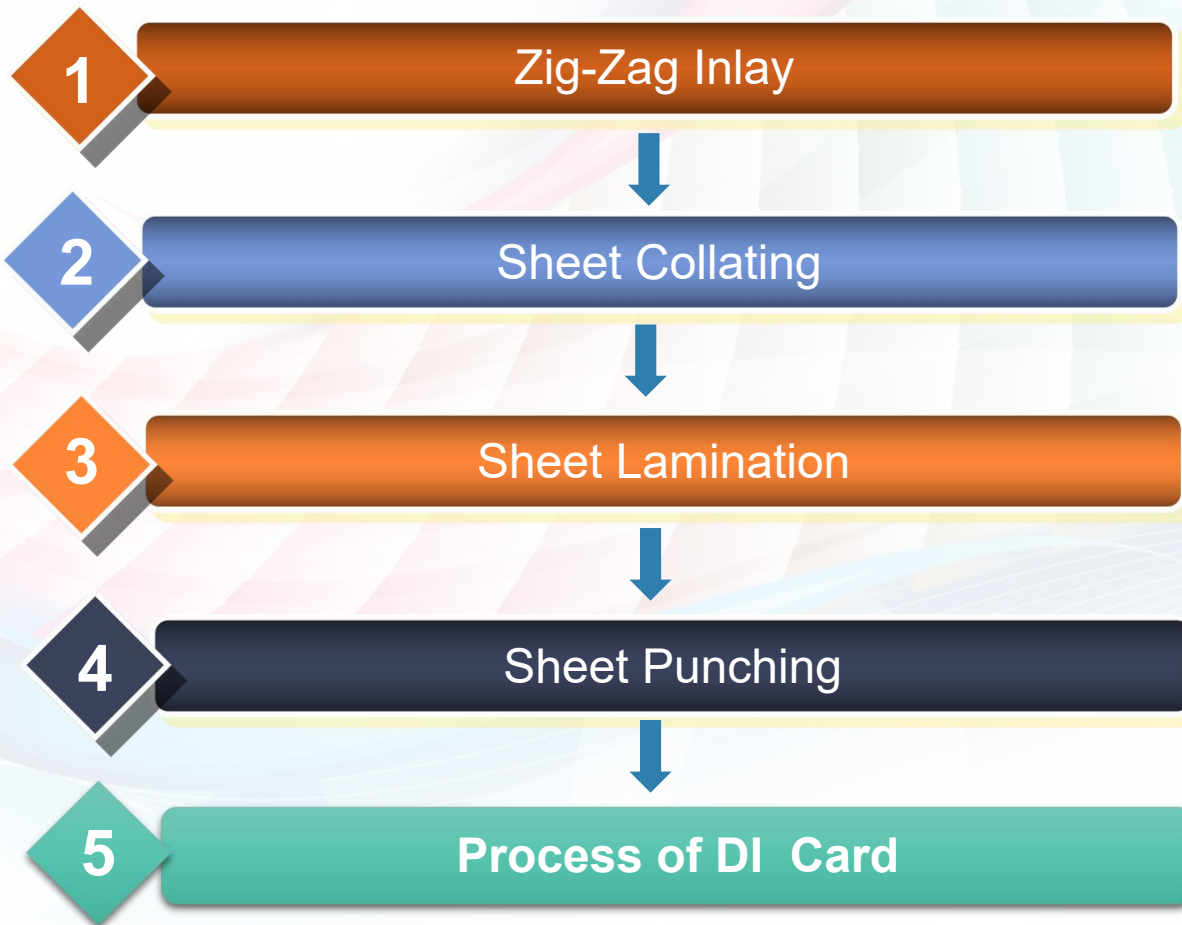


## Dual Interface Card Milling and Embedding Two in One Machine (Model: LUK-DME5000)



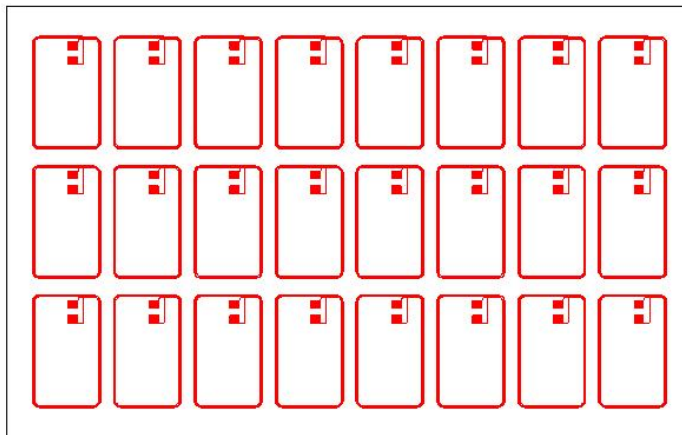
# Process Of Dual Interface Card



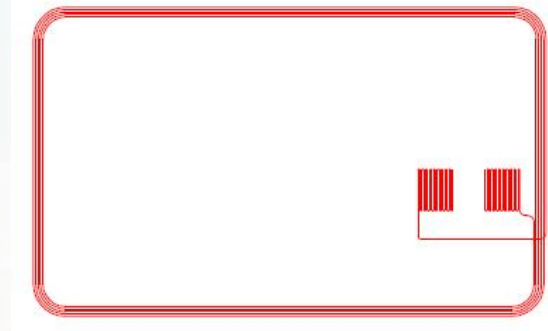
# Process Of Dual Interface Card

1

## Zig-Zag Inlay



Zig-zag Antenna image



**Recommend Machine:**

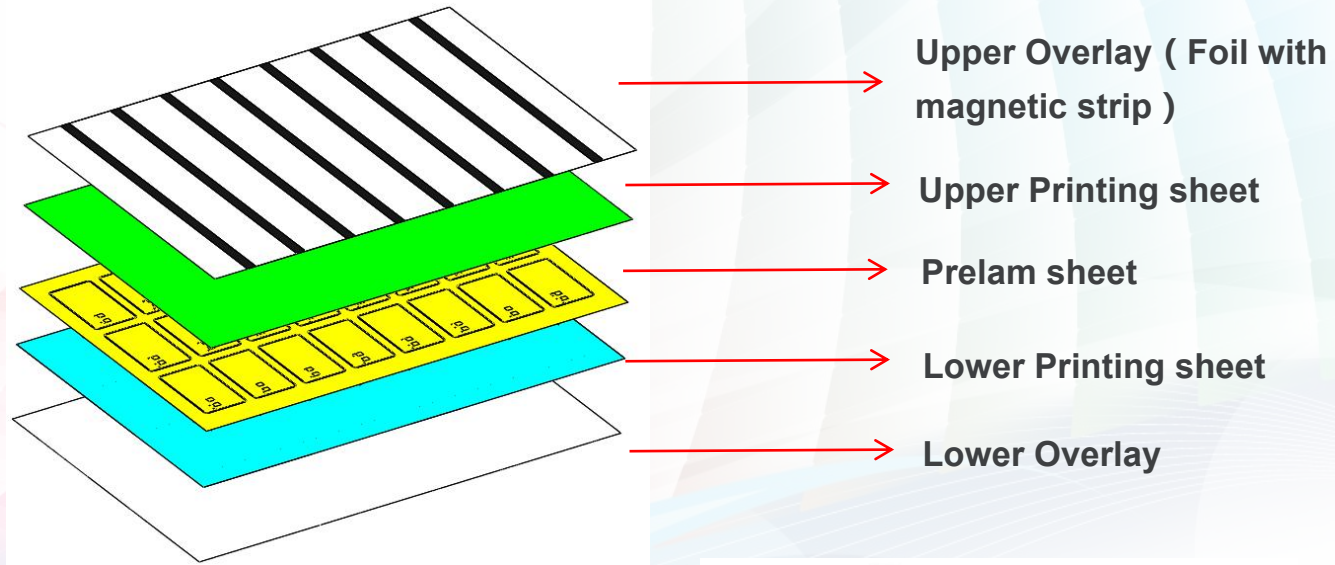
**FULL AUTO WIRE EMBEDDING MACHINE**  
**LUK-AME216**



# Process Of Dual Interface Card

2

## Sheet Collating



Recommend Machine :

**AUTOMATIC SHEET COLLATING MACHINE**  
**LUK-ASC-3000**





# Process Of Dual Interface Card

4

## Sheet Punching



→ Sheet punching

**Recommend Machine :**

**FULL AUTO CARD PUNCHING MACHINE**  
**LUK-CP-3A/4A/5A**

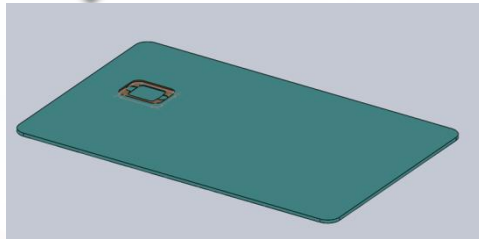


# Process Of Dual Interface Card

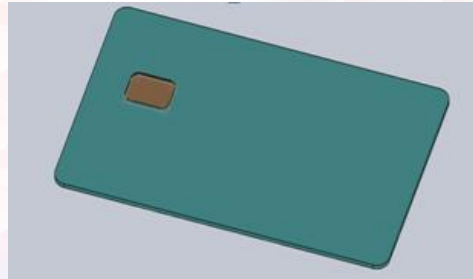
Lukiot

5

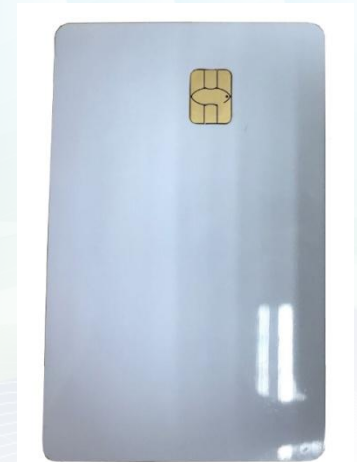
## Process of DI Card



From Card body



To Completed DI Card



**Recommend Machine :**

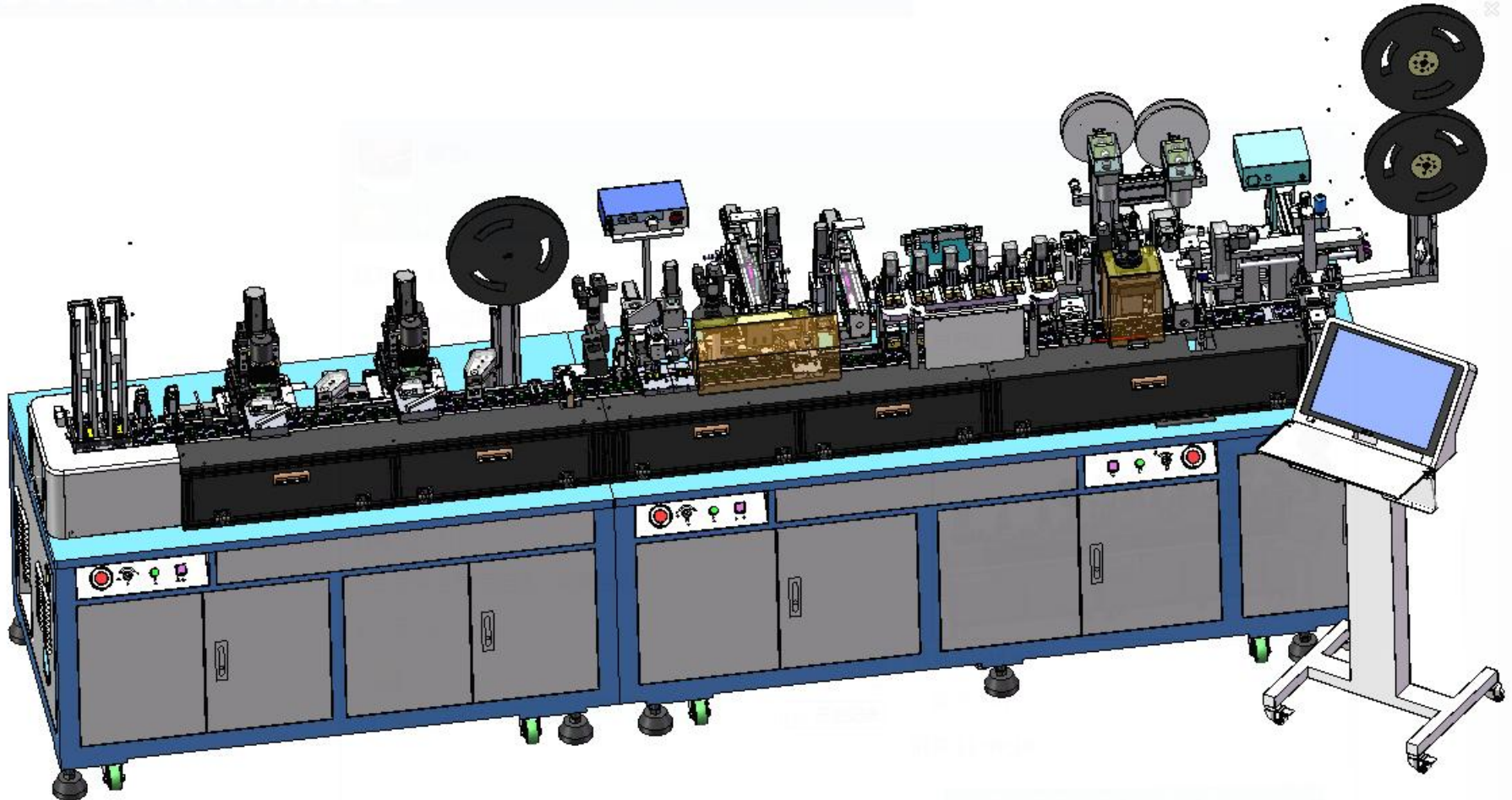
**DUAL INTERFACE CARD MILLING AND  
EMBEDDING TWO IN ONE MACHINE**

**LUK-DME5000**

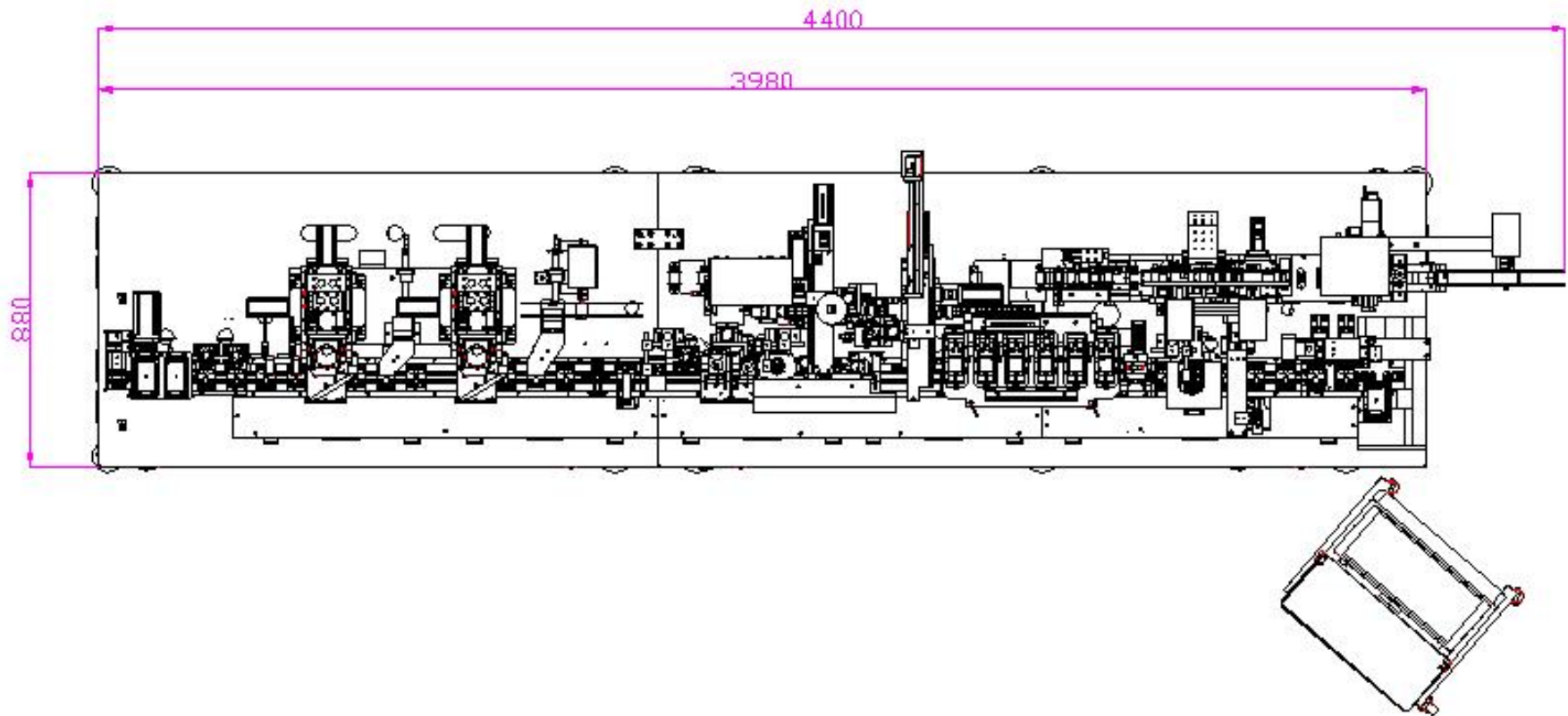


# Machine Dimension LUK-DME5000

Lukiot



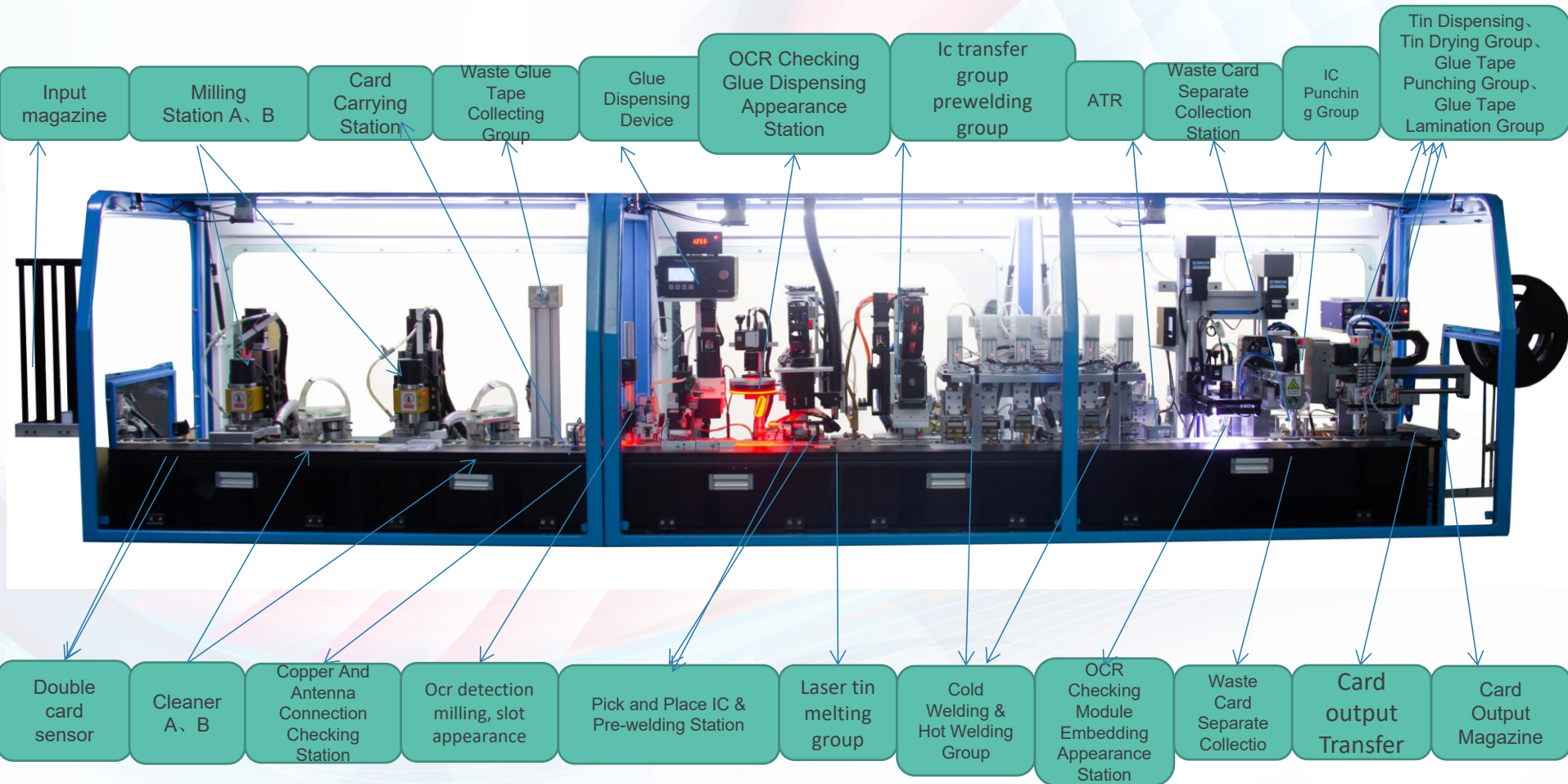
# Machine Dimension



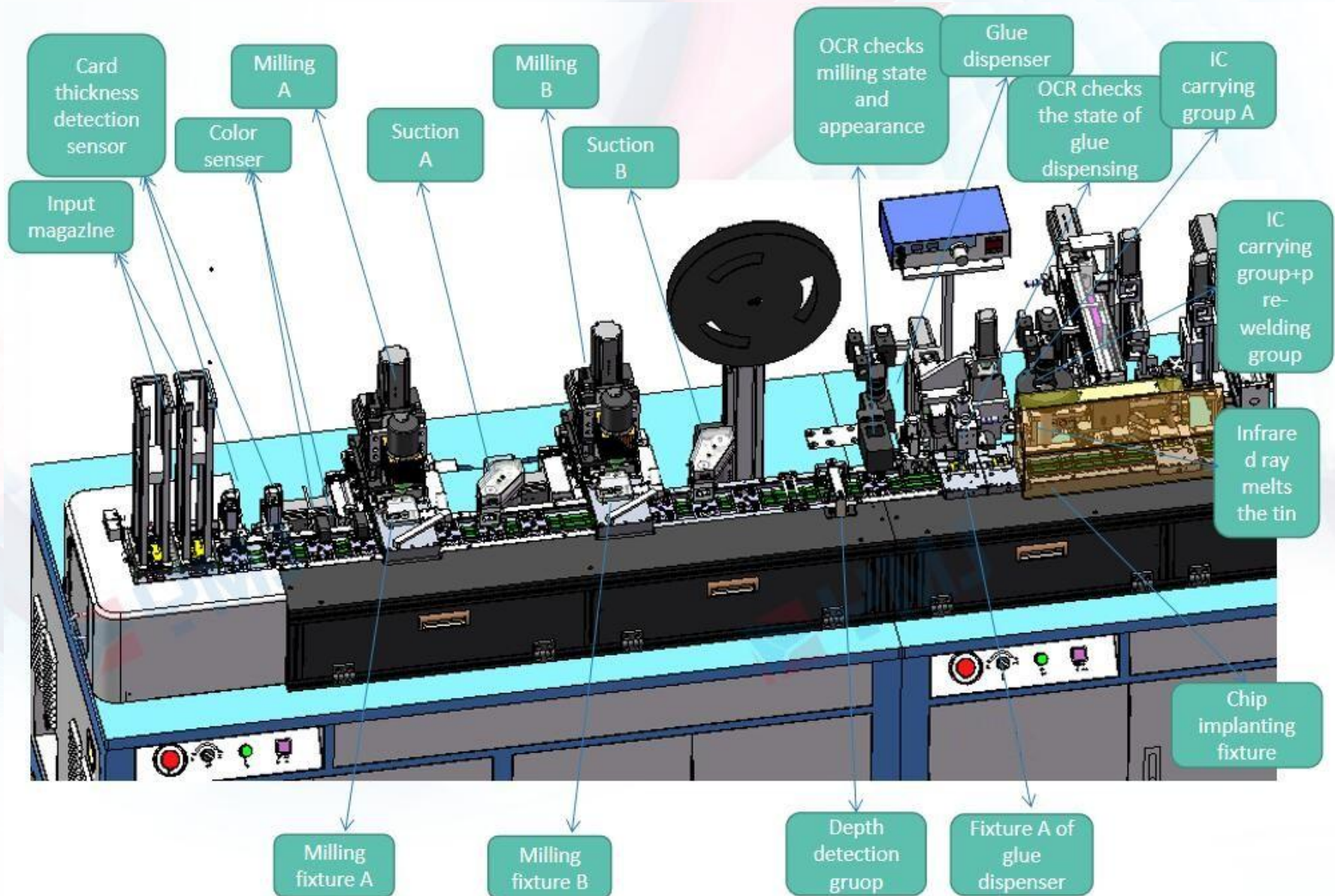


# Machine Structure LUK-DME5000

Lukiot

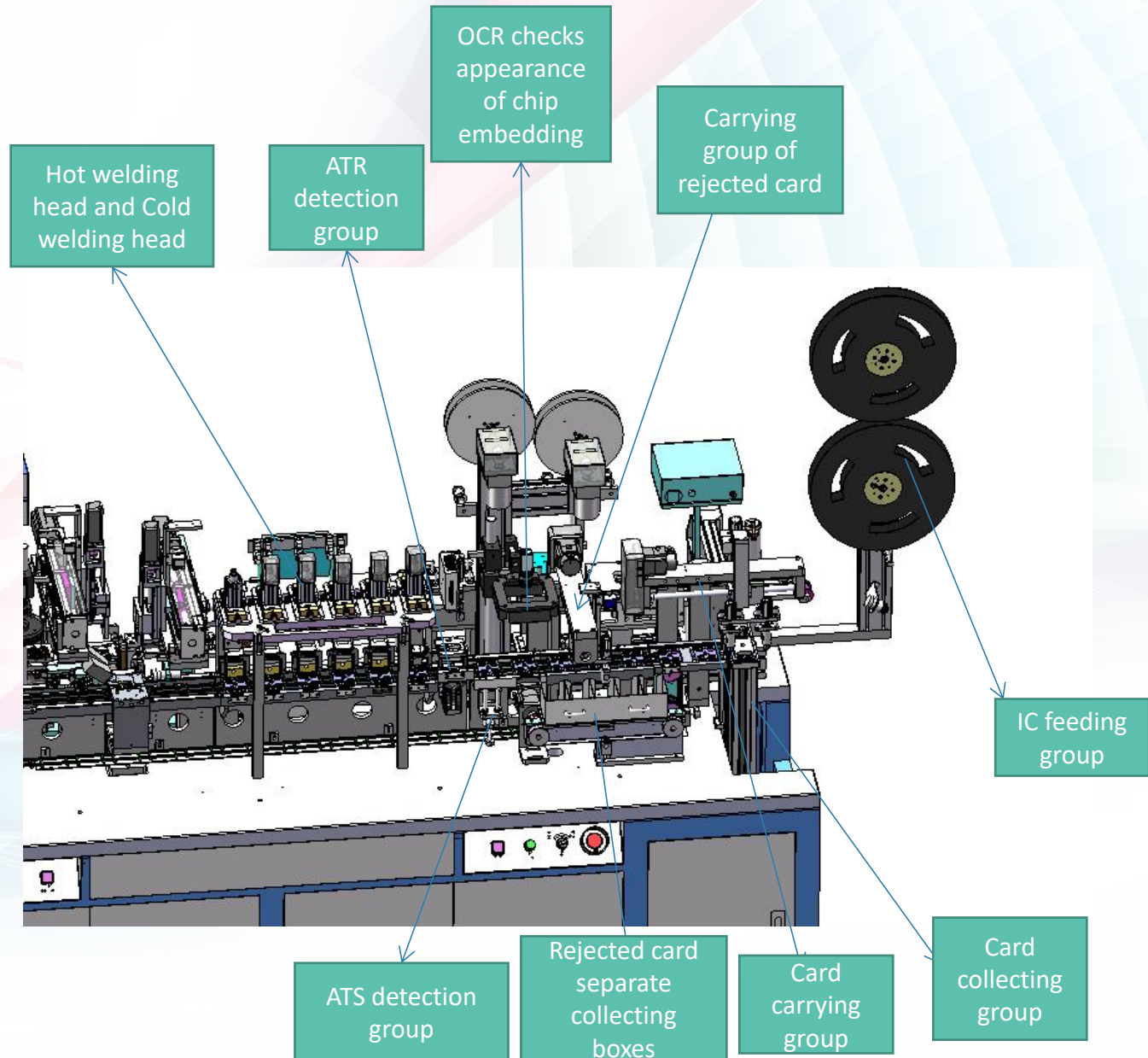


# Machine Structure

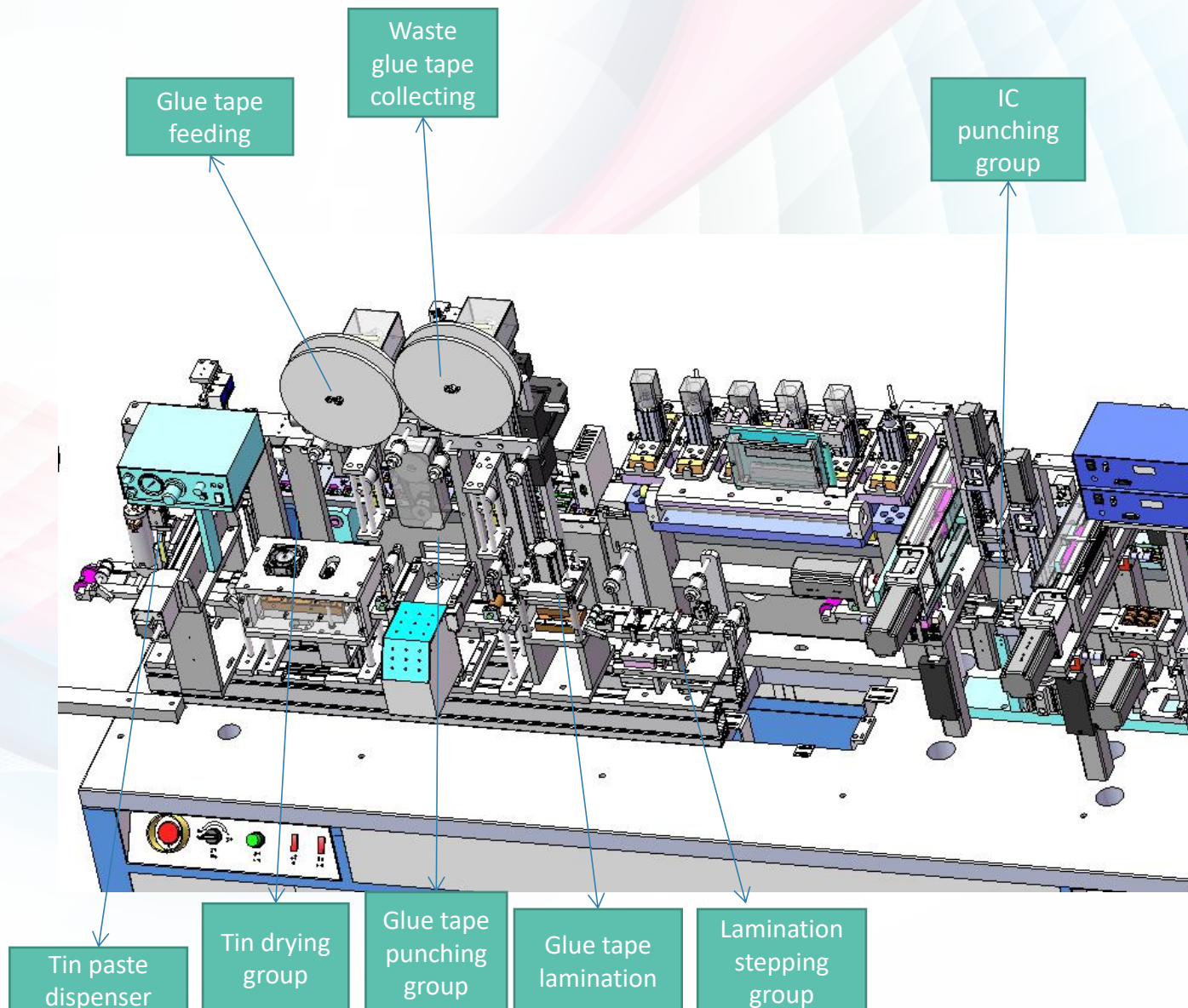




# Machine Structure

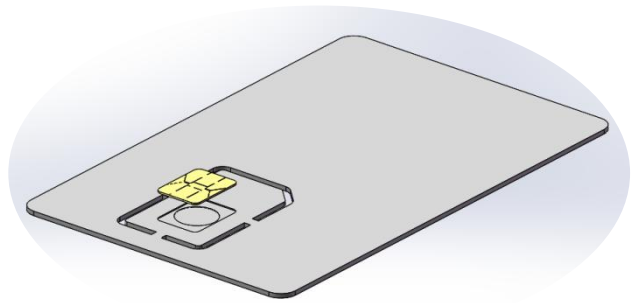


# Machine Structure

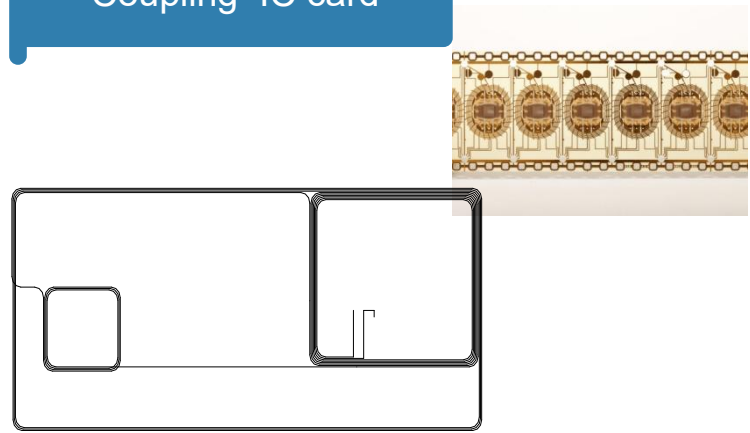




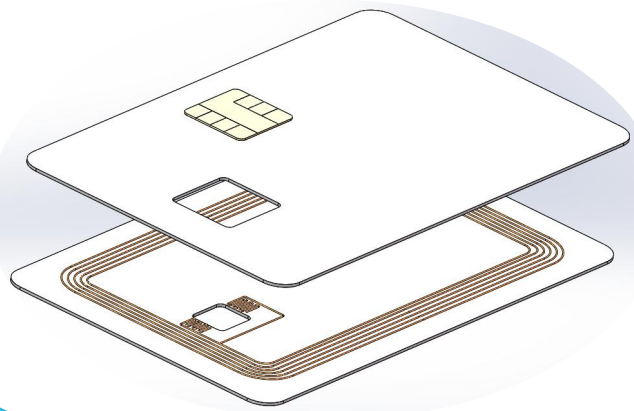
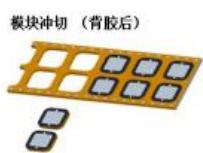
Contact IC card



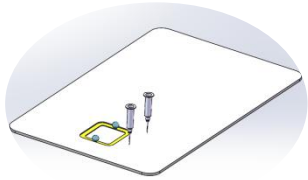
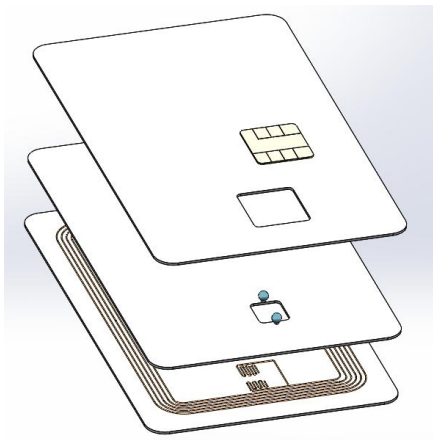
Coupling IC card



Dual Interface Card---  
Conductive Hot melt glue  
tape technology process



Dual Interface Card---  
conductive glue & Tin  
Paste technology process



# Appearance detection function

If the card does not meet the requirements, the three sets of OCR detection will refuse to enter the next station and directly input into the defective product collection box.

Appearance  
inspection  
station 1

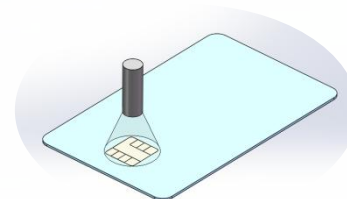
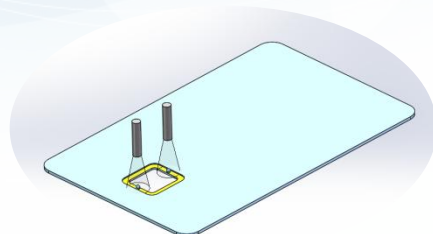
Detecting the milling, the appearance of the slot, the size of the slot, the center of the slot, and the number and quality of the copper wire

Appearance  
inspection  
station 2

Check if the size, position and appearance of the conductive paste/solder paste meet the set requirements

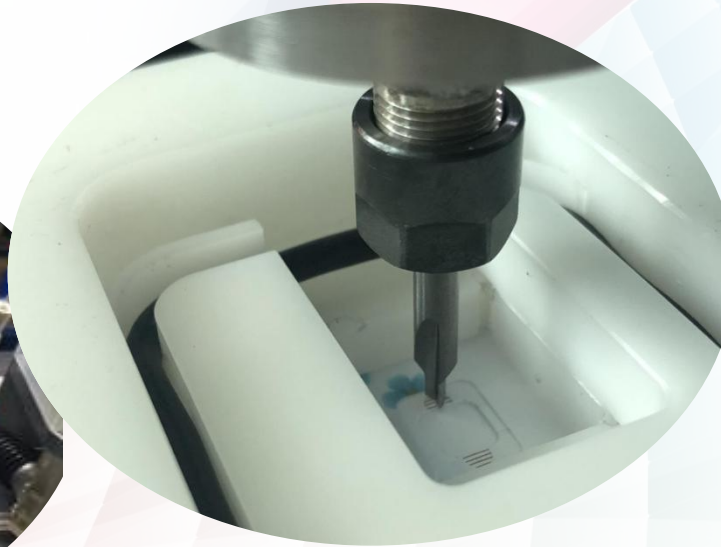
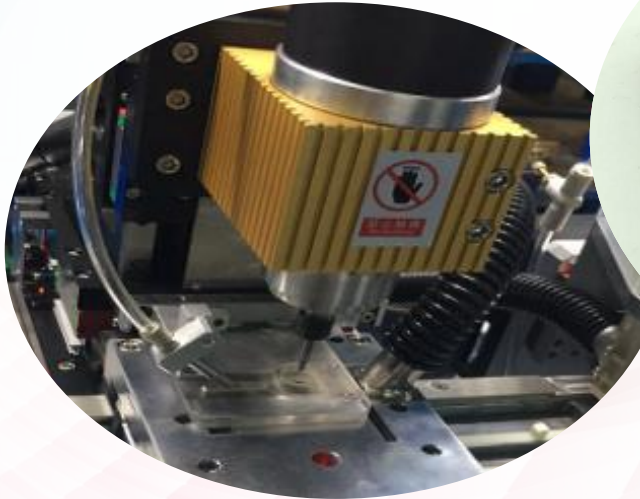
Appearance  
inspection  
station 3

Detecting the appearance of the chip embedding



# Card base milling depth control

Lukiot



## Control principle:

The milling device (by the XYZ three-axis servo + R electric spindle motor completes the milling operation), by changing the principle of the oscillating signal, when the milling cutter contacts the card coil, the feedback resonant frequency changes, thereby controlling the depth of the milling slot.

## Function

1. Motor drives synchronizing wheel and synchronous belt to transport the cards, there are two belts for transportation which can avoid card surface scratch.
2. Double card detection sensor ensure feeding one card at one time.
3. Color sensor detection ensure card in the correct direction..
4. There are two milling groups can milling cavity layers at the same time or separately, just select on HMI.
5. Professional fixture design, can automatically adjust the depth of milling slot according to the height of the coil layer of the card, to ensure the quality of milling slot and the quality of chip embedding.
6. There are two types of cleaners, first in the milling group by air flowing, second is cleaning station which use brush to suck the dust again, ensure the clean cavity for module embedding.
7. Card carrying station move the cards from double card operation belt to single card operation belt.
8. Copper And Antenna Connection Checking Station can check if copper and antenna is connection or not, if no connection, this card will be not embed the module.



## Function

9. There is an OCR after Connection Checking Station, it can check the slot appearance, slot size, slot center position, milling wire number through OCR can check whether the slot position has perforation, slot size, appearance, center position, milling antenna conforms to the set parameters. If so, the card will be embedded in the rejection module and input directly into the defective card box.
10. Glue dispensing station with High precision controller to control the glue injection quantity, also with cooling device can keep the conductive glue always in low temperature status to prevent glue solidified and inject failure.
11. There is an OCR after glue dispensing station, it can check the conductive glue dispensing quantity, position and appearance is meet the specified requirement or not, if meet the requirement, this card will be moved to next working station, otherwise this card will be rejected.
4. IC strip step drive by servo and monitor by electric eye , easy to adjust, step accurate.
13. IC strip with automatic feeding group and waste strip collection group.
14. Hot melt glue tape with automatic feeding group and waste tape collection group.
15. With hot melt glue tape punching station and glue tape with IC strip lamination station.

## Function

16. Chip transfer using servo to drive high-guide rails, screw. Transfer position can modify the parameter directly.

17. Hot welding uses a unique structure. Multi-group hot welding to ensure the quality of embedding.

18. Check if there is chip on card base before hot welding , if no chip, not embedding.

19. Hot welding with cold welding function. Cold welding have cooling water function, to ensure that the back of the card after the card without trace.

20. Hot welding head with X, Y direction fine-tuning function.

21. There is a module height detection device in the cold welding station which can check the height between module surface and card surface, if the height in the specified range, the card will be collected in the output magazine, otherwise this card will be moved to rejection box.

22. Machine has ATR and Contactless card reader both testing, ensure Dual interface card function pass rate.

## Function

**23.** There is an OCR after ATR checking station, it can check the appearance of module embedding. If checking result is good, this card will be collected to output magazine, If checking result is not good, the card will be rejected to waste Card Separate Collection Station.

**24.** Waste card separate collection group can be collected the card according to 4 defects, which include no milling cavity on slot, glue dispensing not meet requirement, no IC embedding on card and module appearance checking is not meet the requirement.

**25.** Conveying arm sucked the card into card output magazine which can check the front side of card each time.

# MAIN PART

Controller	Industrial PC Taiwan Advantech	Industrial Camera	Germany BASLER
Fiber Optic Sensor	Keyence	Cylinder	JAPAN SMC
Screw Rob	TAIWAN HIWIN	Vacuum Cleaner	Made in China
Power Supply	TAIWAN MEANWELL	Solenoid Valve	JAPAN SMC
Vacuum Generator	JAPAN SMC	Control Board	Made in China
Industrial computer	Advantech	IO Board	Taiwan Advantech
Mold	Made by YMJ	Chiller	Made in China
Glue Dispenser	Made in China	Cavity Depth Detection Device	Keyence
Module Height Detection Device	Keyence		



# TECHNICAL PARAMETER

<b>Control</b>	Industrial PC
<b>Voltage</b>	AC 380V 50 / 60 Hz 20A
<b>Power</b>	12 KW
<b>Air Pressure</b>	6kg/Cm <sup>2</sup>
<b>Speed</b>	For DI card with Tin paste technology is about 2500- 2800cards/h For normal card is about 3000-3200 cards/h.
<b>Dimension</b>	(L)4080mm*(W)950mm*(H)1800mm
<b>Weight</b>	3000kg
<b>Module punching accuracy</b>	+/-0.05mm
<b>Milling position accuracy</b>	+/-0.05mm
<b>Milling depth</b>	±0.015~±0.02mm
<b>Milling size</b>	±0.05mm
<b>Embedding position accuracy</b>	+/-0.05mm

# TECHNICAL PARAMETER

Embedding Flatness accuracy	+0.05mm, -0.1mm
Embedding Head Temperature adjustment range	25°C~300°C
The temperature difference between the actual temperature of the welding head and the display temperature of the equipment are	Less than10°C
Temperature fluctuation range	+/-10°C
Applicable materials	Hot melt glue tape, Laminated strip module with ISO standard, 0.68~0.8mm thickness ISO lamination PVC, ABS card.
Operator	1 person
Pass Rate	99.8%
Equipped with machine	Vacuum Cleaner (one set)      Chiller (one set)