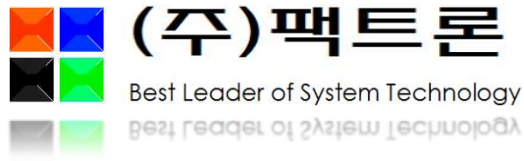


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# FACTRON Co., Ltd Corporation Introduction



Best Leader of System Technology

2024

ADDRESS : 610 & 620-TAKRA 1, 176, SEONGGOK-RO, DANWON-GU, ANSAN-SI, GYEONGGI-DO, KOREA

對外秘

-  *Corporate Overview*
-  *Organization*
-  *Core Value*
-  *Development & Manufacturing Performance*
-  *Vision*



# 1. Corporate Overview

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## Major Status

Corporate Name	FCTRON Co., Ltd
Since	January 2008
CEO	Byung-Ki Lee
Staff	Employees : 12 Partner Ship : 20 Company
Business Area	<ul style="list-style-type: none"> <li>▪ Industrial Mechanical Parts and Materials</li> <li>▪ Industrial Machine Software Manufacturing Development</li> <li>▪ Secondary Battery Equipment Manufacturing Industry</li> <li>▪ OLED &amp; LCD &amp; Semiconductor &amp; Solar Equipment Manufacturing Industry</li> <li>▪ Line Automation of Automobile Production Process (line automation of electrical components, smart keys, M-F switch)</li> <li>▪ Factory Automation Equipment Design/Manufacture and Set-up</li> <li>▪ Fourth Industrial Revolution Smart Manufacturing Convergence Technology</li> </ul>
Location	Office : 620-Takra 1, 176, Seonggok-ro, Danwon-gu, Ansan-si, Gyeonggi-do, Korea Factory : 610-Takra 1, 176, Seonggok-ro, Danwon-gu, Ansan-si, Gyeonggi-do, Korea
Contact	TEL : + 82 - 31 - 433 - 0223 FAX : + 82 - 31 - 433 - 3230  CEO : + 82 - 10 - 5393 - 3935 E-Mail (CEO) : <a href="mailto:by-k-lee@factron.biz">by-k-lee@factron.biz</a>

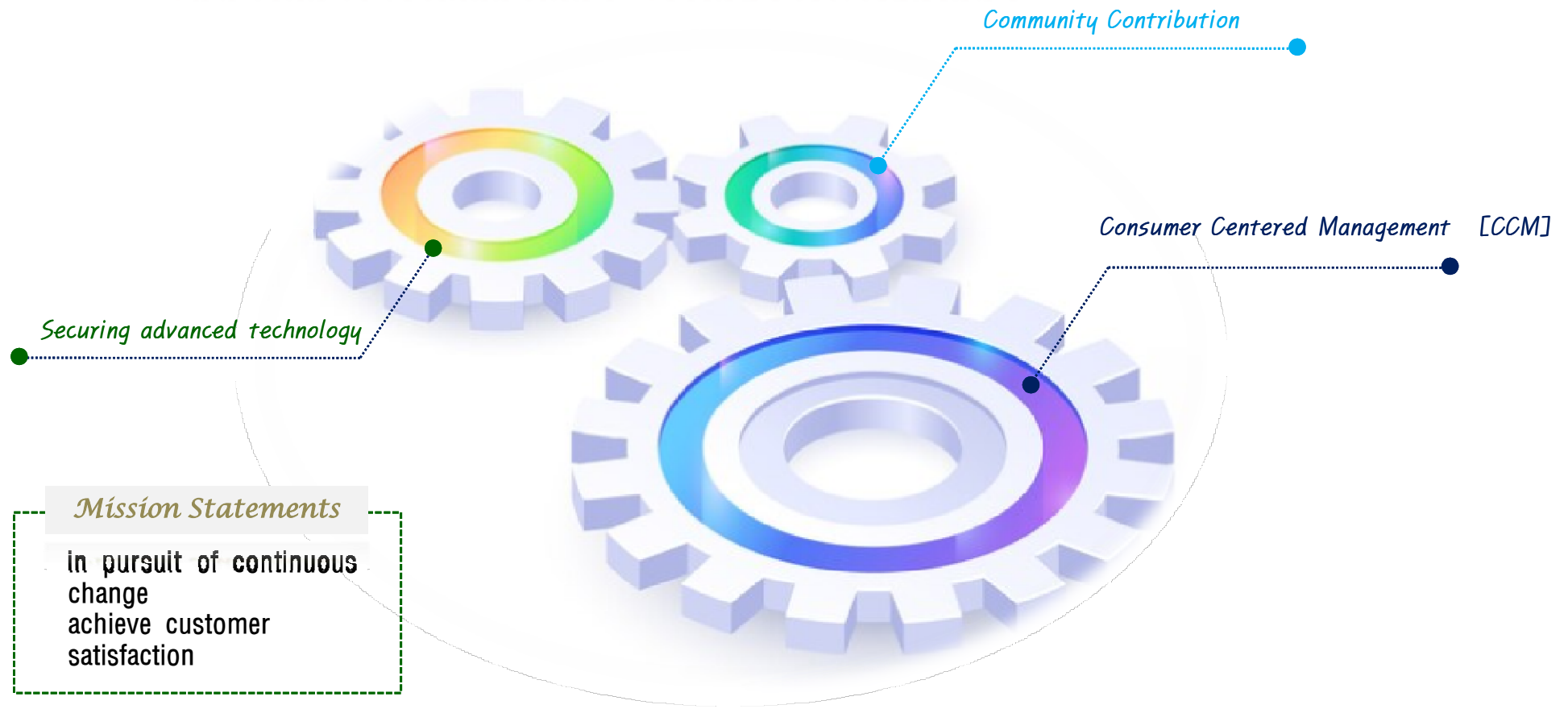


Byung-Ki Lee  
CEO

# 1. Company Overview

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## ▶ Management Philosophy



# 1. Company Overview

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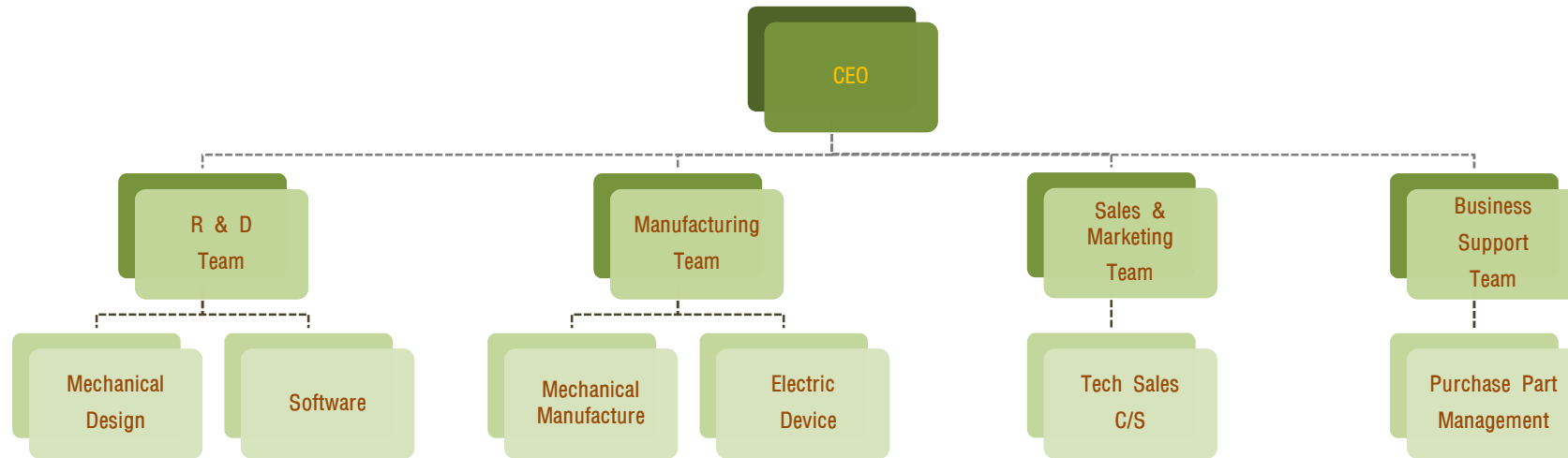
## Key Personnel

Part	Personal History
CEO	<ul style="list-style-type: none"> <li>• Design/Production of Process Automation Facilities in Semiconductor, FPD, Solar, Automotive, and Secondary Battery</li> <li>• Develop Customized Optimization Solutions</li> <li>• Development of Enterprise Carbon Neutral Solutions</li> <li>• Development of Convergence Technology for Production and Manufacturing of Enterprises</li> </ul>
Design Team Leader	<ul style="list-style-type: none"> <li>• Design of Process Automation Facilities in Automotive, Semiconductor, FPD, Solar, and Secondary Battery</li> <li>• Customized Optimization Design</li> <li>• Development of Smart Manufacturing/Convergence Technology in Enterprises</li> <li>• Developing Next-Generation Manufacturing Innovations</li> </ul>
Design Team Member	<ul style="list-style-type: none"> <li>• 2D_3D Design</li> <li>• Design of Engineering Structural Analysis</li> </ul>



## 2. Organization

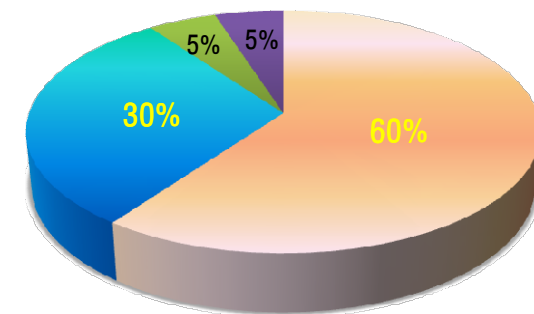
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### ► Our manpower

Category	R & D Team	Manufacturing Team	Sales & Marketing	Business Support Team	Total
Class "A" [More Than 15 Years]	8	5	1	–	14
Class "B" [More Than 5 Years]	–	–	–	1	1
Class "C" [Less Than 5 Years]	4	1	–	–	5
<b>Total</b>	<b>12</b>	<b>6</b>	<b>1</b>	<b>1</b>	<b>20</b>

■ Class A ■ Class B ■ Class C ■ Support



### 3. Core Value

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#### 2D/3D Image Processing

- 2D / 3D Image Processing Algorithms
- Area / Line Scan (TDI) Camera
- Mono / Color Image Processing Technology
- Defect Detection, Measurement Algorithms Technology
- High-Capacity High-Speed Image Processing Technology
- Real Time Review Technology

#### System Design Manufacturing

- 2D / 3D Mechanical Design
- Computational Analysis Based Design
- Electronic Design and Wiring
- OLED Evaporator Design



#### Vision Optics

- Automation Equipment Optical Design
- Inspection Equipment Optical Design
- Optical Module Development

#### FMS M/C System Control

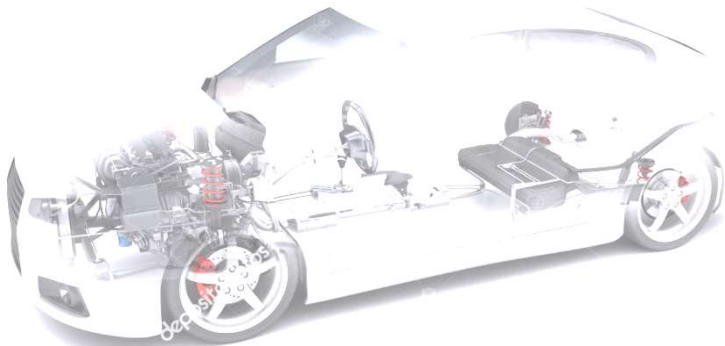
- Automation Equipment Integrated Control Technology
- Inspection Equipment Integrated Control Technology
- Robot, Servo, UMAC Control Technology
- CIM Corresponding Technology
- PC, PLC Control

## 4-1. Development

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### Auto Mobile

- Actively engaging in sales and service activities targeting leading customers in auto mobile sub-segments, providing customized products and technologies that meet their specific needs, continuously refreshing the latest technology directions and routes in the auto mobile sub-industry ;
- Continuously exploring potential markets to cultivate sustainable products and technologies for the company in the future ;
- Accompany potential small customers in the segmented field and grow with them together ;



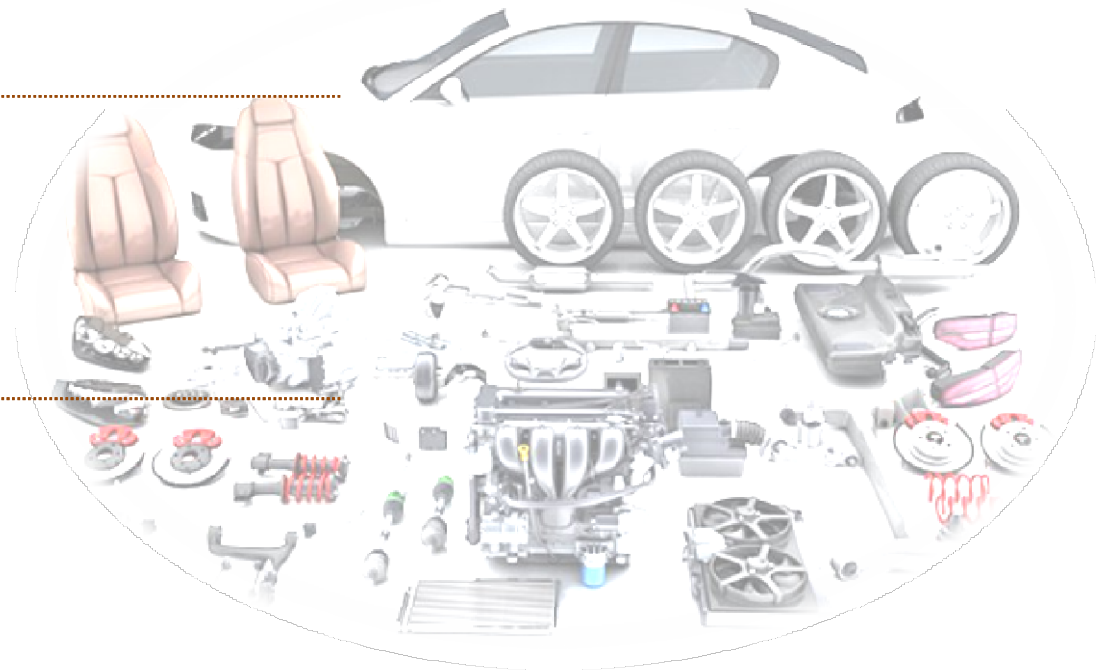


# 4-1. Development

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Auto Mobile

Field	Development History
Switch	<ul style="list-style-type: none"> <li>• Multi Function Switch set</li> <li>• W / Remote Control Switch set</li> <li>• C / Pad Switch set</li> <li>• Paddle Switch set</li> <li>• P / Window Switch set</li> <li>• Center Fascia Switch set</li> <li>• Consol Switch set</li> <li>• Keyboard Switch set</li> </ul>
Key Set	<ul style="list-style-type: none"> <li>• Key Reading M/C</li> <li>• Smart Key Assembly &amp; Inspection M/C</li> <li>• Key Set Auto Assembly M/</li> </ul>
ECT*	<ul style="list-style-type: none"> <li>• Radar Assembly &amp; Inspection line</li> <li>• Bobbin &amp; Stick Coil Winding M/C</li> <li>• ESCL Auto Assembly M/C</li> <li>• High Voltage Box Assembly Line</li> <li>• Molding Line Automation</li> </ul>



# 4-1. Development

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## Auto Mobile

## Business Area For Auto Mobile

Engine Housing Leak Test System



Smart Key Assembly & Inspection System



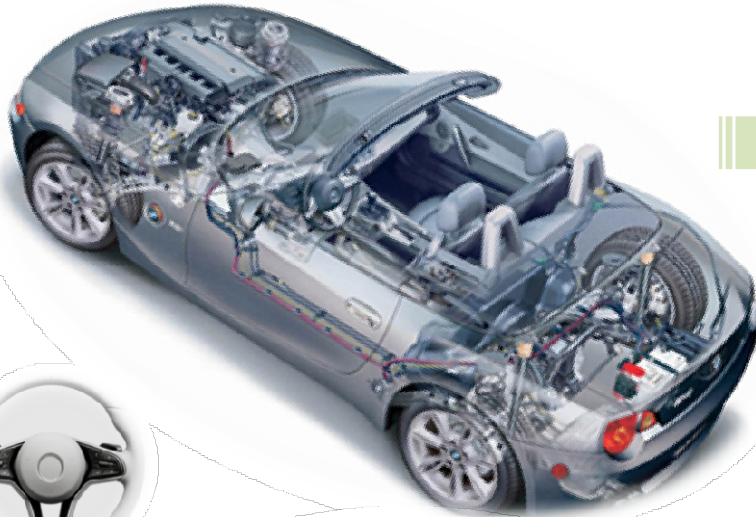
Steering Wheel Switch Part Assembly & Inspection System



Switch Laser Welding System



Key Set Assembly System



Window Switch Assembly & Inspection System



Coil Winding System

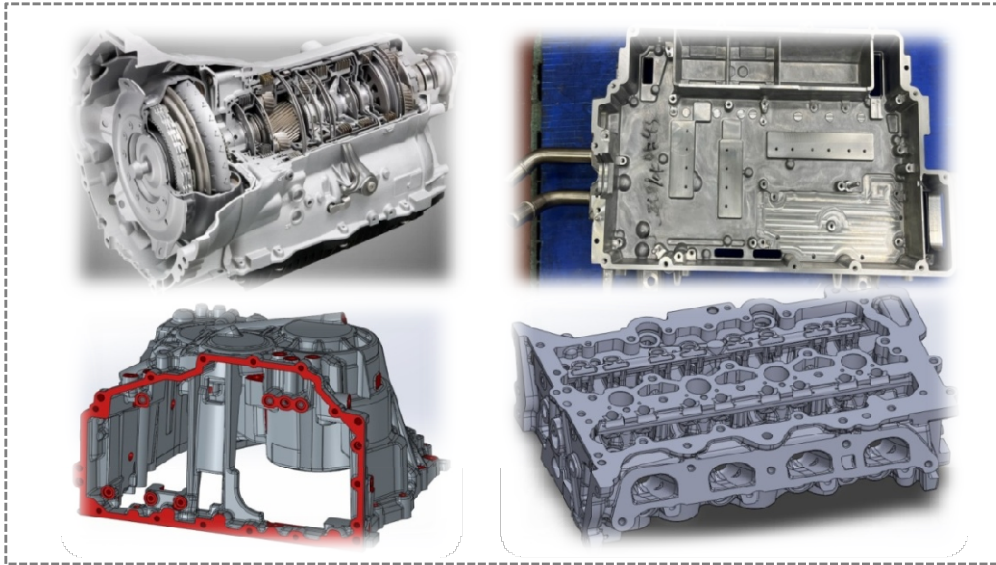
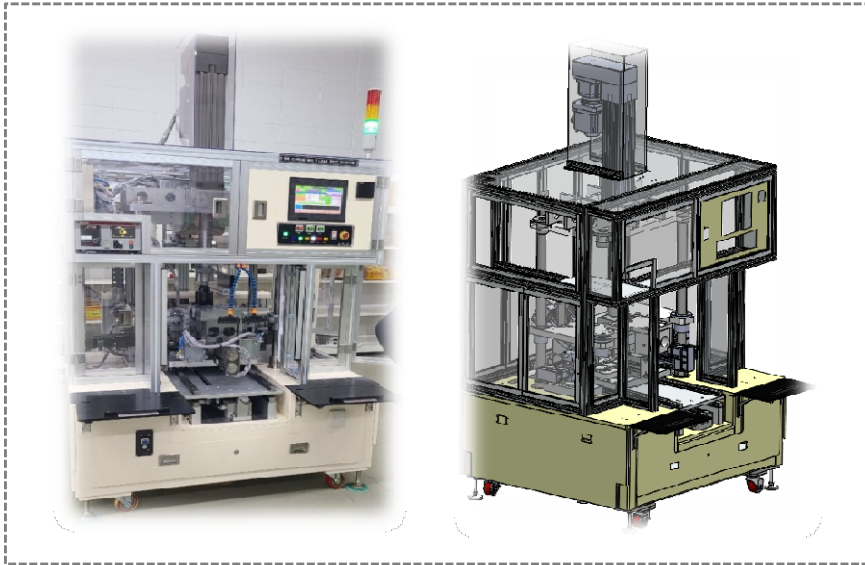


# 4-1. Manufacturing Performance

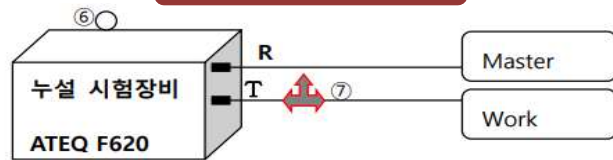
Auto Mobile

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## Leak Test System



### LEAK TEST 개념도



- After masking to fit the shape characteristics of various products High-pressure clean air is injected to limit the inspection of the pipeline Fine cast pores, cracks, shrinkage, insufficient filling, etc It is an equipment that detects leaks caused by various casting defects.

### System Specification

No	Category	SPEC	비 고
1	Power	AC220V, 60Hz, 10KW, 30A	
2	Air Pressure	5 Bar	
3	Leak Test Area	Basic 3 Type	
4	System Size	1,400 x 1,200 x H2,500	
5	Tact Time	120 Second	
6	Leak Accuracy	±1.2cc	

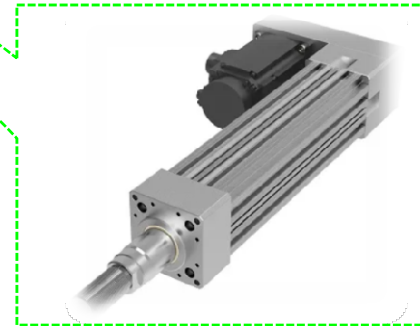
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### Leak Test System



#### 3-1. Leak Check Actuator Change the position Servo Cylinder Apply

- Patent Application : **AC Servo Motor Press Actuator**  
Leakage inspection device and leak inspection method used
- Conventional equipment required additional installation space for leakage and hydraulic unit of piping by applying hydraulic cylinder.



#### •Servo Cylinder Advantage \*

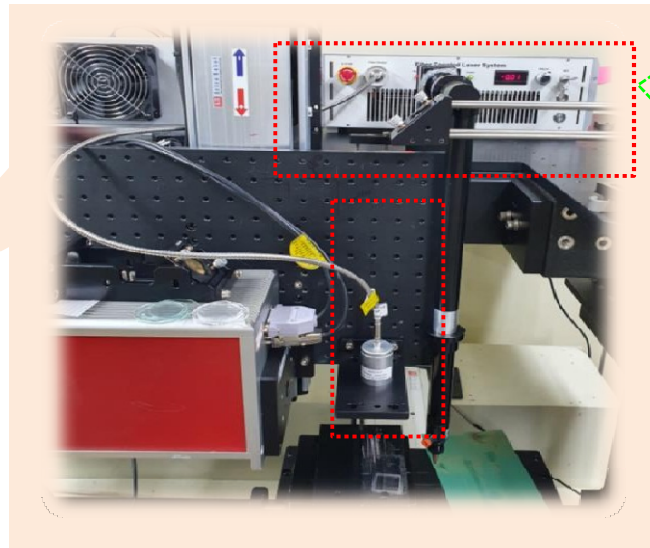
1. The masking position of various products can be changed.
2. Thrust control function with torque control of the motor.
3. No additional Unit required unlike hydraulic pressure.
4. Easy operator-centered operation and operation of equipment

# 4-1. Manufacturing Performance

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## Laser Welding System



### Laser Description

- Type : Fiber
- Wavelength : 980nm
- Max Power : 100W
- With Fiber Collimator Optics

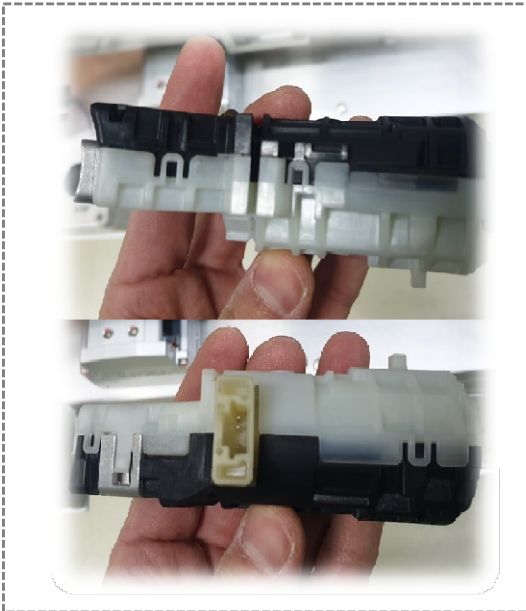
Fiber Core Diameter (μm)	Divergence (diverging)	Divergence (focused)	Beam(mm) at focused distance(cm)			
			@4-5cm	@10cm	@20cm	@30cm
100	6-178mrad	6-128mrad	200-250um	1-1.1mm	1.5-1.8mm	2-3.2mm
200	10-143mrad	10-125mrad	300-350um	1.4-1.5mm	1.7-3.2mm	2.3-4.8mm
400	19-172mrad	19-115mrad	700-800um	2.4-2.7mm	4-5mm	6-7.5mm

# 4-1. Manufacturing Performance

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## Laser Welding System



Parameter	
Sample Thickness	4 [mm]
Height	80 [mm]
Speed	38 [mm/s]
Power	103 [W]

Parameter	
Sample Thickness	2 [mm]
Height	100 [mm]
Speed	50 [mm/s]
Power	75 [W] ▶ 65 [W]

- ❖ Differences in power and processing speed depending on material
- ❖ When you want to speed up processing, you should increase Laser Power or consider other wavelengths of Laser.
- ❖ Processing Speed and Laser Power are not directly proportional.
- ❖ If laser power is up, the quality of the melting part may be affected due to the heat effect.
- ❖ Depending on the laser power, the price of the system can vary greatly.

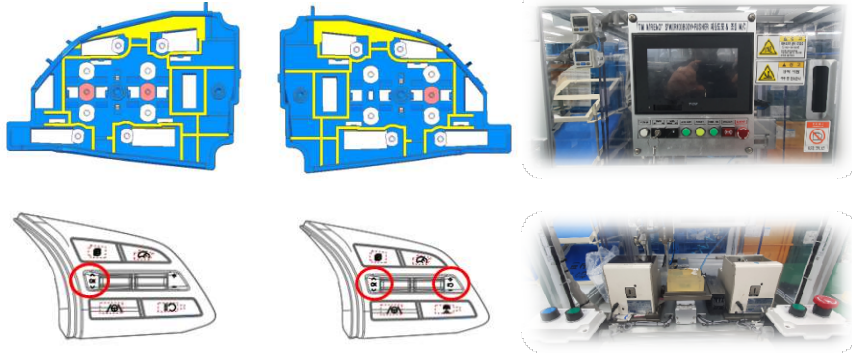
# 4-1. Manufacturing Performance

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## LX2 PE W/REMO Switch Process

### 1. Body + Pusher Grease Dispenser & Assembly System

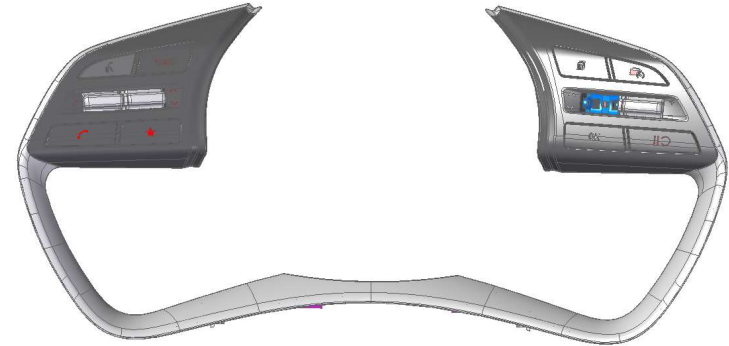


#### System Specification

1. dot application Type 설비 제작(One Point)
2. PUSHER - Grease Dispenser
3. Grease After Pusher Part Assembly
4. Grease LEAK do not happen
5. Work Sensing
6. easy to attach and detach
7. Product will be fixed

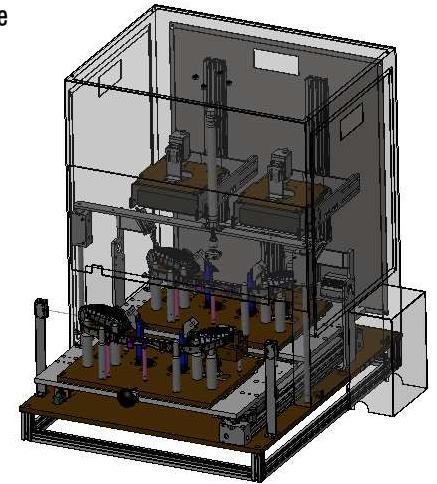


### 2. Assembly Inspection System



#### System Specification

- PC Type , Connector GLIP PIN Type  
Load Jig Apply
- Housing Auto Insert 및 Clamp
  - Jig Change Easy
  - With Bar\_Code Printer & Scanner
  - Vision Inspection (2CAM)
  - Vision Inspection Jig (LH+RH )
  - Cover, DOT Engrave
- Contact Inspection
- Jig (LH+RH Simultaneous Loading)
  - Light Master
  - SCREW Sensing
  - Cover, DOT Engrave



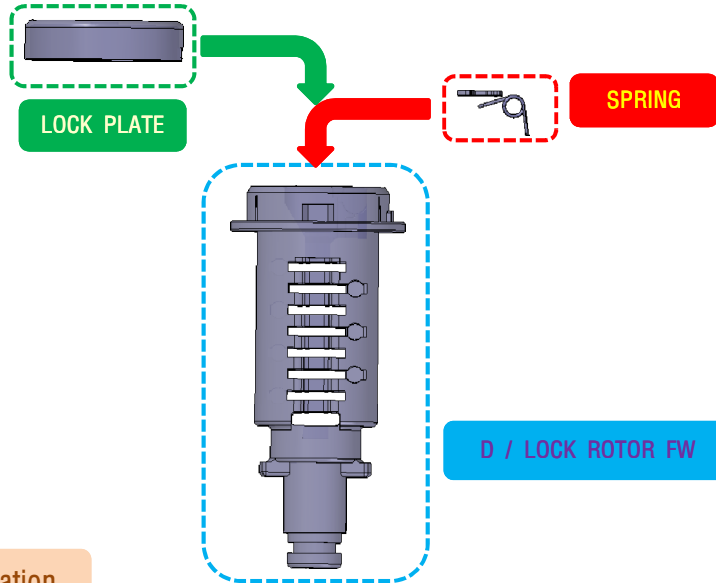
# 4-1. Manufacturing Performance

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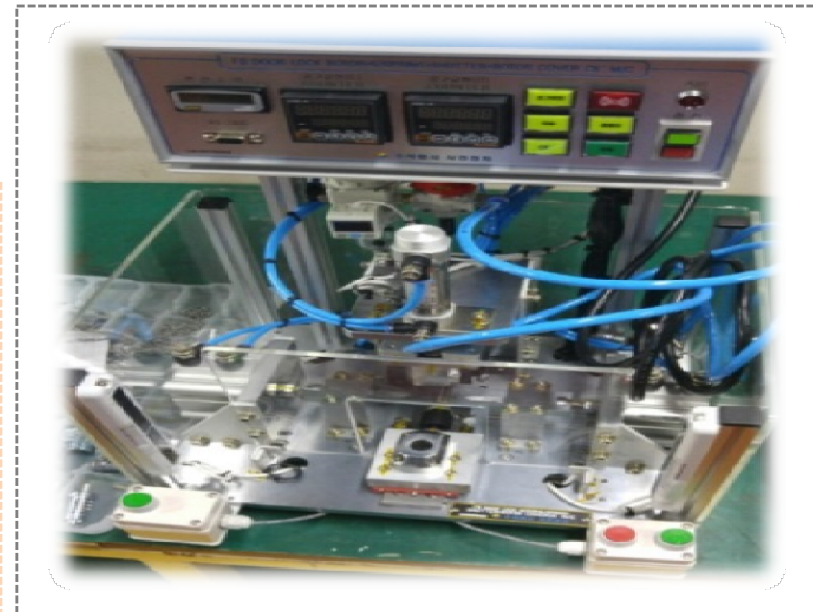
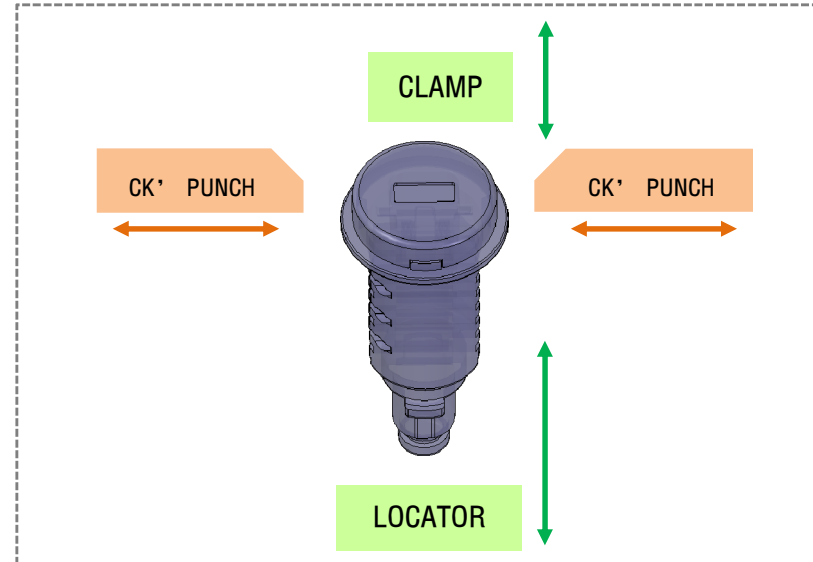
## XDD Key Set Assembly System

### 1. D/LOCK ROTOR CASE CK' M/C - LOCATOR



### System Specification

1. ROTOR + SPRING + SHUTTER + COVER + BLANK KEY  
Assembly After Loading
2. Locator Change Type
  - XDD D/LOCK ROTOR Locator 1 Type
3. 180° 2 EA CK'
4. XJI FUEL ROTOR CK' M/C Common





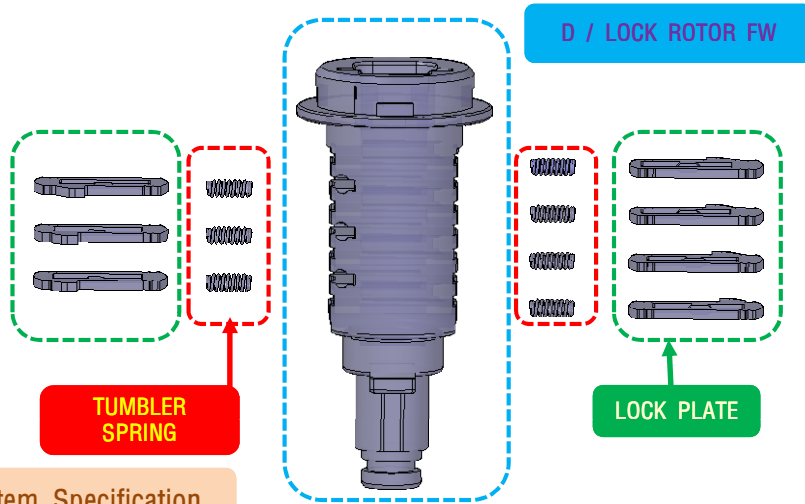
# 4-1. Manufacturing Performance

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## XDD Key Set Assembly System

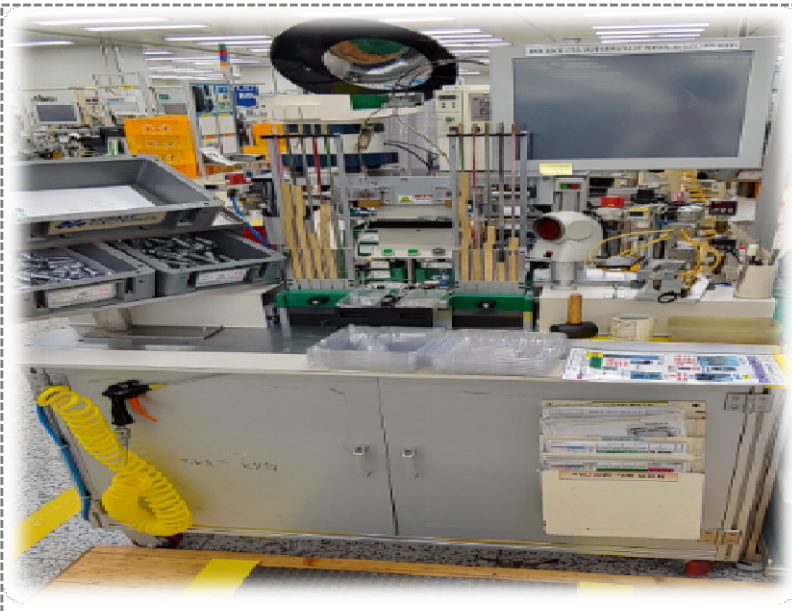
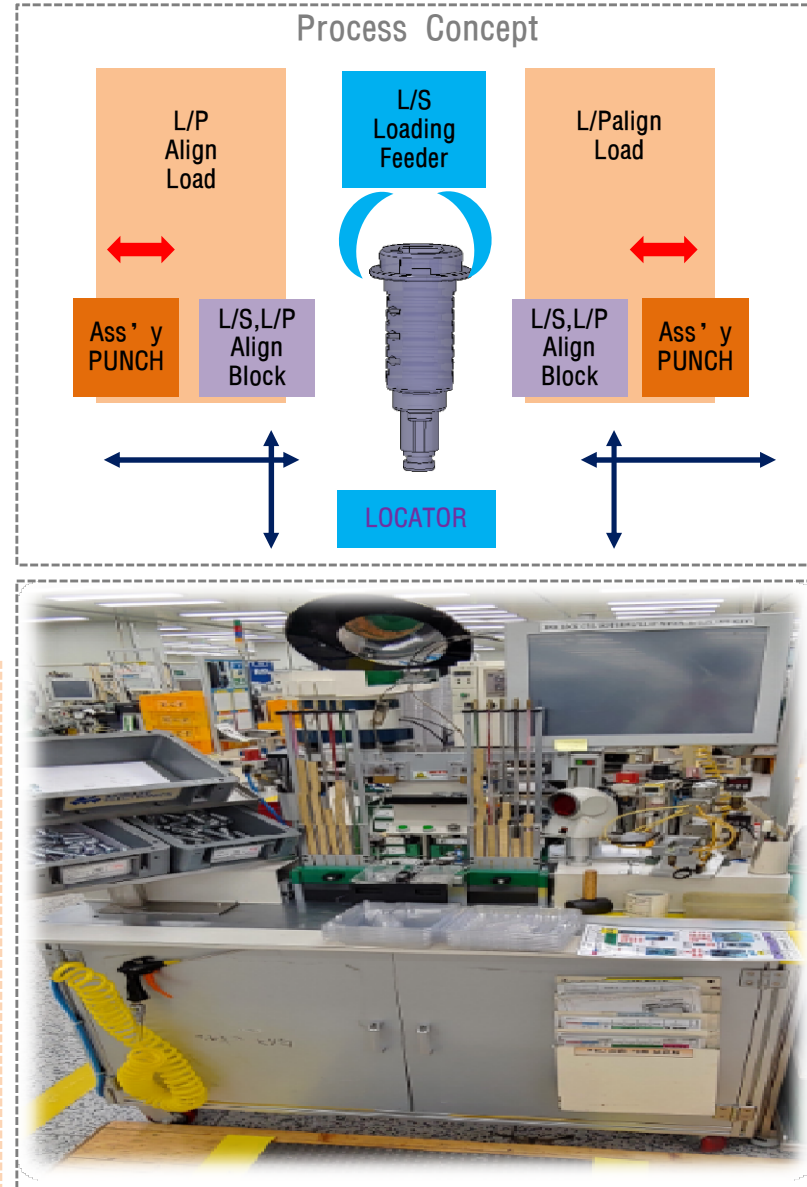
### 2. D/LOCK ROTOR + L/S L/P Auto Assembly System



#### System Specification

1. 1 circular Locator
  - D/LOCK F/W
2. Bar Code Reading After Key Code Check
  - Scanner Apply
3. L/S Missing Detection
4. 7 Level L/S,L/P Auto Align After Assembly
  - L/S, L/P Align Block Assembly Pitch - Up/Down Transfer
5. Sequence
  - ROTOR Loading -> Bar Code Reading -> L/S,L/P Align
  - > L/S Missing Detection -> Button Push -> L/S, L/P Assembly -> Key Insert -> Un\_Load

#### Process Concept



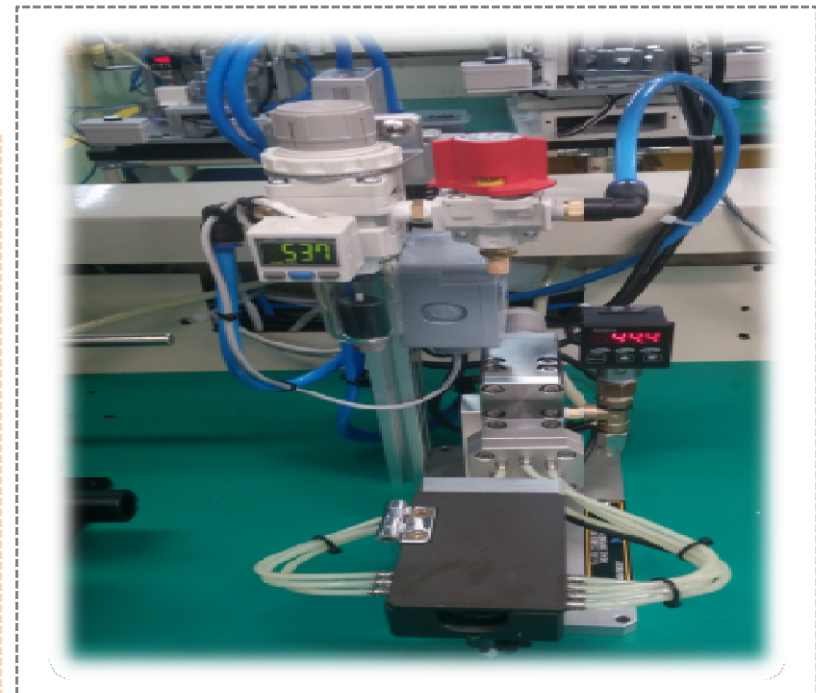
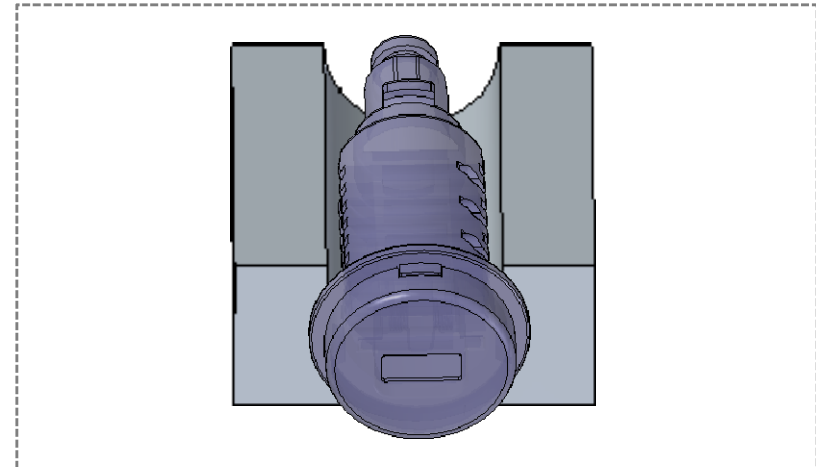
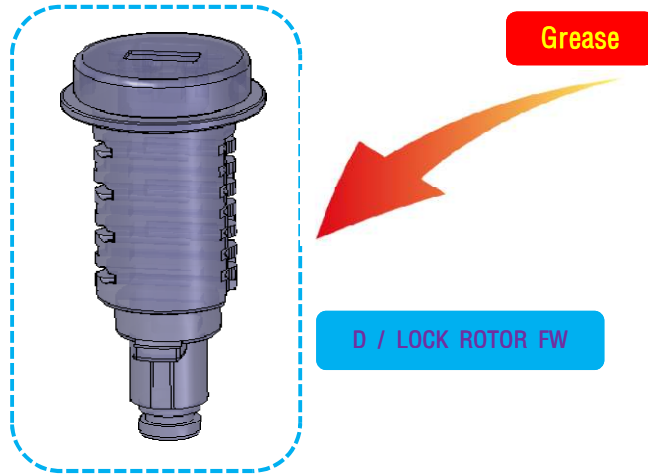
# 4-1. Manufacturing Performance

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## XDD Key Set Assembly System

### 3. D/LOCK ROTOR ASS' Y Grease Dispenser



### System Specification

- 1. Quantitative Dispenser Valve
- 2. Sensor 2 EA Apply
- 3. GS' Dispenser Point
- LOCK PLATE Assembly Part
- 4. Dispenser Width 250mm
- 5. CON' T BOX Size LF Size Same - W\*D\*H : 250\*250\*100
- 6. Prevention of leakage O-RING
- 7. BASE Fix HOLE Apply
- 8. Grease Nozzle Clean Valve Apply
- 9. 1 SET
- 10-1) D/LOCK ROTOR (FW)

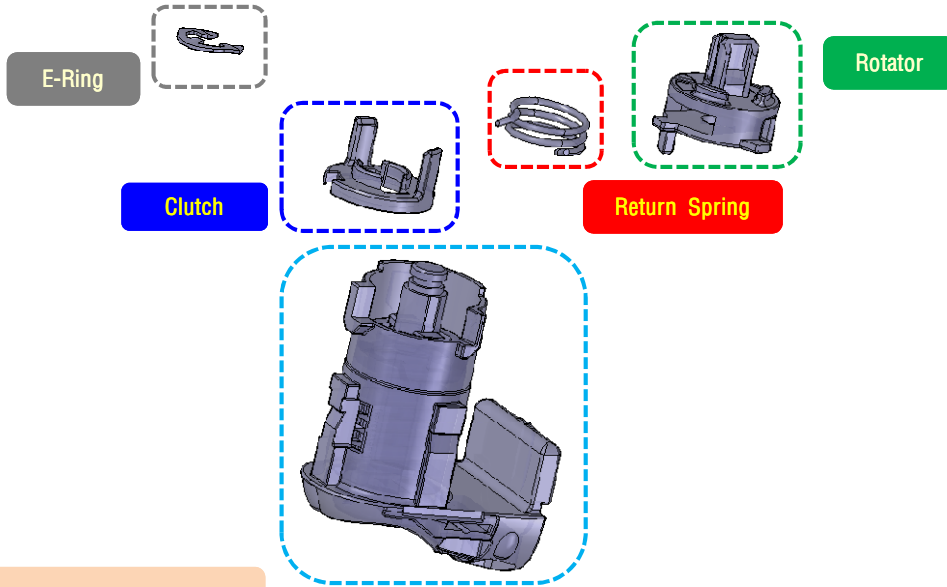
# 4-1. Manufacturing Performance

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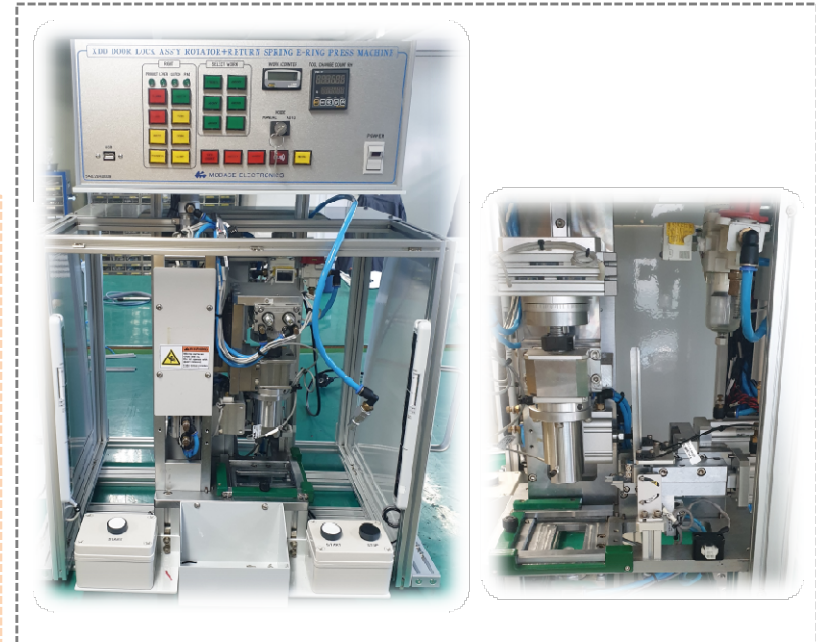
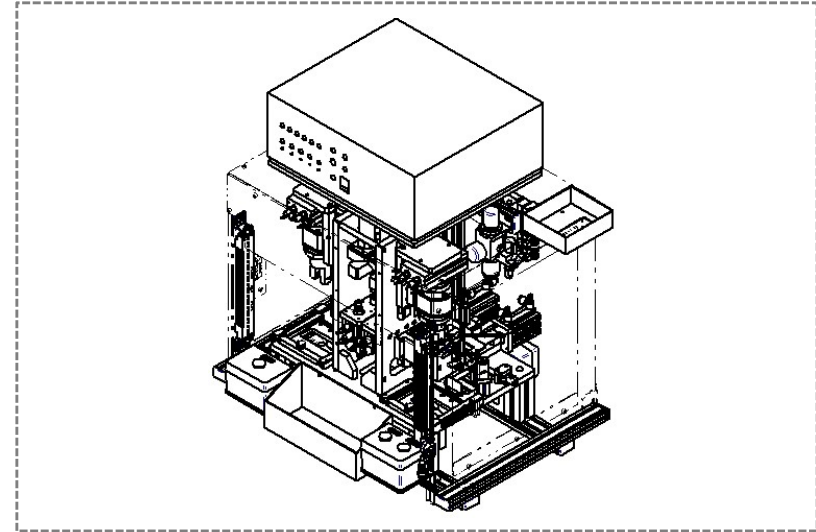
## XDD Key Set Assembly System

### 4. D/LOCK ROTOR ASS'Y + ROTATOR + R/SPRING Assembly System



#### System Specification

1. Urethane Coating (JF Basic)
2. Total : 1 Type
  - 2-1) ROTOR CASE(FW)
    - ※ CLUTCH + RETURN SPRING - ROTOR CASE Assrmbly
    - ROTATOR Top Point Load
    - Spring Rotate -> E-Ring Insert
3. JIG Engraving product specifications and facility numbers
4. FW Produced as a dedicated facility.(Locator Load 1 Zone)
5. Next For LH Locator Change Type Apply
6. FW, NFW Common
6. Product Q'ty, Tool Change Counter Apply
7. E-RING Sensor Aply
8. Insert Punch Spare 3 EA



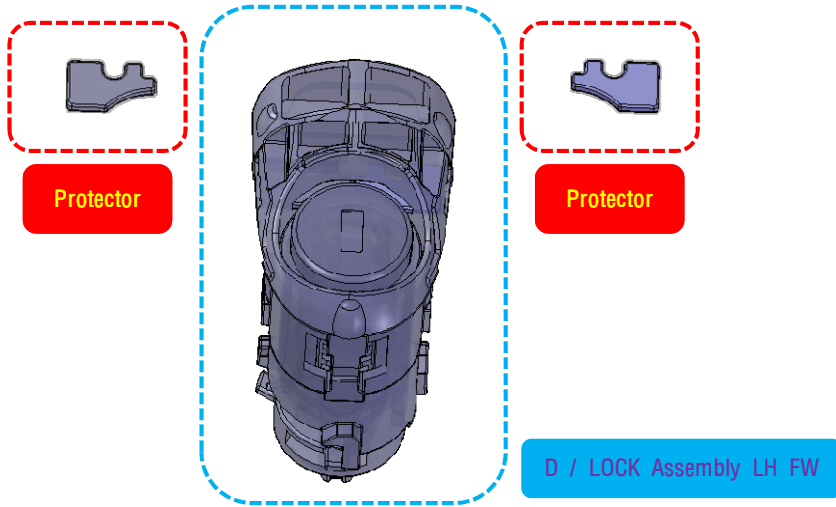
# 4-1. Manufacturing Performance

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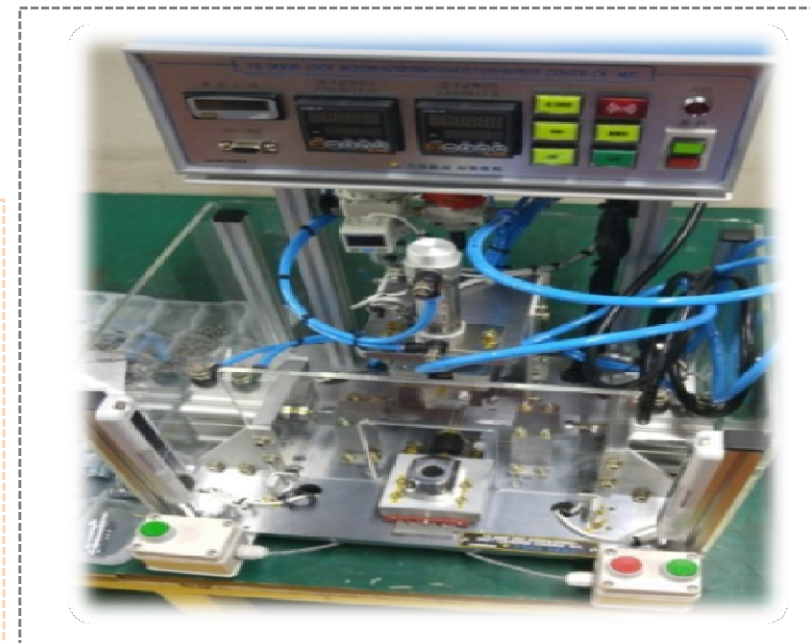
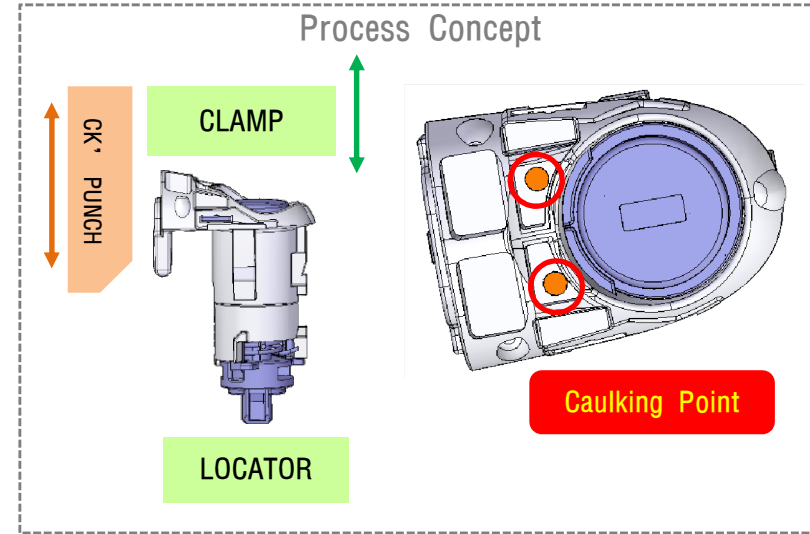
## XDD Key Set Assembly System

### 5. D/LOCK ROTOR ASS' Y + Protector CK' System



### System Specification

1. D/LCOK ROTOR ASS' Y + PROTECTOR After Assembly Load
2. Locator Change Type
3. Locator Forward → Top Position Clamp → Caulking
4. CK' PUNCH Spare 3 Set



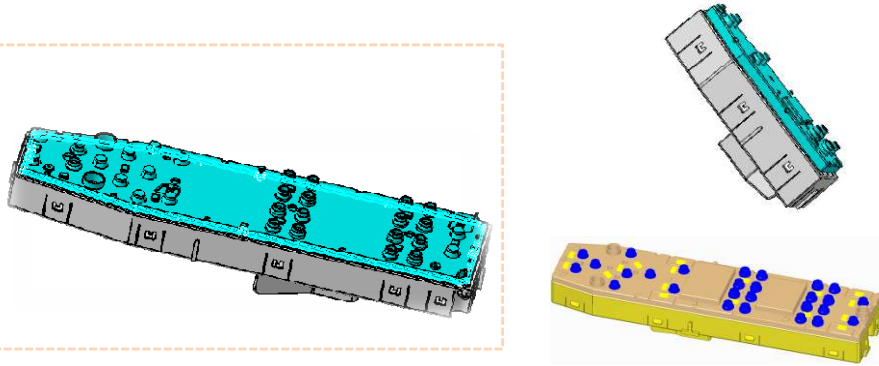
# 4-1. Manufacturing Performance

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## CV1a PW Switch Process

### 1. Rubber + P.C.B CPT Ionizer

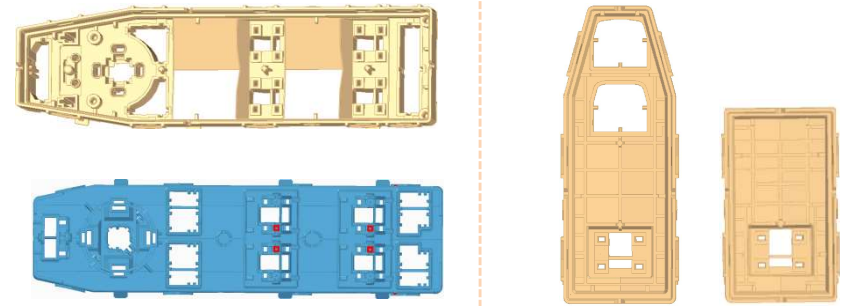


#### System Specification

1. Conduct Ionizer after product detection
2. Ionizer Blower Time Adjust Type
3. Ionizer Blower 1

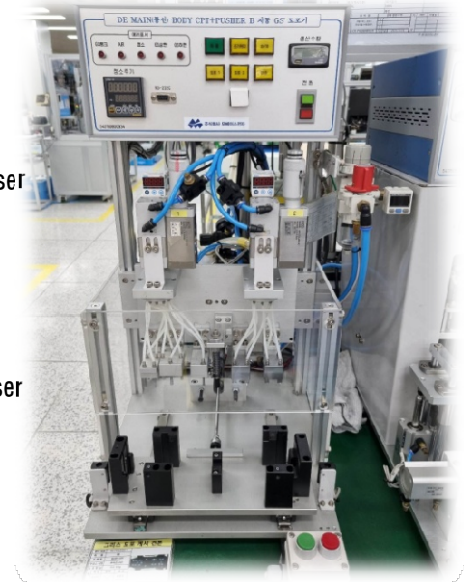


### 2. Body + Pusher Grease Dispenser System



#### System Specification

1. Block Dispenser Type System
2. Pusher Wet Type Grease Dispenser
3. Grease Valve Tome Change
4. Grease Leak Do Not Happen
5. Loading Sensor Apply
6. Load & Un\_Load Easy
- 7.
8. BODY reverse settlement Dispenser



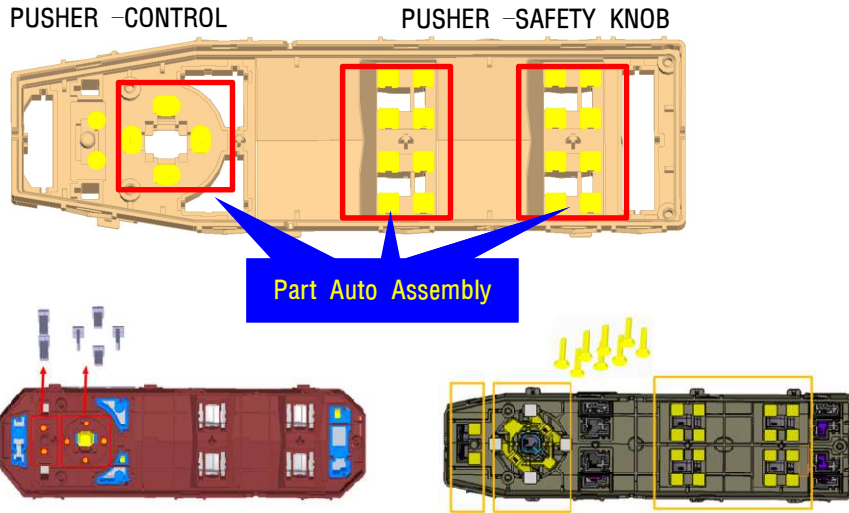
# 4-1. Manufacturing Performance

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## CV1a PW Switch Process

### 3. Body CPT + Pusher Auto Assembly System

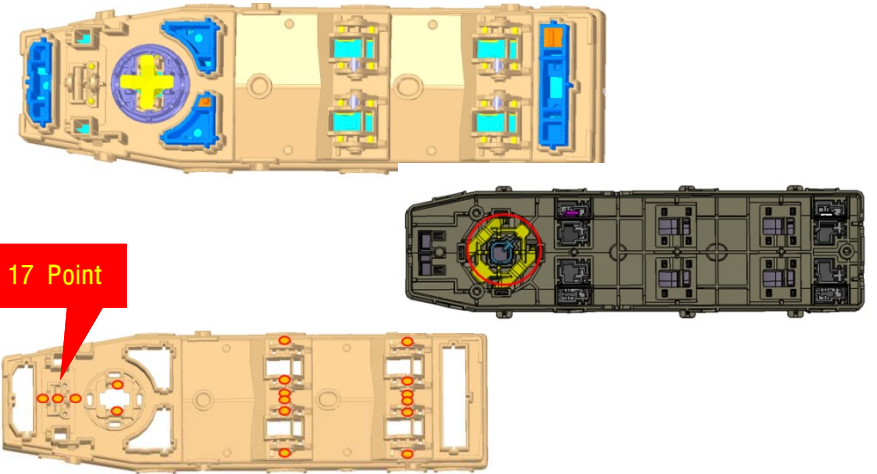


#### System Specification

1. BODY reverse settlement
2. Lad JIG Change TYPE
3. Fixed
4. Load & Un\_Load Easy
5. PUSHER 2 Type Load (CONTROL ,SAFETY 상이)
7. BODY CPT Load Jig KNOB Bottom Part Space Apply
8. C/T 60 Second
9. NE1a PW BODY CPT + PUSEHR Auto Assembl M/C Common



### 4. Body + Knob Grease Dispenser System



#### System Specification

1. Block Dispenser Type System
2. Grease Valve Time Adjust Type
3. Grease Leak Do Not Happen
4. Load Check Sensor
5. Load & Un\_Load easy
6. Fixed
7. Ref To Dispenser Point
8. BODY Direction Check Dispenser (reverse Direction CASE CPT Load JIG Apply)



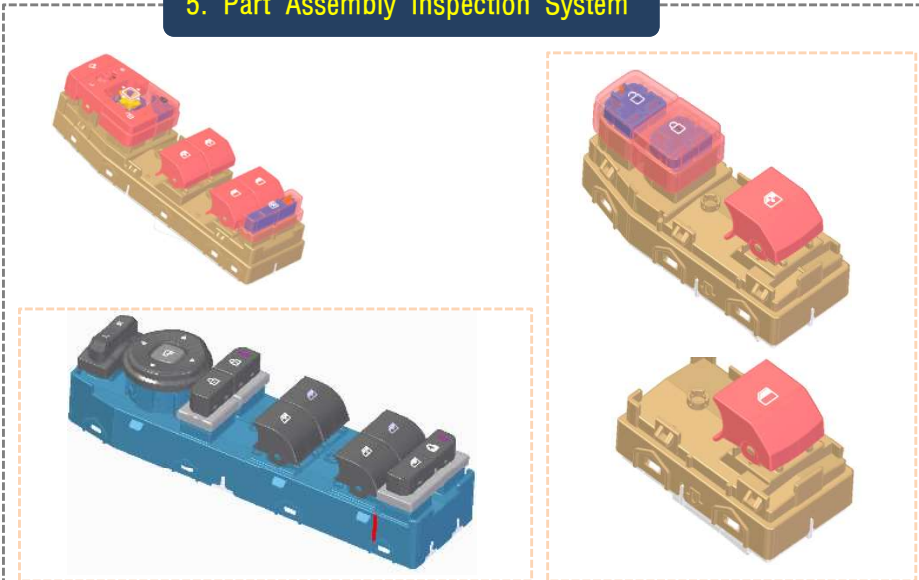
# 4-1. Manufacturing Performance

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## CV1a PW Switch Process

### 5. Part Assembly Inspection System



#### System Specification

- PC Inspection ,
- Connector CLIP PIN Type (16PIN / HS CAN)
- Bar Code Printer / Scanner With
- Vision Inspection
- Vision Inspection LOCATOR Apply
- Connect Inspection
- LOCATOR Apply
- LOCATOR Change TYPE
- SCREW Sensing
- Connect Inspection
- MAIN Load LOCATOR Apply



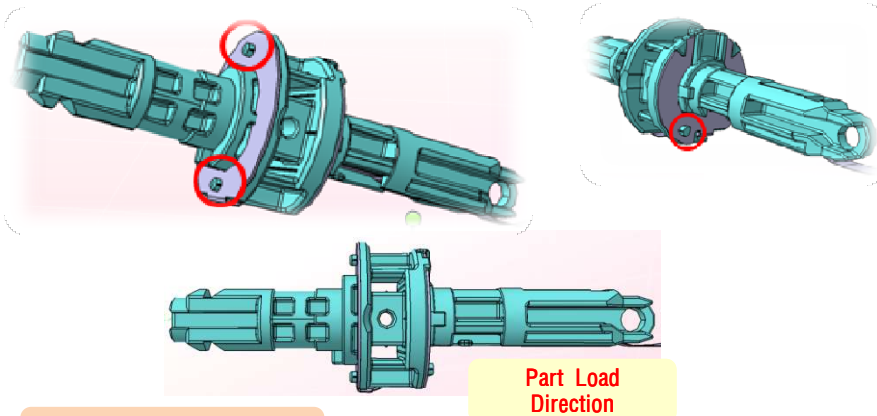
# 4-1. Manufacturing Performance

Auto Mobile

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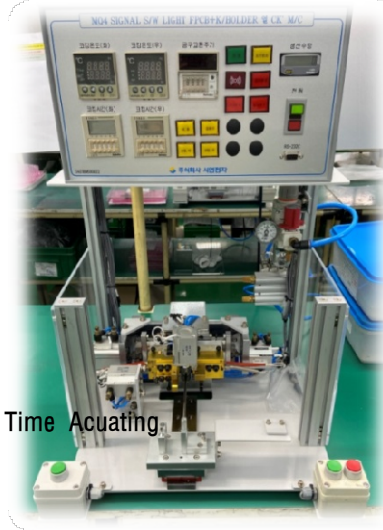
## CL4 M-F Switch Process

### 1. Light Knob Holder + F.P.C.B CK' System

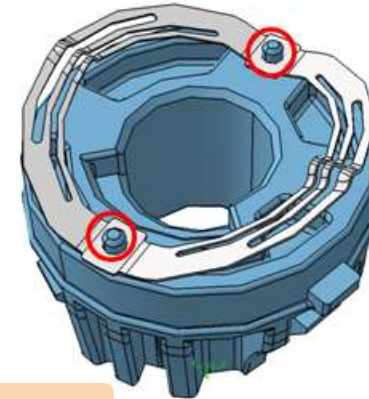


#### System Specification

1. Load & Un\_Load Easy
2. LIGHT CONTACT Direction 2 EA  
FOG CONTACT Direction 1 EA  
Same Time CK' Apply
3. CK' Height Adjust TYPE
4. Fixed
5. WIPER KNOB HOLDER Common  
-. SIG' , WIP' Caulking Punch Same Time Acuating.
6. Process
  - 1) Load -> Move , CK' Active
  - 2) Move > Un\_Load

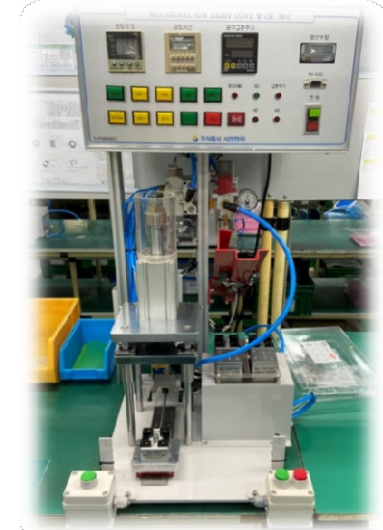


### 2. A/LIGHT CONT' HOLDER CPT CK' System



#### System Specification

1. CK' Height Adjust TYPE
2. Connect Point LAMP
3. GO / NO Gauge
4. Ng Box
5. LOCATOR Change Type
6. A/LIGHT & RR WIPER CONT' HOLDER Common
7. Process
  - 1) Load -> Move , CK' Active
  - 2) Height Check
  - 3) Move -> Un\_Load





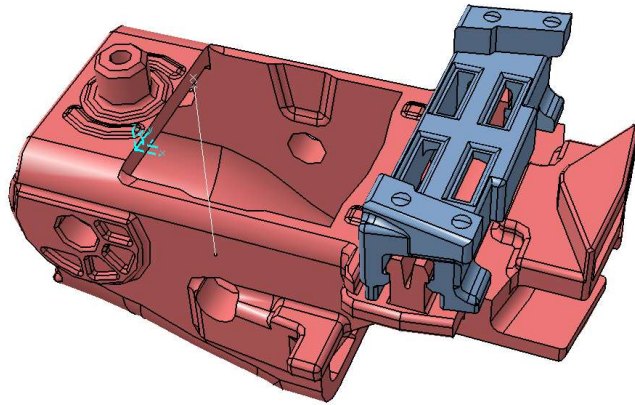
# 4-1. Manufacturing Performance

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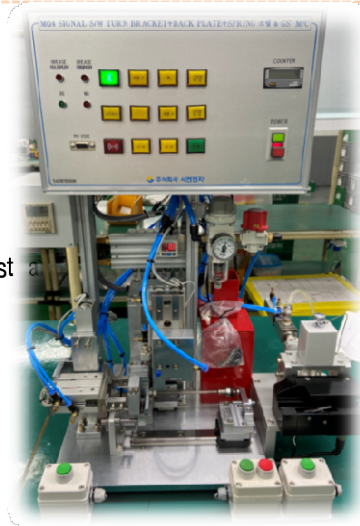
## CL4 M-F Switch Process

### 3. TURN BRACKET CPT Ass<sup>m</sup> y & GS<sup>'</sup> System

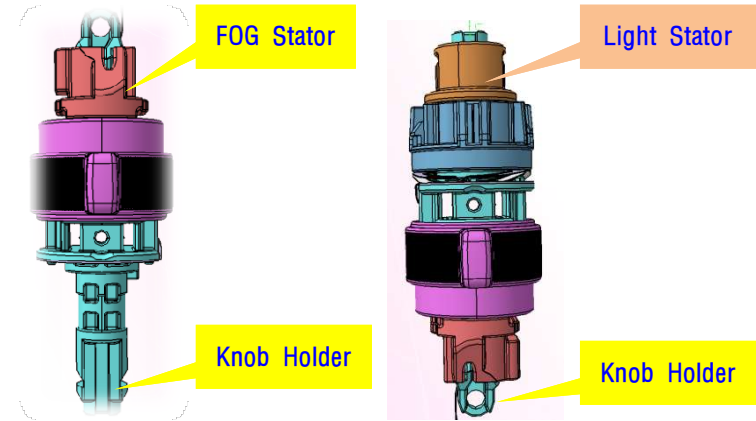


#### System Specification

1. T/BRACKET, B/PLATE, B/SPRING  
Auto Assembly  
- 3 Type Part individual Load
2. B/SPRING Check  
- Let's get the assembly through the test a test for presence or absence
3. GS<sup>'</sup> Dispenser  
- Load After Dispenser

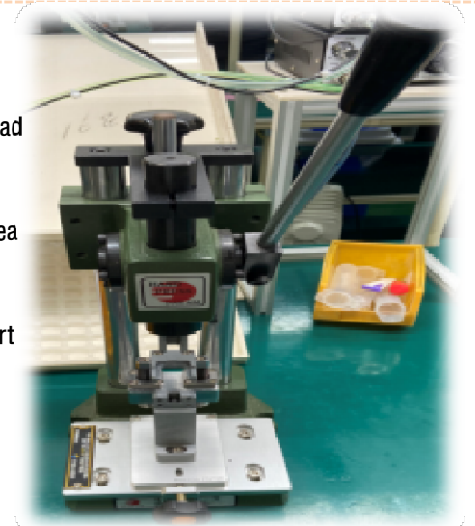


### 4. FOG&LIGHT STATOR PF<sup>'</sup> (HAND PRESS) System



#### System Specification

1. K/HOLDER+KNOB  
CPT+STATOR Assembly After Load
2. HAND PRESS TYPE
3. FPCB Escape the interference area
4. FOG STATOR,  
LIGHT STATOR Same Time Insert
5. LH, RH Common



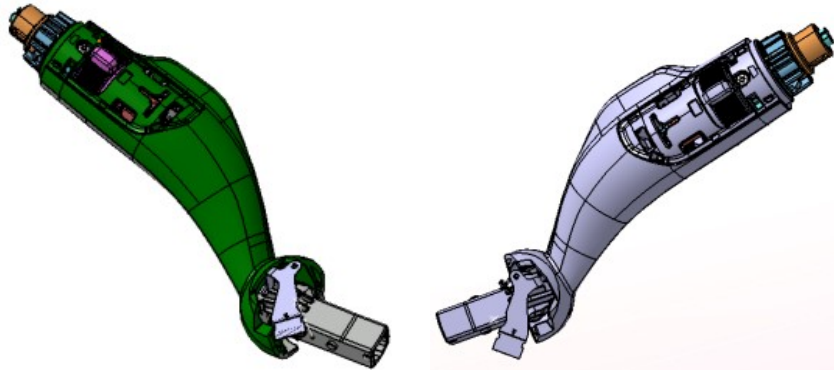
# 4-1. Manufacturing Performance

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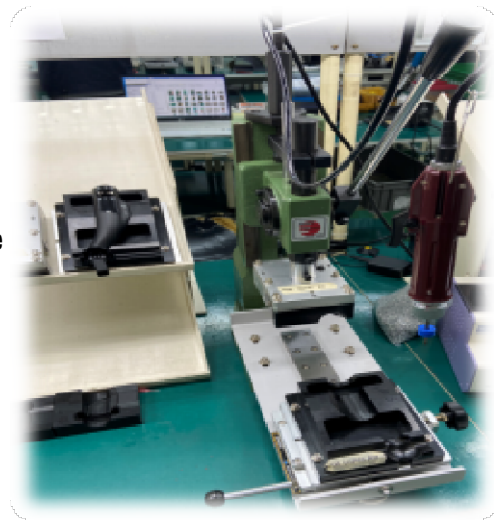
## CL4 M-F Switch Process

### 5. L/L/UPPER + L/COVER + DECO PF' (HAND PRESS) System

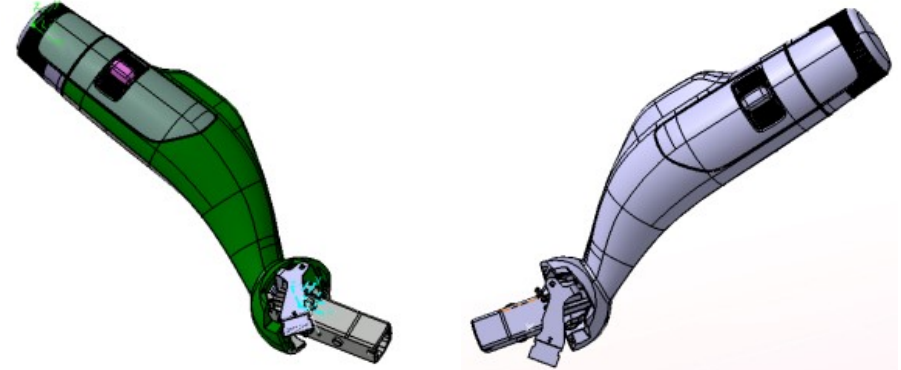


#### System Specification

- 1. Load & Un\_Load Easy
- 2. No Scratch
- 3. LH RH Common
  - Load , Punch Change Type
- 4. HAND PRESS TYPE
- 5. Fastening pedestal
- 6. DECO Insert Jig Common



### 6. LIGHT LEVER CPT+K/UPPER PF' M/C System



- 1. Up/Down Moving System
- 2. LH RH Common
- 3. Bottom Locator Heat Treatment
- 4. Work Check sensor



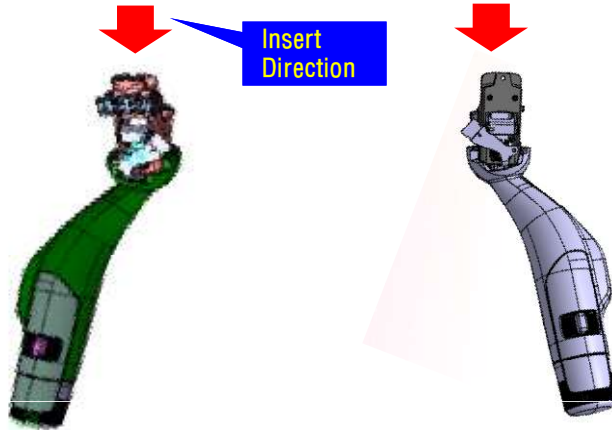
# 4-1. Manufacturing Performance

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## CL4 M-F Switch Process

### 7. L/LEVER CPT + T/BACKET PF' (HAND PRESS) System

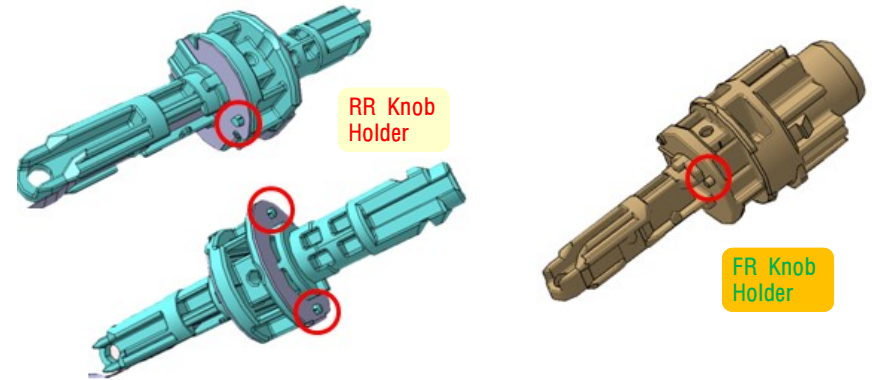


#### System Specification

1. LEVER CPT+ BRACKET Assembly After Load Insert
2. LH RH Common  
-. Load , Punch Change Type
3. HAND PRESS TYPE

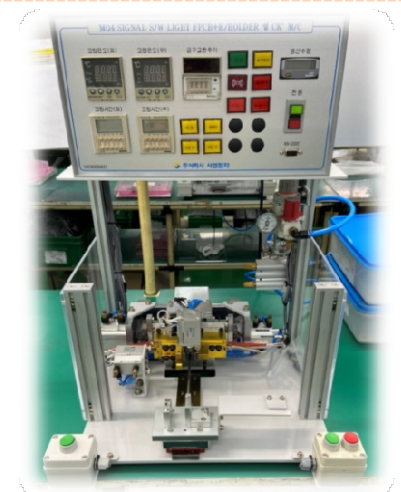


### 8. WIPER KNOB HOLDER + FPCB CK' M/C System



#### System Specification

1. Load & Un\_Load Easy
2. RR HOLDER, FR HOLDER Common Use  
-. RR WIPER CONTACT Dir 2EA  
INT CONTACT Dir  
1 EA Same time CK' Progress  
-. FR WIPER KNOB HOLDER Insert  
1 EA CK' Progress
3. CK' Height Adjust TYPE
4. Welding Fixed
5. LIGHT KNOB HOLDER Common  
-. SIG' , WIP' Corking Punch Sam Time
6. Process  
1) Load -> Move , CK' Progress  
2) Move -> Un\_Load



# 4-1. Manufacturing Performance

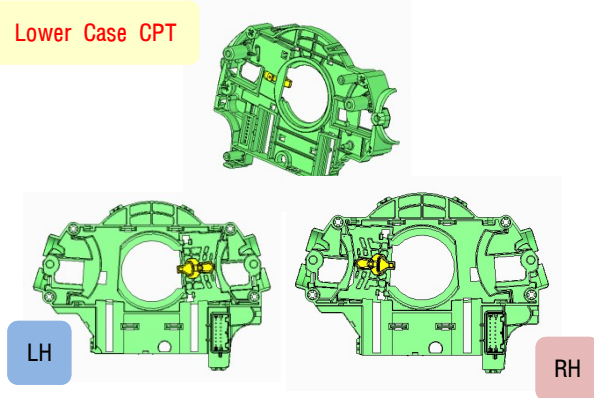
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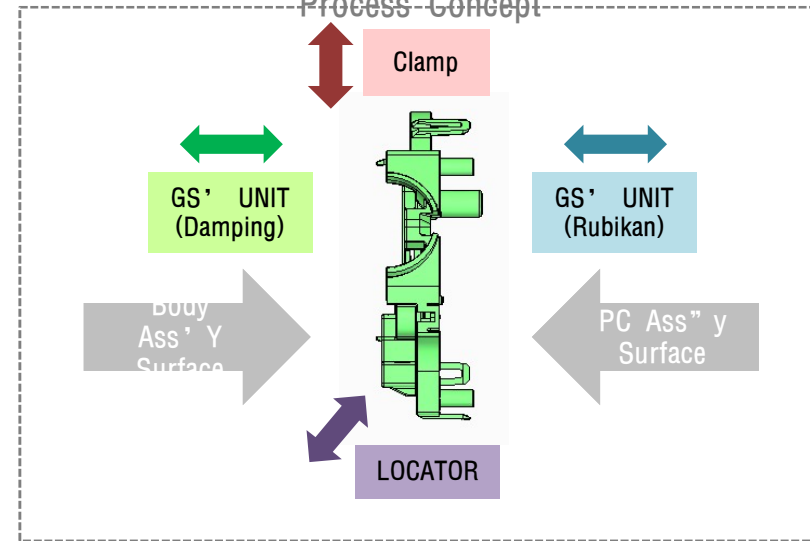
## CL4 M-F Switch Process

### 9. CASE LOWER GS' Dispenser M/C System

Lower Case CPT



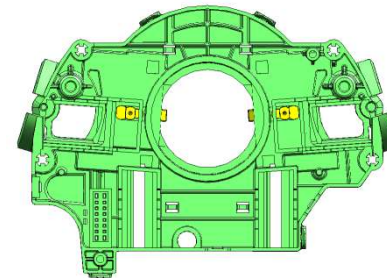
Process-Concept



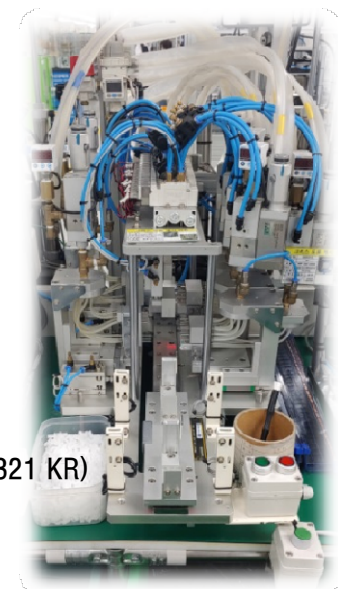
### System Specification

- Control Box Separation Type
  - Mechanical Part Wire : 1m
  - Mechanical Part Length 600mm
- Double Side Dispenser (GS' 2 Type Use)
  - Make it stand and LOAD
  - Locator After Forward Dispenser
  - GS' Dispenser Pump 2 EA Use
- Fixed Clamp Apply
- LH, RH Common
  - Implementing Specification Selection
  - Dispenser Point Common
  - Damping Dispenser Individual forward application

LH&RH Common



- Damping Improvement (44-321 KR)
- Rubikan



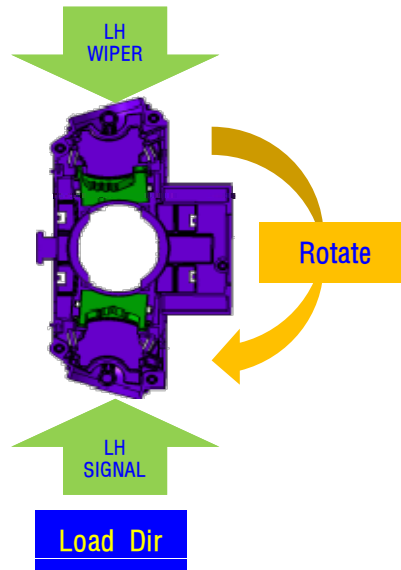
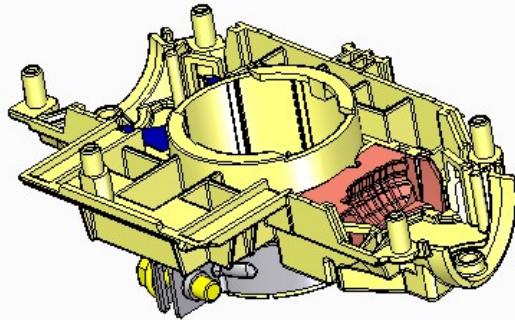
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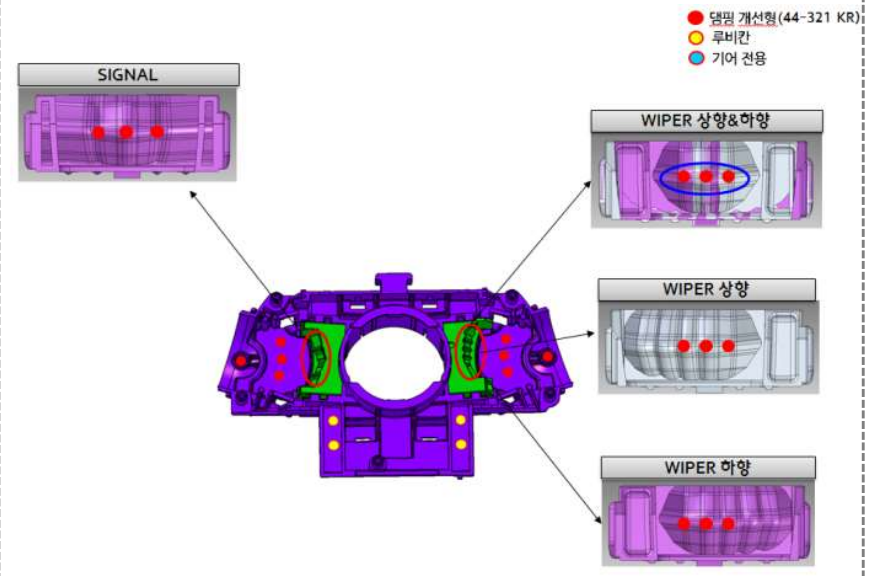
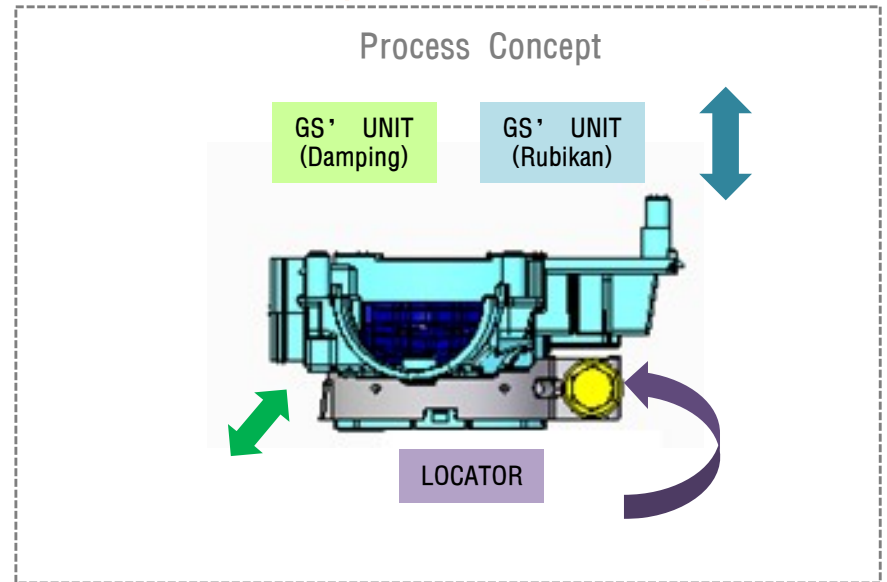
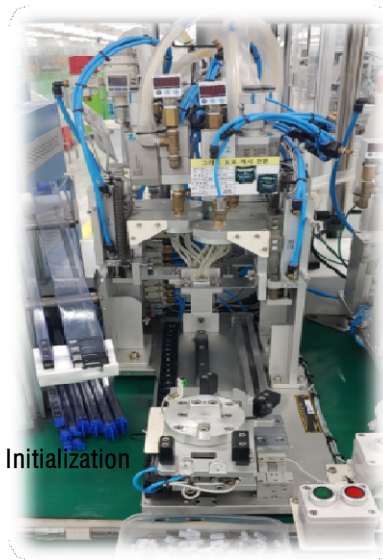
## CL4 M-F Switch Process

### 10. BODY CPT GS' Dispenser M/C System



### System Specification

1. Control Box Separation Type
  - Mechanical Wire : 1m
  - Mechanical Length 600mm
2. GS' 2 Type Dispenser
  - Locator After Dispenser
  - GS' Dispenser Pump 2 EA Use
  - PLATE Top/Bottom Dispenser
  - PLATE After Bottom > Forward Dispenser
3. LEVER CPT Combined use of assembly support
  - Body Rotate Function
    - ↳ Rotate Button Apply
    - ↳ After Rotate -> Un\_Load -> Initialization  
(Part Check Sensor 1 Sec After -> Missing -> Initialization)
4. LH, RH Common
  - Dispenser Point Common



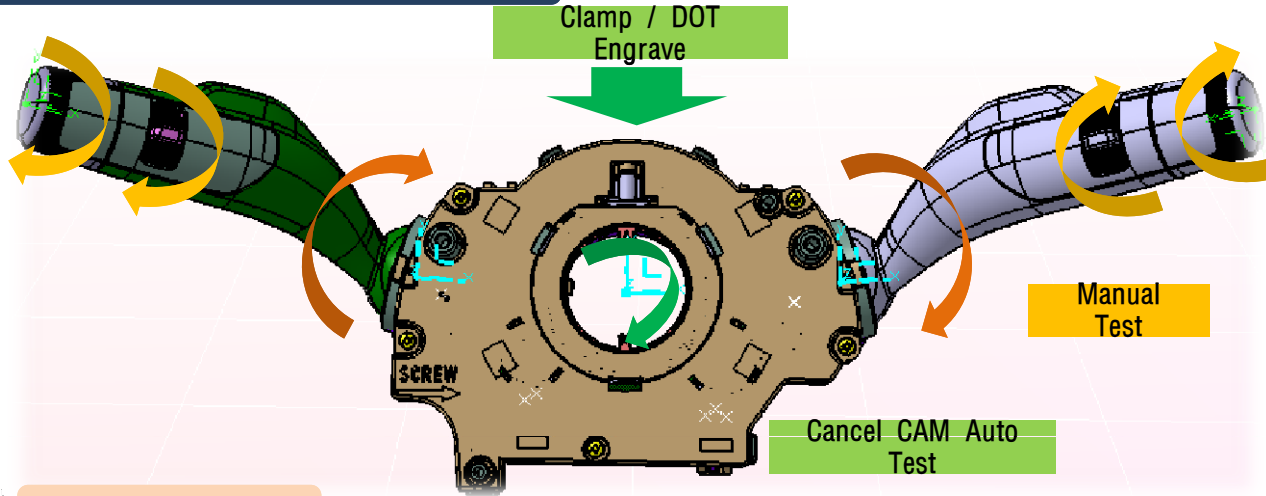
# 4-1. Manufacturing Performance

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## CL4 M-F Switch Process

### 11. Part Assembly 완성 Inspection System

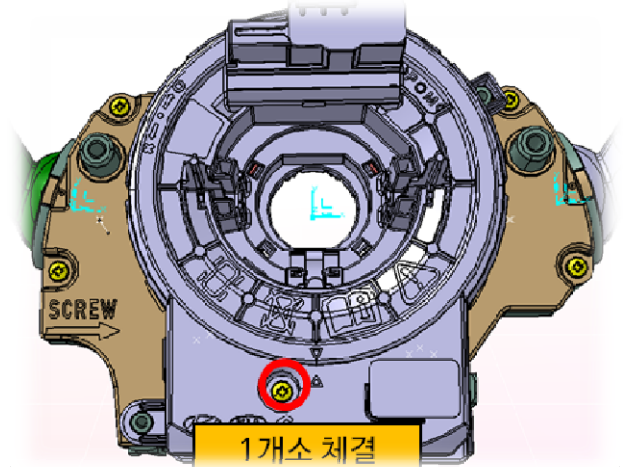


### System Specification

1. PC TYPE, CLIP PIN TYPE Housing
2. SIGNAL/WIPER LEVER Manual Test
3. Part Load Guide
  - ↳ Clamp, CANCEL CAM Auto Rotate
4. FOG/LIGHT/VOLUME/RR WIPER Manual Test
5. TURN/WIPER/DIM' / WASHER Manual Test
6. LHD/RHD Common
7. DOT Engrave, Label Print & Bar Code Scan
8. NG Box Apply
9. Vision Inspection



### 12. SRC + Screw Fastening pedestal



1. Column Assy Part Load
2. Load Guide Min Size Apply



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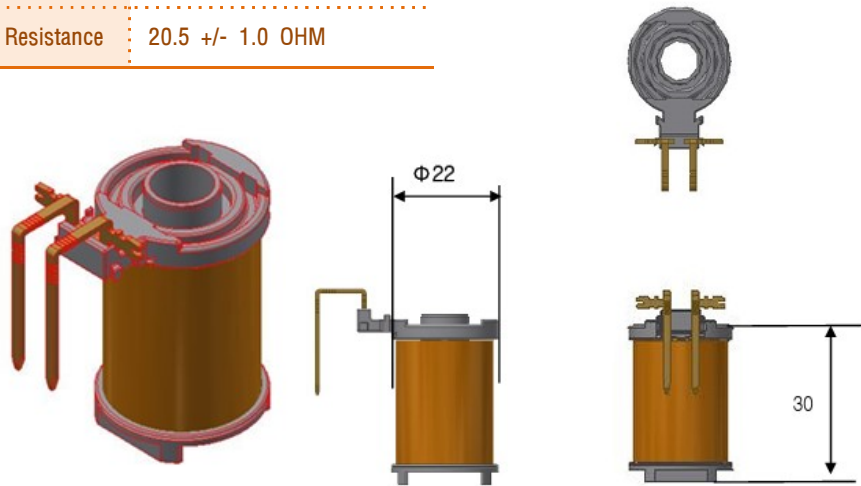
## Stick Type Winding System \_ Auto Mobile Antenna Line

### System Specification



Bobbin

Bobbin	Nylon Plastic PA66 GF45
Terminal	C2680 0.8t + Sn plating
Coil	1AIW 0.27, 1420 TURN
Resistance	20.5 +/- 1.0 OHM



1	System Name	CCV Coil Winding & Assembly System	
2	Work	CCV CN7	
3	Progress	Part Name	CCV Bobbin Assembly
		Type	Auto Loading
		Capacity	1,500,000 EA (Year)
		Time	4,800 Hours/Year
		Cycle Time	10 Second [Winding Apply 5 Sec 단축] [Machine Cycle Time]
4	Utility	Rate	90 %
		Electric	Φ 3 380VAC
		CDA	5 Bar
5	System	Temperature	0 ~ 40 °C, 5 ~ 85 %
		Bobbin, Terminal 1, Terminal 2, Loading Unit	
		Terminal Press Unit	
		Winding Unit	
		Welding Unit	
		Vision Inspection Unit	
		Resistance Surge Inspection Unit	
		NG / Good / Un_Loading Unit	

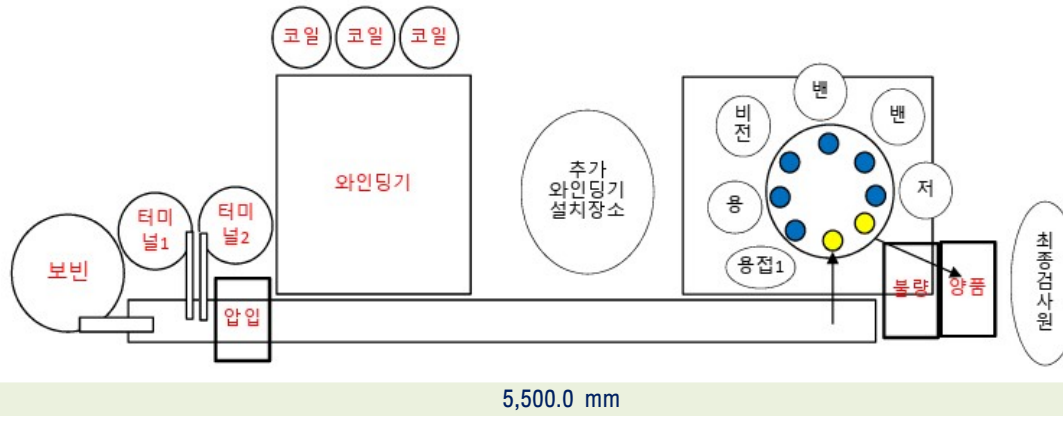
# 4-1. Manufacturing Performance

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## Stick Type Winding System \_ Auto Mobile Antenna Line

Process	CCC-S061	CCC-S062	CCC-S063	CCC-S064	CCC-S065
Process Name	Terminal Insert	Winding	Hot Staking	Bending	Resistance / Appearance Inspection
Ref To Picture	Terminal 1, 2 	1AIW 0.27 			
Process No	Terminal Insert	Coil Winding	Resistance Welding	Terminal Bending	Resistance Appearance Inspection
Contents		Resistance 20 +/- 1 OHM Coil Tension 150 +/- 20 gf	Voltage/current, appearance, cross section Whether the coil is damaged or not, whether it is being welded		
F / Proof			Welding Monitoring, Welding Length	Bending Connect Test	Resistance 20 +/- 1 OHM No damage to appearance





# 4-1. Manufacturing Performance

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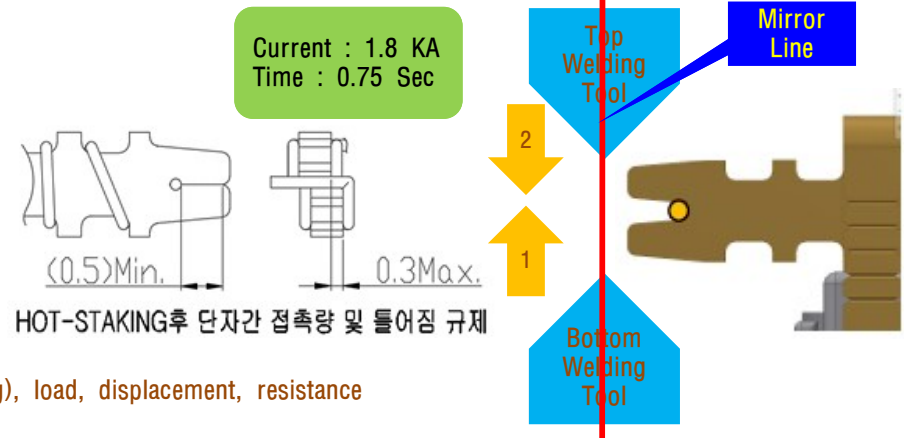
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## Stick Type Winding System \_ Auto Mobile Antenna Line

### Typical Process

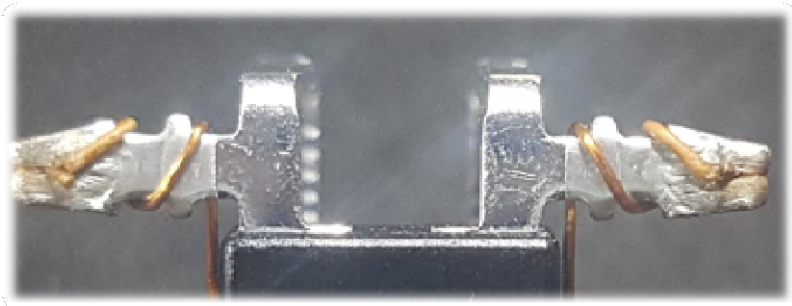
#### Welding Process

1. Welding Tool used multiple times.
2. Welding Tool Mirror Used
3. Welding Tool After Contact Welding Tool Manage the distance difference of the welding tool after the distance and welding current flow.  
[LVDT (Laser Sensor) Length Measure Good/NG Result]
4. Welding Tool Contact pressure load management.  
(Good / NG determination by load value management after welding)  
Load : TBD 15 kgf (Welding Head Apply)  
Welding Current / Voltage : TBD 1.5 KA/1.5V
5. Welding / Inspection Data PC Data , Mark date, time, current, time (weld monitoring), load, displacement, resistance
6. Welding Fume Installation of exhaust port (vacuum generation is separately installed)



#### Vision Inspection Process

1. Vision inspection for the position and welding of the seamline coil  
(1 EA Camera at the same time inspection of the seamline)

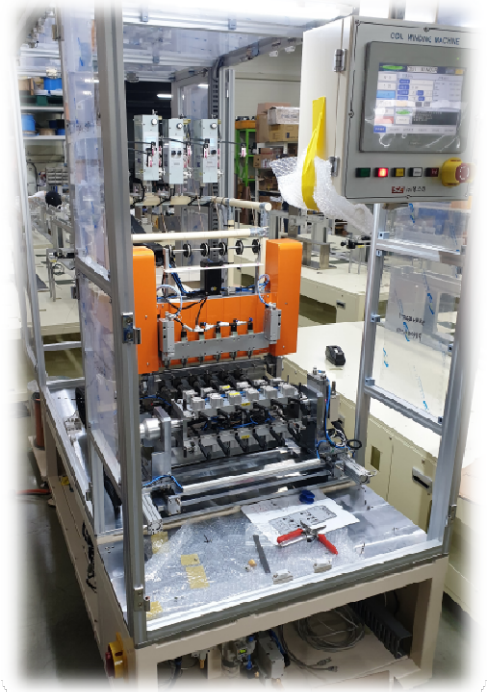
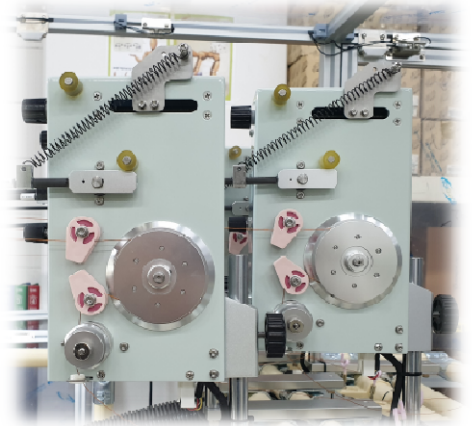
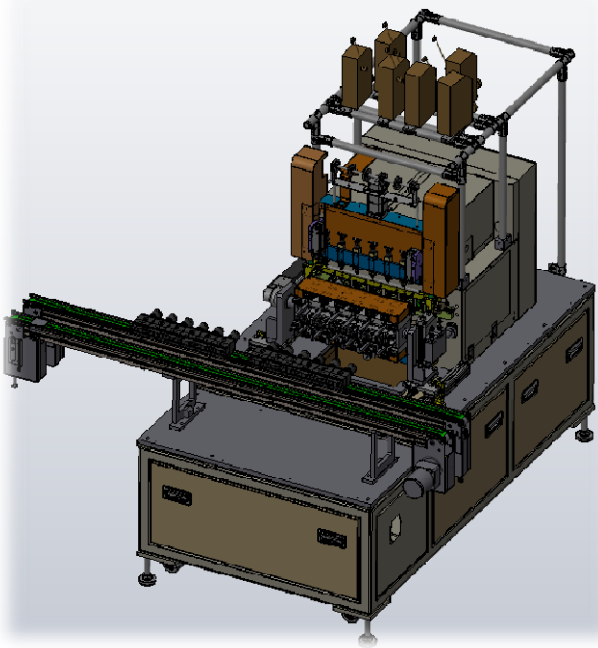


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Stick Type Winding System \_ Auto Mobile Antenna Line



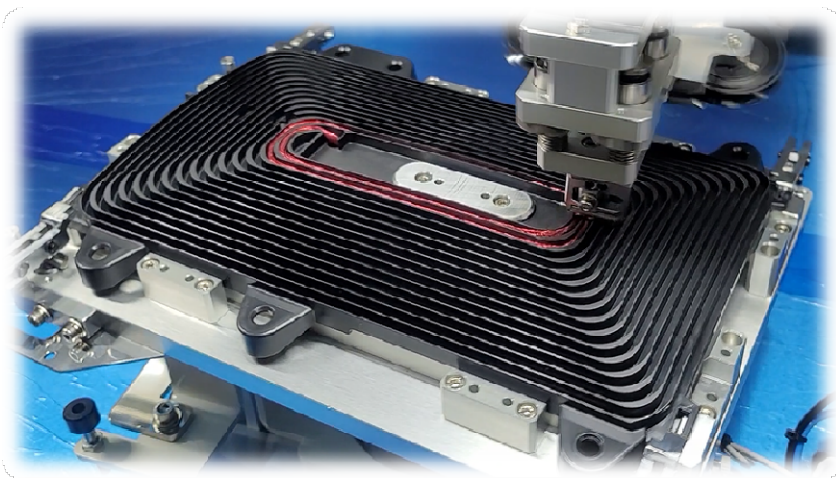
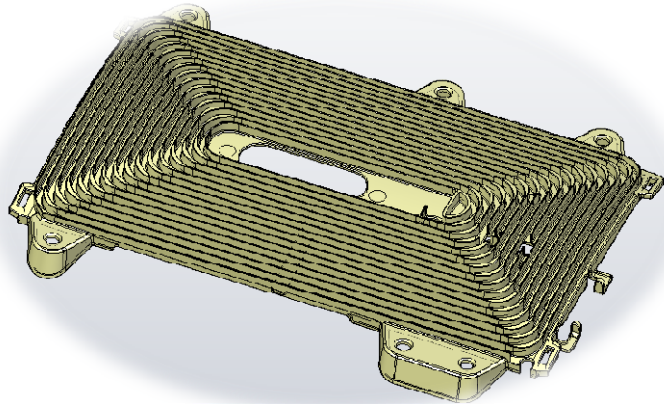
# 4-1. Manufacturing Performance

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## IH Coil Winding System



### System Specification

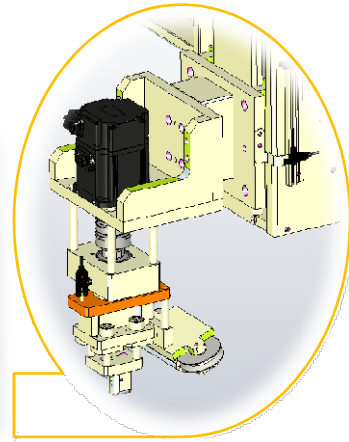
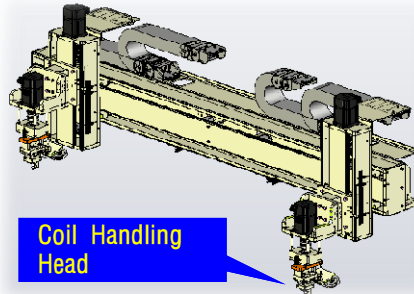
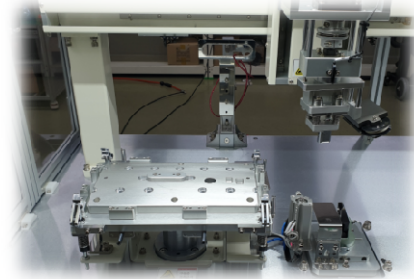
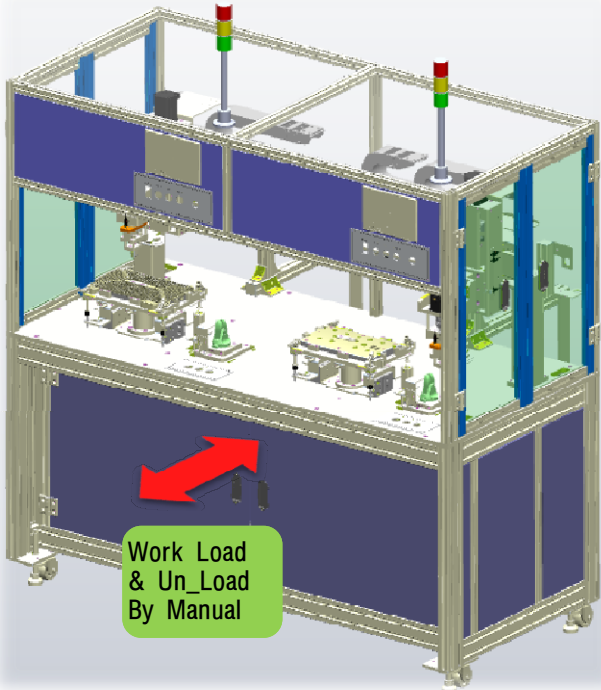
ITEM		FC3058 IH COIL WINDING M/C
Part		IH MODULE COIL BASE
IH MODULE COIL BASE		COIL : $\varnothing 3.61$
Ambient temperature Range For Assured Performance		5°C ~ 35°C(41 ~95°F)
Power Source		220V AC, 50/60 Hz
Compressed Air		4-6kg/cm <sup>2</sup> G at Oil Free Dried Air
Component	SPINDLE	BASE Loading After Rotate
	X-AXIS ROBOT	COIL NOZZLE Left & Right Move
	Z-AXIS ROBOT	COIL NOZZLE Top & Bottom Move
	$\varnothing$ -AXIS	COIL NOZZLE Top & Bottom Move
	Control Board	PLC, Relays. Controller, Operation Switch, Sensor
Outside L × W × H mm		1700 × 800 × 1700
Weight		500 Kg

# 4-1. Manufacturing Performance

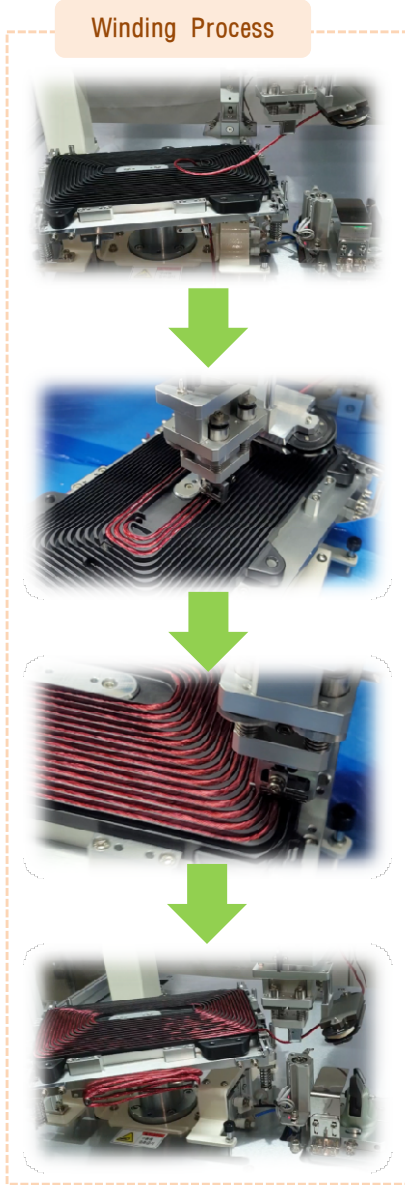
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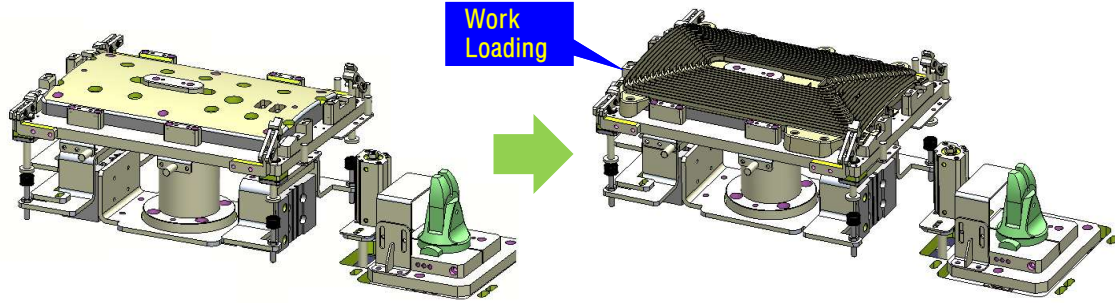
## IH Coil Winding System



Process Start



Work Loading



Process Finish

# 4-1. Manufacturing Performance

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## Smart Key Assembly Inspection Automatic Auto Mobile Line

Subject : PD & TL FOLD' G TX Type Auto Assembly System



PD & TL FOLD' G TX TYPE

No	Process	FP'	Contents
1	PCB ASSY + L/CASE 열CK'	2	
2	Screw Join	3	
3	Arm Current / Voltage Check + BATTERY Assembly	2	
4	BATTERY COVER 조립 & SCREW 2EA 체결	1	
5	LOGO Attach	1	
6	Final Inspection	4	
7	Battery Cover Laser Engrave	1	
8	LABEL Attach	1	
Total		15	

Category	Description
Cycle Time	12 Second
System Size	5.1 m x 3.5 m
ITEM	PD & TL FOLD' G TX
TYPE Change	JIG Change Type ( PD / TL )

System Specification

Part Name	PD TYPE	TL TYPE	Re_Mark
L/CASE			
U/CASE			
Battery Cover			
L/C Cover			

# 4-1. Manufacturing Performance

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Smart Key Assembly Inspection Automatic Auto Mobile Line

Progress Description

No	Process	PD TYPE	TL TYPE	FP' Contents	
				Description	Apply
1	PCB ASSY + L/CASE 열CK'			1. Hot Caulking Temperature Control (F/P' ) 2. PCB 2D Bar Code Scan ( F/P' )	2
2	L/CASE + CAM CPT + U/CASE			-	-
3	PD : Screw Join - 4 Point TL : Screw Join - 2 Point			1. PCB Inspection (Scanner / FP' ) 2. Button Inspection (Camera / FP' ) 3. SCREW Joint Management (F/P' ) - 1.0 ~ 2.0 kgf.cm (Real Time)	3
4	Arm Current / Voltage Check + BATTERY Assembly			1. Battery Voltage Inspection (F/P' ) 2. PCB Arm Current Measure (F/P' )	2
5	BATTERY COVER ASS' Y & SCREW 2EA Join			-	-
6	LOGO Attach	-----		1.LOGO Attach (F/P')	1
7	Final Inspection			1. TP missing & heterogeneous inspection (F/P') 2. LED lighting inspection (F/P') 3. Functional inspection (F/P') 4. SCREW 6 EA Joint Part Inspection (F/P')	4
8	Battery Cover Laser Engrave	 LOT Laser 각인	 LOT Laser 각인	1.Laser Attach Part Scan (F/P' )	1
9	L/COVER & LABEL Attach		-	-	-
10	Appearance Inspection			-	-

Total ( 29 Progress )

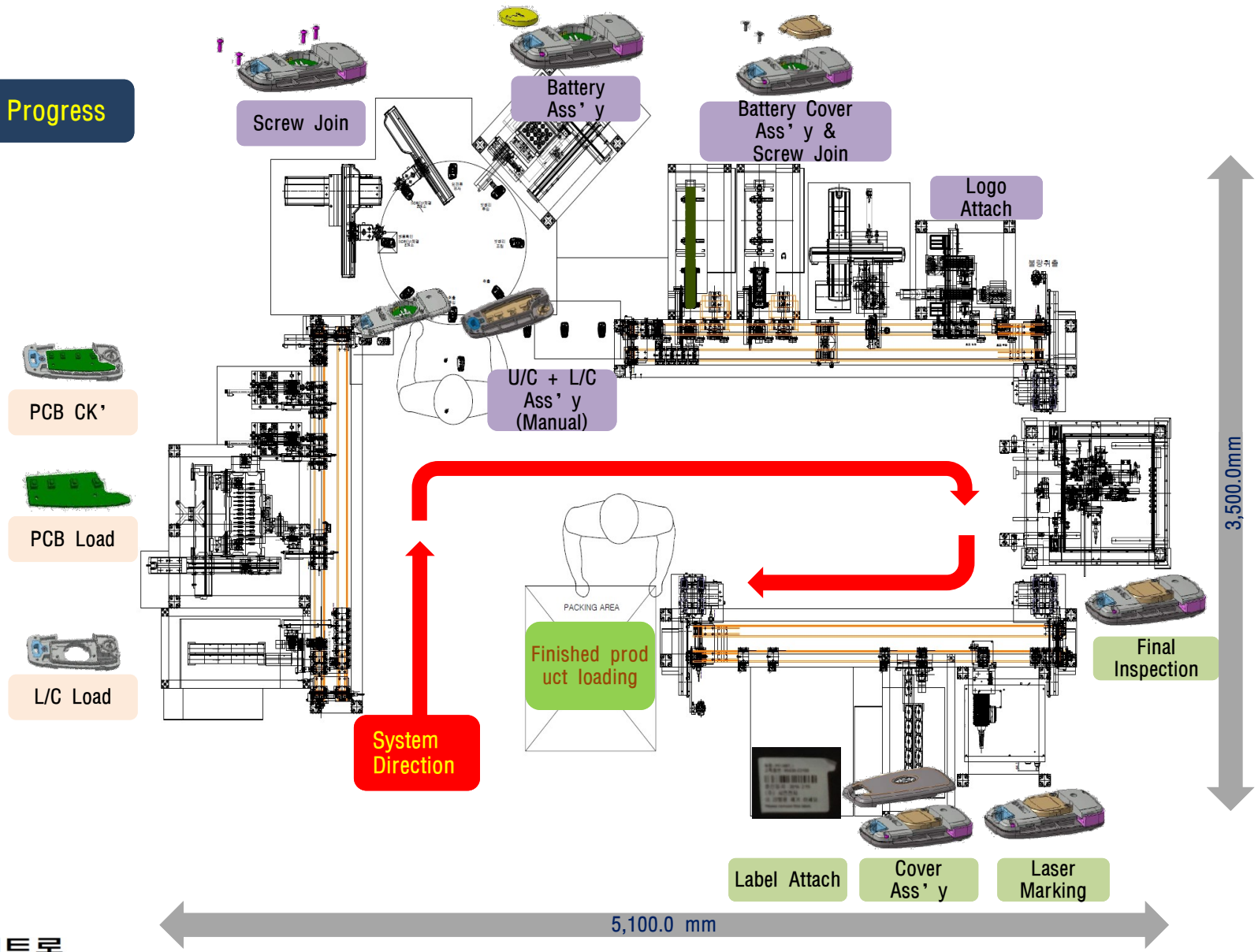
13

# 4-1. Manufacturing Performance

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## System Progress

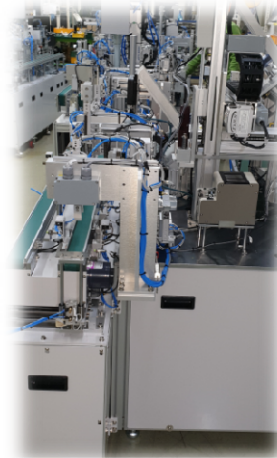
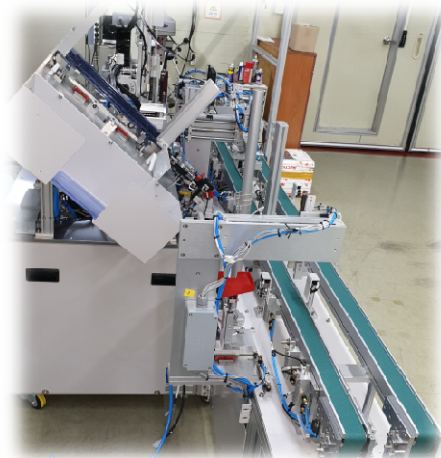
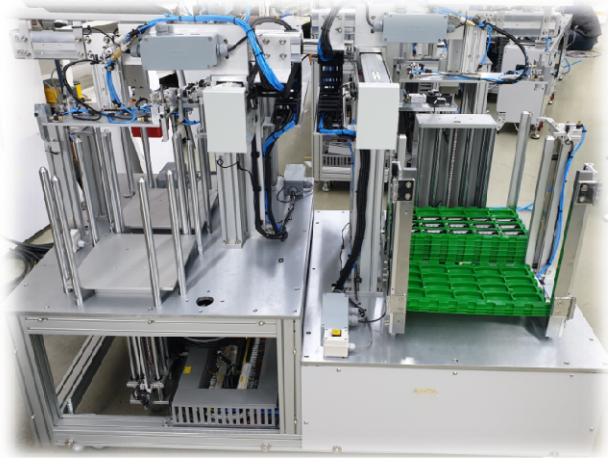


# 4-1. Manufacturing Performance

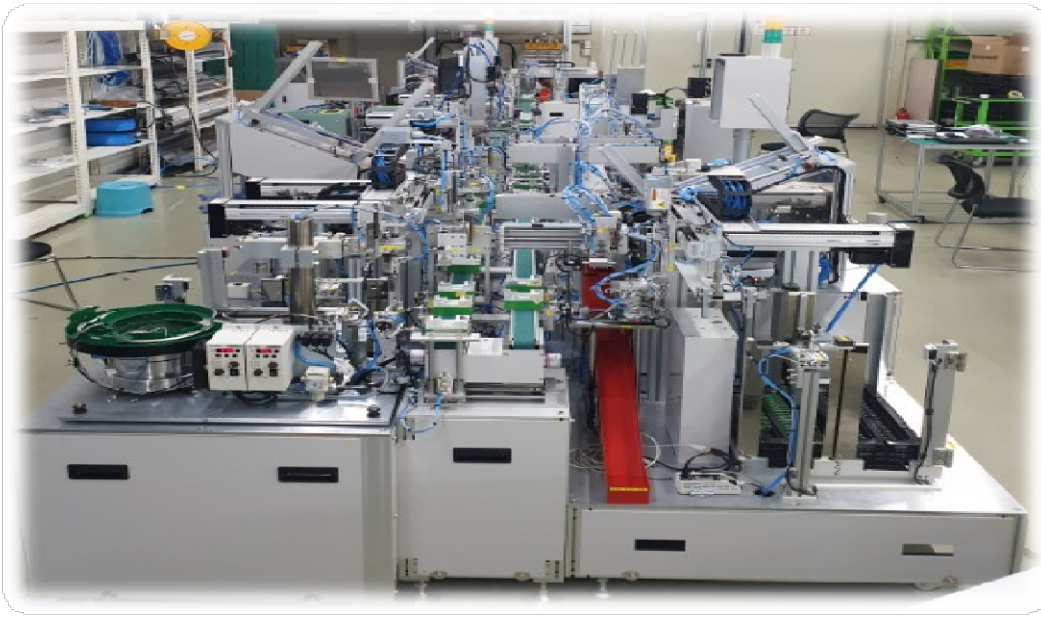
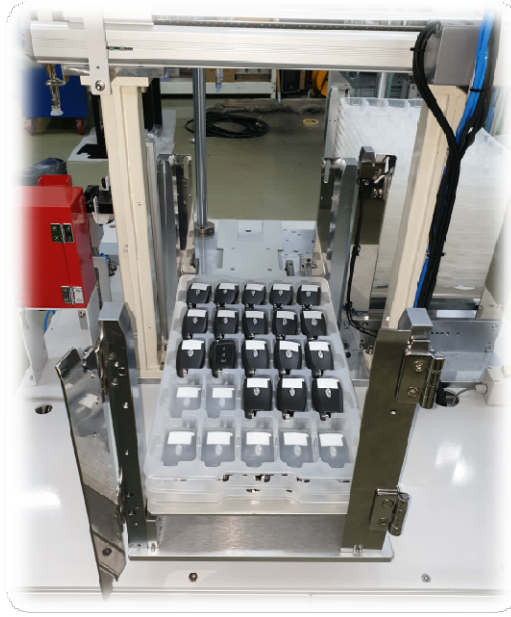
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Smart Key Assembly Inspection Automatic Auto Mobile Line



System Picture





## 5. Vision

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### ▶ Our Vision

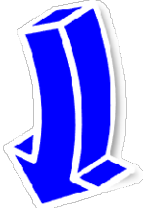
우리의 비전

We are committed to :  
growing the best equipment and service provider

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## Our Partner



Head Office & Location

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Address : 610 & 620 - Takra 1, 176, Seonggok-ro, Danwon-gu, Ansan-si, Gyeonggi-do, Korea

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***Thank you for your attention***

