

- »» Double-station manual loader
- »» Double-station automatic loader
- »» FMS fully flexible production line
- »» Intelligent manufacturing system

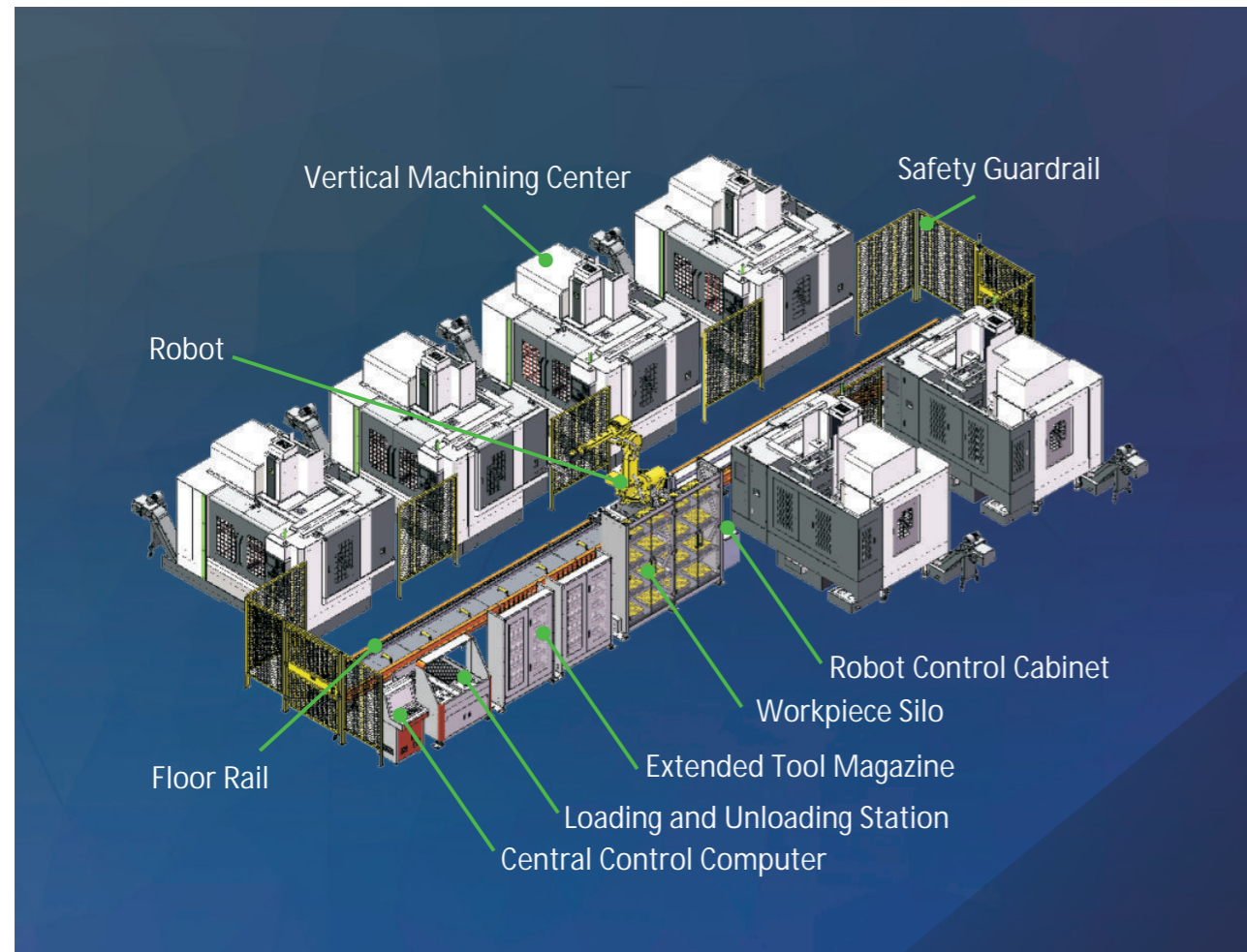


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Multiple Varieties/Small Batches/Single Parts
FMS Flexible Automation Processing Solution Provider

Vertical Machining Center

Flexible Manufacturing Processing Line



» Product Features

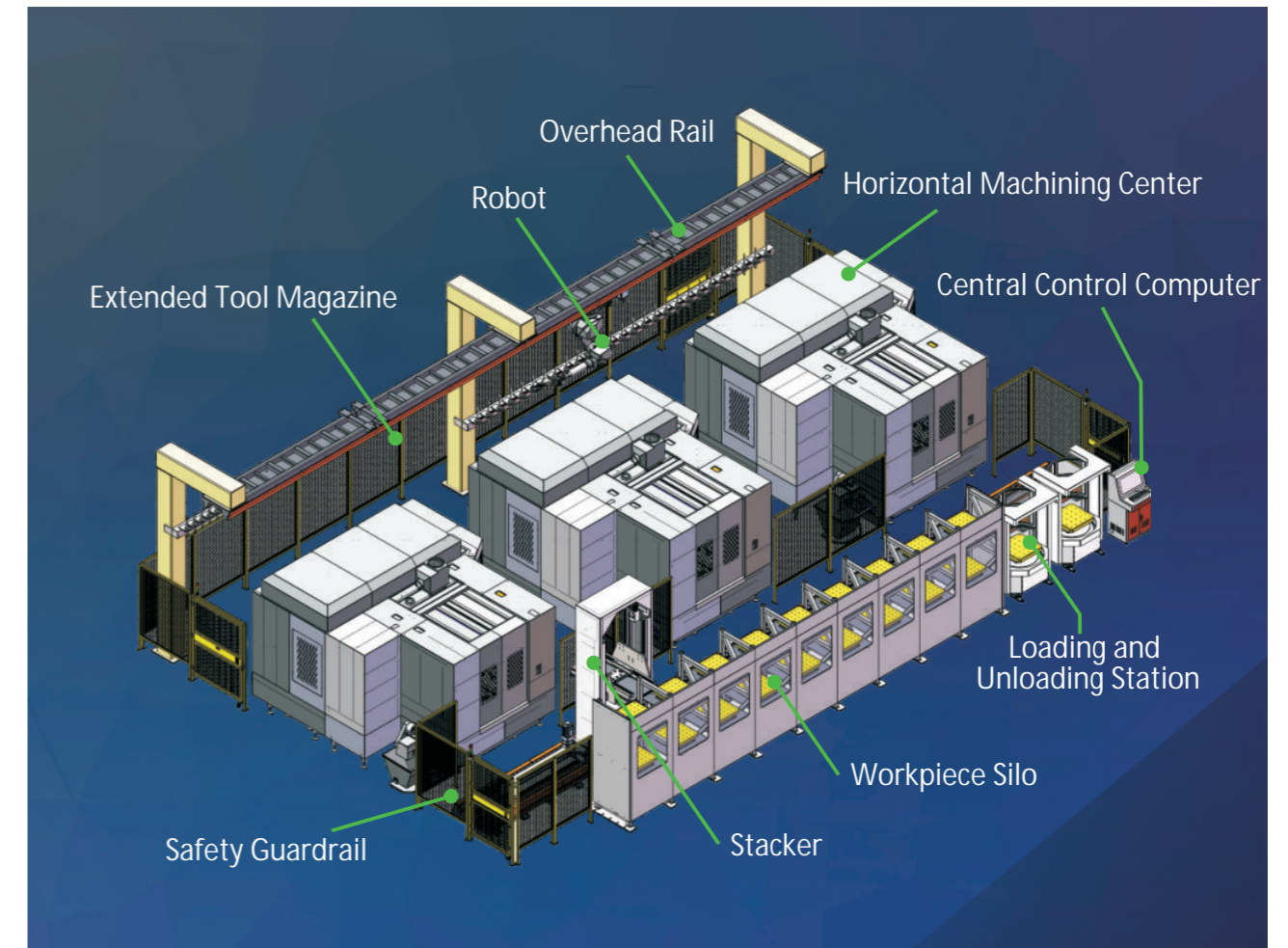
- ◆ Off-machine clamping, automatic loading and unloading of parts and tools, tool database and life management, automatic alignment and data acquisition of workpieces, automatic transmission and execution of programs;
- ◆ Intelligent distribution and execution of production tasks (automatic production scheduling within the line), production process monitoring and production data statistics;
- ◆ Automatic detection, automatic correction, and automatic reporting;
- ◆ Quick product changeover (no manual debugging required), shortened production cycle, improved production efficiency, improved quality stability, and unmanned production;
- ◆ Simple operation, and quick employment after two days of training.

» Application Range

- ◆ Single-piece processing, such as molds, inspection tools, R&D, school experiments;
- ◆ Small batches and multiple varieties, such as military industry, wind power, equipment, etc.;
- ◆ Batch product processing, such as automobiles, electronics, home appliances, 3C products;
- ◆ Can match various robots, various CNC and testing equipment, suitable for various molds Automation, parts production lines.

Horizontal Machining Center

Flexible Manufacturing Processing Line



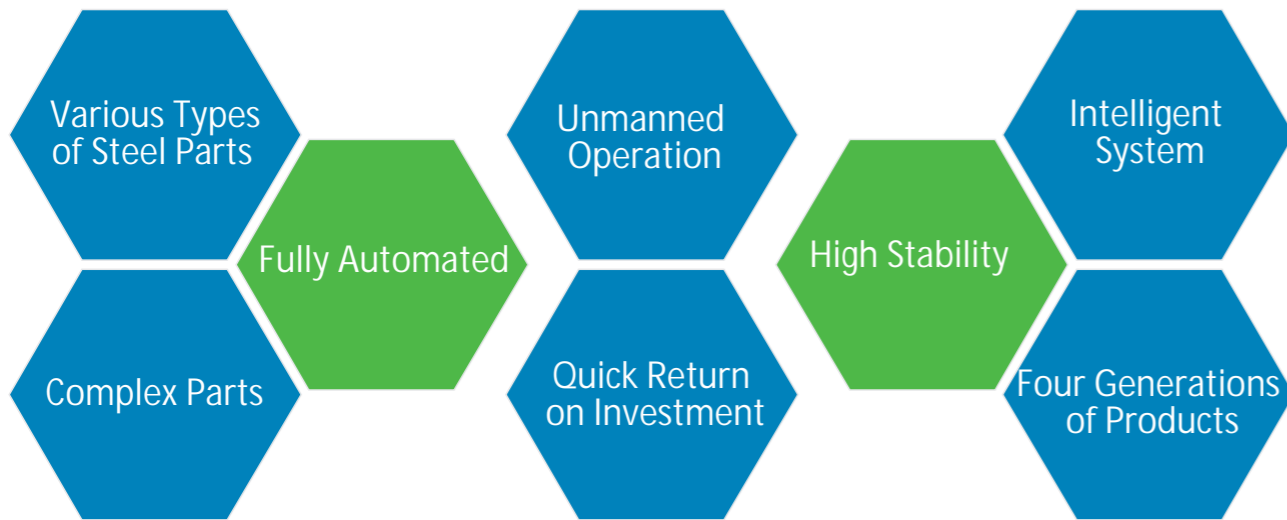
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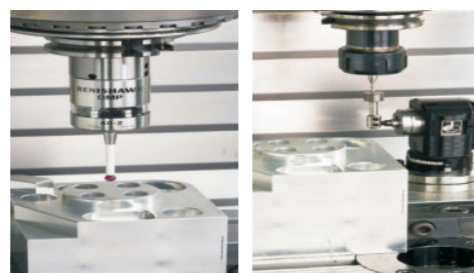
- ◆ The production line can reduce the time of manual handling and clamping, and is suitable for the processing of medium and large parts;
- ◆ The line can be integrated with various robots, horizontal machining centers, testing equipment, cleaning machines, AGVs and other supporting equipment to realize an unmanned workshop.

Flexible Production Line Application Scenarios



Actual Benefits of Application Cases

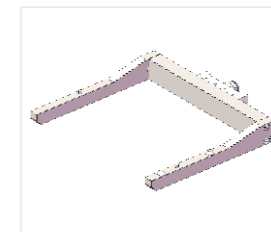
- ◆ The equipment utilization rate has increased by more than 35%;
- ◆ The flexible production line plus the intelligent manufacturing system realizes centralized control and intelligent digital management of all hardware, intelligent production management and automatic execution of the entire process, which enables enterprises to realize automation, unmanned, unattended, less-manned, and dark workshops, reducing personnel input by about 80%;
- ◆ The whole process is mechanically automated, and the entire process is precisely controlled according to standards, which greatly reduces rework and material waste caused by human operational errors, and is conducive to improving the safety of the production process;
- ◆ It can be launched quickly in 2 months at the fastest, and the investment cost can be recovered in about 1 year.



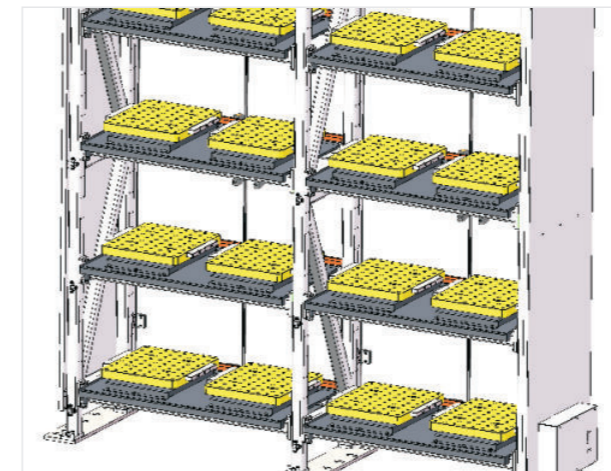
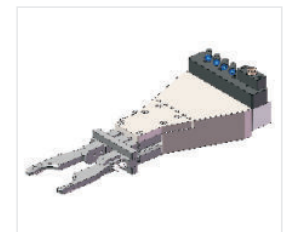
Six-axis Robot

Multiple specifications are available, with a moving speed of 48m/min ground rail; the pallet gripper and tool gripper can be switched quickly and automatically.

Pallet Gripper



Tool Gripper



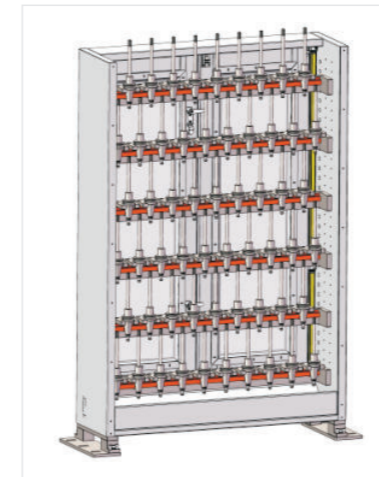
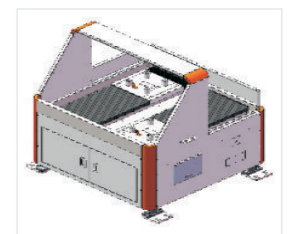
Pallet Clamping System

Zero-point positioning pallet clamping system with repeatability accuracy $\leq 0.005\text{mm}$, various types of pallets are available.

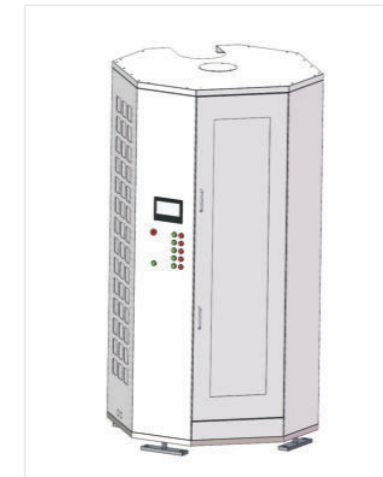
Pallet



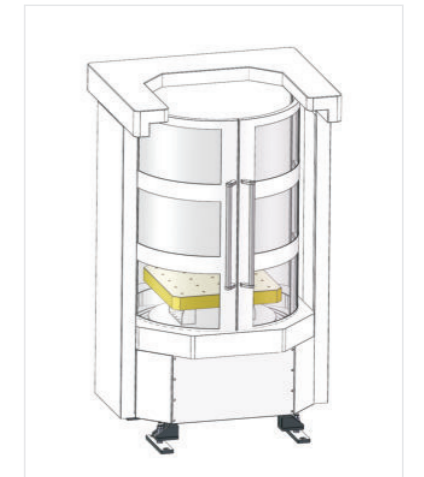
Loading and Unloading Station



Tool Warehouse

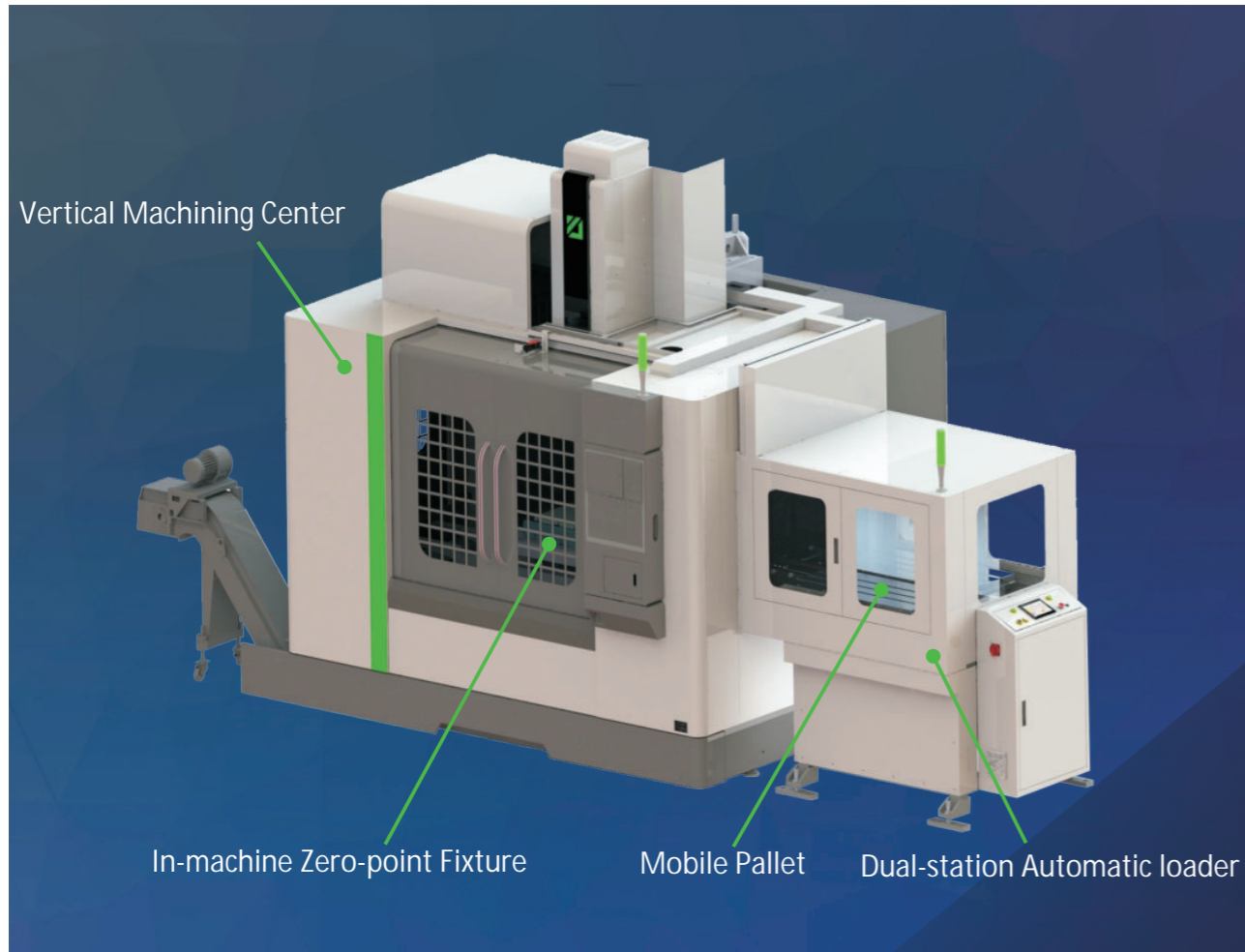


Tool Warehouse



Loading and Unloading Station

Flexible Dual Station Automatic Loading Machine

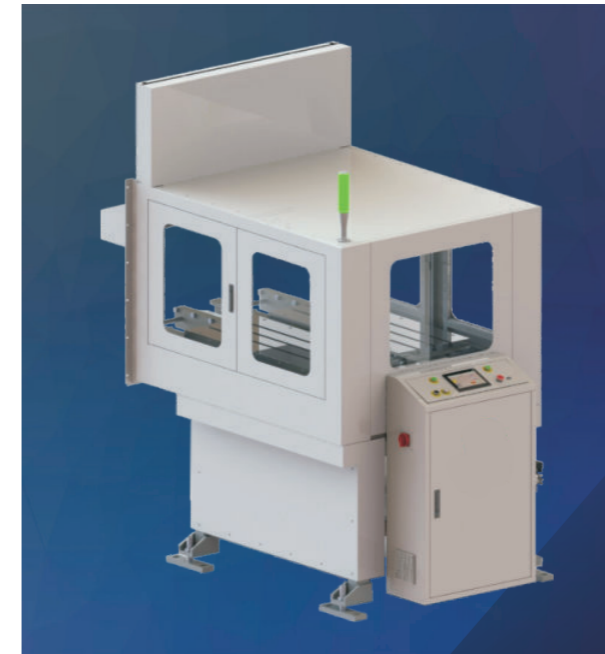


Product Features

- ◆ Workpieces are loaded and unloaded outside the machine, which does not occupy the machine production time and does not require downtime waiting, effectively reducing the non-processing time of the machine tool, improving the utilization rate, and improving the overall production efficiency;
- ◆ The pallet is automatically exchanged, and the conversion action can be completed quickly within 20 seconds;
- ◆ The program automatically switches and starts, and no personnel supervision is required, and production is automated;
- ◆ After the exchange is automatically completed, a buzzer call will be heard to remind the machine to load the pallet;
- ◆ The loader can be customized according to the machine tool specifications;
- ◆ You can choose a version with or without control software.

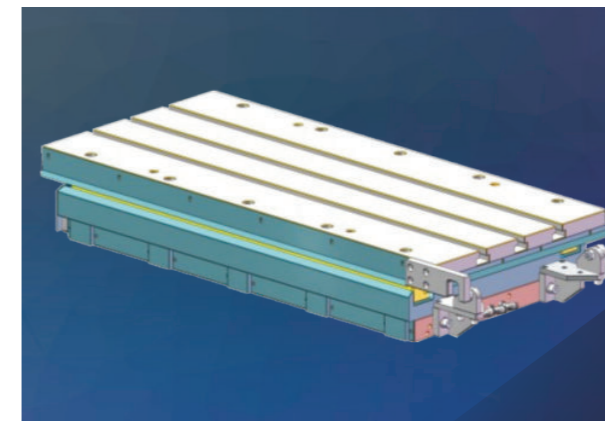
Application Range

The double-station automatic exchange loader is suitable for the automated production of machining processes for batch products and parts.



Technical Parameters of Double-station Automatic Feeder

Overall Dimensions	2300*1260*1150mm
Loading Height	350mm
Loading Weight	500KG
Exchange Time	20S
Drive Mode	Servo Motor
Door Opening Mode	Fully Enclosed Double-sided Double-door



Technical Parameters of Base

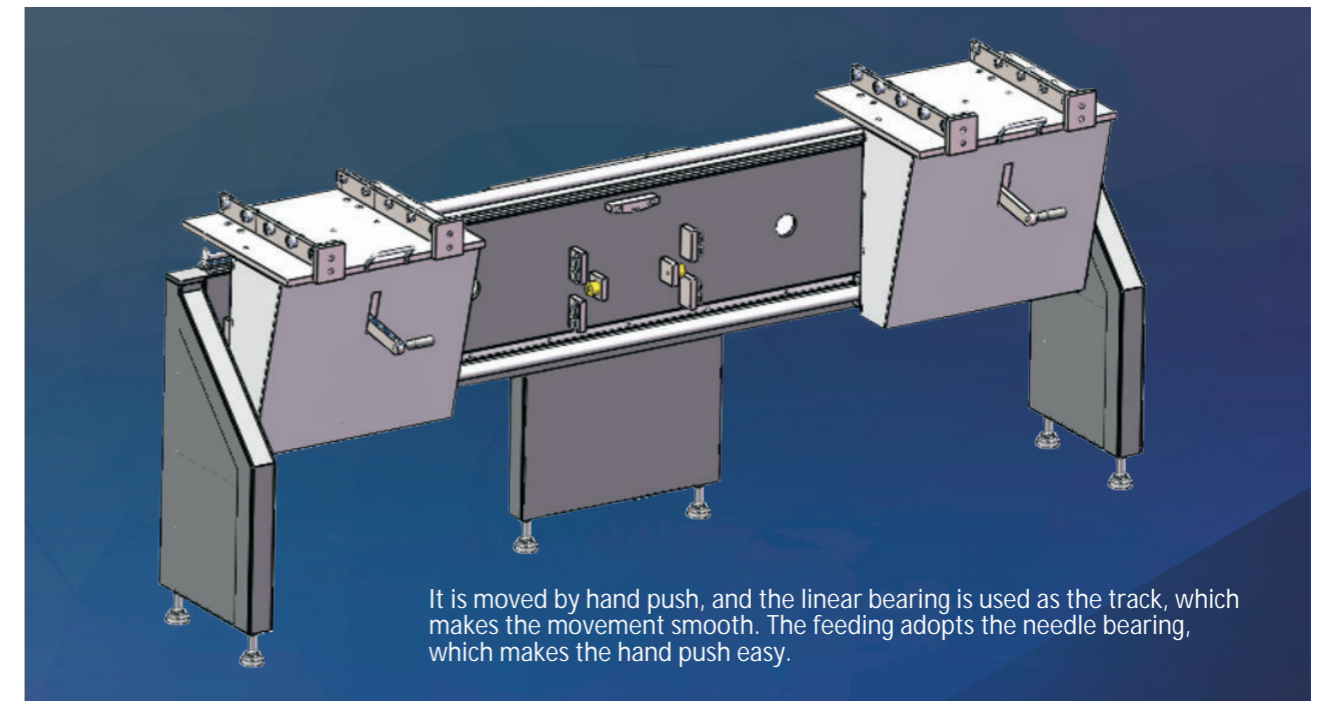
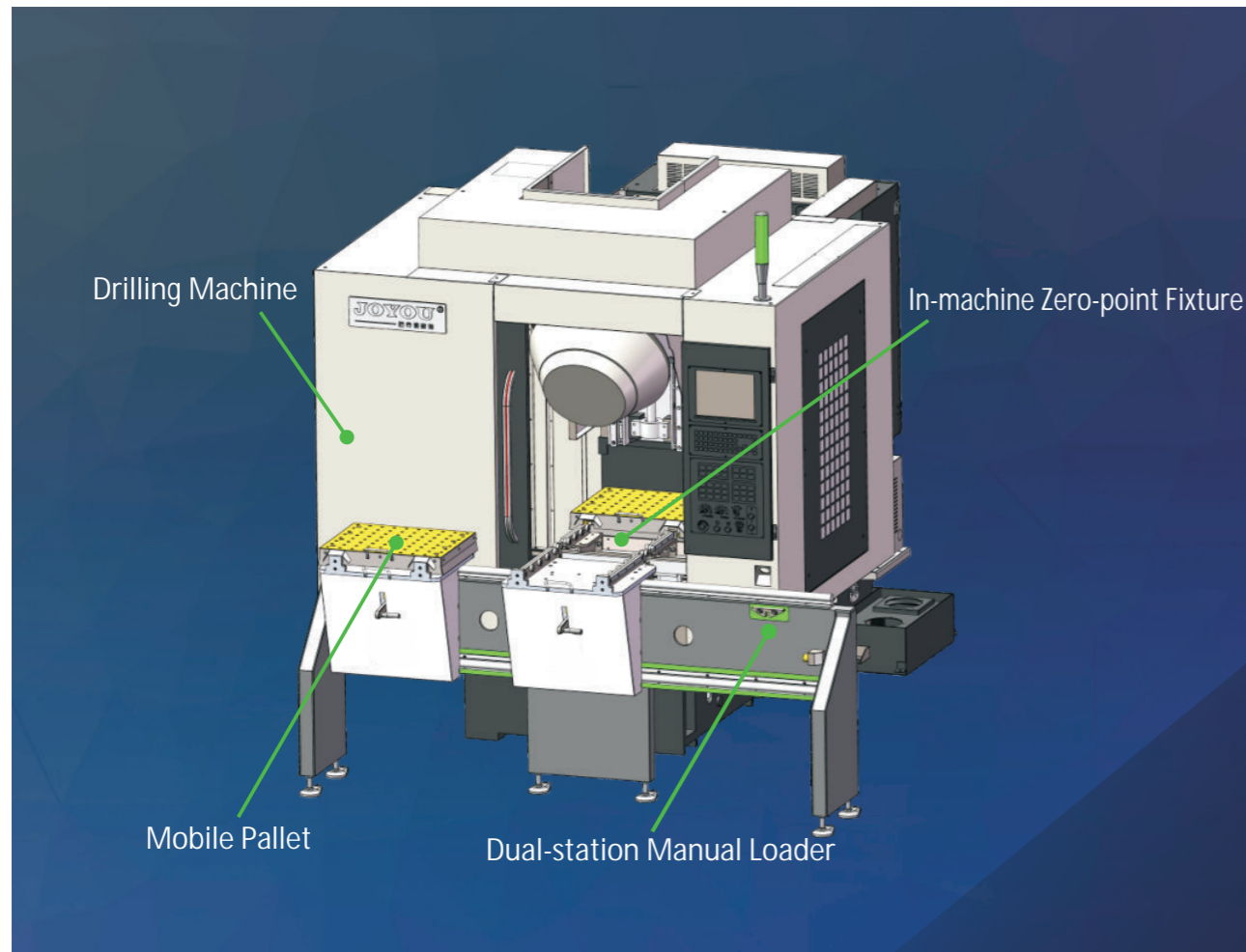
Base Size	900*430*78mm
Zero Point Specification	130*8
Locking Force	64000N
Unlocking Air Pressure	≥6bar
Positioning Accuracy	0.01mm
Personalized Configuration	Air Cleaning and Locking Airtightness Detection

Model Parameters of Base

Model	Plate Size	Pallet Weight	Pallet Spacing	Applicable Model Y Travel
DSL10040	1000*400mm	165kg	480mm	500-550mm
DSL10045	1000*450mm	185kg	530mm	550-600mm
DSL10050	1000*500mm	205kg	580mm	600-650mm



Dual Station Manual Loading Machine



It is moved by hand push, and the linear bearing is used as the track, which makes the movement smooth. The feeding adopts the needle bearing, which makes the hand push easy.

Product Features

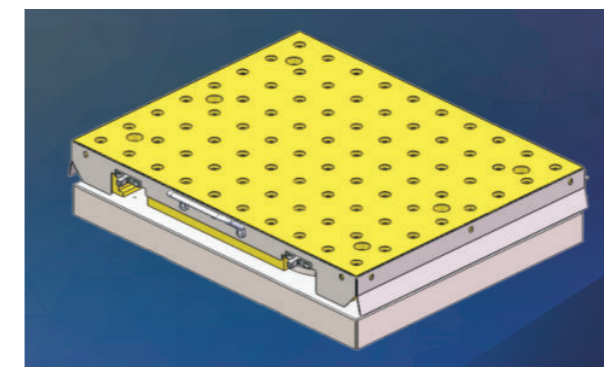
- ◆ Workpieces are loaded and unloaded outside the machine, which does not take up production time and does not require downtime and waiting;
- ◆ The repeat positioning accuracy can reach within 0.01mm, the overall rigidity is good, the tightening position is sealed with a sealing strip to prevent iron filings from entering, the upper tray and the base plate can be fitted with a protective rubber sheet, and a floating shield is used on the front to prevent iron filings from entering. An airtight test is installed to check whether it is locked in place to prevent product scrapping and reduce the time for personnel to clean up iron filings;
- ◆ The double-station switching workbench can greatly reduce the clamping time of products in the machine, reduce machine tool downtime, and reduce personnel labor intensity. It is economical, efficient and practical;
- ◆ The automatic loading model can be customized according to customer needs.

Application Range

The double-station manual exchange loader is used for fixed processing of machined parts such as parts, molds, and products. The products can be quickly switched and flexibly fixed on the pallet. Chucks, vises, non-standard fixtures, etc. can be added.

Zero-point Fixture Inside the Machine

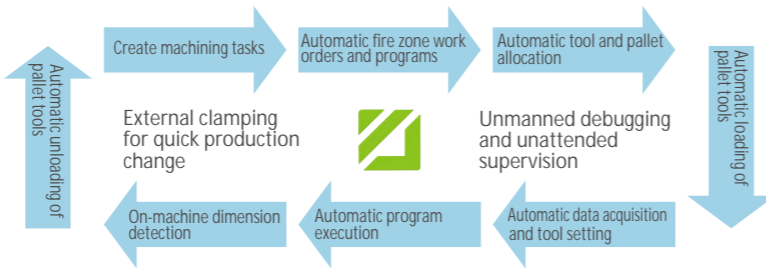
Use ventilation to loosen, and automatically lock when the air is cut off. The repeat positioning accuracy can reach within 0.005MM. The overall rigidity is good. The tray size is 500*400. The tightening position is sealed with a sealing strip to prevent iron filings from entering. The upper tray and the base plate can be fitted with a protective rubber sheet.



Intelligent Manufacturing System

Intelligent Manufacturing System

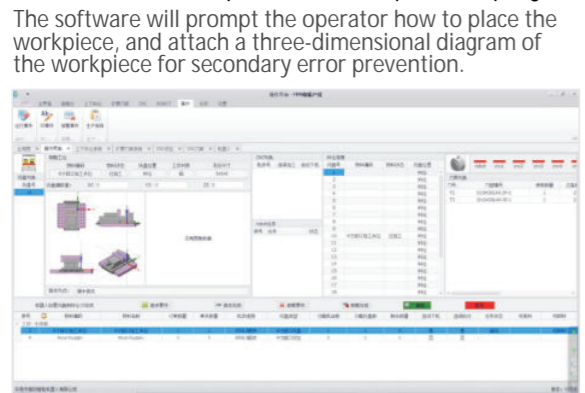
The flexible production line CNC intelligent manufacturing system is independently developed and designed by JUJOU Intelligent. After 7 years of research and development and actual application on site by customers, the MES system has been recognized by a large number of customers and finally formed the fourth-generation information system.



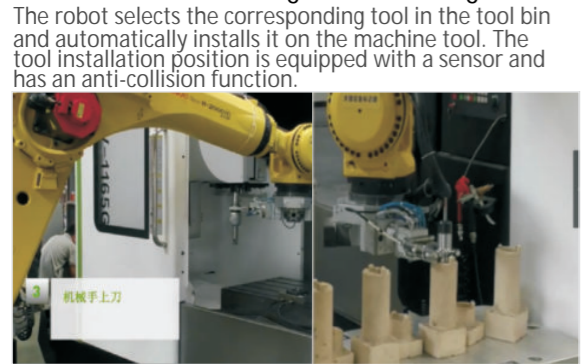
< 1 > Create processing tasks quickly and easily



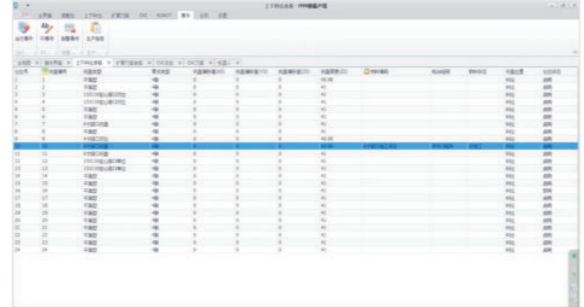
< 3 > Automatic acquisition of workpiece NC program



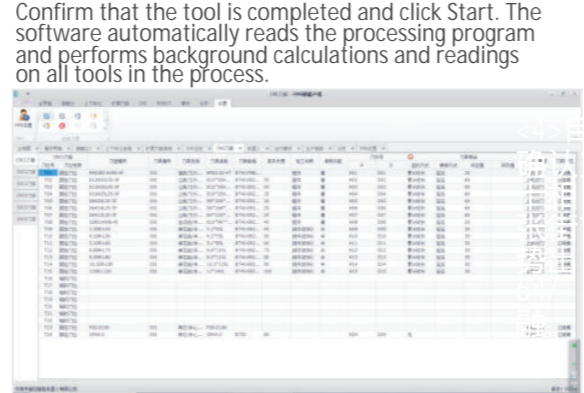
< 5 > Automatic loading and unloading of tools



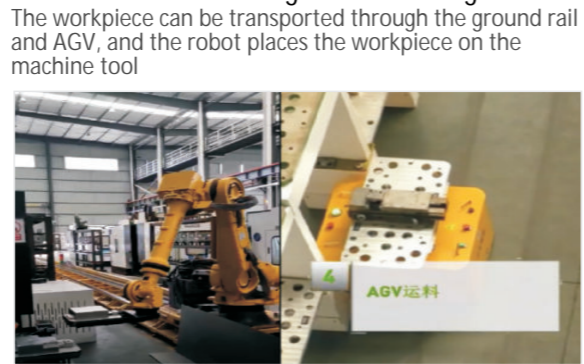
< 2 > Assign tasks



< 4 > Automatic tool allocation

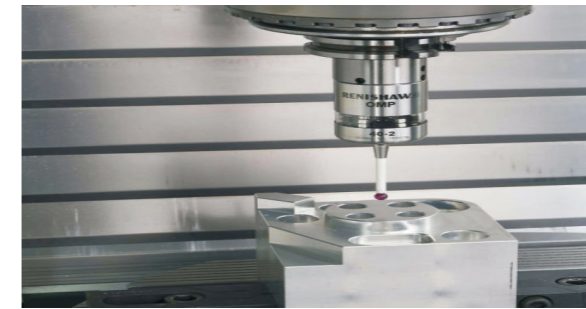


< 6 > Automatic loading and unloading



< 7 > Automatic workpiece alignment

The software calls the probe algorithm. Automatic alignment of the calculation (the workpiece placement does not need to be precisely placed).



< 9 > Automatic task allocation CNC processing

The software is compatible with various mainstream CNC operating systems, and can customize the main content of machine tool processing (finishing, roughing, general), and automatically allocate processing tasks to idle machine tools.

CNC列表			料仓信息			
机床号	连续加工	自动下机	托盘号	物料编码	物料状态	托盘位置
CHC2	否	否	1			料仓
CHC3	否	否	2	DZ-25-OP1		料仓2-装配位
			3			料仓
			4			料仓
			5			料仓
			6			料仓7-装配位
			7	DZ-25-OP20		料仓
			8			料仓
			9			料仓
			10			料仓
			11	M2-OP10		料仓
			12	M2-OP1	待加工	料仓

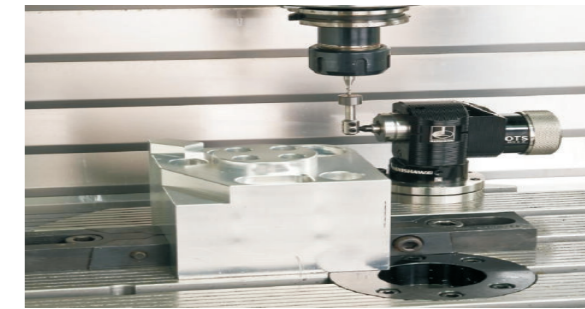
robot任务		
序号	任务	状态
0	料仓7-装配位	
1	料仓2-装配位	

< 11 > Tool life management

Three life management methods: cumulative time, number of processed pieces, and wear value. Independent life management and monitoring are carried out for the tools. Different tool life methods can be set for each tool according to the nature of the tool.

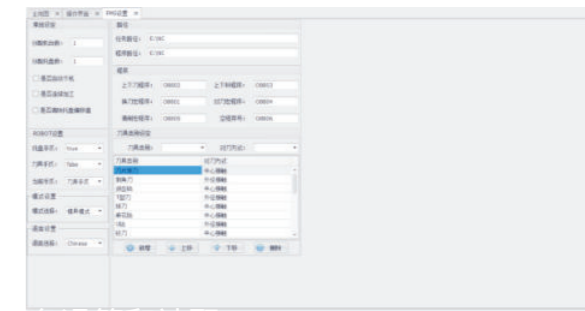
< 8 > Automatic tool compensation

The software calls the tool to use the tool setting instrument to measure the diameter and length of the tool. The actual measured value is compensated in the processing program through the algorithm.



< 10 > Automatic and manual modes can be switched at will

When the machine tool fails and needs maintenance, the mode can be switched freely to control the use of the machine tool or prohibit its use.



< 12 > Industrial computer control



Automation advantages:

- ◆ Equipment monitoring to achieve visual production;
- ◆ Multi-terminal control to keep track of production progress;
- ◆ System logs, production and processing records, and automatic analysis of equipment utilization rates.