BOSHIYUAN

Third generation Mold Monitor

Product Introduction

Company Profile

Xiamen Boshiyuan machine vision technologyco.,ltd

Xiamen factory

Wuxi factory

Xiamen Boshiyuan is a high-tech enterprise specializing in the research and development, integration, and service of machine vision systems. Our company has independently developed and sold machine vision systems such as multi-phase integrated intelligent mold monitors, rapid measuring instruments with multiple fields of view, CCD algorithm universal platform, intelligent AOI full inspection standard machine, medical device hair foreign object detection non-standard machine, wafer semiconductor detection machine, etc. We are committed to providing more intelligent and accurate machine vision solutions for manufacturing enterprises.

The company's mold monitoring system in the segmented field has achieved an annual sales volume of over 8000 units, and its sales and service network covers 33 provinces and regions across the country. It has established factories in Xiamen and Wuxi, and now has 15 full-time agents and more than 30 cooperative distributors. After sales services have now achieved more comprehensive coverage in regions such as South China, East China, North China, and Southwest China.

Enterprise Map

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Product Introduction

BOSHIYUAN-Third generation Mold Monitor

Boshiyuan Star Products Mold Monitor

Mold monitor, also known as mold protector or mold electronic eye, is a non-contact modification solution that uses machine vision to monitor the operation of equipment by comparing and detecting image data in real time. It is a low-cost and more perfect solution for preventing mold pressing or other damage to user terminal equipment. It is easy to learn, use, flexible and versatile, and is not limited by industry or region.

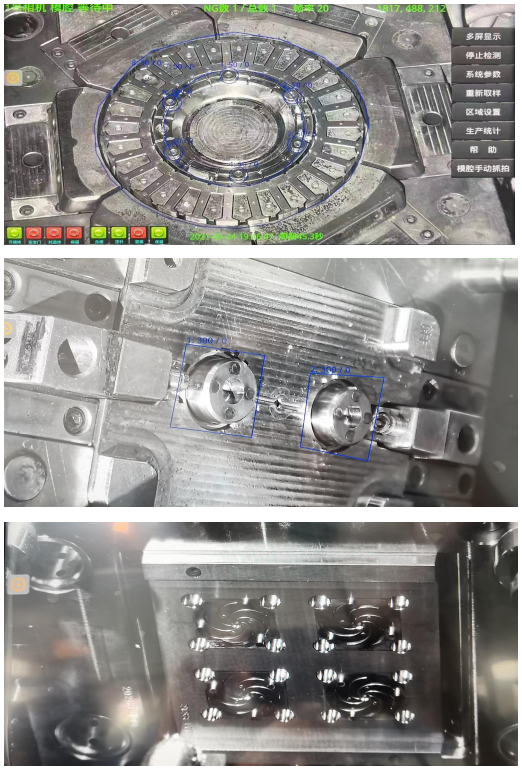
- Check if there is a shortage of raw materials for the products inside the mold
- Check whether the formed product adheres to the fixed mould
- Remove duplicate ejector pin actions
- Check if the temperature of the mold is within the required range
- Check whether the top pin, slider, and neutron of the mold have been retracted into place before the mold is closed
- Check whether the embedded parts are placed in place and deformed
- Check whether the formed product falls off normally before mold clamping and whether the robotic arm returns to its original position;

Configuration parameter

Mold Monitor Configuration parameter

Configuration name	Configuration parameter (The configuration will be updated irregularly, and shall be subject to the technical agreement or quotation.)
Equipment model	BSY-1000
Screen size	13.3 inches
CPU model	J6412
CPU clockspeed	2.6GHz
Random-access memory	8GB
Memory	M.2-2280 256GB
Operating system	Linux
Graphics card	IntelUHD Graphics for 10th Gen IntelProcessors
Rated voltage	DC 12V~35V(Wide voltage)
Overall weight	1.6kg
Camera	6 million pixels(Ethernet camera)
shot	6 million pixels (customized)
Screen resolution	1920*1080
Frame rate	20

Mold monitor detection interface



Core advantages

1
Wide market coverage
Sales exceeded 10,000 units in 2024

2
Internationally leading detection accuracy
Self-developed complete image algorithm - BSYSVisionLib, which can correct errors of 10mm

3
Big data management system
Remotely monitor all machines in the workshop

4
High-definition imaging/precise detection
Using global exposure CMOS cameras,wider dynamic range

5
Thermal imaging in-mold monitoring
Monitor mold temperature/customize temperature control

6
One-to-many efficient linkage
One mold protector can match multiple terminals in simple environments

Factory Quality control

Self-owned production workshop/assembly - testing - shipment - installation: one-stop service

Assembling

Certified Quality

26copyright registration certificates

Adjusting

Packaging

ISO9001 Certified

Big Data Management System

Nowadays, the global industry is constantly advancing towards the 4.0 intelligent era. Traditional injection molding/stamping workshops are also facing pressing problems during in mold production. However, due to insufficient layout in the early stage of the workshop or hardware equipment update costs, even with the installation of commonly available mold monitors on the market and the initial visualization of in mold monitoring, traditional workshops still cannot be transformed into intelligent workshops.

In response to this pain point, our company has upgraded and transformed our third-generation mold monitor, adding network modules and developing a big data management system, enabling users to achieve a truly intelligent transformation in injection molding/stamping production. In response to the new workshop, the equipment can be directly adapted to provide big data collection and management for the workshop.

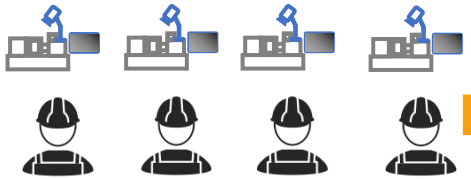
One person guards one device	When there is an abnormality in the mold Can only be operated on-site
The cost of upgrading equipment to intelligence is high	Difficult to establish Manufacturing Execution System
No network port layout	No data report statistics
The cost of remote visualization for equipment modification is high	.....

Transforming towards intellig ence

Real time production monitoring of multiple devices	Integrate a production detail diagram	Test report	Remote parameter setting
Detecting video/NG video backtracking	Generate a report of detected NG data	NG records for statistical analysis	Traceability of operation records for a single terminal
System software update log	Comparison of data from all terminals	○Create Manufacturing Execution System	

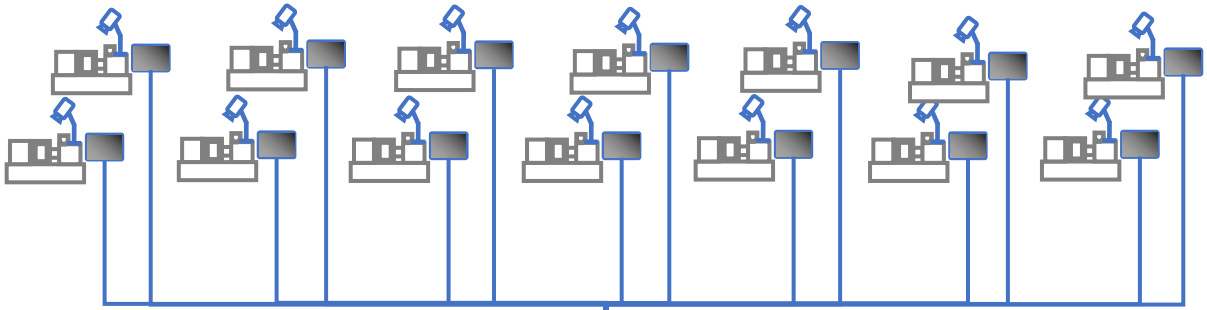
Big Data Management System

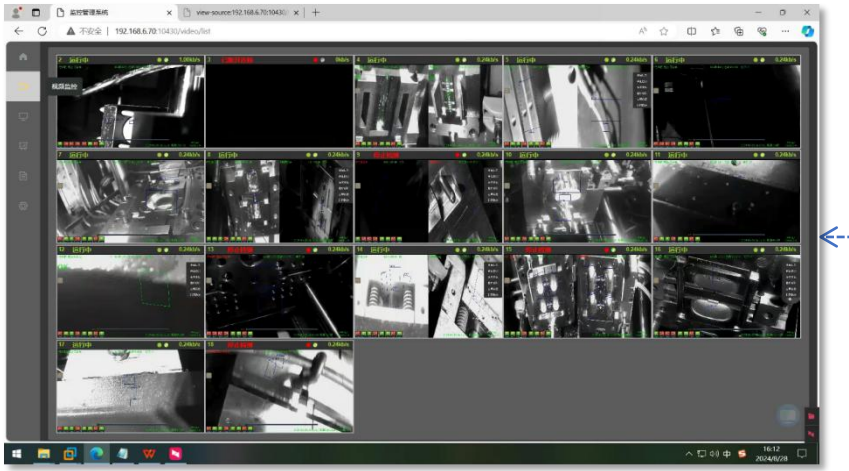
Remote visualization of molds on user terminals and real-time monitoring of integrated interfaces



User's terminal device×N ▷
Monitoring/operation workstation×N

upgrade





User's terminal device×N ▷
Monitoring/operation workstation××1

Intuitive display of live in mold conditions

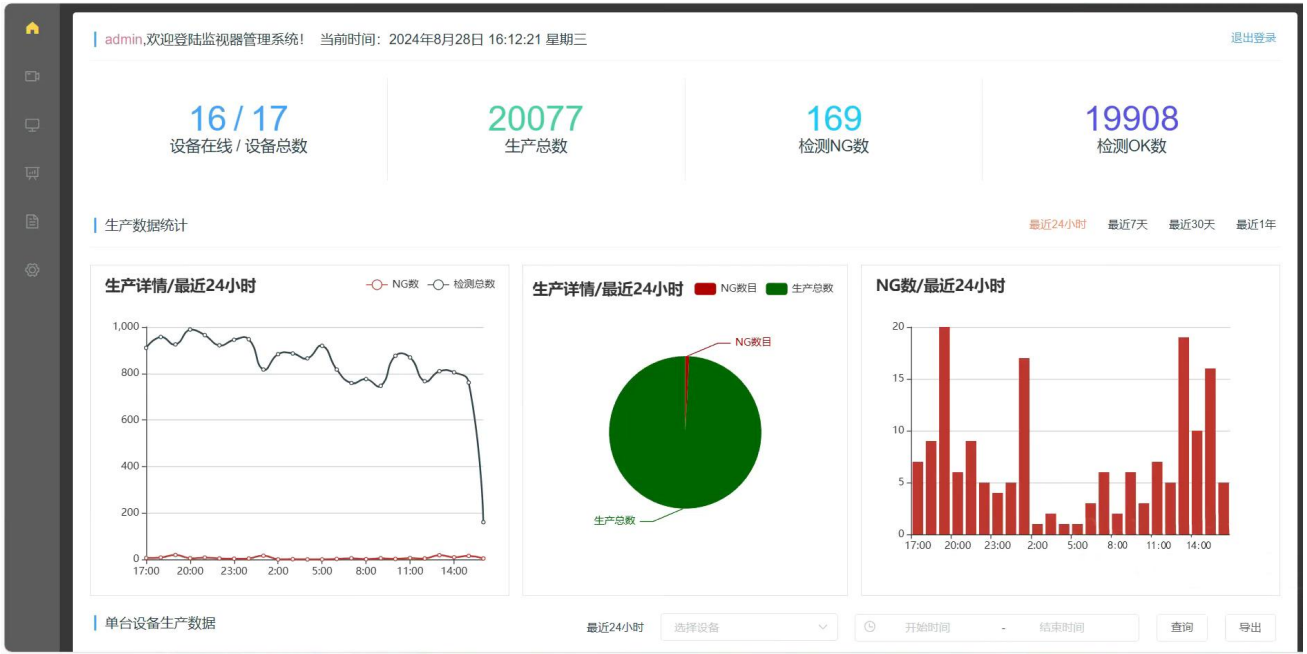
Significant reduction in labor costs

Data management system

MES

The production data of the workshop is automatically statistically analyzed and graphically displayed

The overall operational stability of the workshop terminal and the rate of defective products are known



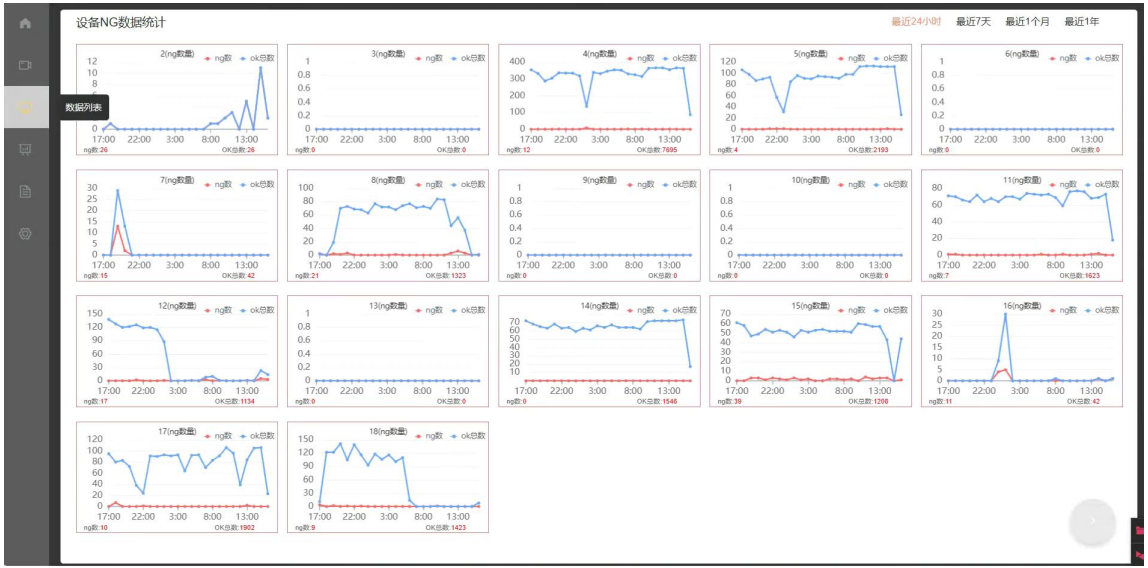
Statistics of the number of online devices

The total production volume at the workshop terminal / NG statistics

Terminal operation status
Real-time update

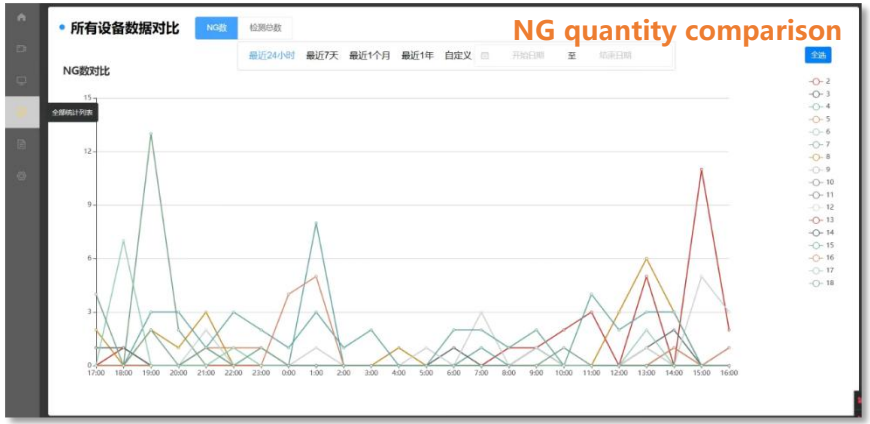
Data management system

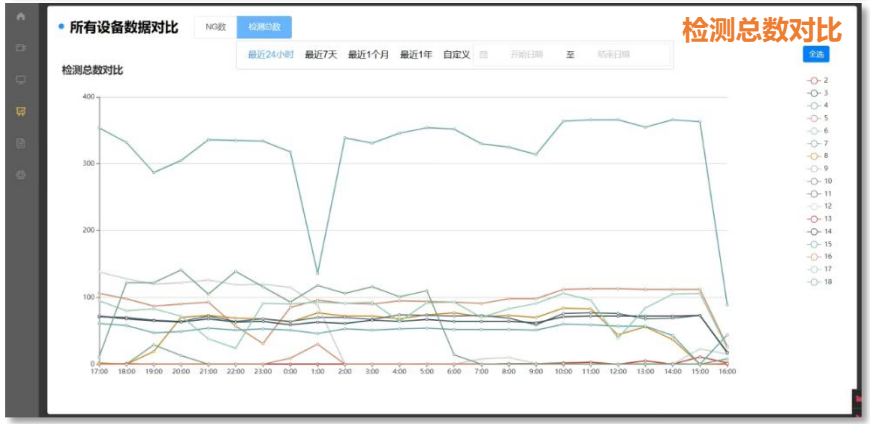
Each device can be customized for a time period - to display the total number of good and bad products



The real-time production status is clear and explicit
Managers can use the workshop kanban for intuitive management

Data management system





Each terminal is displayed side by side to the curve graph in terms of time

The total number of detections of all devices /NG data is automatically tallied

The time period for data recording can be freely selected

☑ The production stability of all equipment is clearly compared

☑ The production efficiency of all the equipment is clearly visible

☑ The yield of qualified products produced by a single device is easier to obtain

Data Management System

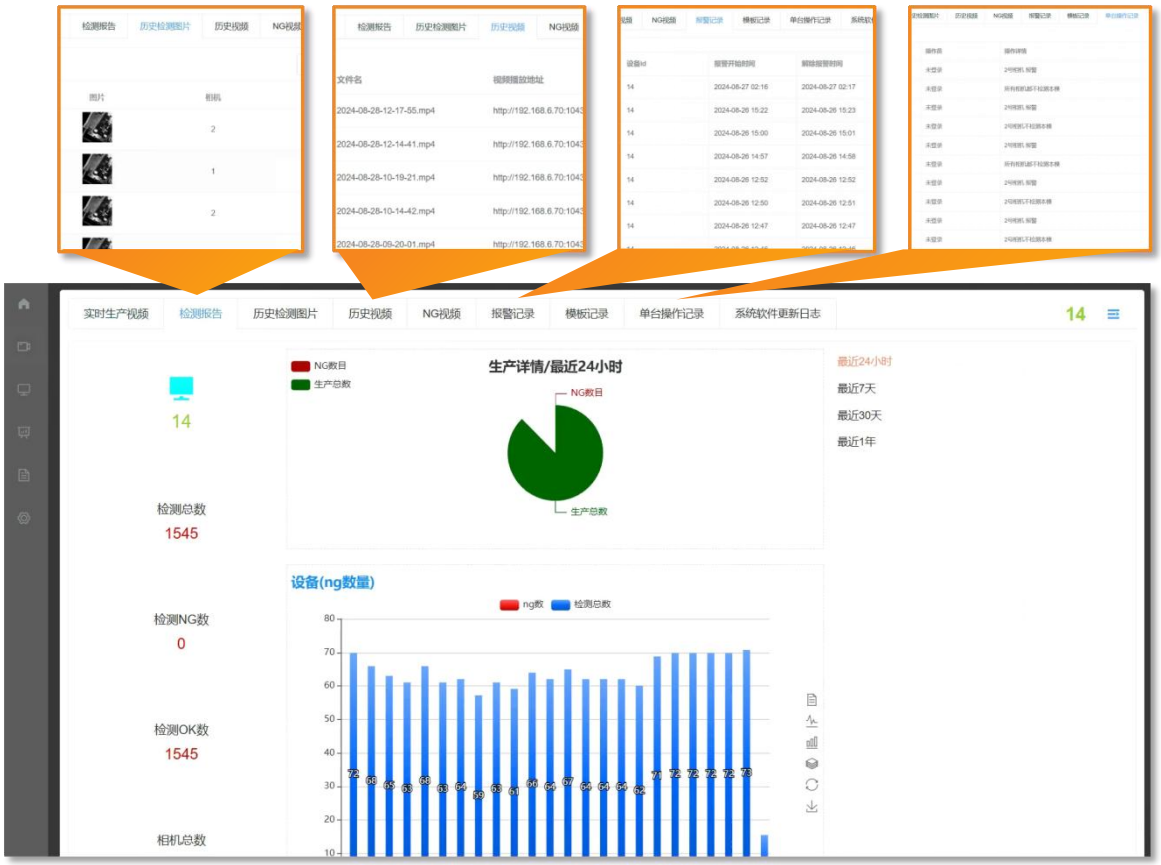
Real time product production video

Remote and up close viewing of mold travel

Remote operation of mold monitoring parameter settings

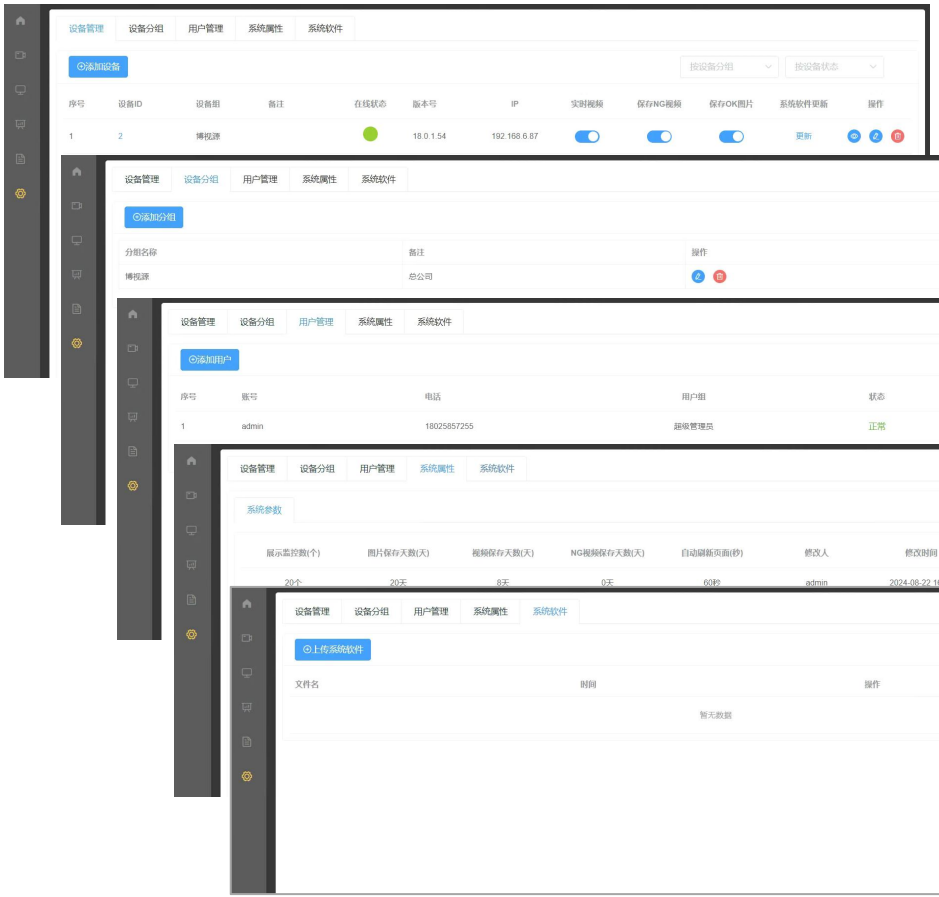
- Adjustable detection sensitivity, alarm area, and detection box adjustment
- Occasionally there is a false alarm, but the cause can be immediately investigated with human eyes to restore the operation of the production line

Data management system



Real-time production video	The same as on-site operation
test report	Equipment production status retrospective
Historical detection picture	Detect image backtracking
Historical video	Detect dynamic backtracking of images
NG video	NG Problem retrospective investigation
alram record	Record the time from triggering the alarm to lifting it
model record	Template backtracking has been added
operation record/set	Details of equipment operation
System log update record	Check if it is the latest version

Data management system



equipment management	Batch within the system Manage equipment
Equipment grouping	In multiple workshop scenarios Group management is more convenient
User Management	Division of operator permissions Avoid unauthorized operations
System attributes	Manage data Preservation duration
System software	Software version display

Data management system

The data statistics and display of various dimensions of in-mold monitoring are highly integrated with mold monitoring equipment and terminal mold production

序号	设备id	在线状态	开模数(总数)	未通过数	NG率	平均生产周期(秒)	平均解除报警时长	报警次数	监视器工作时长(小时:分钟)	停机时长(小时:分钟)	数据更新时间	最新操作记录说明
1	10	●	0	0	0%	N/A	N/A	0	00:00	23:00	2024-08-28 16:14:47	手动关闭电源
2	11	●	1607	7	0.44%	46.99	83.79 秒	7	22:46	00:14	2024-08-28 16:14:47	2号相机添加了一张模板
3	12	●	1101	17	1.54%	57.57	34.15 秒	17	09:13	13:47	2024-08-28 16:14:47	1号相机添加了一张模板
4	13	●	0	0	0%	N/A	N/A	0	00:00	23:00	2024-08-28 16:14:47	修改了系统参数，模腔延时从130改为10，半自动 改为启用
5	14	●	1528	0	0.00%	49.97	N/A	0	23:00	00:00	2024-08-28 16:14:47	2号相机 报警
6	15	●	1149	38	3.31%	47.11	250.78 秒	38	20:45	02:15	2024-08-28 16:14:47	手动设置停止检测

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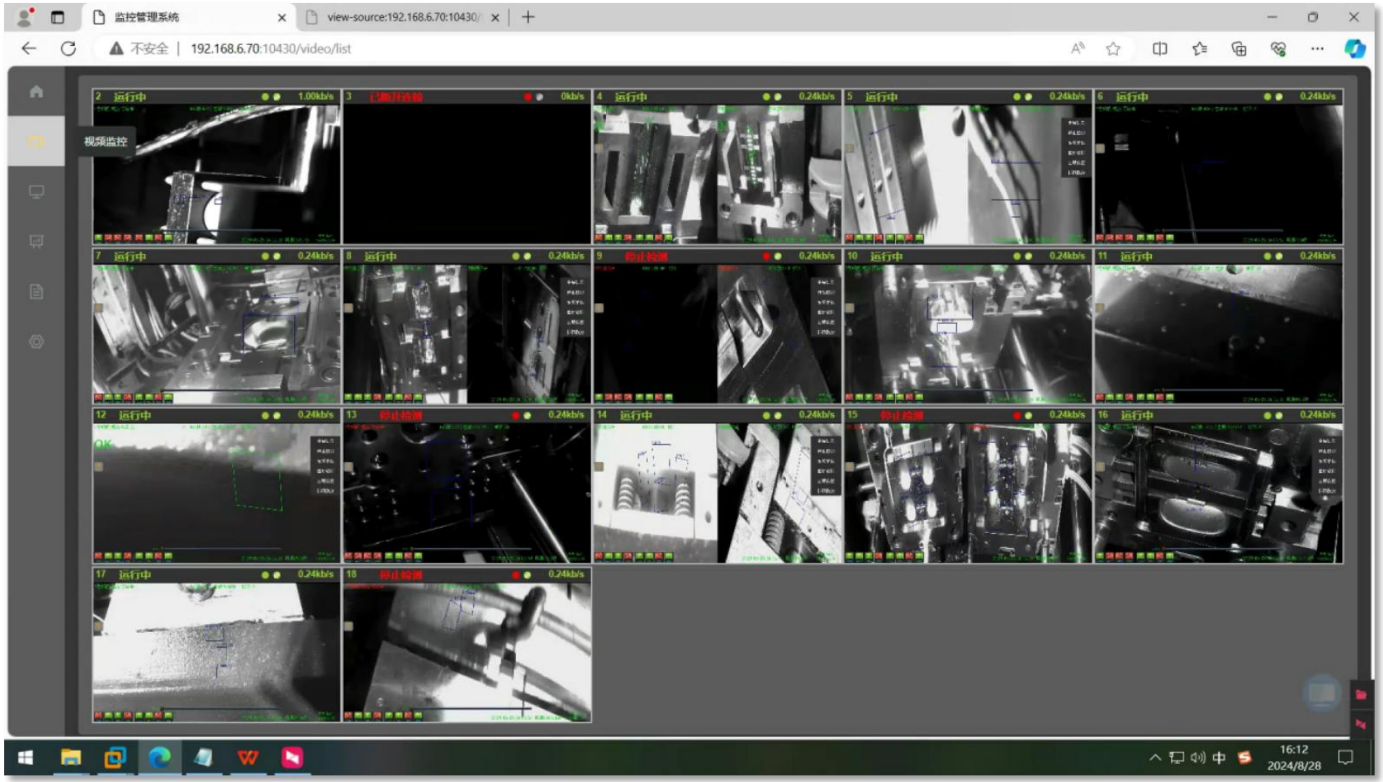
Data management system

Workshop Case Presentation - In-mold Monitoring for Injection Molding Production



Thermal imaging intracellular monitoring

Thermal imaging temperature detection adds one more dimension to mold monitoring

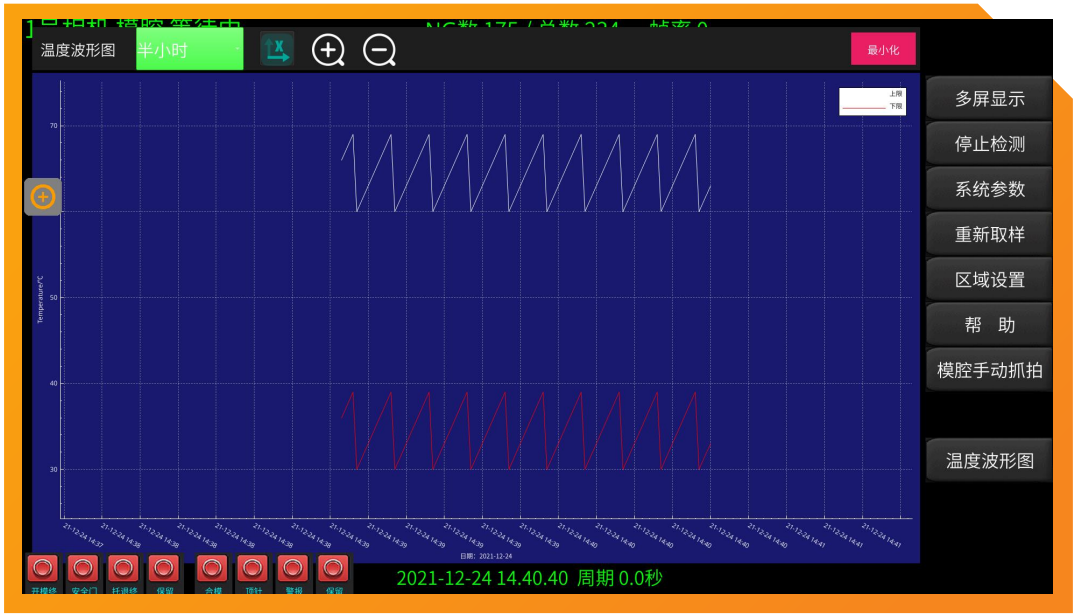
In the injection molding process, some materials have relatively high requirements for temperature. For instance, high-temperature sensitive materials such as engineering plastics PEEK/LCP/PPS and text-sensitive materials like TPE/FKM, when manufacturing various plastic products like optical fiber components, automotive sensor housings or mobile phone cases, if the temperature control is abnormal, it will lead to problems such as abnormal shrinkage rate, warping or deformation of the products. However, the installation of contact-type temperature monitoring devices incurs a high cost for equipment renovation.
Our company's self-developed thermal imaging mold monitor BSY-T900 is equipped with non-contact thermal imaging recognition. It can customize the temperature measurement area and alarm range, and is also compatible with traditional visual inspection systems for operation. It is a relatively perfect solution.

model	BSY-T900 Online temperature measurement thermal imager camera
sensor type	Vanadium oxide uncooled detector
resolution	384x288
Frame rate	50 Hz: 50 fps
Focal length of thermal imaging lens	6.8mm
Maximum aperture value	F1.0
Near shooting distance of thermal imaging	0.6m
The farthest distance for temperature measurement (0.1x0.1m)	6m
Field of view Angle	56°x41.7°
Palette	There are 15 colors including white, black, Fusion 1, rainbow, Fusion 2, iron red 1, iron red 2, dark brown, color 1, Color 2, ice and fire, rain, red, green, and dark blue
Temperature measurement accuracy	±2℃ or as read ±2℃
Temperature measurement range	-20 °C~150 °C or 0 °C~550 °C
Intelligent information superposition	10 dots Temperature measurement, 10 frame temperature measurement, 1 line temperature measurement
Maximum number of preview paths	20pcs
Video compression standard	H.265/H.264/MJPEG
Network port	1-RJ45interface10 M/100 M/1000 MAdaptive Ethernet port
Shell material	Aluminum-magnesium alloy
power input	DC 10~30V

Thermal imaging intracellular monitoring

Function in details

- Thermal sensitivity ⩽55mk
- Thermal response time＜15ms
- Non-contact temperature measurement
- Abnormal temperature alerts can be set
- 4 temperature modes (low temperature, medium temperature, high temperature, custom)



Automatically record each time Temperature measurement data

Measurement data is automatic. Generate the waveform diagram

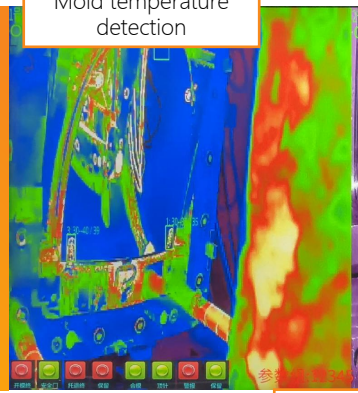
You can customize the time period for viewing Relevant waveform diagram

Thermal imaging intracellular monitoring

Case show

Toilet lid

Mold temperature detection

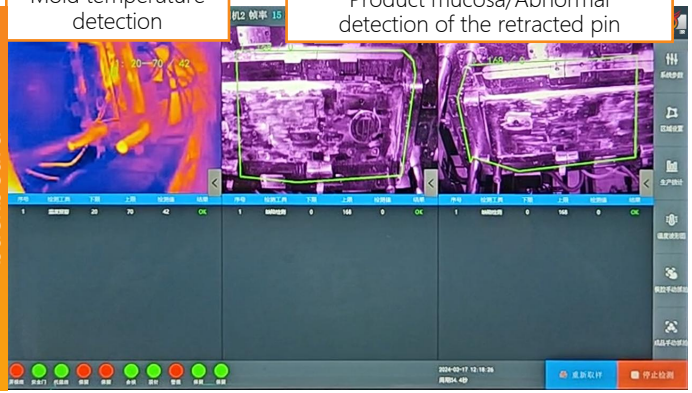


Abnormal detection of the retracted pin

Air conditioning backboard

Mold temperature detection

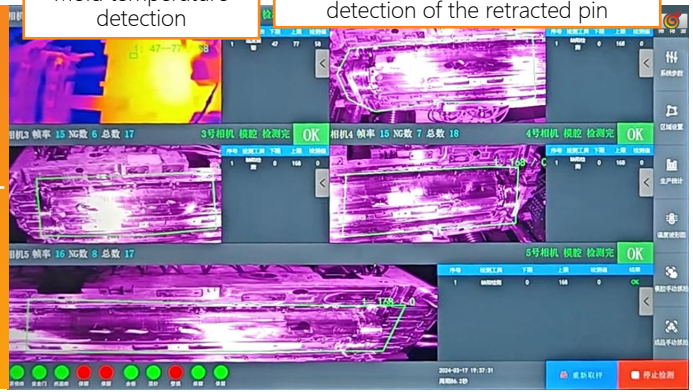
Product mucosa/Abnormal detection of the retracted pin



Air conditioning front cover plate

Mold temperature detection

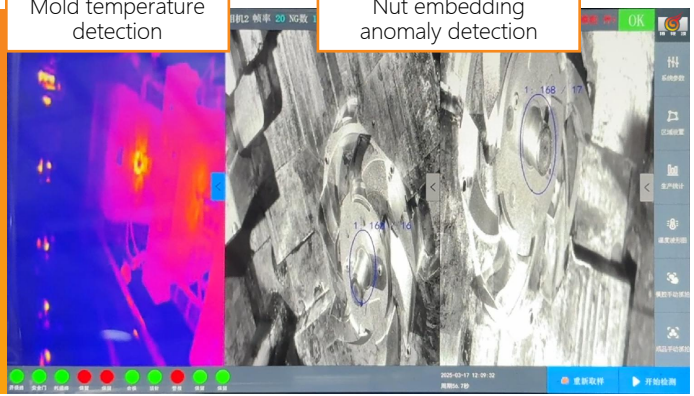
Product mucosa/Abnormal detection of the retracted pin



Fan blade

Mold temperature detection

Nut embedding anomaly detection



Other functions

Automatically generate the detection area and parameters - improve the accuracy of debugging, reduce the operation steps for users, and shorten the debugging time;

Foolproof one-click operation and beginner operation guide - The system comes with a one-click tutorial that automatically sets up relevant programs. Technicians only need to follow the set steps step by step to learn the basic functions of the Boshiyuan monitor without the need for manual training

Automatic correction when the mold opening stroke displacement deviation occurs - The self-developed moving mold drift correction algorithm has been verified in practice to correct an error of 10mm, and this function is most obvious in the old hydraulic press.

Automatic light compensation and correction - For reflective and overly dark areas, the self-developed light compensation algorithm can automatically identify the relevant areas and make automatic corrections to achieve overall brightness balance. This function is particularly effective for metal embedding.

The latest model matching algorithm based on contour can effectively solve the misalignment problem of embedded parts, the imaging of steel sheets, and the misjudgment caused by color difference.

The newly developed mold monitor corresponds to the in-mold monitoring system of multiple injection molding machines. It can be applied in relatively simple application environments to detect whether products have fallen off the mold normally, greatly saving the procurement costs for customers.

Optional function: Abnormal alarms from the monitor can send text messages to the designated technician's mobile phone to ensure efficient and real-time handling of abnormal alarms.

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Thank you

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