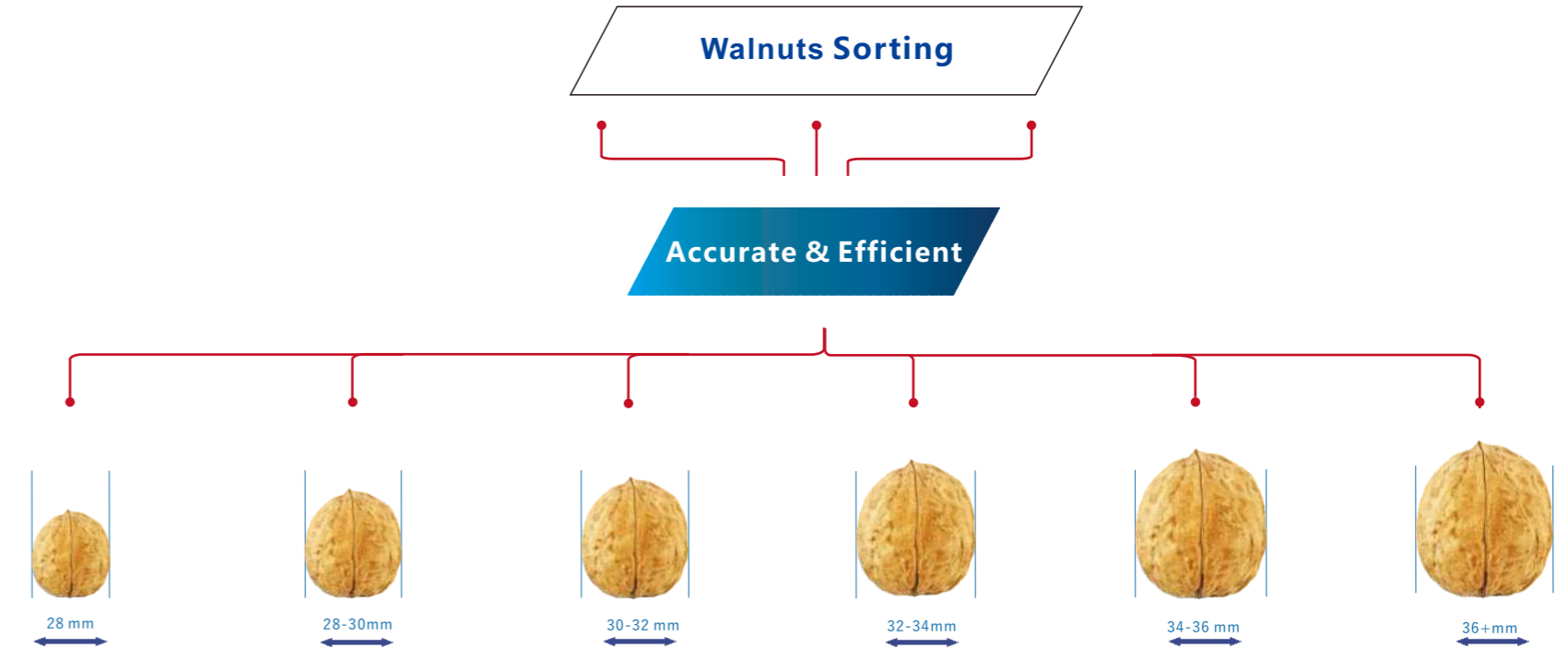
Lotus Seeds Sorting

Accurate & Efficient

Intact
Lotus Seeds

Mildewed /Damaged
Lotus Seeds

Streaked
Lotus Seeds

Walnuts Sorting Effect

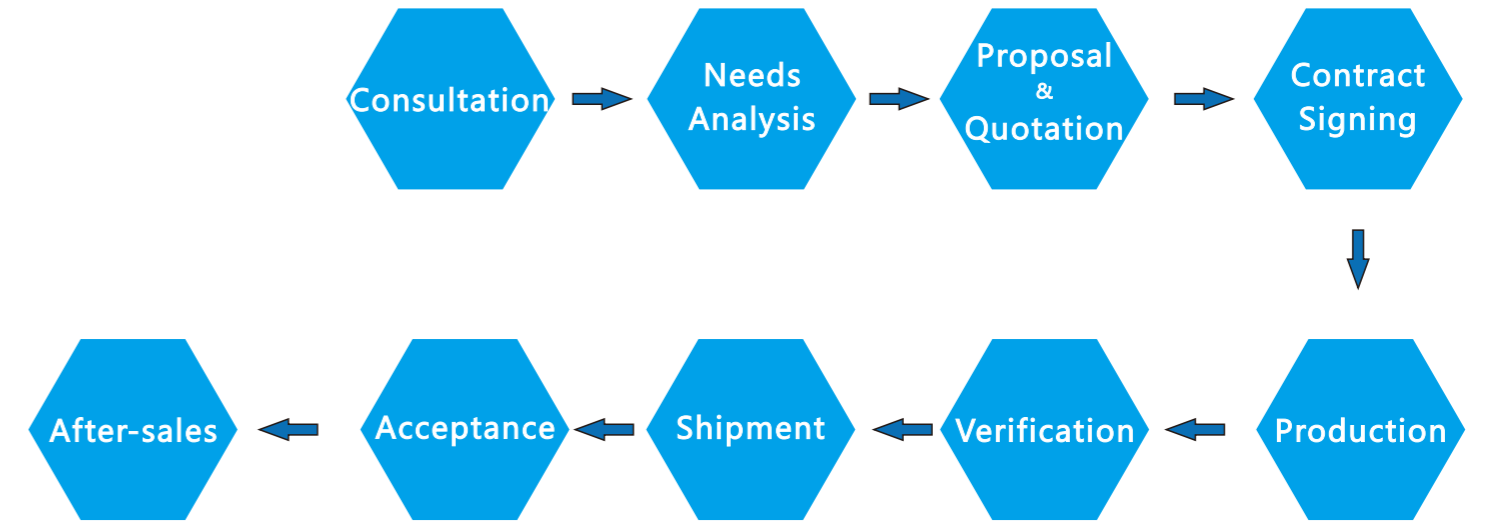| One-time Sorting	Multiple Configurations	Switching Freely

- ◆ Exclusive sorting equipment customized according to actual needs
- ◆ It can sort Xinjiang 185, Yunnan Dama, Jufeng and Yunlong walnuts simultaneously advanced with high efficiency, high precision and high output

Walnuts Sorting

Accurate & Efficient

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

Customer Cases (Partial)

Business Procedures

Consultation → Needs Analysis → Proposal & Quotation → Contract Signing

After-sales ← Acceptance ← Shipment ← Verification ← Production

Business Partners

Company Honors ≫

3A Enterprise Certificates

Management System Certificates

Software Certificates

Invention Patents　Photoelectric Fruit Grader　Computer Software Copyrights

Utility Model Patent Certificates

Anhui First Set/Unit of Major Technical Equipment

High-Tech Enterprises　Big Data Enterprise

Anhui Science & Technology Major Special Project

Other Honors Certificates