



**SEJONG FNC** CO., LTD

# OVERVIEW

## Automotive Seat Assembly Lines



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# SEJONG FNC COMPANY OVERVIEW

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Company Overview

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Clients

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Projects

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# Sejong FNC Company Overview



Automotive Seat Related Mechanism Assembly

Seat Frame, Seat Track, Recliner, Cushion

EOL Seat Inspection Equipment, NVH

Factory Automation

Based in Daegu, S. Korea



PWR RECLINER AUTO ASS'Y LINE



SEAT MECHANISM POWER LINE



SEAT MECHANISM HEIGHT LINE



SEAT MECHANISM NORMAL LINE

Sejong Tech  
Founded  
(Daegu)



2002

Hyundai, Kia primary  
contractor  
(testing equipment, seat lines)



2004

Converted to Sejong  
EMC Co.



2005

CE  
Certifications  
(6 Types)



ISO  
9001/2008



2008

Sejong FNC  
Spin Off



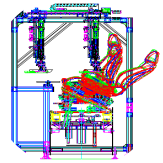
2015

Patents  
(6 Patents obtained)



2016

Technical Evaluation  
Certification



2017

# Sejong FNC Company Overview



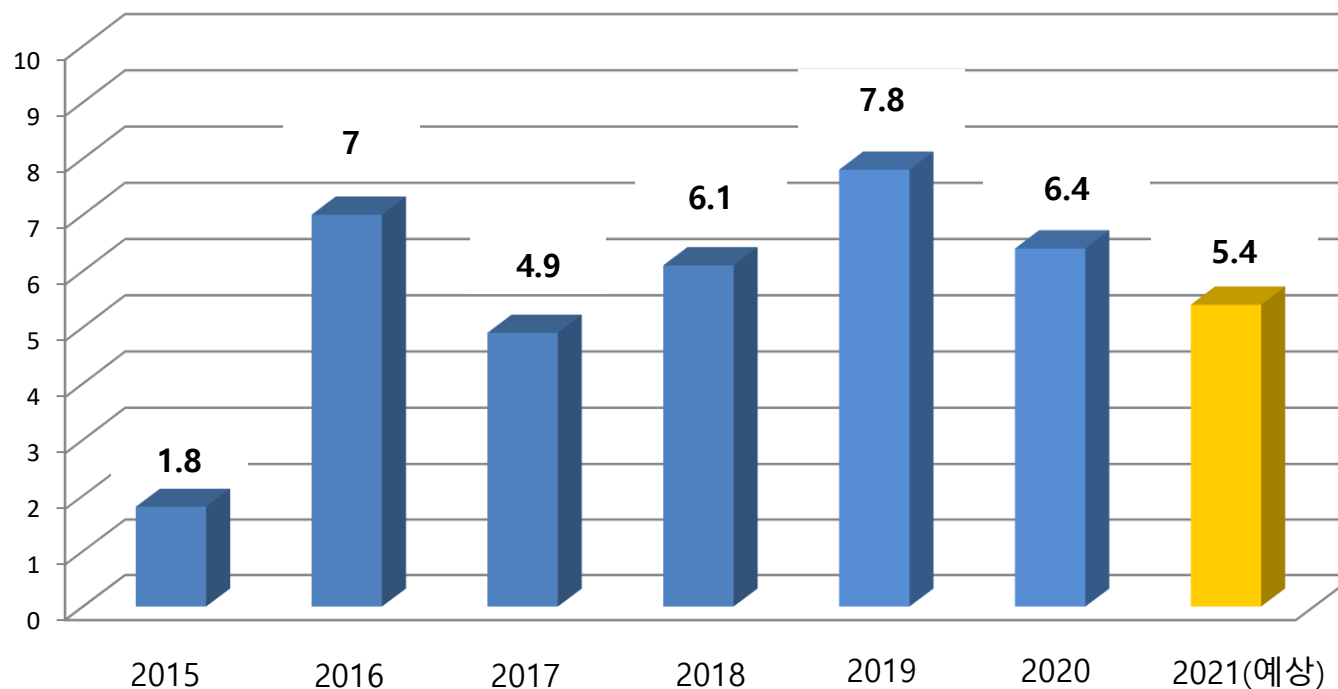
Division	#	Years of experience	Responsibilities	Note
Management, Sales Department	4 people		CEO / Executive / Accounting	Sales and business support
Automation Division	7 people	<ul style="list-style-type: none"> <li>• More than 10 years: 4 people</li> <li>• 5-10 years: 3 people</li> </ul>	Seat Assembly & Cush/Back Mechanism Assembly Line Track & Recliner Assembly Line	Mechanical Design and Manufacturing
Computer Application Control Unit	7 people	<ul style="list-style-type: none"> <li>• More than 10 years: 3 people</li> <li>• 5-10 years: 4 people</li> </ul>	Seat Assembly & Mechanism Line PLC Control, POP System & EOL inspection equipment	POP System Development Computer Software Development Product Analysis PLC Control
Sejong FNC Chongqing Subsidiary	2 people	<ul style="list-style-type: none"> <li>• More than 10 years of experience (mechanical and electrical PLC)</li> </ul>	Seat Ass'y & Cushion Mechanism Assembly Line	Local Sales and Technical Support A/S Support
Research Team	4 people		New technology development, patent application	
<b>Total</b>	<b>16</b>			

# Sejong FNC Company Overview



## Revenues

Unit: \$1 million US\$



# Sejong FNC Company Overview



SEJONG FNC CO., LTD

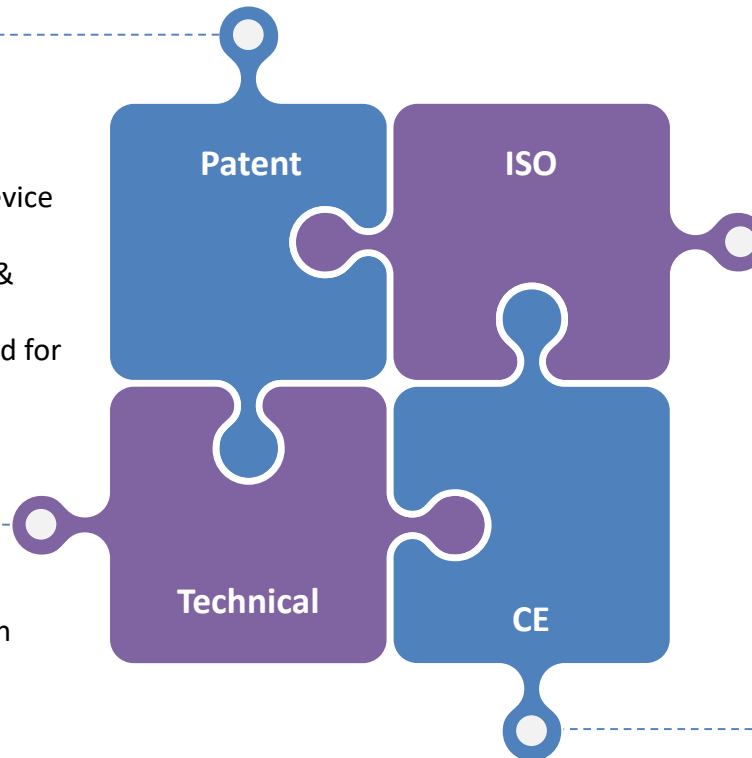
## Patent

9 patents

- Seat torsion spring assembly
- Seat clamping equipment
- Actuating force measuring device
- Seat height pumping spindle
- Access device for inspection & assembly of electric units
- Peripheral device for bolt used for seat assembly
- Jig for seat assembly line

## Technical Recognition

- Top Company Technical Evaluation Certification
- Venture, Inno-Biz Certification
- Corporate Research Center Certification



ISO

ISO 9001: 2015  
Certification



CE Mark

14 Marks

# Sejong FNC Clients

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# Sejong FNC Clients

No	Client	Facility	Main Equipment Composition	Type	Year
1	DAS Asan Factory	LF/UM/JF/Power/YB/IG/Y400 Cush. Mech. Ass'y Line	Free Flow Conveyor Line Jig Pallet	Turnkey Lines	2015~ 2017
2	DAS Asan Factory	LFa/UMa/JFa/ADa/TMa Cush. Mech. Ass'y Line	Slide Inspection Equipment Height Inspection Equipment Fool Proof Equipment		
3	DAS Beijing Factory	LFc/GC/TLc/ID/HDc EV Cush. Mech. Ass'y Line	Balance Spr'g Assembly Equipment		
4	North China DAS Chongqing	YC/NU/CB/OSc/QX/C51e Cush. Mech. Ass'y Line	Cush. Spr'g Assembly Equipment IMS Electronics Power inspection equipment		
5	DAS Yeomseong Factory	TFc/JFc/UC/QM/NP/ND Cush. Mech. Ass'y Line	Portable Inspection Equipment Grease Injection device Recl. Manipulation Force Inspection Equipment		
6	DM Industry	TL/QL/TL EV Cush. Mech. Ass'y Line	Ass'y Transfer equipment soundproof room		
7	DAS Goan Factory	S401 Seat Ass'y Line	POP System PLC Control		
8	DAS Gyeongju Factory	ID Seat Ass'y Line	System Tool(EC Tool) Checking Fixture Jig		



# Sejong FNC Clients

No	Client	Facility	Type	Year
9	Hyundai Dymos & M Seat	YDM Seat Slide, H/Rest, IMS, Electrical Length, Ventilation, WCS Inspection Equipment TLe Power, Slide, SBR inspection equipment, etc. KD ODS Inspection Equipment H operation inspection equipment All BK/VI inspection facilities	Inspection Equipment & Automatic Assembly line	2015~2017
10	Seoyeon CNF Chongqing Factory (Korea and Japan)	C30 Cush Mech. Ass'y Power, Slide, Operating Force Inspection Equipment C30 Back Mech. Ass'y Power, operating force inspection equipment Track Ass'y Line Recliner Ass'y Line Cush & Back, Weld'g Line POP System		
11	Hyundai Motor	Seat ODS & SBR inspection equipment Seat ventilation and heater inspection equipment Seat Connector Fastening Inspection Equipment Seat Connector Removal Facility Seat wrinkle improvement Heating Booth Seat heterogeneity prevention vision inspection equipment Integrated Conveyor Line Construction Control Battlefield. PODS-F/G, SAB, SBR Slide, Power inspection equipment		

# Sejong FNC Clients

No	Client	Facility	Main Equipment Composition	Type	Year
1	DAS USA	ON/DN8 Cush. Mech. Ass'y Line	Free Flow Conveyor Line Jig Pallet	Turnkey Orders (including equipment remodeling)	2018
2	DAS Beijing Factory	TMc Cush. Mech. Ass'y Line	Slide Inspection Equipment Height inspection equipment		
3	DAS North China	TMc Seat Ass'y Line	Fool Proof Inspection Equipment Balance Spr'g Assembly Equipment		
4	DAS North Ki Chongqing	SQ/OSc/CB Cush. Mech. Ass'y Line 일체	Cush. Spr'g assembly equipment IMS Electronics Power inspection equipment		
5	DAS Shantan Factory	C40D Checker Modification (C53F,C40DB,C51E)	Portable inspection equipment Recl. Manipulation Force		
6	DAS Gyeongju Factory	QX Cush. Mech. Ass'y Line 일체	Inspection Equipment soundproof room POP System		
7	DAS India	AI3/QX1i Cush. Mech. Ass'y Line 일체	PLC control All Sub Jigs Checking Fixture		
8	Other	OS/CK/IK Inspection Equipment	Burnish'g equipment, slide inspection equipment, height inspection equipment		

# Sejong FNC Clients

No	Client	Facility	Main Equipment Composition	Type	Year
1	DAS USA	DN8a Back Ass'y Line 일체 DL3a/MQ4a/DN8a/NX4a/ CN7a Cush/Back Mech. Ass'y Line 일체	Free Flow Conveyor Line Jig Pallet Slide & Height Inspection Equipment	Turnkey Order (including equipment remodeling)	2019
2	DAS Gyeongju Factory	VF Line 개조: TM Cush. Mech. Ass'y Power Line RB Line 개조 : QX Line	SBR/Ventilation Inspection Equipment Fool Proof Inspection Equipment		
3	KM & I	9BUX Ass'y Line 일체	Balance Spr'g Assembly Equipment		
4	DAS Chongqing Factory	CB/OSc Line + OSc EV +SU2c 공 용화 개조	IMS Electronics Power inspection equipment Portable inspection equipment		
5	DAS Beijing	DL3c Cush. Mech. Ass'y Line 개 조 일체	Recl. Manipulation Force Inspection Equipment Soundproof room		
6	DAS India	SU2i Cush. Mech. Ass'y Line 일 체	POP System PLC control		
7	Daejin Co., Ltd.	KA4 2.3.4열 Cush Frm Ass'y Line 일체	Sub Jig & C/F		
8	Other	현대자동차 Seat 조립Line 검 사설비 등	All inspection equipment		

# Sejong FNC Clients

No	Client	Facility	Main Equipment Composition	Type	Year
1	DAS USA	TMa PE Specification Assembly Line DN8a Sport Specification Assembly Line	Free Flow Conveyor Line Jig Pallet Slide & Height Inspection Equipment SBR/Ventilation Inspection Equipment Fool Proof Inspection Equipment Balance Spr'g Assembly Equipment IMS Electronics Power inspection equipment Portable inspection equipment Recliner Manipulation Force Inspection Equipment Soundproof room POP System PLC control Sub Jig & C/F	Turnkey Order (including equipment remodeling)	2020
2	DAS Gyeongju Factory	All US4 Seat Assembly Line - 1st row seat assembly line - 2/3 row seat assembly line - 4 row seat assembly line QX Line Retrofit: Ventilation Inspection			
3	DAS Asan Factory	GL3 Cush Mech, Ass'y Line (Renovation of existing 1,2,7 Lines)			
4	DAS Beijing	NX4c Cush. Mech. Ass'y Line Line Modification			
5	DAS India	BI3 Specification Assembly Line (SU2i Cush.Mech. Ass'y Line modification)			
6	Daejin Co., Ltd.	All KA4 2nd Relax Cush Frm Ass'y Line			
7	Other	Iwon Comfortek KA4 2nd row Seatchecker	All inspection equipment		

# Sejong FNC Clients

No	Client	Facility	Main Equipment Composition	Type	Year
1	DAS USA	ON PE specification assembly line R1T/R1S (Rivian) Cushion Mech. Ass'y Line Other Seat Inspection Equipment Remodeling	Free Flow Conveyor Line Jig Pallet Slide & Height Inspection Equipment SBR/ventilation inspection equipment	Turnkey Order (including equipment remodeling)	2021
2	KM & I	UZ-GEM Project - Front Seat Assembly Line - Rear Seat Assembly Line - Head Rest Frame Assembly Line - POP System	Fool Proof inspection equipment Balance Spr'g assembly equipment IMS Electronics Power inspection equipment		
3	KM & I Changwon	9BQC Seat Assembly Line POP System	Portable inspection equipment Recl. Manipulation Force Inspection Equipment		
4	DM Industry	US4 4열 Seat Assembly Line	soundproof room POP System PLC Controller Sub Jig & C/F		
5	DAS India	NX4a Cush Frame Vision Inspection Equipment	All inspection equipment		
6	Daejin Co., Ltd.	KA4 2 <sup>nd</sup> Seat Electrical Inspection Equipment			
7	Other	Seat Maker EOL Testing Equipment Upgrade			

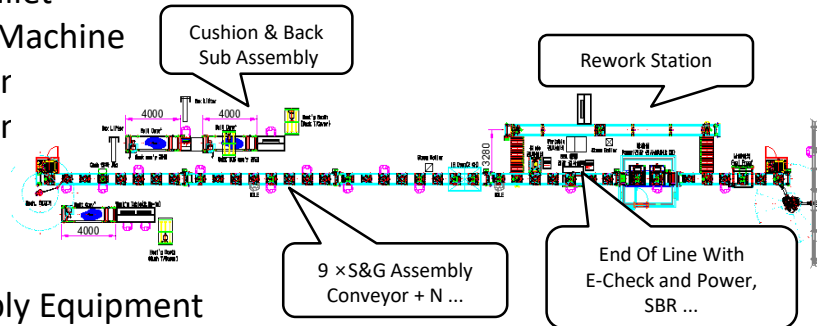
# Sejong FNC Projects



## Main Equipment Focus

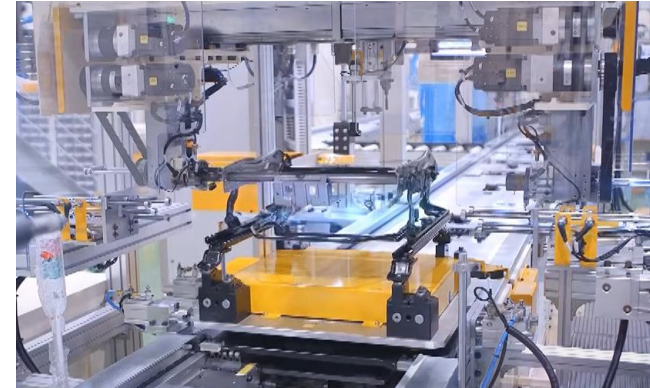
### Car Seat Frame & Assembly Line

1. Conveyor & Pallet
2. Function Test Machine
3. Process Machir
4. Sub Jig & Toolir



### Custom Made

1. Jig & Fixtures
2. Test & Assembly Equipment



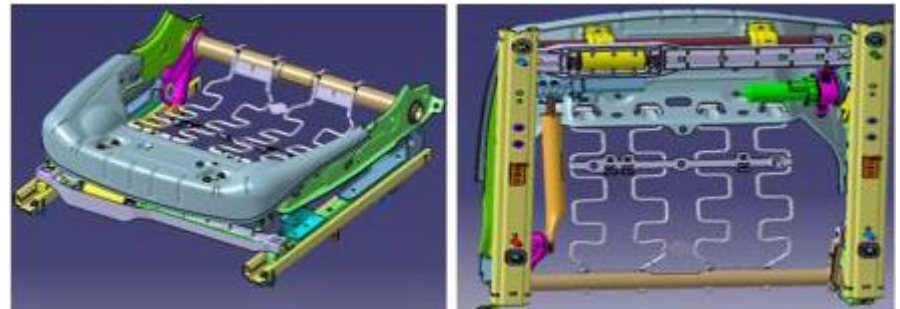


# Sejong FNC Projects



## Seat Cushion Frame Assembly Line (Complete)

### Seat Cushion Frame Assembly Line (Total)



Overview

### Line Composition

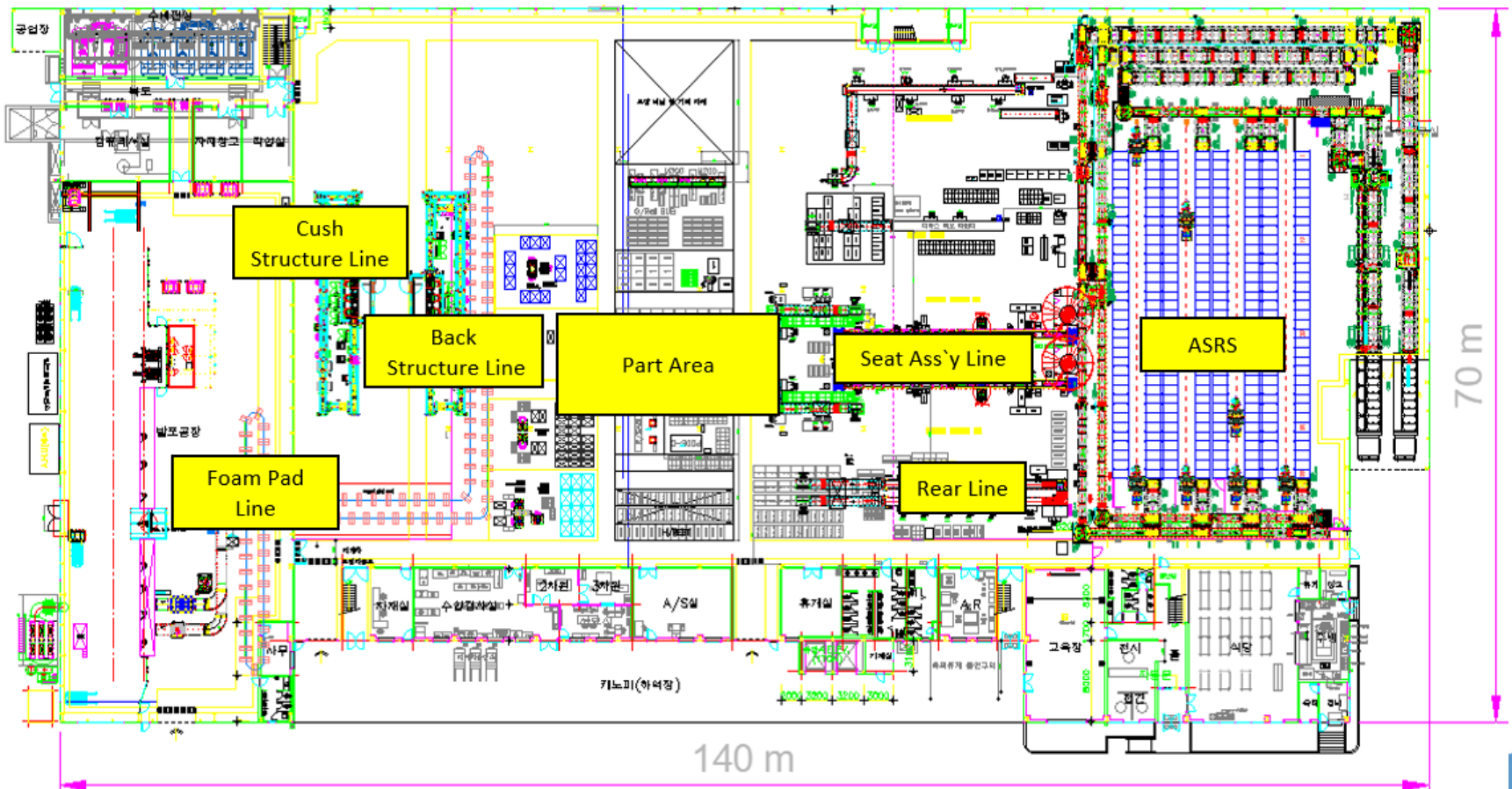
1. Free Flow Conveyor, Jig Pallet, Sound-proof room, Ass'y Unloading Equipment
2. Slide/Pump'g Height Inspection Equipment, Fool Proof Inspection Equipment
3. Balance Spr'g Assembly Equipment, Cush. Spr'g Assembly Equipment, Grease Injection Equipment
4. IMS. Electric field. Power Inspection Equipment, Portable Inspection Equipment, Recliner Operating Force Inspection Equipment
5. POP System, Entire PLC Control
6. Entire System Tool (EC Tool)

\* Cycle Time 35 Sec/ea

# Sejong FNC Projects



## Seat Assembly Line (Complete)





# Sejong FNC Equipment



## Seat Slide Test M/C

### Slide Testing Equipment



#### Overview

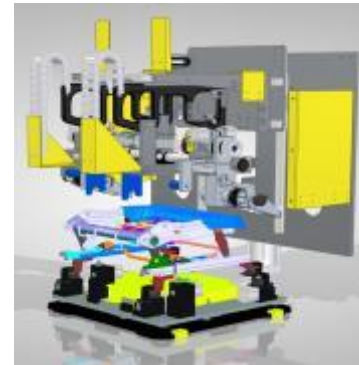
1. Input of Servo Teaching value by specification/car model classes. Use of Tri-axis Servo Motor
2. Testing Provision: Lever releasing force, Slide forward/backward actuating force
3. Measuring Method: Real time Graph Display according to the load cell direct loading system
4. Credibility: over 98%

# Sejong FNC Equipment



## Pumping Height Test M/C

### Pumping Height Testing Equipment



#### Overview

1. Testing Provision: height actuating force, operating times, working angle
2. Measuring Method: improve credibility by measuring dead weight; weight loaded on product is located on XXX mm at SGRP point identical to testing condition
3. Credibility: over 98%
4. Respond according to specification or car model due to Tri-axis servo application  
(But Tool/fixture part is exchanged to match the shape/form)

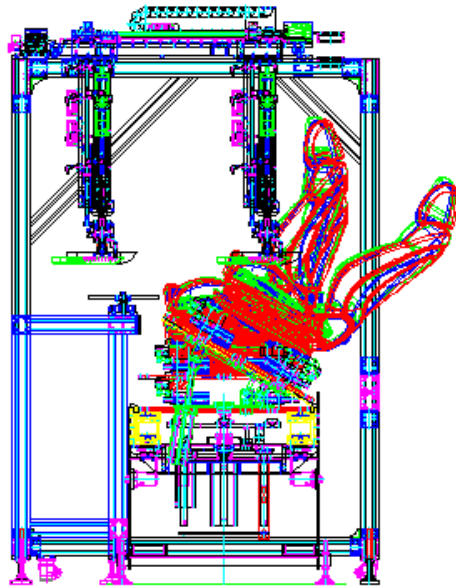
# Sejong FNC Equipment



## PODS-G Inspection Equipment

Equipment for inspecting passenger seat sensor (For advanced airbags)

Sensor Manufacturer: Delphi



# Sejong FNC Equipment



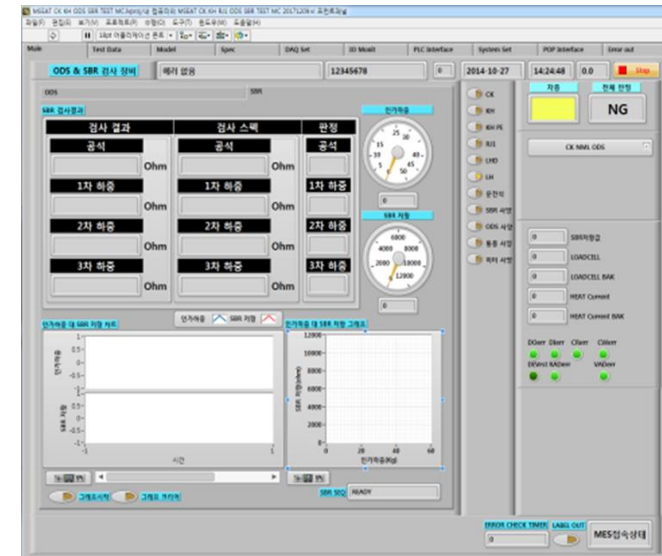
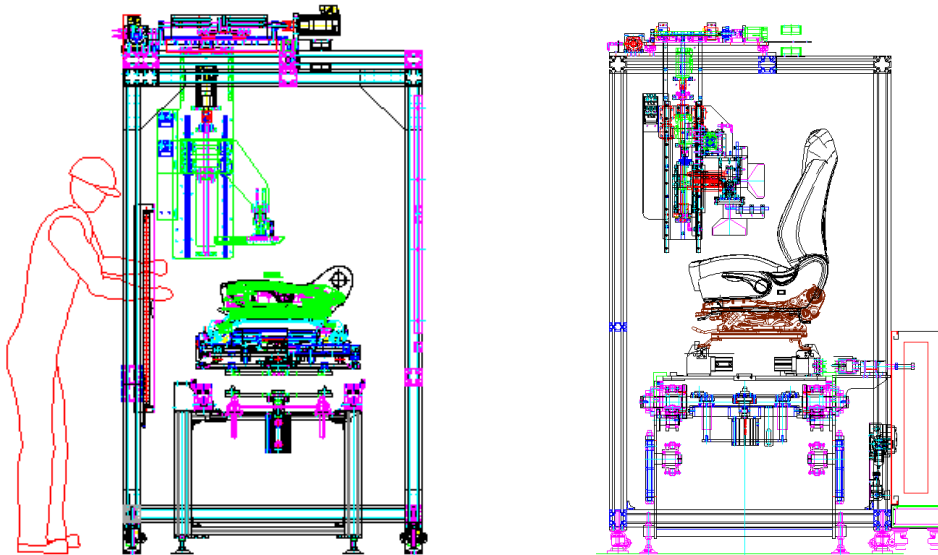
## SBR Inspection Equipment

1) Equipment for inspecting passenger seat sensor (For advanced airbags)

Sensor Manufacturer: IEE

2) Equipment for inspecting passenger seat sensor (For seat belt reminder)

Sensor Manufacturer: IEE, Asin



# Sejong FNC Equipment



## Electric Parts Functioning Inspection Equipment

### Electric Field Inspection Equipment



### Overview

1. Application of company developed exclusive Program (SAB, Buckle, Heater, ventilation, SBR, PODS) Using DAQ device
2. Meeting customer specifications
3. Exclusive testing cable development
4. Inspection Data management, POP System (MES) connection management
5. Simple portable tester used for testing & portable tester development

# Sejong FNC Equipment

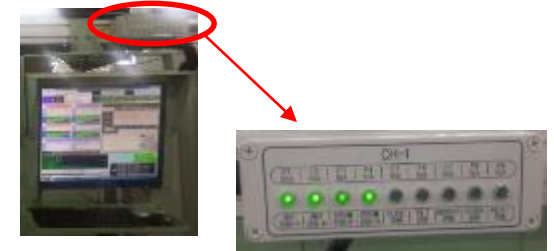
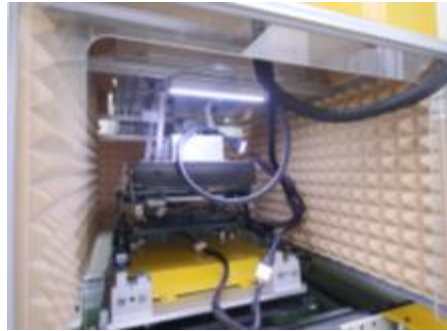


## Power Seat Operation Inspection Equipment

### Soundproof Room, Power Testing Equipment



**Sound-proof  
Room Enclosure**



**Open Fuse Checker**

#### Overview

1. Encloser installation that blocks noise during power testing with soundproof room (improved credibility of power testing)
2. Deadweight load (XX Kg) during power testing
3. Identical angle of automotive body condition reenactment (Jig Pallet Tilt`g)
4. Meeting soundproof room basic external noise 80dB to Internal background noise 30dB requirements
5. Checker function addition that allows worker to check right away when Electric field/ Power testing equipment has open fuse (increase in productivity due to reduction of conservation time)

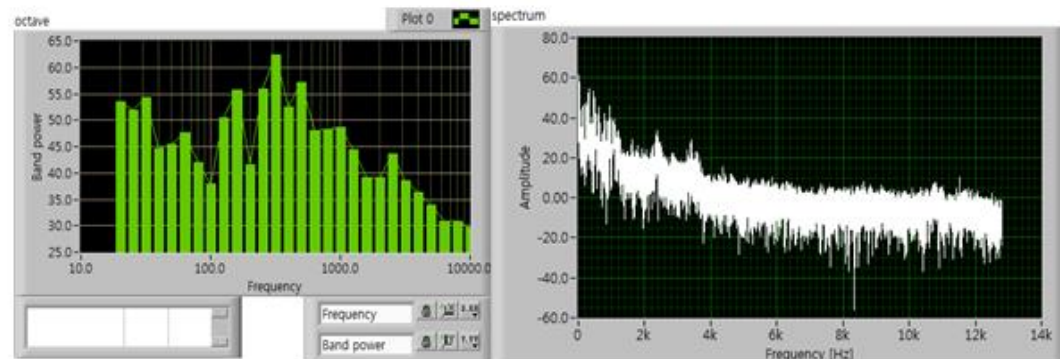
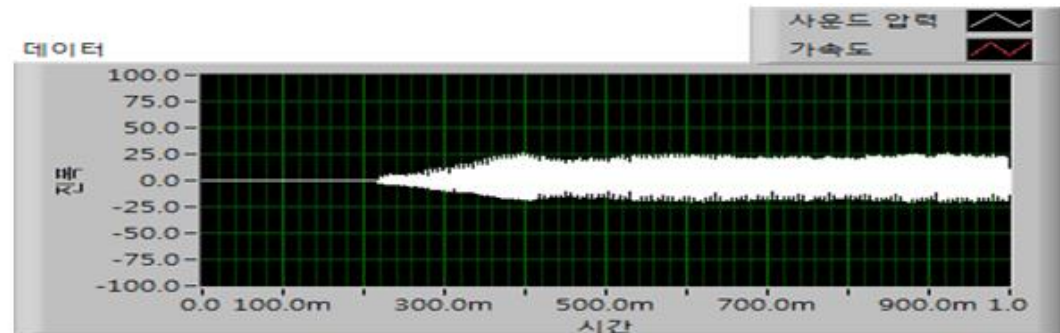


# Sejong FNC Equipment



## NVH Inspection Equipment

1. Steering Wheel Electric Parts & Noise / Vibration Inspection Equipment
2. KH / VG Haptic Vibration Inspection Equipment
3. Power Seat Operating NVH Inspection Equipment



# Sejong FNC Equipment



## Light Weight Jig

Easy maintenance due to light weight of jig

General jig: 80Kg / Lightweight jig: 45kg (subject to change depending on the concept)

2. Conveyor noise reduction due to jig weight reduction
3. Mounting block replacement type makes it easy to handle multiple models
4. Extended life of conveyor chain

