

www.en.hglaser.com



HGLASER SOLUTIONS

HGLASER SOLUTIONS IN AUTOMATION APPLICATION



Wuhan Huagong Laser Engineering Co.,Ltd.

ADD: HUST Industry District East Lake Hi-tech Development Zone, Wuhan, Hubei, P.R.China
PC: 430223
TEL: 0086 27 87180225
FAX: 0086 27 87180288
EMAIL: info@hglaser.com
WEB: en.hglaser.com

Wuhan Huagong Laser Engineering Co.,Ltd.



HGLASER SOLUTIONS

www.en.hglaser.com



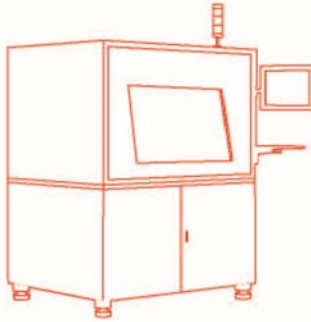
Wuhan Huagong Laser Engineering Co.,Ltd. ,one of the largest laser and plasma equipment manufacturers in China, is the main subsidiary company of Huagong Tech Co., Ltd. (Stock code: 000988). HGLASER is a national key high-tech enterprise, possessing technology centers and provincial key laboratories.

Wuhan Huagong Laser Engineering Co.,Ltd possesses two famous brands -- **HGLASER** and **FARLEY LASERLAB**. HGLASER has always been committed to providing broad and comprehensive laser manufacturing solutions in industrial manufacturing field, researching, manufacturing and selling various laser processing and plasma machines around the world.

The main products of HGLASER cover the full power series of laser cutting systems, laser welding systems, laser marking series, laser texturing equipment, laser heat treatment systems, laser processing and plasma machines, which are used widely in metallurgy, non-ferrous metals, automobiles, parts, aviation, military, precision instruments, machine manufacturing, hardware, integrated circuits, semiconductor manufacturing, solar, education, communication and measurement, packaging, leathers, plastics, rubbers, jewelries, crafts, medical equipment and etc.

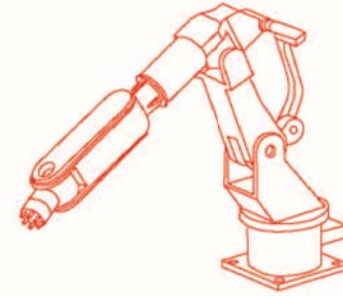
HGLASER
SOLUTIONS

BRAND



 **HGTECH**

Precision Laser Processing Solutions



FARLEY • LASERLAB

THE WORLD BRAND OF CUTTING & WELDING TECHNOLOGY

High-power Laser Processing Solutions

**HGLASER
SOLUTIONS**

HGLASER SOLUTIONS IN AUTOMATION APPLICATION



**HGLASER
SOLUTIONS**

Automation Application refers to the process of machines to achieve expected target by automatic inspection , information process, analytical judgement and operation control without manual operation.

With consistent accumulation of optical, mechanical and electronic integration, automatic control and system integration , HGLASER is devoted to provide the most suitable automation solution for all industries, such as 3C industry, telecommunication , hardware, automobile , medical , plastic , household appliance, food and security industry.

HGLASER
CONTENTS

HGLASER
SOLUTIONS

AUTOMATION INDEPENDENT WORKSTATION

Household Appliance Laser Marking System Workstation	16
Battery Case Laser Welding System Workstation	20
Full-automatic Charger Laser Marking Inspection System Workstation	22
Full-automatic Disk Laser Marking System Workstation	24
Full-automatic PCB Laser Marking Workstation	26
Automobile Components Laser Welding Workstation	28
Body in White Roof Laser Welding Production Line	30
Military Research Special Material Welding Workstation	32
Kitchen Industry Welding Workstation	34

02



HGLASER
SOLUTIONS

LASER AUTOMATION TECHNOLOGY

UNIT DEVICE	08
MEASUREMENT TECHNIQUE	10
MEASUREMENT PROCEDURE	11
LASER MEASUREMENT APPLICATION	12

01

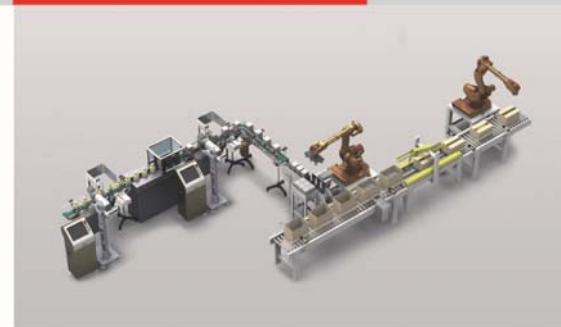


HGLASER
SOLUTIONS

FULL-AUTOMATIC PRODUCTION LINE

Full-automatic Automobile Light Processing Production Line	38
Pharmaceutical Industry Two-dimension Code Safety Tracking Automatic Line	40
Full-automatic Automobile Power Battery Sealing Production Line	42
Automobile Body in White Roof Laser Flexible Welding Production Line	44

03



HGLASER
PART ONE

01

HGLASER SOLUTIONS

LASER AUTOMATION TECHNOLOGY

- UNIT DEVICE
- MEASUREMENT TECHNIQUE
- MEASUREMENT PROCEDURE
- LASER MEASUREMENT APPLICATION

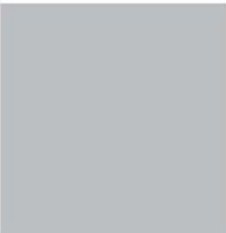
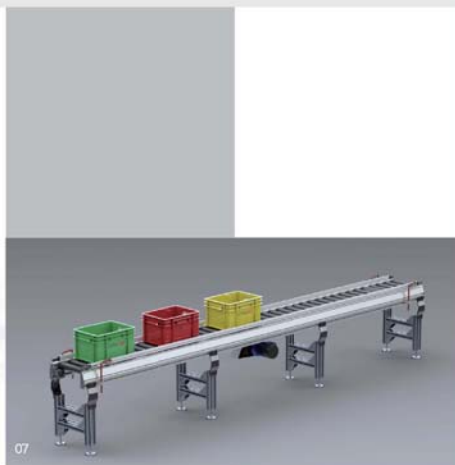
UNIT DEVICE



HGLASER SOLUTIONS



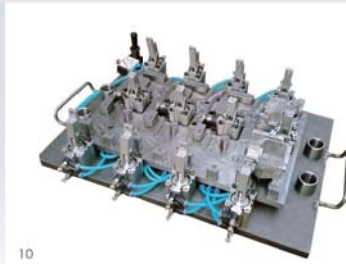
01 Linear Motor
02 Robot
03 Direct Driver
04 Electric Cabinet



05 Touch Screen
06 Software
07 Conveyor Belt
08 Motion Mode



09



10



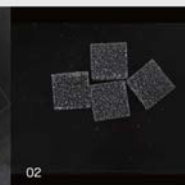
11

09 Vacuum Chuck
10 Fixture
11 Sensor

UNIT --- VISUAL IDENTITY



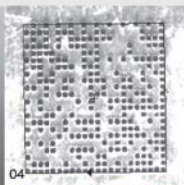
01



02



03



04



05



06



07



08

01 Object Recognition 02 Object Recognition 03 Object Recognition 04 2D Code Recognition
05 OCR 06 Internal Measurement 07 Locating Hole Recognition 08 Color Recognition

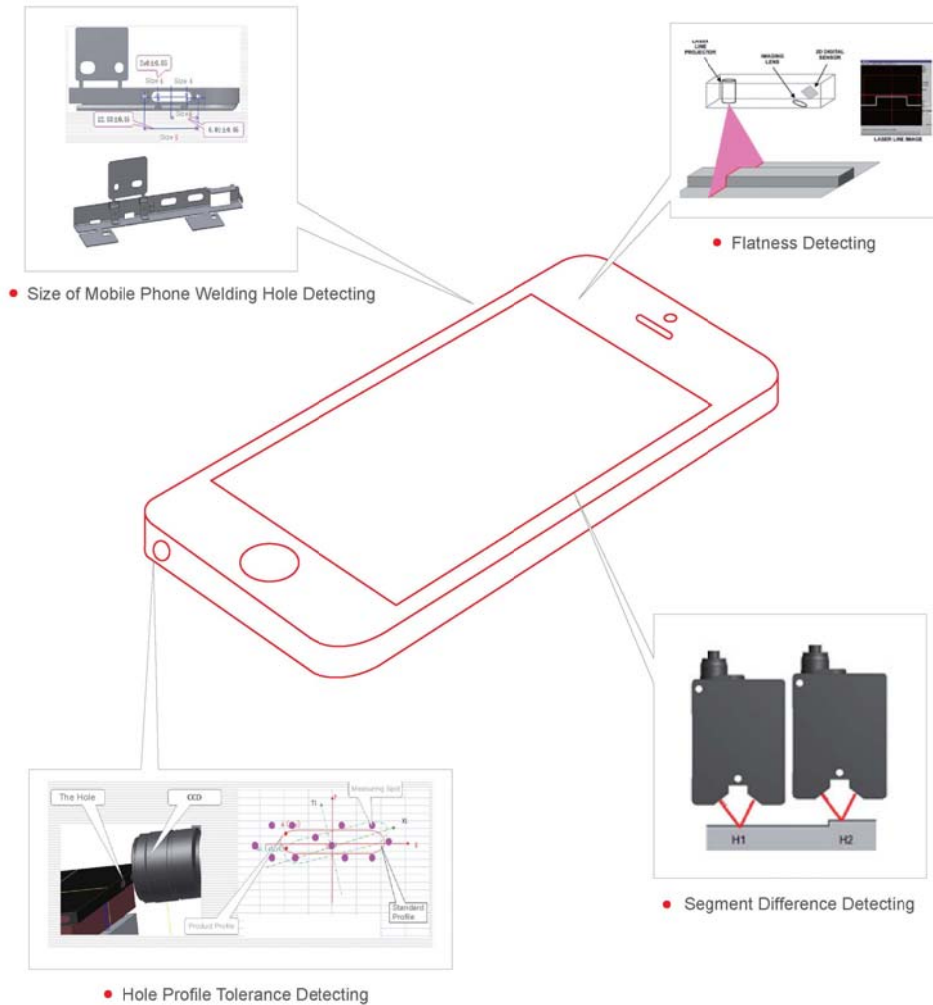
MEASUREMENT TECHNIQUE & PROCEDURE

HGLASER TECHNOLOGY

Laser measurement technique is a non-touch measurement method, with high precision, large measuring range, short detection time and high special resolution.

HGLASER PROCESS

Laser transmitter shoots visible red laser to the measured object surface by lens, and the laser reflected from the object is received by internal CCD linear camera. CCD linear camera can receive this laser from different angles according to different distance. In accordance with this angle and the distance between laser and camera, the digital signal processor can calculate the distance between sensor and the measured object.



SCAN



• Scanning Measured Workpiece

MEASUREMENT



• Measuring Range Programming Interface

DATA



HGLASER
PROCESS



● FOOT Assembled Detection Integrated Machine



● Full-automatic Precision Measuring System



● Automatic Charger Measuring Production Line



● Hole Interface Size Measuring Equipment



● Positional Tolerance Measuring Equipment

HGLASER
PART TWO

02

HGLASER
SOLUTIONS

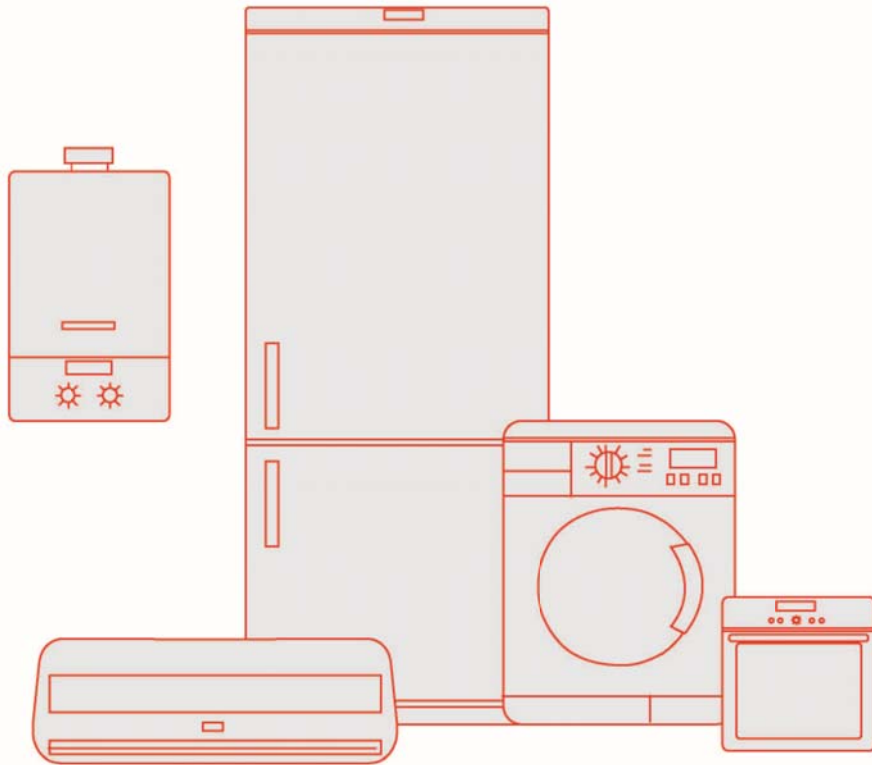
AUTOMATION INDEPENDENT WORKSTATION

- Household Appliance Laser Marking System Workstation
- Battery Case Laser Welding System Workstation
- Full-automatic Charger Laser Marking Inspection System Workstation
- Full-automatic Disk Laser Marking System Workstation
- Full-automatic PCB Laser Marking Workstation
- Automobile Components Laser Welding Workstation
- Body in White Roof Laser Welding Production Line
- Military Research Special Material Welding Workstation
- Kitchen Industry Welding Workstation

HOUSEHOLD APPLIANCE LASER MARKING SYSTEM WORKSTATION

Laser marking technology, marking speed is fast. Marking effect is of high precision, without any deformity. As a permanent marking technology, it is widely used in white household appliances field. Laser marking technology has tremendous feature of anti-counterfeiting function. It helps tracking quality in every distribution step of the products after the sales.

WHITE HOUSEHOLD APPLIANCES



+ Self-adhesive Labels

- High Labor Cost
- Low Adhesion Precision
- High Cost of Consumable Materials
- Easy Removal and Easy for Counterfeiting



+ Laser marking

- Automatic Marking
- High Adhesion Precision
- No Consumable Materials During Production
- Permanent Markings, Stable and Reliable.



EQUIPMENT
INTRODUCTION

HGLASER
PROCESS

EQUIPMENT
INTRODUCTION

HGLASER
PROCESS



● Indoors Hanging Unit of Air Conditioner Laser Marking Equipment



● Indoor Unit of Air Conditioner Laser Marking Equipment





EQUIPMENT
INTRODUCTION

HGLASER
PROCESS

APPLICATIONS Could be used in battery industry, laser welding and related applications for battery pole piece, shield, stopcock etc.

SAMPLES



FEATURES

-  1 Welding machine
2 Workstation system
3 Cooling system
-  Automatic welding by auto-focus welding head with collimator
-  CCD images positioning system.
-  Manual feeding and un-feeding. Double workstation with air-driven feeding platform. Could run any single workstation , or run double workstations.

EQUIPMENT
INTRODUCTION

HGLASER
PROCESS

APPLICATIONS Achieve markings, checking, NG detecting and filtering, high automation on chargers. Laser marking, checking, filtering of defective product and all other automation processing on Small components in IT, 3C products,

SAMPLES



FEATURES



1. Recycling system of the clamping device.
2. Laser marking system
3. Filtering system of the defective products.
4. CCD images recognition & analysis system





EQUIPMENT
INTRODUCTION

HGLASER
PROCESS

APPLICATIONS Full-automatic disk laser marking

SAMPLES



FEATURES

- 1 Four axes robot
- 2 CCD positioning system
- 3 CCD disks counting system
- 4 Laser height measurement device
- 5 Rotation Feeding/Un-feeding table.
- 6 Four workstations rotation.
- 7 Safety protection optical grating.

CCD positioning system and laser height measuring system could help automatically count the number of the disks.

Four-axis robot , automatically feed disks to four-workstation rotation system



FEATURES



- 1 CO₂ /Fiber laser source.
- 2 Imported high resolution CCD
- 3 millimeter -level motion module.



Marking data could be produced by system automatically, and also could be produced by internet connection.



Could cooperate with SMT production line, for online operation.
And also could cooperate with auto feeding/un-feeding devices, for offline operation workstation.

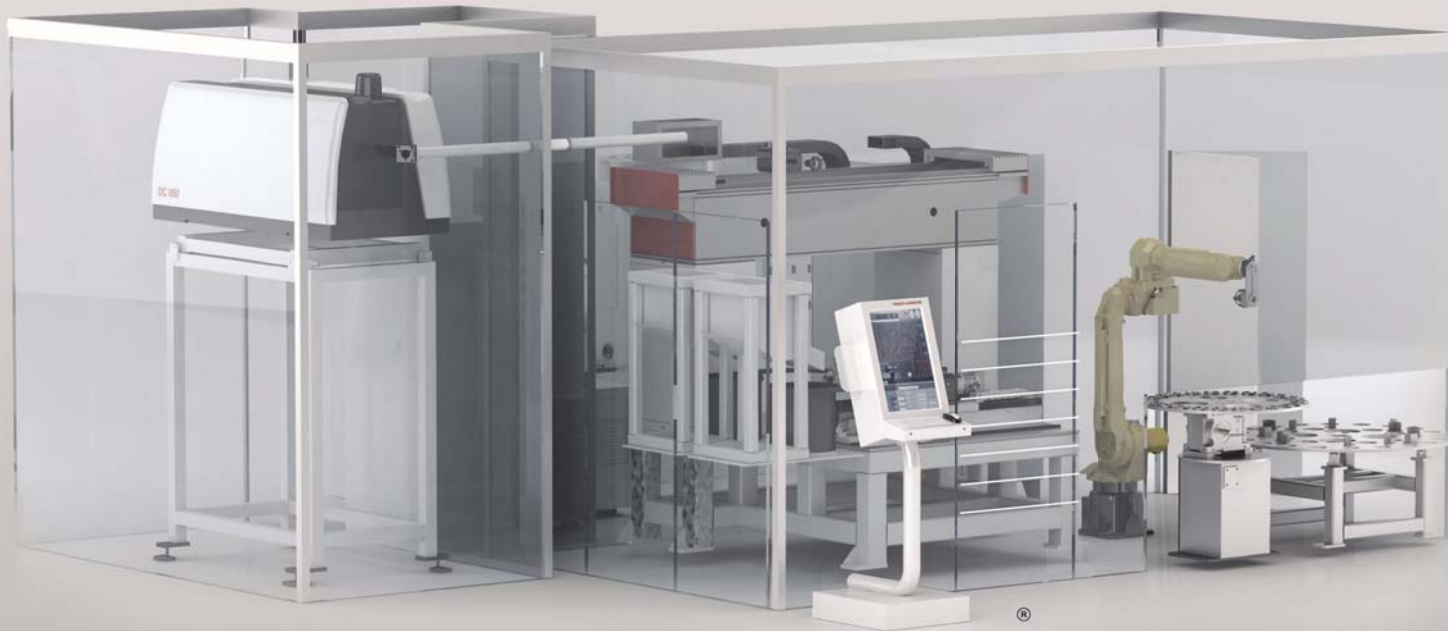
EQUIPMENT
INTRODUCTION
HGLASER
PROCESS

APPLICATIONS Dedicated machine for markings of PCB barcode, QR, text, images data .
Device details



SAMPLES





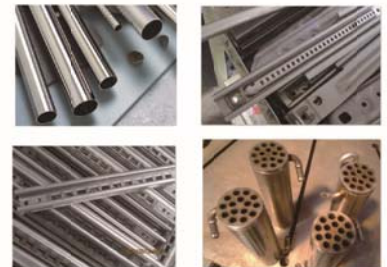
APPLICATIONS

- 1 Convenient HMI operation
- 2 Automatic feeding / un-feeding robot to achieve annual output over 1 million
- 3 Customized design of clamping device to achieve automatic welding of angle adjusters and other components

TYPICAL APPLICATIONS

- 1 Safety airbag welding
- 2 Emission pipes welding
- 3 Slider welding
- 4 Energy absorber box welding
- 5 Angle adjuster welding
- 6 Vehicles door welding
- 7 Stepping board and chair welding

SAMPLES





AUTOMOBILE COMPONENT TYPICAL APPLICATIONS



01



02

- 01 Slide
- 02 Air bag
- 03 Recliner
- 04 Stepping decoration board
- 05 Energy absorption box



03

- 06 Seat
- 07 Shifting fork
- 08 Gear
- 09 Door frame
- 10 Welding tube



06



07



04



05



08



09



10



EQUIPMENT
INTRODUCTION

HGLASER
PROCESS

APPLICATIONS

- 1 Special horizontal reverse gantry structure design, apply to different structure components;
- 2 With high flexibility, equips welding, cladding/repair, heat processing functions;
- 3 Equips wire feeding system, could fulfill laser + MIG multiple welding;

FEATURES

Specialized used in huge size high power fiber laser 3D flexible multi-function process

SAMPLES



EQUIPMENT
INTRODUCTION
HGLASER
PROCESS



APPLICATIONS

This specialized laser welding machine mainly adopts 3D robot to drive laser welding head, provides completely automatic welding for stainless steel plate in kitchen ware industry.

FEATURES

- 1 Outer laser transmitted by optic fiber, well enclosure, safe and reliable;
- 2 Equip automatic rotary door, Dislodgement machine, automatic fume exhaust enclosure, and other components;
- 3 Completed system fulfills kitchen ware

SAMPLES



HGLASER
PART THREE

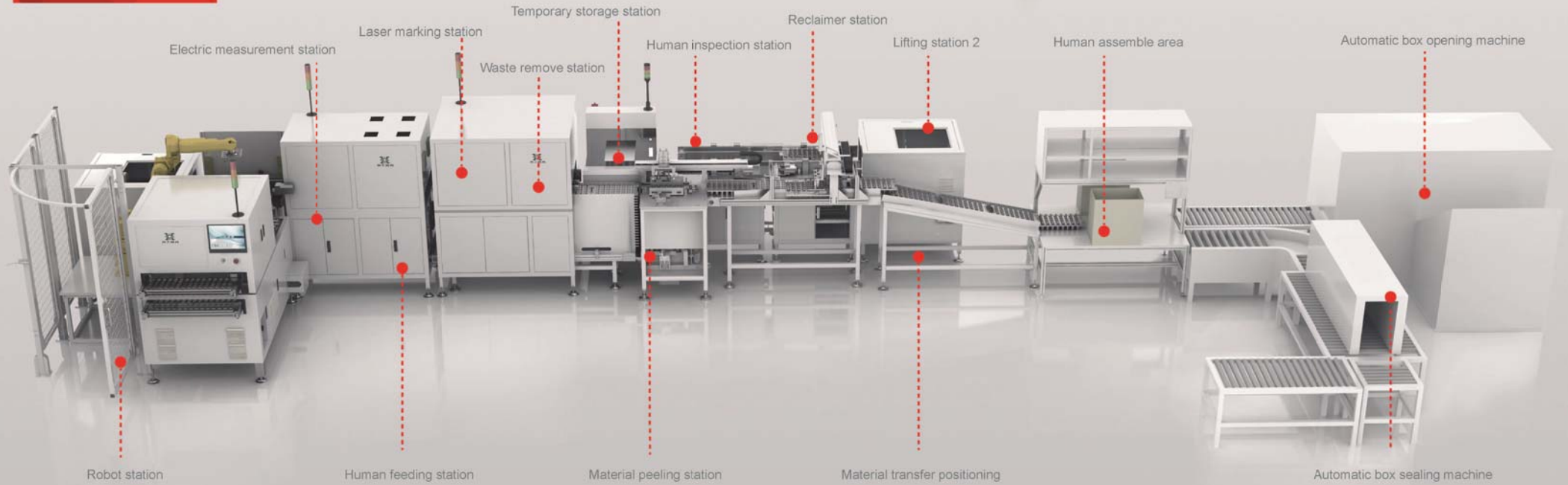
03

HGLASER SOLUTIONS

FULL-AUTOMATIC PRODUCTION LINE

- Full-automatic Automobile Light Processing Production Line
- Pharmaceutical industry Two-dimension Code Safety Tracking Automatic Line
- Full-automatic Automobile Power Battery Sealing Production Line
- Automobile Body in White Roof Laser Flexible Welding Production Line

FULL-AUTOMATIC
AUTOMOBILE LIGHT
PROCESSING
PRODUCTION LINE



EQUIPMENT
INTRODUCTION
HGLASER
PROCESS

INTRODUCTION

Adopts complete automatic ways to fulfill product ranking, function inspection, laser marking, finished/rejected product classify, temporary storage, product rotary and package sealing functions. Functioning terminal production line uses backflow way to fulfill loading tool transferring.

SAMPLES



FEATURES



Complete automatic laser marking, inspection, package production line;



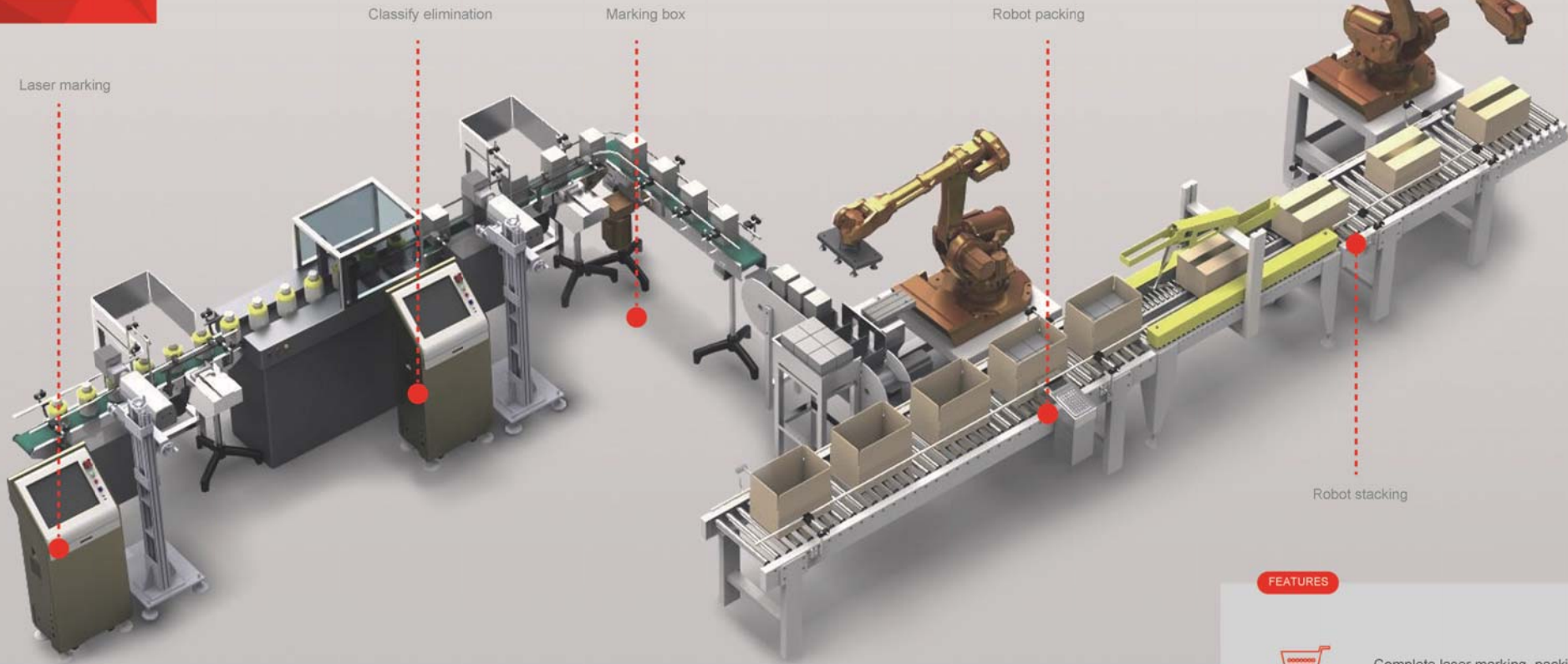
- 1 Automatic adjust feeding
- 2 Lighting test
- 3 Laser marking
- 4 CCD inspect
- 5 Rejected product elimination
- 6 Human inspection
- 7 Automatic packing
- 8 Finished product package;



Automobile lighting H4 series headlight, other products(H1, H3, H7 series, etc) could be customized;

PHARMACEUTICAL INDUSTRY

2 dimension code safety tracking automatic production line



EQUIPMENT INTRODUCTION
HGLASER PROCESS

INTRODUCTION

This automatic production line is consist of filling machine, marking system, anti-fake system, automatic sealing machine... which could fulfill automatic bottom sealing, encasement, weighing(rejected product elimination)functions. It also equips laser marking and data collection system to ensure quality tracking and monitoring.

SAMPLES



TYPICAL CLIENTS



FEATURES



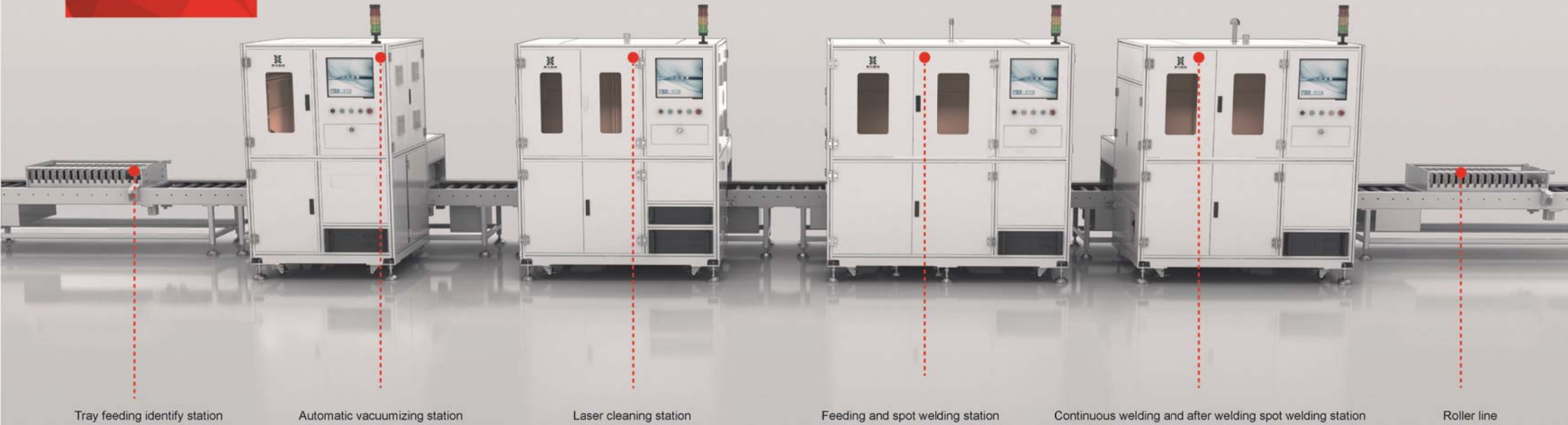
Complete laser marking, packing and tracking production line;



- 1 Laser marking
- 2 Ldentify and elimination
- 3 Robot encasement
- 4 Robot stacking
- 5 Data relevance
- 6 Marking box



Automatic production line equips anti-fake system laser marking and data collecting



Tray feeding identify station

Automatic vacuumizing station

Laser cleaning station

Feeding and spot welding station

Continuous welding and after welding spot welding station

Roller line

EQUIPMENT
INTRODUCTION
HGLASER
PROCESS

INTRODUCTION

Power battery complete automatic welding, read barcode and identify product category, finish automatic vacuumizing, welding area laser clean, automatic upper sealing, spot welding, continuous welding and inspection.

FEATURES

Apply to power battery and other sealing products automatic laser welding

APPLICATION FIELD



Automatically identify product category and match requirement system, valid for mix production;



Welding area laser clean, coaxial CCD positioning, increase welding quality;



Vibrating disc ranking and sealing, automatic feeding, reduce human operation;



CCD positioning, provides high accuracy for feeding and welding;

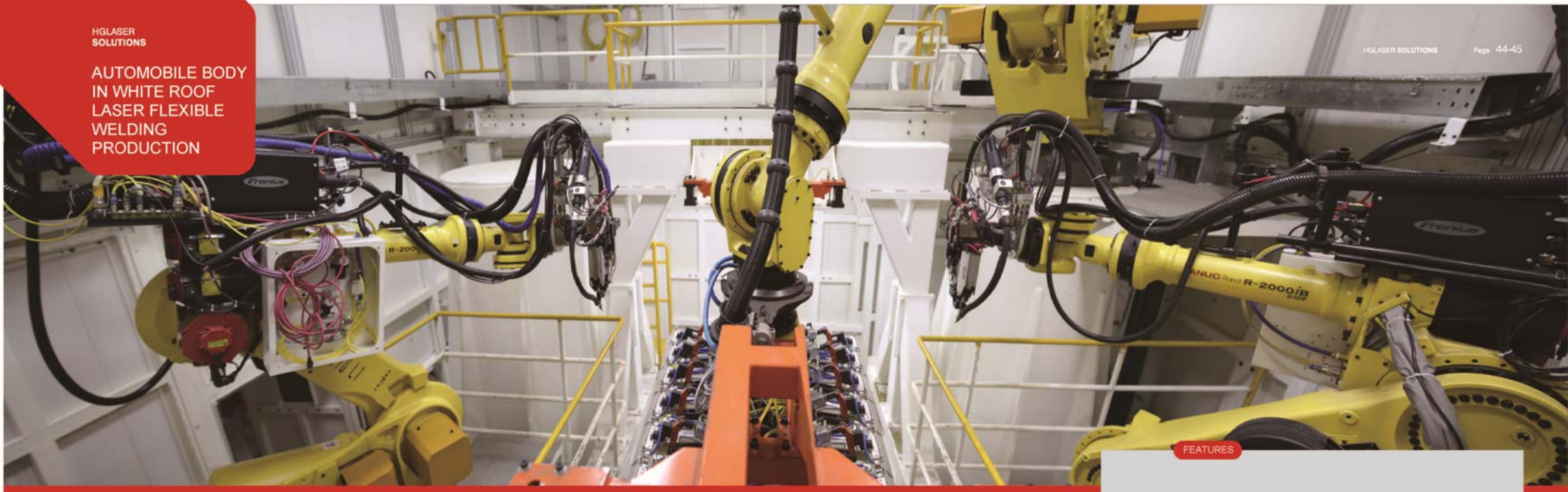


Spot welding and continuous welding separately operate, increase production efficiency;



Specialized software, CCD function, real time communication with customer database;

**AUTOMOBILE BODY
IN WHITE ROOF
LASER FLEXIBLE
WELDING
PRODUCTION**



FEATURES



Chinese 1st automobile body in white laser welding system



- 1 Valid for 2~4 kinds of medium size mixed vehicle production;
- 2 Match nearly all brands' vehicle production management line;



**EQUIPMENT
INTRODUCTION**

**HGLASER
PROCESS**

INTRODUCTION

This flexible welding production line has been widely used in GM, PSA, JAC and many other automobile factories, break out the monopoly of global enterprises, fill in the gaps of Chinese technology, make big develop of Chinese laser welding technology;

SAMPLES

