# AI視覚選別機製品概要

**灌装类饮品检测（瓶体、空盖、合盖、液位、杂质、标签）**
Filling beverage detection (bottle body, empty cover, closed cover, liquid level, impurities, labels)



**瓶盖检测　Bottle cap inspection**



**瓶体检测　Bottle inspection**



**瓶胚检测　PET preform inspection**



**杯装检测　Cup inspection**



**医药包装检测　Pharmaceutical packaging inspection**



**喷码检测（缺失、模糊、未喷码）　Code detection (missing, fuzzy, uncoded)**



**其他行业检测：纺织、工业互联网、薄膜、纸质包装等**
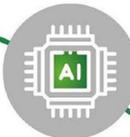Other industry testing: textile, industrial Internet, film, paper packaging

AI Visual Inspection Equipment
AI视觉检测设备

# 遇见AI 告别困扰
## AI, solve your problems

### AI深度学习, 精准定位差异
#### AI deep learning, accurate positioning of differences

基于深度学习的AI算法, 突破传统检测技术难点, 采集产品缺陷样本, 自主学习训练, 多维度辨识样品间的细小差异。通过采集少量样本训练完善算法网络模型, 使其具有"类脑"智能, 达到所见即所得的效果。

The AI algorithm based on deep learning breaks through the difficulties of traditional detection technology, collects product defect samples, self-learning and training, and multi-dimensionally identifies small differences between samples. By collecting a small number of samples to train and improve the algorithm network model, it has "brain-like" intelligence and achieves the effect of what you see is what you get.
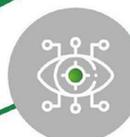
## KEYETECH

### 智能"芯", 洞悉真相
#### Intelligence GPU, discover the truth

定制化LED光源、工业相机, 搭载智"芯"处理平台, 还原产品真实本色, 产品缺陷一目了然。融合光、机、电、算、软, 架构出集成度更高、运算更快、处理能力更强的AI平台。

Customized LED light source, industrial camera, equipped with intelligent "core" processing platform, restore the true nature of the product, and product defects are clear at a glance. Integrate optical, mechanical, electrical, computing, and software to build an AI platform with higher integration, faster computing, and stronger processing capabilities.

### 赋能行业, 智慧升级
#### Empower the industries, intelligence upgrade

特有的数据增强功能, 少量样本模拟海量数据, 构建自有AI数据库, 适应客户产品升级需求, 赋能企业数字化转型升级, 提质增效。

The unique data enhancement function, a small number of samples simulates massive data, builds its own AI database, adapts to customer product upgrade needs, empowers enterprises to digitally transform and upgrade, and improves quality and efficiency.

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# 灌装线检测流程
## Filling line inspection process

### 1、空瓶检测 Empty bottle detection

· 瓶口、瓶颈、瓶身、瓶底破损及裂纹，缺陷面积
Bottle mouth, neck, bottle body, bottle bottom damage and cracks, defect area
· 瓶口内外径尺寸和椭圆度，直径差
The inner and outer diameter of the bottle mouth and the ovality, the diameter difference
· 高低瓶，高度差等
High and low bottles, height difference, etc.

### 2、瓶盖及瓶盖内件检测
### Bottle caps and bottle cap internals inspection

· 瓶盖内件有无、变形和破损
The presence, deformation and damage of the inner parts of the bottle cap

### 3、液位及封盖检测 Liquid level and cap detection

· 可设置标准液位，检测出偏差
Standard liquid level can be set to detect deviation
· 未盖瓶盖、瓶盖歪斜
No cap, crooked cap
· 划痕、脏污、厚薄、孔洞等
Scratches, dirt, thickness, holes, etc.

### 4、杂质检测 Impurity detection

· 蚊、蝇等生物及其躯干
Small creatures such as mosquitoes and flies
· 毛发、有色丝状物沉淀
Precipitation of hair, colored filaments
· 悬浮物、黑色、白色、有色杂质等
Suspended solids, black, white, colored impurities, etc.

### 5、瓶体贴标喷码检测 Bottle labeling and coding detection

· 防伪标有无 With or without anti-counterfeiting labels
· 喷码有无 With or without coding
· 皱标，标签长宽变化 Wrinkled label, label length and width change
· 歪标，标签两侧高差等 Crooked label, height difference on both sides of label, etc.

### 6、空盒外观及贴标检测
### Empty box appearance and labeling inspection

· 礼盒表面破损、变形、划痕，长度
The surface of the gift box is damaged, deformed, scratched, and the length
· 空盒贴防伪标等
Empty boxes with anti-counterfeiting labels, etc.

### 7、装盒后外观及礼盒喷码检测
### Appearance and gift box coding inspection

· 礼盒外观检测
Gift box appearance inspection
· 礼盒激光喷码（日期,生产批次），包含喷码有无、变形、歪斜等
Gift box laser coding (date, production batch), including the presence or absence of coding, deformation, skew, etc.

### 8、装箱后外观及纸箱贴标喷码检测
### Appearance and carton labeling and coding detection after packing

· 标识 Logo
· 纸箱外观变形、封口胶歪斜、飞翅、短缺
The appearance of the carton is deformed, the sealing glue is skewed, and the shortage
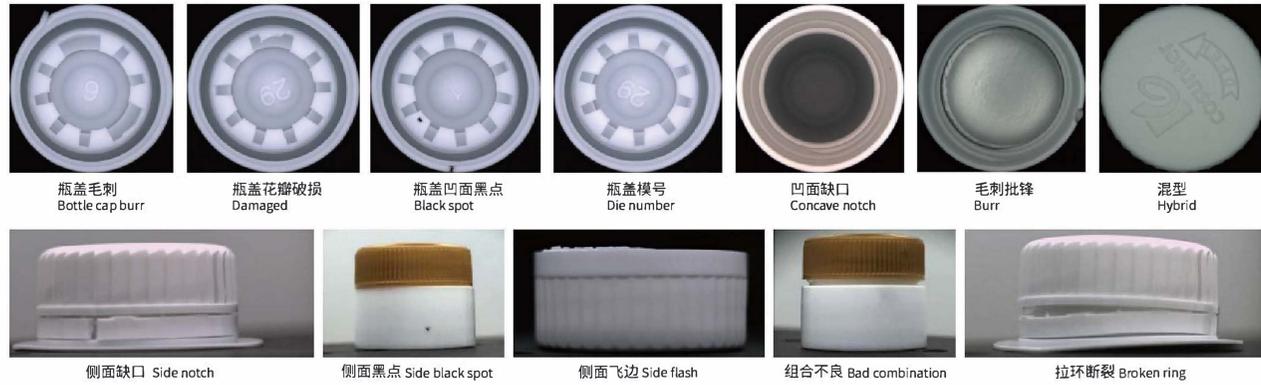· 纸箱贴标 Carton labeling
· 纸箱油墨喷码等 Carton ink jet coding, etc.

自动化、信息化、智能化
包装行业视觉检测解决方案专家
Expert in visual inspection solutions for automation, informatization and intelligent packaging industry
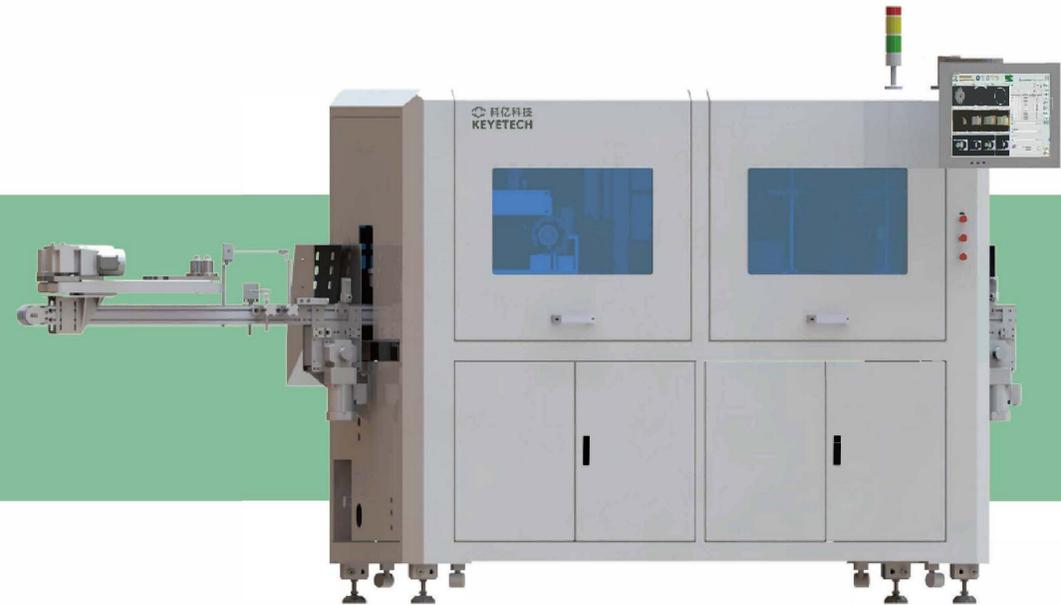
# 全自动瓶盖检测机
## Automatic Closure Inspection Machine  >>

# 全自动瓶体检测机
## Automatic Bottle Inspection Machine  >>





## 检测缺陷 Sample:



| 瓶盖毛刺 Bottle cap burr | 瓶盖花瓣破损 Damaged | 瓶盖凹面黑点 Black spot | 瓶盖模号 Die number | 凹面缺口 Concave notch | 毛刺批锋 Burr | 混型 Hybrid |

| 侧面缺口 Side notch | 侧面黑点 Side black spot | 侧面飞边 Side flash | 组合不良 Bad combination | 拉环断裂 Broken ring |

## 检测缺陷 Sample:



| 瓶子内壁黑点 Black spot | 瓶底异物 Foreign body | 瓶底拉丝 Brushed | 瓶底厚薄不均 Uneven thickness | 瓶底合模线粗 Unsuitable bottom parting line | 瓶口黑点 Black spots on bottle | 内壁黑点 Inner wall black spot |

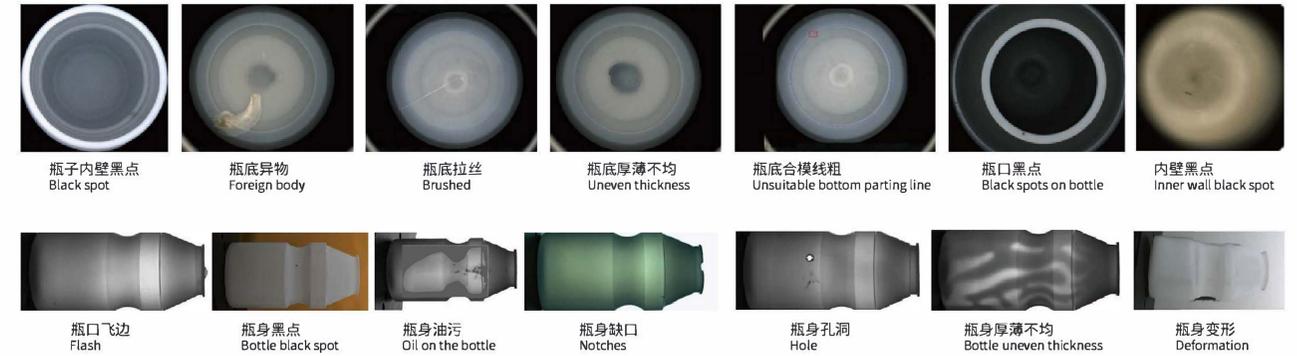| 瓶口飞边 Flash | 瓶身黑点 Bottle black spot | 瓶身油污 Oil on the bottle | 瓶身缺口 Notches | 瓶身孔洞 Hole | 瓶身厚薄不均 Bottle uneven thickness | 瓶身变形 Deformation |

## 技术参数 Technical parameters:

| 检测标准 Inspect | 黑点、色差、杂质、螺纹、压环、断环、缺口、批锋、毛刺、变形、尺寸、垫片、内塞、模号等 Black spot, color difference, impurity, thread, pressing ring, broken ring, notch, batch edge, burr, flash, deformation, dimension, gasket, inner plug, die number, etc. | | |
|---|---|---|---|
| 检测区域 Detection area | 瓶盖凹面、顶面、侧面 Bottle cap concave,top,side | | |
| 电压电流 Voltage and current | 适配客户国家标准 Adapt to national standard | | |
| 压缩空气 Compressed air | 0.5Mpa-0.8Mpa | | |
| 检测速度 Speed | 2500个/分钟 2500pcs/min | 功率 Power | 5000-7000w |
| 检测精度 Precision | 0.1mm | 准确率 Accuracy | 99.9% |
| 设备尺寸（包含理盖机）Size | 3700*1300*1785mm | 重量 Weight | 350kg |

## 技术参数 Technical parameters:

| 检测标准 Inspect | 黑点、色差、杂质、螺纹、吊环、缺口、余料、飞边、气泡、孔洞、厚薄不均、变形、尺寸、喷码、商标、模号等 Black, spots, color difference, impurities, threads, rings, notches, leftovers,flash, bubbles, holes, uneven thickness, deformation, size, inkjet, trademark, die number, etc | | |
|---|---|---|---|
| 检测区域 Detection area | 瓶口、瓶口内壁、瓶底、瓶身 Bottle mouth,bottle bottom,bottle body | | |
| 电压电流 Voltage and current | 适配客户国家标准 Adapt to national standard | | |
| 压缩空气 Compressed air | 0.5Mpa-0.8Mpa | | |
| 检测速度 Speed | 300个/分钟 300pcs/min | 功率 Power | 5000-7000w |
| 检测精度 Precision | 0.1mm | 准确率 Accuracy | 99.9% |
| 设备尺寸 Size | 3550*1030*1800mm | 重量 Weight | 350kg |

AI Visual Inspection Equipment
AI视觉检测设备

# 全自动标签检测机
## Automatic Label Inspection Machine

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# 全自动瓶胚检测机
## Automatic Preform Inspection Machine

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### 检测缺陷 Sample:



标签缺失 Missing | 瓶身褶皱 Wrinkling | 瓶身黑点 Black spot | 瓶身脏污 Dirty | 标签破损 Broken label

二维码破损 Broken QR code | 条形码错误（混标）Wrong barcode | 瓶口标签缺失 Missing bottle label | 瓶口标签多 Extra labels

### 检测缺陷 Sample:



胚口缺料 Material shortage | 胚口黑点、异物 Body speck | 胚身气泡 Bubble | 胚身黑点 Black spot | 瓶身划痕 Scratch

瓶口裂纹 Crack | 瓶身流纹 Flow mark

### 技术参数 Technical parameters:

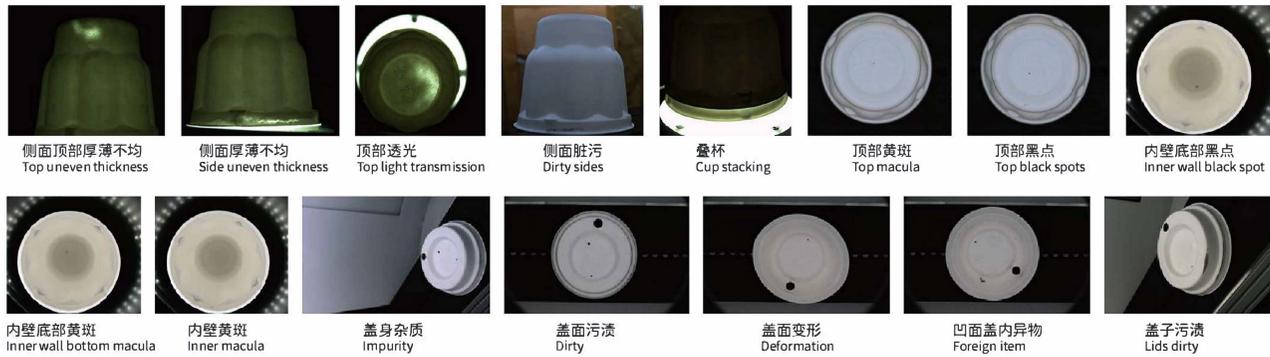| 检测标准 Inspect | 套标、贴标、模内贴标 Trapping label, labeling, in-mold labeling | | |
|---|---|---|---|
| 检测区域 Detection area | 瓶身各种标签 Various labels on the bottle | | |
| 电压电流 Voltage and current | 适配客户国家标准 Adapt to national standard | | |
| 压缩空气 Compressed air | 0.5Mpa-0.8Mpa | | |
| 检测速度 Speed | 300个/分钟 300pcs/min | 功率 Power | 3000-5000w |
| 检测精度 Precision | 0.1mm | 准确率 Accuracy | 99.9% |
| 设备尺寸（包含理盖机）Size | 4550*1030*1800mm | 重量 Weight | 350kg |

### 技术参数 Technical parameters:

| 检测标准 Inspect | 黑点、杂质、缺口、飞边、裂纹、划痕、流纹、孔洞、气泡、变形等 Specks, color, foreign item,screw thread, hole, crack, scratch, burr, flash, deformation,etc. | | |
|---|---|---|---|
| 检测区域 Detection area | 胚口、支撑环、胚身、胚底瑕疵 embryo mouth, support ring, embryo body, Bottom defect | | |
| 电压电流 Voltage and current | 适配客户国家标准 Adapt to national standard | | |
| 压缩空气 Compressed air | 0.5Mpa-0.8Mpa | | |
| 检测速度 Speed | 300个/分钟 300pcs/min | 功率 Power | 3000-6000w |
| 检测精度 Precision | 0.1mm | 准确率 Accuracy | 99.9% |
| 设备尺寸 Size | 1955*720*1877mm | 重量 Weight | 260kg |

AI Visual Inspection Equipment
AI视觉检测设备

# 全自动纸塑产品检测机
## Automatic Paper Plastic Products Detector

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### 检测缺陷 Sample:



| | | | | |
|---|---|---|---|---|
| 侧面顶部厚薄不均 Top uneven thickness | 侧面厚薄不均 Side uneven thickness | 顶部透光 Top light transmission | 侧面脏污 Dirty sides | 叠杯 Cup stacking |
| 顶部黄斑 Top macula | 顶部黑点 Top black spots | 内壁底部黑点 Inner wall black spot | | |

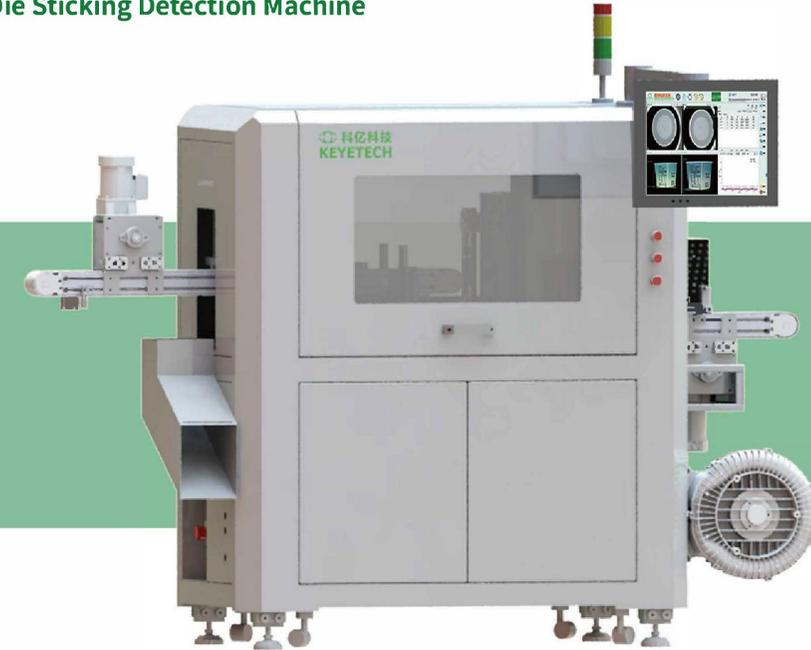| | | | | |
|---|---|---|---|---|
| 内壁底部黄斑 Inner wall bottom macula | 内壁黄斑 Inner macula | 盖身杂质 Impurity | 盖面污渍 Dirty | 盖面变形 Deformation |
| 凹面盖内异物 Foreign item | 盖子污渍 Lids dirty | | | |

### 技术参数 Technical parameters:

| 检测标准 Inspect | 黑点、杂质、缺口、飞边、裂纹、孔洞、变形等 Specks, impurity, notches, burr, crack, hole, deformation, etc. | | |
|---|---|---|---|
| 检测区域 Detection area | 杯口、杯内壁、杯外壁、杯外底、纸塑盖凹面、纸塑盖四周、纸塑盖顶面 Cup mouth, inner wall of cup, outer wall of cup, outer bottom of cup, concave surface of paper plastic cover, all around of paper plastic cover, top surface of paper plastic cover | | |
| 电压电流 Voltage and current | 适配客户国家标准 Adapt to national standard | | |
| 压缩空气 Compressed air | 0.5Mpa-0.8Mpa | | |
| 检测速度 Speed | 300个/分钟 300pcs/min | 功率 Power | 3000-6000w |
| 检测精度 Precision | 0.1mm | 准确率 Accuracy | 99.9% |
| 设备尺寸(包含理盖机) Size | 2058*1710*1567mm | 重量 Weight | 350kg |

# 全自动模内贴检测机
## Full Automatic Die Sticking Detection Machine

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### 检测缺陷 Sample:



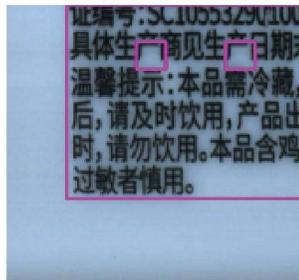| | | | | |
|---|---|---|---|---|
| 杯壁黑点 Black spots on the cup wall | 杯壁异物 Foreign item on the cup wall | 杯底孔洞 Holes in the bottom of the cup | 边缘缺口 Edge notch | 标签黑点 Label black spot | 标签破损 Damaged labels |
| 标签气泡 Bubble | 标签贴反 Reverse label | 标签歪斜 Skewed labels | 冲标 Label misplaced | 漏贴标 Label missing |

### 技术参数 Technical parameters:

| 检测标准 Inspect | 贴标不良(冲标、歪标、斜标、错位、气泡、褶皱)黑点、杂质、缺口、飞边、孔洞、变形等 Poor labeling (punching, crooked, oblique, dislocation, bubbles, wrinkles) black spots, impurities, gaps, flash, holes, deformation, etc. | | |
|---|---|---|---|
| 检测区域 Detection area | 杯身各部标签、杯口、杯内壁、杯外底 Labels on the cup body, cup mouth, cup inner wall, cup outer bottom | | |
| 电压电流 Voltage and current | 适配客户国家标准 Adapt to national standard | | |
| 压缩空气 Compressed air | 0.5Mpa-0.8Mpa | | |
| 检测速度 Speed | 300个/分钟 300pcs/min | 功率 Power | 3000-6000w |
| 检测精度 Precision | 0.1mm | 准确率 Accuracy | 99.9% |
| 设备尺寸 Size | 1277*670*1634mm | 重量 Weight | 260kg |

AI Visual Inspection Equipment
AI视觉检测设备

# 全自动印刷检测机
## Automatic Printing Inspection Machine  >>

# 全自动玻璃瓶检测机
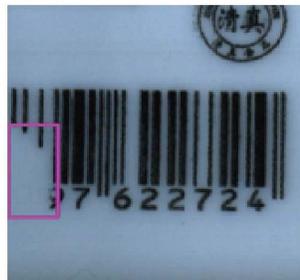## Automatic Glass Bottle Inspection Machine  >>

## 检测缺陷 Sample:



字符缺失
Missing characters

条码缺失
Missing barcodes

印刷重影
Printing ghosting

油墨飞溅
Ink splash
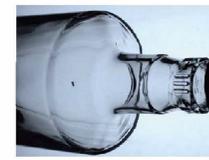
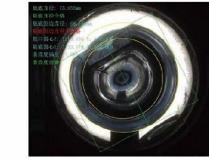## 检测缺陷 Sample:



瓶身黑点
Bottle black spot

夹料
Extra injection plastic

瓶底裂纹
Bottle bottom crack

凹陷
Dent

裂纹
Cracks

瓶底尺寸
Bottle bottom size

结石
Stone

气泡
Air bubbles

脏污
Dirty

## 技术参数 Technical parameters:

| | |
|---|---|
| 检测标准 Inspect | 字符缺失、印刷重影、套色不准、油墨飞溅 Missing characters ,printing ghosting,color difference,ink splash |
| 检测区域 Detection area | 文字印刷区域 Text printing area |
| 检测材质 Sample material | PET、PP、PS等 PET,PP,PS,etc. |
| 电压电流 Voltage and current | 适配客户国家标准 Adapt to national standard |
| 压缩空气 Compressed air | 0.5Mpa-0.8Mpa |

| | | | |
|---|---|---|---|
| 检测速度 Speed | 60-70个/分钟 60-70 pcs/min | 功率 Power | 5000-7000w |
| 检测精度 Precision | 0.1mm | 准确率 Accuracy | 99.9% |
| 设备尺寸(包含理盖机) Size | 2020*1085*1555mm | 重量 Weight | 260kg |

## 技术参数 Technical parameters:

| | |
|---|---|
| 检测标准 Inspect | 裂纹、油污、气泡、结石、粘料、玻璃搭丝、双合缝线、初模夹印、黑点、铁锈、闷头印、褶皱等 Cracks, oil stains, air bubbles, stones, sticky materials, glass wires, double stitches, initial mold clamping, black spots, rust, dull prints, wrinkles, etc. |
| 检测区域 Detection area | 瓶口、瓶底、瓶身、瓶内壁 Bottle mouth,bottom,bottle body, inner/outer wall |
| 适用行业 Application | 白酒、医药(西林瓶、安瓿瓶等)、化妆品等 Wine,pharmaceutical(vials,glass bottle),cosmetic packaging |
| 电压电流 Voltage and current | 适配客户国家标准 Adapt to national standard |
| 压缩空气 Compressed air | 0.5Mpa-0.8Mpa |

| | | | |
|---|---|---|---|
| 检测速度 Speed | 60个/分钟,以西林瓶检测为例 60 pcs/min (vials) | 功率 Power | 5000-7000w |
| 检测精度 Precision | 0.1mm | 准确率 Accuracy | 99.9% |
| 设备尺寸(包含理盖机) Size | 3297*2291*2073.5mm | 重量 Weight | 350kg |

AI Visual Inspection Equipment
AI视觉检测设备

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