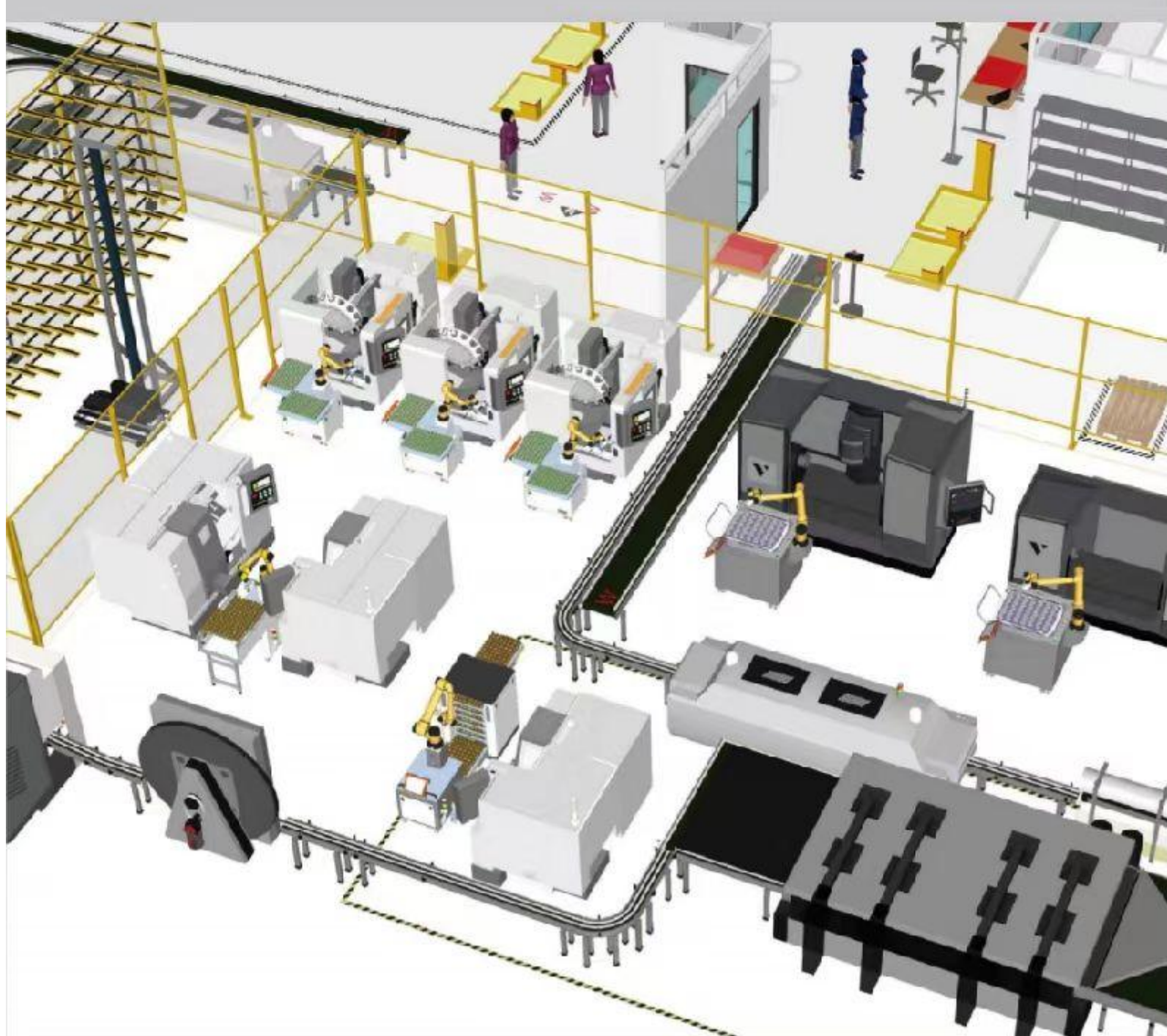


Flexible intelligent manufacturing future factory solutions

Humachine Cobot





Humachine Cobots

Humachine Cobots can work side by side with operators in cnc production workshops, and compared to traditional industrial robots, they are smaller, more flexible, have lower deployment costs, and are safer. For workshop operators, the loading and unloading operation time can be long, simple, repetitive, and boring, and personnel can easily become fatigued. Humachine Cobots can take over these simple repetitive tasks, while increasing output and quality, freeing up operators to do more valuable work.

Humachine Cobots are the best solution for small and medium sized enterprises with small batch, multi-variety production. As a leading professional system integrator of general-purpose robots, we will provide detailed assessment proposals and automation planning based on your on-site needs, pointing out which solutions are suitable for your application and completing the implementation.

Humachine Cobots can be commissioned and delivered for operation at the customer site within a week. We provide a complete service package for you, including turnkey solutions, on-site training, first-time use accompanied production services, and remote support.

Odd worker-Double sliding

Odd worker-Basic version

Odd worker-Rotary silo

Helper

Odd worker AS/RS

Odd worker AS/RS basic



Humachine Cobot

It can meet the needs of automatic loading and unloading of various varieties and small batches, and can be adapted to various drilling machine, machining centers, milling machine, lathes, special machines and other equipment

- ★ Wide range of application: It can be adapted to different brands and different types of application equipment.
- ★ Flexible movement: can bring AGV car, automatic positioning.
- ★ Easy to operate: The system can be used without programming knowledge
- ★ Modular design: the material tray can be changed freely to meet the processing needs of various workpieces.
- ★ Quick change of container: adapt to different workpiece placement requirements.
- ★ Safe and reliable: In line with a number of safety standards, human-machine collaboration is safer.



Fast deployment, fast switch

where is The need Where are the Cobots

40 minutes

Fast deployment

10 minutes
fast switch



Efficiency PK

Deployment time

Switch time

Humachine Cobot

40 minutes

10 minutes

Other Cobot

>2hours

>1 hour

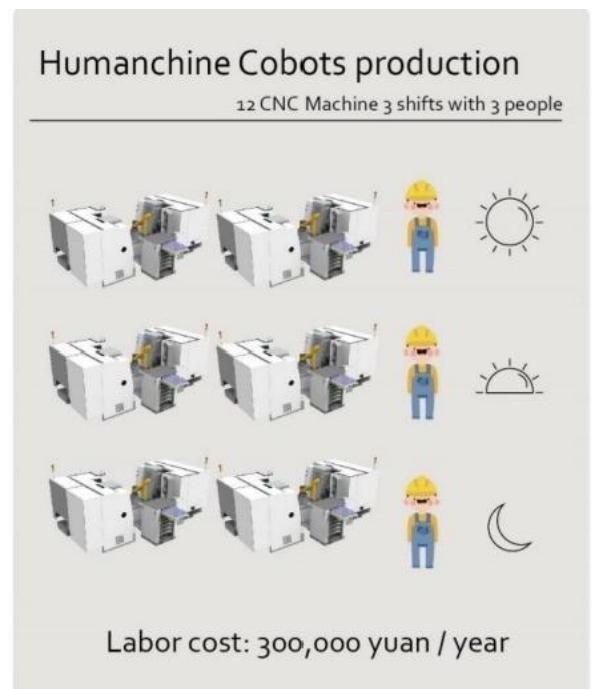
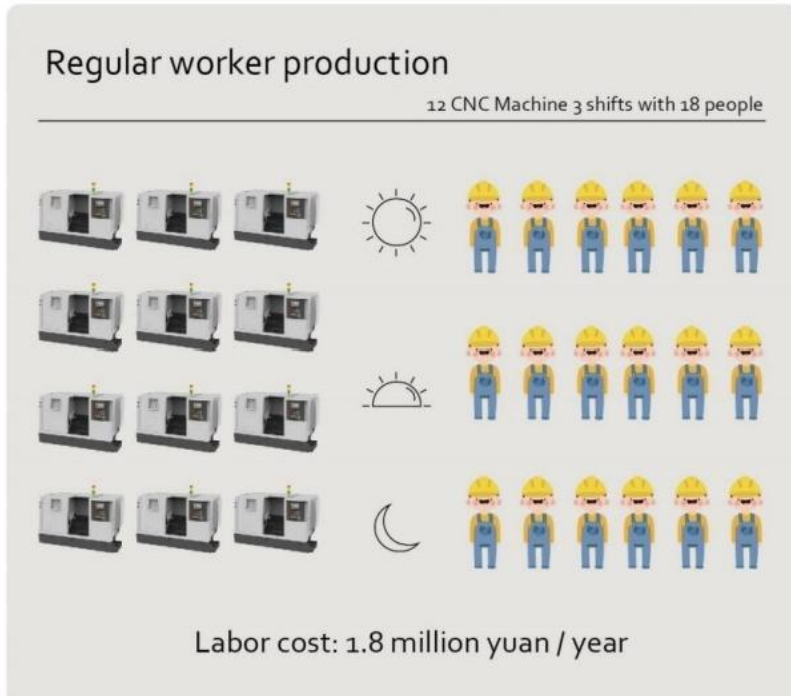
Traditional robot

>24 hours

>2 hours

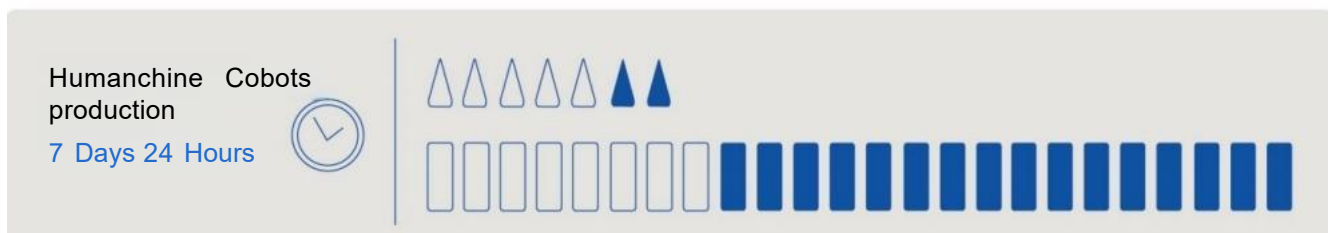
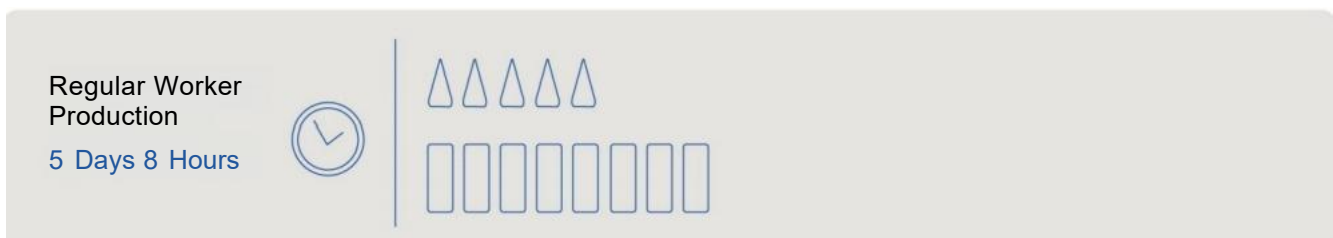
Labor Cost Comparison

✓ **Save 1.5 million yuan /year**

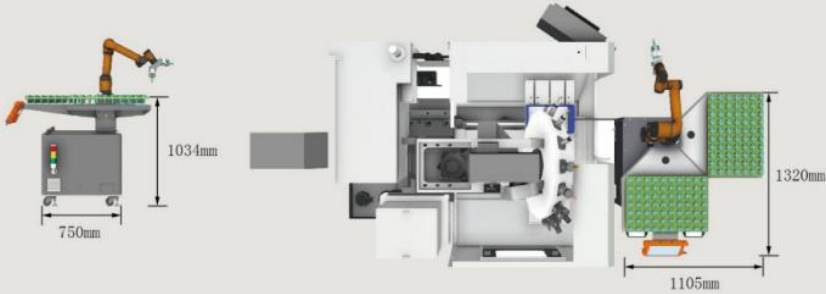


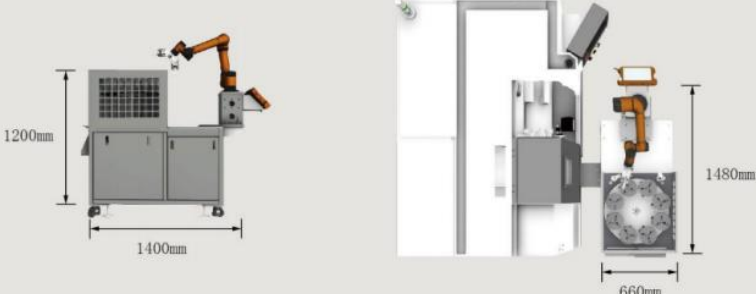


Utilization Rate Comparison

✓ **Boost 5840 hours/year**

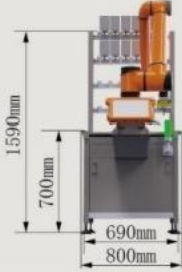
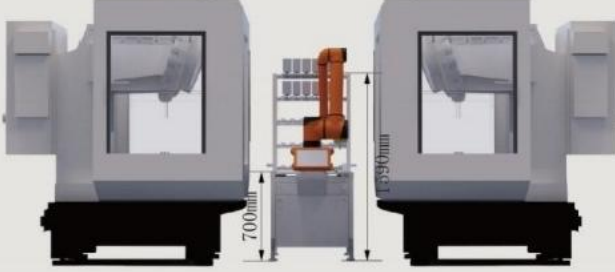
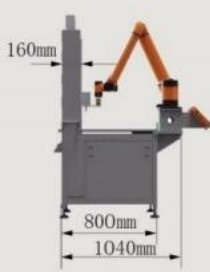

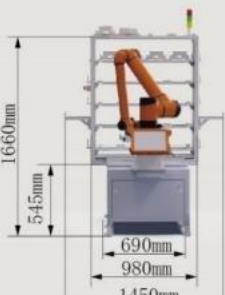
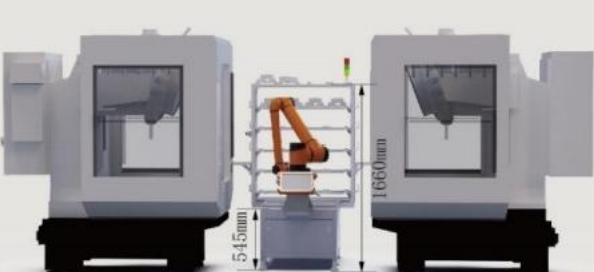
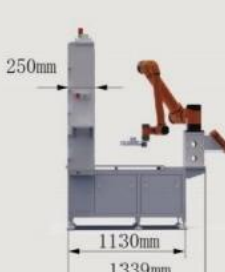



Compact design, flexible to match with all production needs

Odd worker-Basic version	
Odd worker - Double sliding	
Helper	
Odd worker-Rotary silo	

※ Depending on the production rhythm, it can be arranged in one-to-two, one-to-three configurations

Compact design, flexible to match with all production needs

Odd worker AS/RS basic	 
Odd worker AS/RS basic	 
Odd worker AS/RS	 
Odd worker AS/RS	 

※ Depending on the production rhythm, it can be arranged in one-to-two, one-to-three configurations

Humachine Cobots-helper

·F-Series

The Handyman Collaboration Unit consists of 1 basic module with a flexible, manually replaceable workpiece pallet for compatibility with a wide range of workpieces.

·M series

The Humachine Cobots unit consists of 1 basic module, 2 trolley modules and 2 flexible workpiece pallets. Workpiece pallets are designed to accommodate various part types.





Equipment series	Helper-F Series			Helper-M Series		
Model	XG05F-886	XG10F-1350	XG16F-967	XG05M-886	XG10M-1350	XG16M-967
Matching equipment	CNC lathe /Vertical Machine Center/EDM /Three-coordinate Detection					
Cobots Maximum load	5kg (including tool end)	10kg (including tool end)	16kg (including tool end)	5kg (including tool end)	10kg (including tool end)	16kg (including tool end)
Cobots Maximum working radius	886.5 mm	1350 mm	967.5 mm	886.5 mm	1350 mm	967.5 mm
Standard end effector	1 Set	1 Set	1 Set	1 Set	1 Set	1 Set
Workpiece weight	≤3.2kg	≤7.2kg	≤13.2kg	≤3.2kg	≤7.2kg	≤10kg
Workpiece length	≤100mm	≤150mm	≤100mm	≤100mm	≤150mm	≤100mm
Workpiece diameter	≤60mm	≤60mm	≤60mm	≤60mm	≤60mm	≤60mm
Storage quantity	≤48件	≤48件	≤48件	≤48件	≤48件	≤48件
Container type	Fixed single code disc	Fixed single code disc	Fixed single code disc	Moved single code disc	Moved single code disc	Moved single code disc
Repeat positioning accuracy	±0.02	±0.03	±0.03	±0.02	±0.03	±0.03
End effector weight	Approx. 2.1 kg	Approx. 2.8 kg	Approx. 2.8 kg	Approx. 2.1 kg	Approx. 2.8 kg	Approx. 2.8 kg

※ Depending on the production rhythm, it can be arranged in one-to-two, one-to-three configurations

Humachine Cobots-odd worker

Modular design,high product flexibility,can adapt to various equipment in the factory,and quickly build automation applications.





Equipment series	Odd worker-Basic version		Odd worker-Double sliding	
Model	XG05B02-886	XG10B02-1350	XG05BD-886	XG10BD-1350
Matchind equipment	CNC lathe /Vertical Machine Center/EDM /Three-coordinate Detection			
Cobots Maximum load	5kg (including tool end)	10kg (including tool end)	5kg (including tool end)	10kg (including tool end)
Cobots Maximum working radius	886.5mm	1350mm	886.5mm	1350mm
Standard end effector	1Set	1Set	1Set	1Set
Workpiece weight	≤3.2kg	≤7.2kg	≤3.2kg	≤7.2kg
Workpiece length	≤100mm	≤150mm	≤100mm	≤100mm
Workpiece diameter	≤60mm	≤60mm	≤60mm	≤60mm
Number of single-tier storage	≤28件	≤28件	≤24件	≤24件
Number of code discs	1-3个	1-3个	1-2个	1-2个
Containe type	Fixed multi-code disc	Fixed multi-code disc	Sliding double dial	Sliding double dial
Repeat positioning accuracy	±0.02	±0.03	±0.02	±0.03
End effector weight	Approx. 2.1 kg	Approx. 2.8 kg	Approx. 2.1 kg	Approx. 2.8 kg

※ Depending on the production rhythm,it can be arranged in one-to-two,
one-to-three configurations

Humachine Cobots -Odd workers Rotary Silo

Modular design of the silo, fast product switching and high parts reserve.





Equipment series		Odd worker-Rotary silo	
Model		XG05R08-886	XG10R08-1350
Matching equipment		CNC lathe/Vertical Machine Center /EDM /Three-coordinate Detection	
Cobots Maximum load		5kg (Including tool end)	10kg (Including tool end)
Cobots Maximum working radius		886.5mm	1350mm
Standard end effector		1 PCS	1 PCS
Workpiece weight		≤3.2kg	≤7.2kg
Workpiece length		≤100mm	≤100mm
Workpiece diameter	Outer clip circle	Φ 25~ Φ 95mm	Φ 25~ Φ 95mm
	inner circle	Φ 55~ Φ 125mm	Φ 55~ Φ 125mm
Maximum outer diameter of workpiece		Φ 150mm	Φ 150mm
Single station height		350mm	350mm
Station		8 Stations	8 Stations
Container type		Disc	Disc
Repeat positioning accuracy		±0.02	±0.03
End effector weight		Approx. 2.1 kg	Approx. 2.8 kg

※ Depending on the production rhythm, it can be arranged in one-to-two, one-to-three configurations

Humchine Cobots-AS/RS edition

fundModular design,compatible with 3R,EROWA,LNG zero positioning system small size and flexible deployment



Modular design,compatible with hainbuch,AMF,SCHUNK,and other zero point positioning system small size and flexible deployment





Equipment series	Odd worker AS/RS basic	Odd worker AS/RS
Model	XG10ASB-1350	XG10AS-1350
Matchind equipment	CNC lathe /Vertical Machine Center/EDM/Three-coordinate Detection	
Cobots Maximum load	10kg (include end effector)	10kg (include end effector)
Cobots Maximum working radius	1350mm	1350mm
Standard end effector	a set of	a set of
Total workpiece&fixture weight	≤7kg	≤7kg
Workpiece size	≤80 (length)*80 (width)*120 (height)	≤185 (length)*175 (width)*175 (height)
maximum Total height	<150mm	≤150mm
Storage quantity	≤24件	≤20件
Container Type	Zero point fast change system	Zero point fast change system
Repeat positioning accuracy	0.005	0.005
End effector weight	near 1kg	near 1.2kg

※ Depending on the production rhythm,it can be arranged in one-to-two,
one-to-three configurations

Humchine Cobots zero point quick change system

No programming and rapid deployment are the characteristics of small workers collaborative warehouse, we do not need professional automation personnel operation, workshop operation workers can work on simple training. The standard storage robot reduces the workshop deployment time to hours, reducing the impact of installation and debugging on production.

Compatible with the major brands of the zero point fast change system



3R



EROWA



LANG



HAINBUCH



AMF



SCHUNK



Automate the online detection

The online measurement inside the machine tool does not interfere with the machining process, and the machine tool preset time is short, achieving up to 90% utilization. Moreover, due to the simulation of the actual machining state, the measurement accuracy is very high. In addition, during the machining process, the tool and workpiece are inspected, and if any errors are found, timely compensation and correction can be made, greatly reducing the scrap rate and significantly increasing the output while ensuring quality. Comparatively, the manual measurement method has lower accuracy and is prone to errors caused by human factors, while the disadvantage of offline measurement is that it cannot guarantee the quality during machining.

In-machine probe measurement is widely recognized as the best method for maximizing machine tool efficiency, quality, capacity, and accuracy.












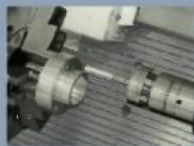
RENISHAW
OMP40-2



BLUM
TC52



BLUM
Z-Nano

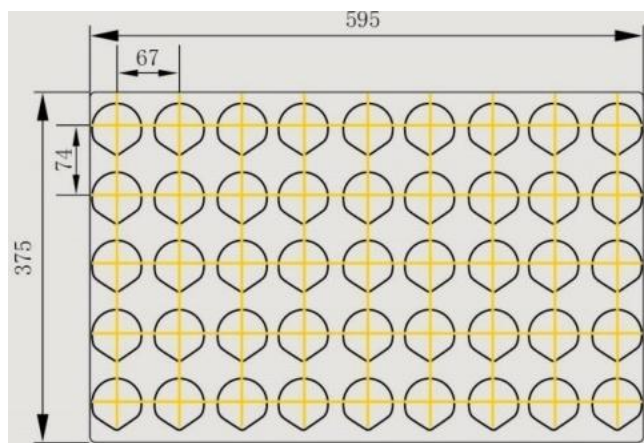
and tool setting	workpiece alignment	Tool breakage detection	Tool compensation	Qualified/Unqualified logic
 Tool length and diameter	 fixture error correction	 High-speed tool breakage detection	 Fine machining cutting depth compensation	 3D feature qualified/unqualified
 Tool edge/tip position	 Rotary (axis) error correction	 Defect detection	 thermal expansion compensation detection	 In-process qualified/unqualified chips Logic constructor

Humachine Cobots -Odd workers Material tray

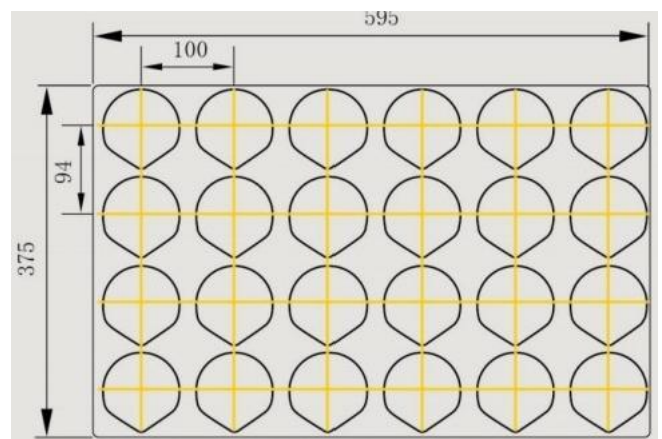
Standard template, there are 3 specifications for customers to choose, the specifications are as follows:

Standard tray template dimensions

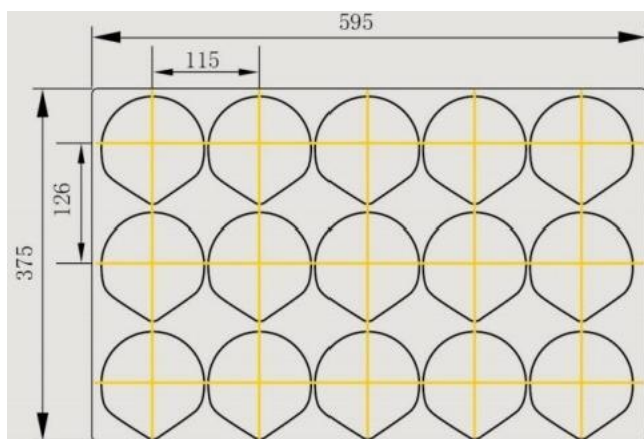
Template NO.	Workpiece size range	Number of workpieces
AHT010301	$\phi 15 \sim 46\text{mm}$	5x9=45pcs
BHT010201	$\phi 40 \sim 74\text{mm}$	4x6=24pcs
CHT010101	$\phi 70 \sim 100\text{mm}$	3x5=15pcs



AHT010301



BHT010201



CHT010101

※ The above dimensions are for reference only,
and are customized according to the actual workpiece size.

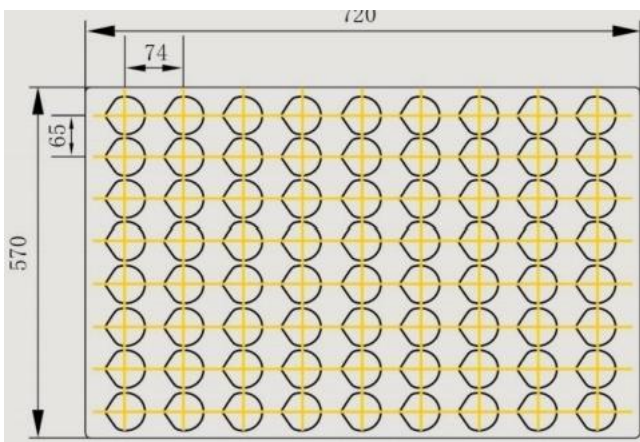
Humachine Cobots

-Odd workers Material tray

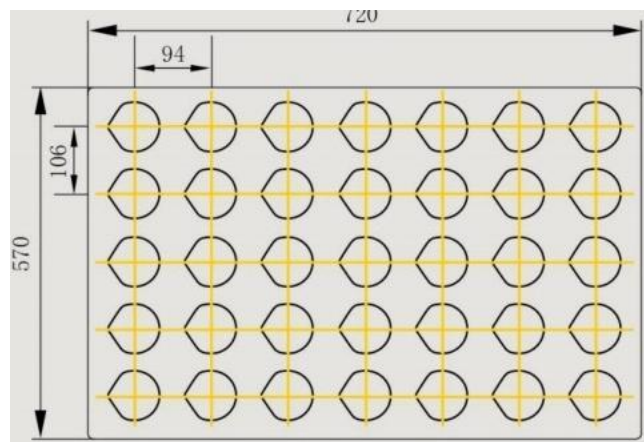
Standard template, there are 3 specifications for customers to choose, the specifications are as follows:

Standard tray template dimensions

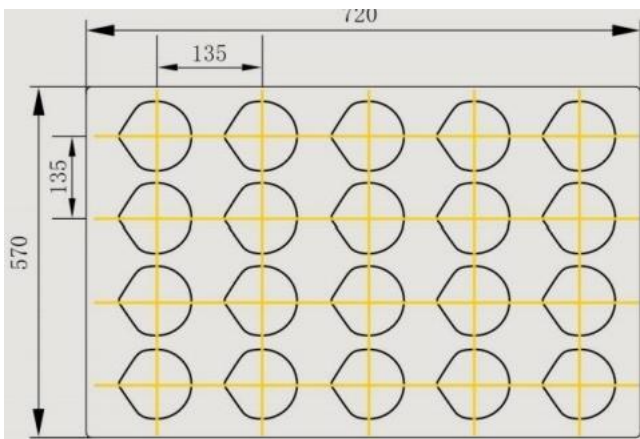
Template NO	Workpiece size range	Number of workpieces
ABG010301	$\phi 15 \sim 46\text{mm}$	8x9=72pcs
BBG010201	$\phi 40 \sim 74\text{mm}$	5x7=35pcs
CBG010101	$\phi 70 \sim 100\text{mm}$	4x5=20pcs



ABG010301



BBG010201



CBG010101

※ The above dimensions are for reference only,
and are customized according to the actual workpiece size.

Customer case



Customer demand: The workshop increases the drilling machine, hoping to realize one-person multi-machine operation and night shift production, and the customer's products belong to multi-variety and small batches.

Cobot scheme:

Occupant sliding table version, realizes multi-machine and night shift production by one person, one small worker cooperates with one machine tool, and the replacement of products is flexible, simple and low cost. Meet multi-variety small batch fast tangent production.



Customer demand: MAZAK Turning and Milling Machine, long processing time for parts, hope to achieve 24-hour production.

Cobot scheme:

Standard version of the helper, using a 16KG robot, equipped with two feeding trucks, to achieve unattended night shifts at night.

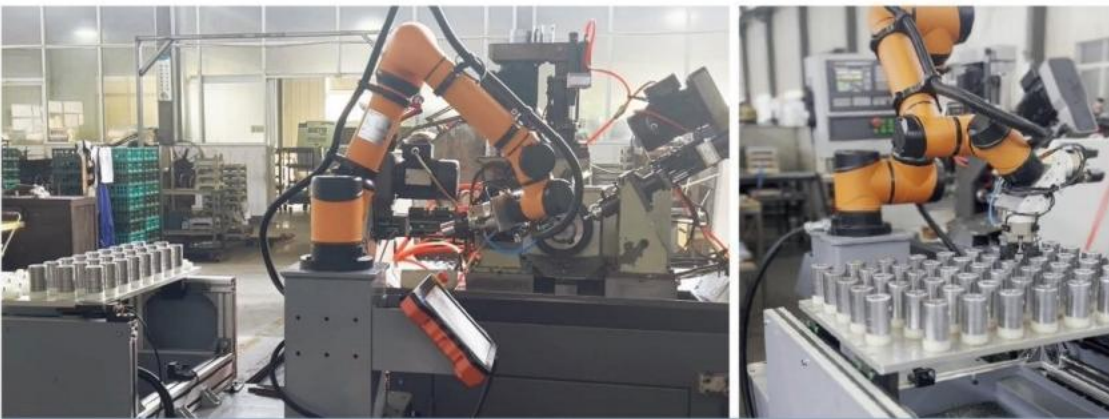




Customer demand:

Two CNC lathes with a cycle time of 6 seconds. The two processes need to be turned around for processing. We hope to achieve night shift production with one person and multiple machines.

Cobot odd worker sliding table version, adding reversing mechanism, realizing night shift with one person and multiple machines, unattended, and daily output increased by 30%.



Customer Special plane production, fast rhythm, workers can not leave demand: the post, high labor intensity, this post is in a state of recruitment for a long time. The customer wants to reduce the intensity and start night shift production.

Cobot scheme:

The gig-sliding version uses a 5KG collaborative robot to meet continuous production, reduce the labor intensity of workers, realize multiple machines for one person, and start night shift production.

Customer case



Customer demand: The workshop is equipped with a MAZAK turning and milling composite machine tool, which needs to process a variety of small batch products. The customer hopes to quickly switch between products and flexibly arrange production.

Solution: Use the basic version of the "Odd-Worker" system. One "Zero-Worker collaborator corresponds to one machine tool, allowing for flexible, simple, and low-cost product replacement. This solution meets the needs for quick production of various small-batch products.



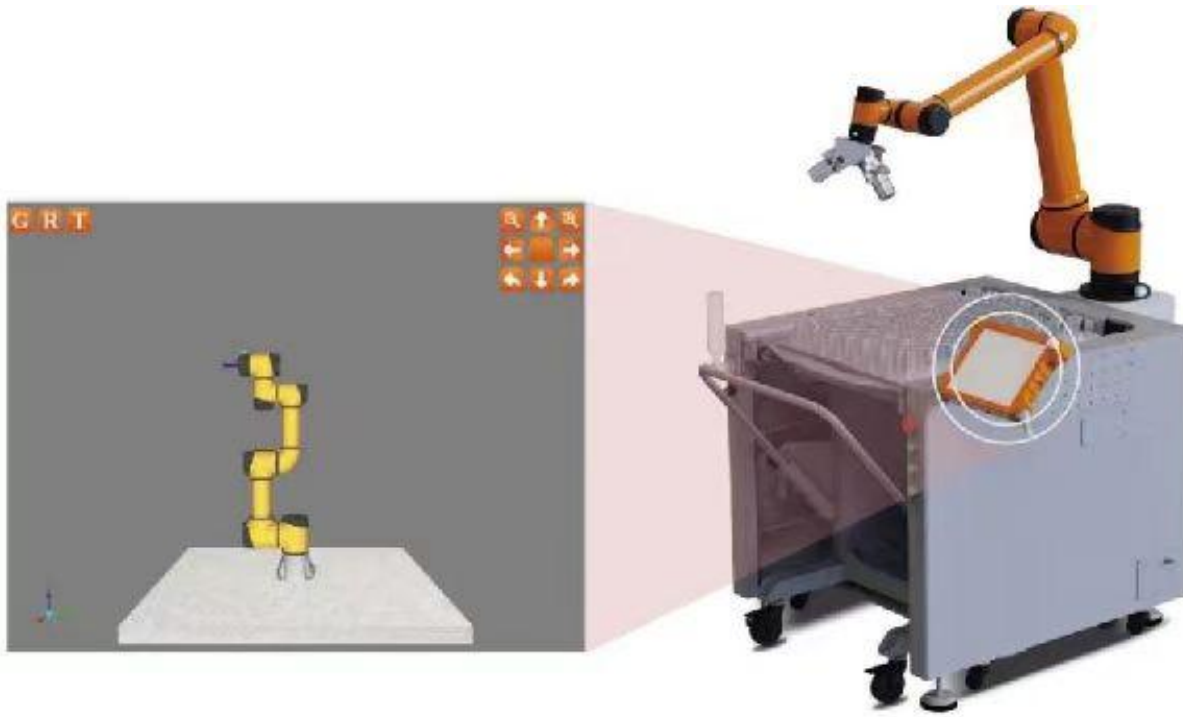
Customer demand: The customer wants to process a variety of small-batch products in machining centers and drilling and tapping centers, and hopes to quickly switch between products and achieve mixed-material flexible automated production.

Solution: Utilize a storage tower system equipped with a Loko collaborative robot and a zero-point quick-change system to achieve flexible production of various small-batch products. This solution can meet the requirements for mixed-material flexible automated production of multiple product types.



"Robots On the cloud"- Make data become the new productivity

Robotics cloud data management system



- Freely set production plans

Based on actual needs,input and adjust production scheduling and planning in real-time.

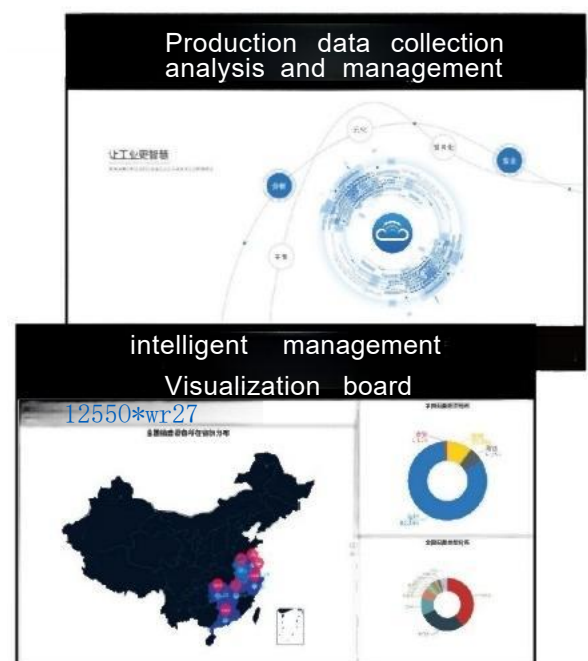
- Automatically generate actual production data

Collect and summarize data,calculate production efficiency,record product types and provide data support for management optimization.

- Robot and automation system information

Machining progress,remaining material on trays,equipment status,and other information are easily accessible.

- Connect equipment to the cloud system,allowing users to remotely view all robot and production information.





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