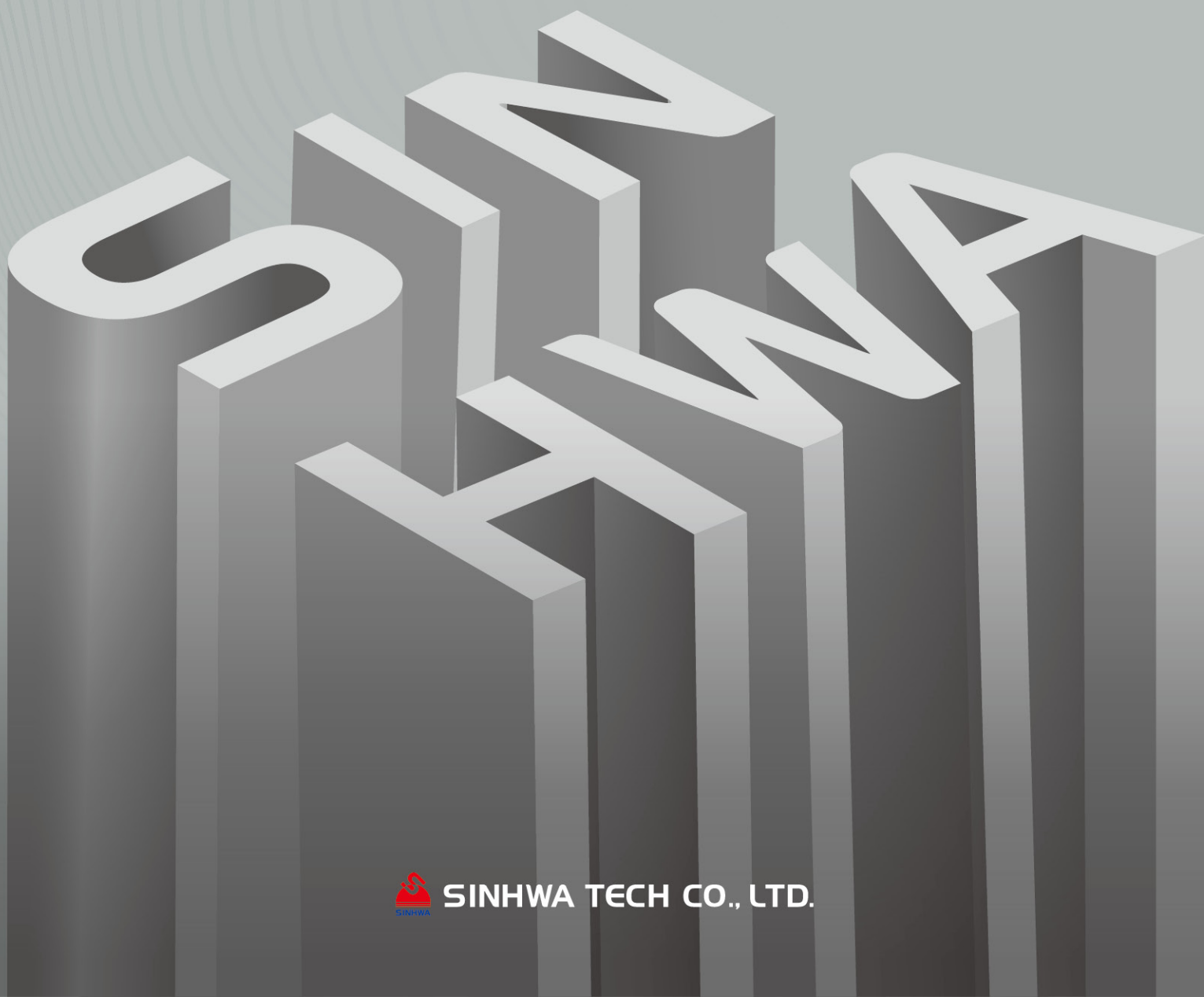




# SINHWA TECH

Thermoforming molds Checking  
Fixtures For Automotive Interior Parts



# CREATIVE! INNOVATION! IDEA!



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## Greetings



Hidden champion in  
Automotive interior parts mold industry  
Think like a man of action and act like man of thought.

Sinhwa Tech has led the Korean automotive interior parts mold industry for more than two decades through innovation and R&D in various areas such as mold construction, mold structure, and product molding and cutting properties.

Our Research Institute contributes to the reduction of cost and goals of process improvement through its own R&D projects and R&D projects organized by public institutions every year. We currently have 13 patents specifically for automotive interior parts molds.

Through this continuous innovation and R&D in mold technology, we have achieved \$3 million in direct export to overseas customers such as Czech, Poland, Japan Malaysia, Indonesia, Germany, Slovakia, Poland, China, India and Russia.

We have also been doing volunteer work for the underprivileged every year on the basis of the right ideas, responsible actions, and grateful management philosophy, and we will continue to strive to revitalize the local economy through job creation.

To meet the technology, quality, price and delivery needs of our customers, we will always listen to all the customers and create future success stories with you.

President Jinho Choi



# History

The future depends on what we do in the present

## 2010 ~ 2018

- 2018. 10 Obtained totally 13 patents for automotive interior parts molds
- 2018. 04 Designated 2018 Small Giant company of Korea
- 2018. 03 Export molds to AVTOVAZ in Russia for the first time
- 2017. 12 Annual sales US\$14,000,000, Export record US\$3,000,000
- 2017. 04 Received the 11th Ulsan Automobile Day' Achievement award
- 2016. 12 Annual sales US\$13,000,000, Export record US\$1,500,000
- 2016. 11 Started to export molds to NTF in India
- 2016. 06 Started to export molds to Adler Pelzer in Czech Republic, Poland and Eastern-Europe
- 2015. 12 Annual sales US\$11,000,000, Export record US\$1,300,000
- 2015. 06 Designated 2015 Ulsan city Hidden champion – SMBA
- 2014. 12 Annual sales US\$10,000,000, Export record US\$1,200,000
- 2013. 12 Obtained totally 9 patents for automotive interior parts molds
- 2012. 08 Firstly selected 2012 Global star venture promotion business – UEPA
- 2011. 12 Designated 2011 Promising export firm – SMBA



## 1994 ~ 2009

- 2007. 06 Designated 2007 Promising export firm – SMBA
- 2006. 12 Selected 2006 Enterprise of Ulsan metropolitan major exportation Award – Ulsan city
- 2005. 10 Selected 2005 Venture enterprise Award - SMBA
- 2004. 04 Started to export molds for automotive interior parts to Japan, Turkey
- 2000. 06 Changed the company name to Sin Hwa Tech Co., Ltd.
- 1997. 05 Produced forming & press mold for automobile
- 1994. 05 Founded Sin Hwa Model



# Overview

In order to succeed, we must first believe that we can

Company Name	Sin Hwa Tech Co., Ltd.			
Establishment	May 31, 1994 (Incorporation of going business : June 01, 2004)			
Head Office	20 Maegoksaneop 6-gil, Buk-gu, Ulsan, Korea			
President	Jin-Ho Choi			
Line of Business	Mold, Checking fixture, Waterjet shell Ultrasonic cutting shell for Automotive interior parts			
Auto Interior Parts	Floor carpet	Head lining	Dash outer	Diffusor
	Package tray	Trunk lid	Hood	Luggage mat
	Wheel guard	Luggage side	Covering shelf	
	Under cover	Engine cover	Dash inner	
Domestic Customers	Dongjin, Dual, Seoyon E-Hwa, Seoyon Intech, Hanrim, Hanmin, Foosung Group, Sungchang			
Overseas Customers	Sugihara, Sugihara Grand, Grand Carpet, Ntf(India), Avtovza, Adler Perzer Group, Taesung, Seoyon E-Hwa,			
Major Market	Korea, China, Japan, India, Southeast Asia, U.S.A, Mexico, Brazil, Germany, Czech, Poland, Slovakia, Russia			



Capital  
US\$ 750,000



Total Sales  
US\$11 million  
(Overseas US\$3 million)



Employees  
46

## Certificate

Quality is more important than quantity





# Philosophy

If you think you can, or you think you can't, you're right!

## Differential technology strategy

- Automotive interior parts mold
  - High value mold development
- Molds for IT and medical products
  - Research institute positive investment
- Strategy
  - Cooperation with technically advanced companies

## Vision

Become a global leader for automotive interior parts mold and create success stories in the world

## Business Competition

- Employment training
  - Strengthening of in-house engineering education
- Differentiated marketing strategy
  - Technical investment and interchange of technology
- Realizing of technical innovation company
  - Continuous investment for new technology

## Management Policy

All staff's Responsible management  
Gain Intellectual property rights of core business  
Operate a dynamic team

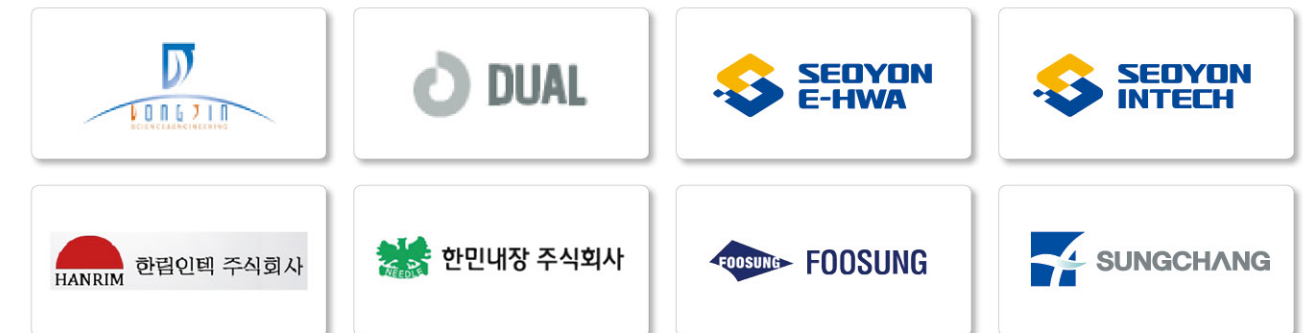
## Management Mind

- Stick to the basics
  - Three rightnesses, Five attitudes
- Immediate correction and quick improvement
  - Taking the lead
- Eliminate wastes
  - Unnecessary, Unreasonable Uneven things

# Partner

You can be close to our customers more with your ears than with your mouth

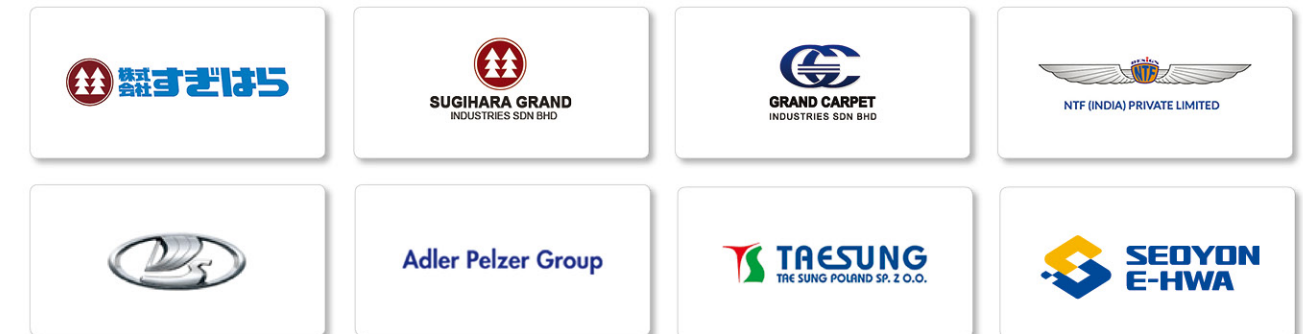
## Domestic Customer



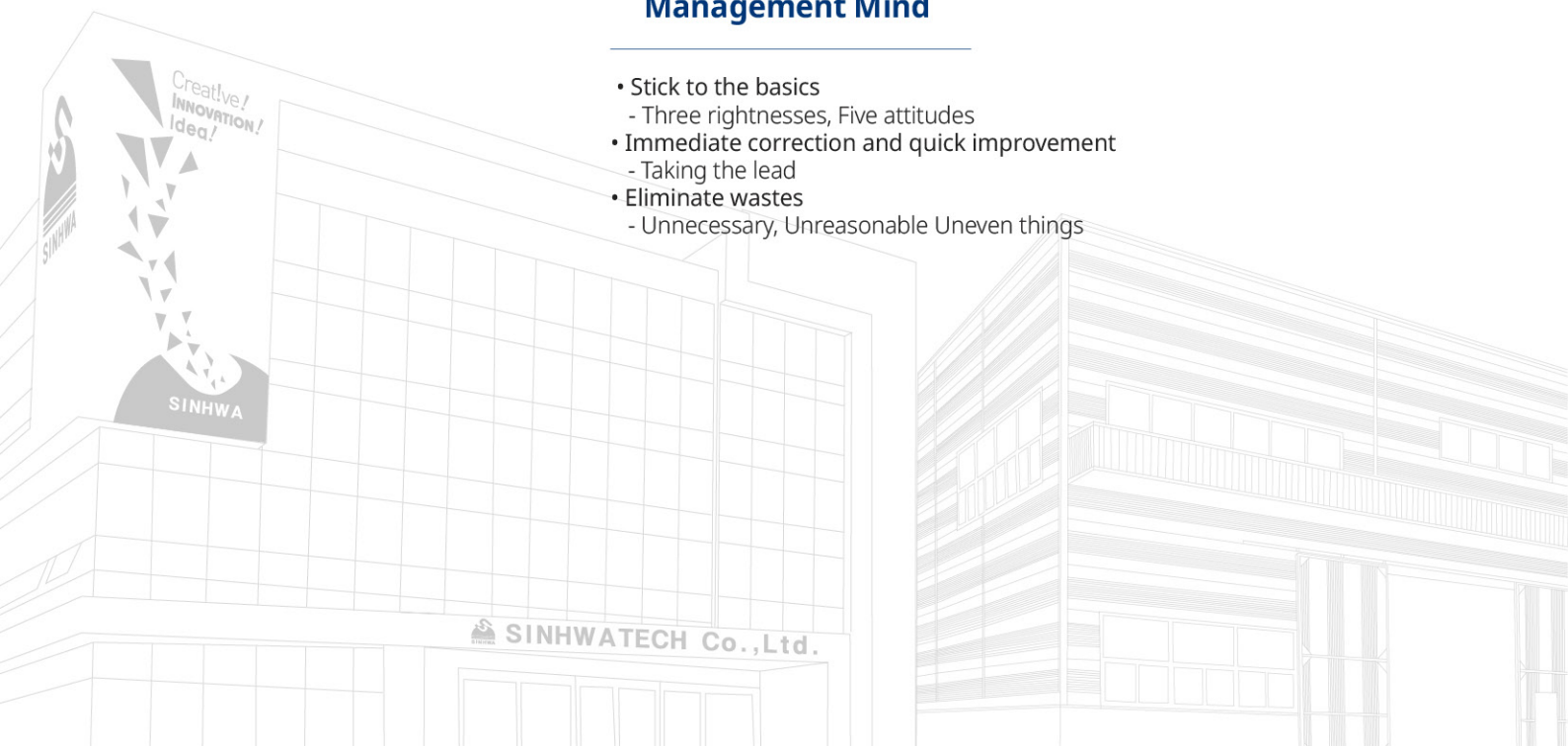
## Domestic Car Makers



## Overseas Customers



## Overseas Car Makers

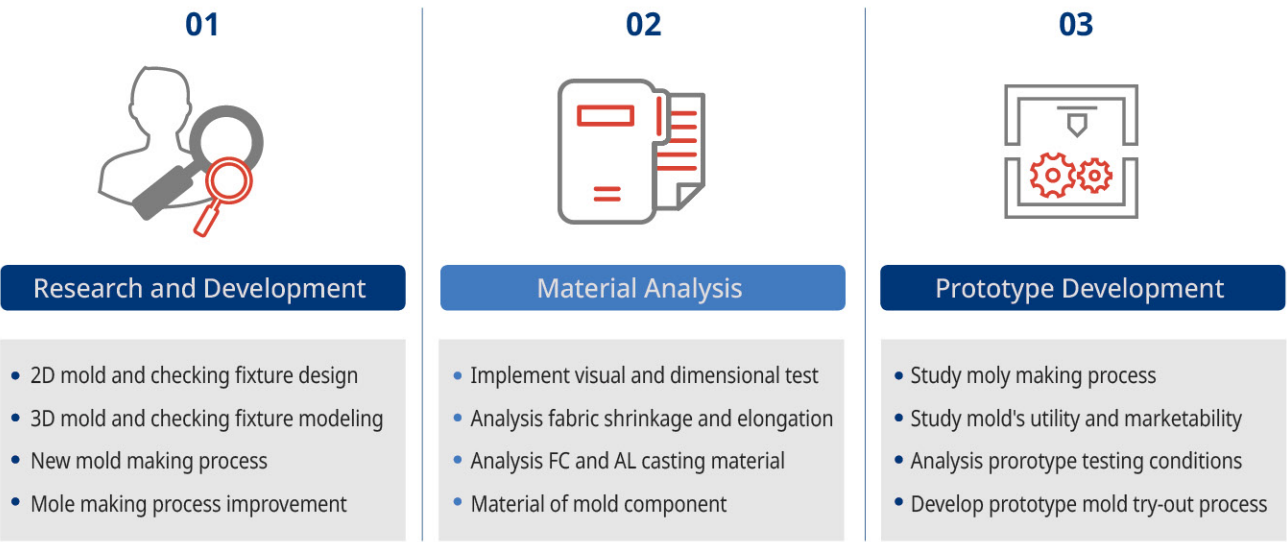




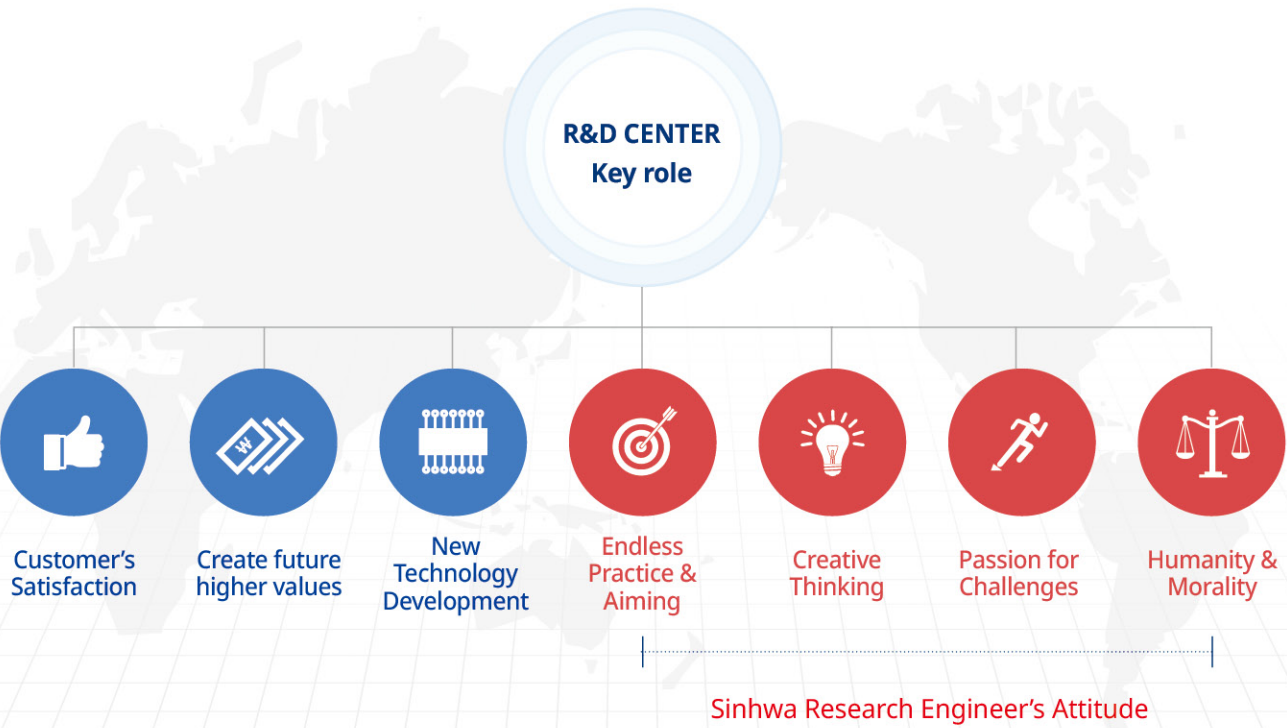
# R&D Center

We do our best to fulfill customer's satisfaction and trust

## R&D Center overview



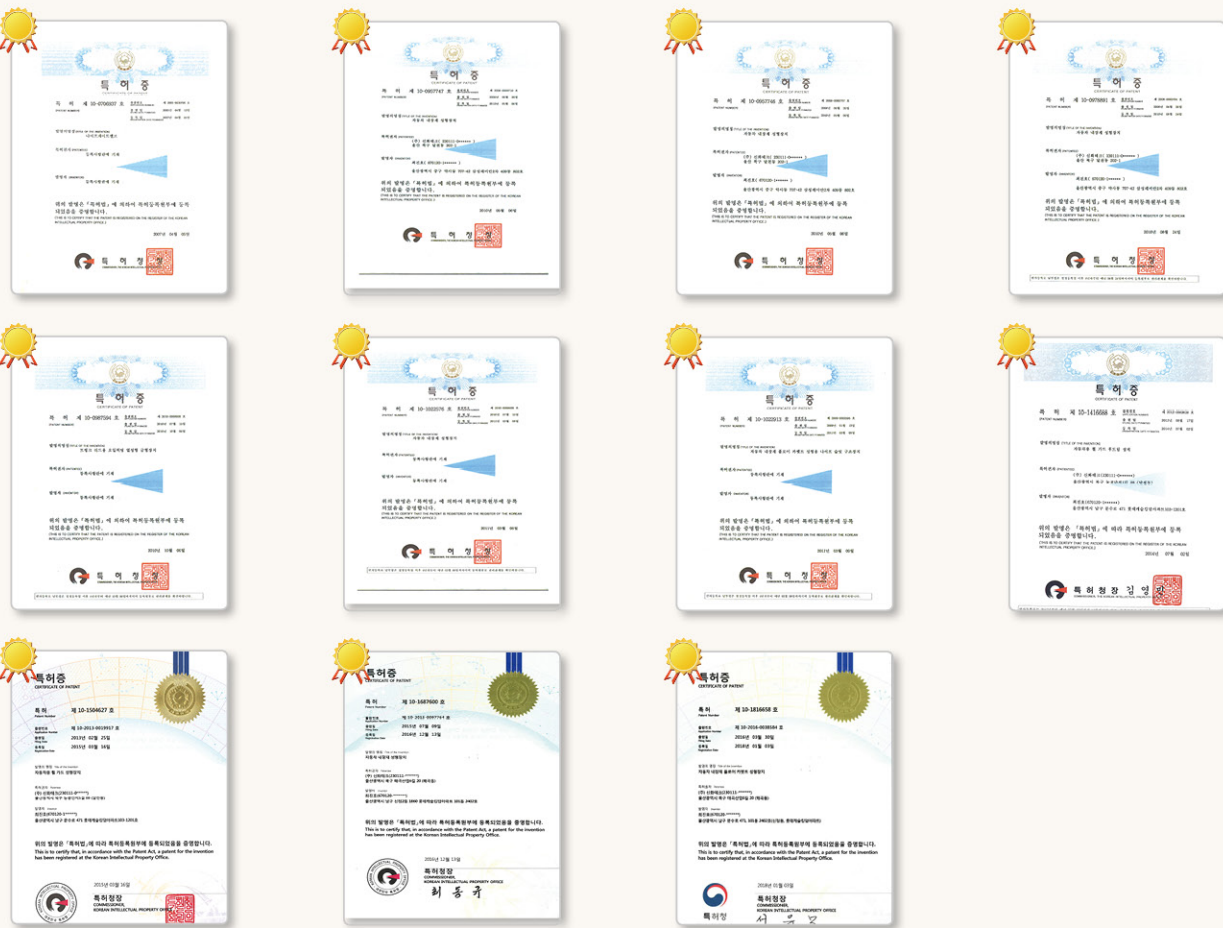
## R&D Policy and Core values



# Patent

Quality is more important than quantity

NO.	Applicant	Contents of the invention	Application No.	Registration No.
1	Sinhwa Tech	Knife gate valve	1020050030796	1007069370000
2	Sinhwa Tech	Metal mold for manufacturing a automobile inner element	1020080060707	1009577460000
3	Sinhwa Tech	Metal mold for manufacturing a automobile inner element	1020080060704	1009788910000
4	Sinhwa Tech	Forming device for wallboard of vehicle	1020080060710	1009577470000
5	Sinhwa Tech Ulsan College	Knife slit metal mold for manufacturing a floor carpet in automobile inner element	1020090002595	1010229130000
6	Sinhwa Tech Ulsan College	Oil heating mold apparatus by heat for a trunk lid	1020100068608	1009875940000
7	Sinhwa Tech Ulsan College	Metal mold for manufacturing a automobile inner element	1020100068609	1010225760000
8	Sinhwa Tech	Equipment for cutting a wheel guard of a vehicle	1020120089828	1014166880000
9	Sinhwa Tech	Equipment for molding a wheel guard of a vehicle	1020130019917	1015046270000
10	Sinhwa Tech	Forming device for wallboard of vehicle	1020150097764	1016876000000
11	Sinhwa Tech	Forming device for a floor carpet in automobile inner elementforming bubble sheet	1020160038584	1018166580000
12	Sinhwa Tech	Water cooling type molding apparatus for heat forming bubble sheet	1020180054376	-
13	Sinhwa Tech	Air Cooling type molding apparatus for heat forming bubble sheet	1020180054377	-





# Facility

## MCV-A2050



Table size	5,000 × 1,500mm
Spindle speed	8,000 RPM

## MCV-A2030 & MCV-2030



Table size	4,000 × 1,900mm 1,800 × 1,600mm
Spindle speed	10,000 RPM / 6,000 RPM

## SW-423



Table size	4,000 × 2,200mm
Spindle speed	6,000 RPM

## SF-3120



Table size	3,000 × 1,800mm
Spindle speed	6,000 RPM

## PRO-3210



Table size	3,050 × 2,100mm
Spindle speed	6,000 RPM

## HB-3210



Table size	3,200 × 2,040mm
Spindle speed	6,000 RPM

## HEP-2150



Table size	2,000 × 1,400mm
Spindle speed	6,000 RPM

## HCMC-1892



Table size	1,950 × 920mm
Spindle speed	6,000 RPM

## HDSP-0300-A1 & HDSP-0300-A2 DSCP-200



Capacity	300 Ton / 200 Ton
Stroke	1,500mm / 1,300mm
Area of Slide	3,000 × 2,200mm 2,000 × 3,000mm

## SH-P-M-033



Table size	7,800 × 2,450 × 2,700mm
Spindle speed	1kw × 400L × 60ea

## SH-P-M-039



Type	Booth Pit
Size	4,000 × 4,500 × 2,100mm
Space	37.8m²

## Fujioka-01 / 02 / 03 / 04



Surface plate	3,000 × 2,000mm
X, Y, and Z axes	2,300 × 1,300 × 950mm

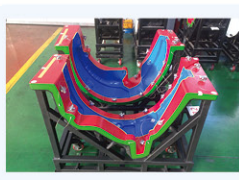
# Manufacturing process

## Step 01 Review customer's CAD DATA



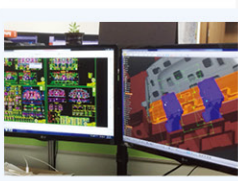
- Feasibility study for mold structure and formability  
Submit an estimate, delivery schedule

## Step 10 Dimension inspection



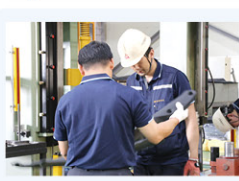
- Mount the finished product on the checking fixture and check dimension in accordance with approval drawings.

## Step 02 Design Pattern CATIA DATA



- Design a pattern CATIA DATA based on the internal manufacturing standard and customer requirements

## Step 09 Try-out



- Try out the finished mold for making products and check all the parts on mold  
(1st Try-out in-house and 2nd Try-out in a customer's factory)

## Step 03 Pattern manufacturing



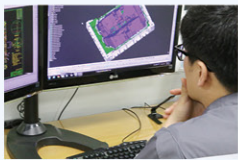
- Make an evaporative-pattern using polystyrene form by NC machining

## Step 08 Die spotting



- Combine the upper & lower mold on the hydraulic press machine for checking contact surface

## Step 04 CNC machining DATA and 3D Modeling DATA



- Make CNC machining DATA and design 3D modeling DATA

## Step 07 Finishing & Assembly



- Assemble all the related parts in accordance with the drawings

## Step 05 FC or AL casting for mold body



- Make FC or Aluminium mold body by Full Mold Casting method using pre-NC machined polystyrene form pattern

## Step 06 CNC work



- Machine the surface of FC or AL casted mold using WORK NC program on 3D CNC machine  
(Rough → Semi-Finishing → Finishing machining)

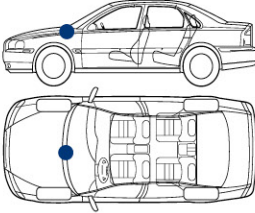





# Production Lead time

Product	Type of Mold	Specifications	3D	Pattern	Full-mold	CNC	Polishing	Die Spotting	Try-out (Finish)	Lead Time
		Approval	Modeling	Fabrication	Casting Steel block	Work	Assembling	CMM Check		
Engine Hood	Thermoforming	6	4	5	14	14	7	3	2	55 days
	Trimming & Piercing	6	4	5	14	14	7	3	2	55 days
Dash inner	Cold forming	6	4	5	14	17	9	3	2	60 days
	Thermoforming	6	4	5	14	17	9	3	2	60 days
	Trimming & Piercing	10	8	10	18	25	14	3	2	90 days
Dash outer	Aluminium pre-molding	6	4	5	10	10	7	3	5	50 days
	Thermoforming	6	4	5	14	17	9	3	2	60 days
	Trimming & Piercing	10	8	10	18	25	14	3	2	95 days
Headliner	Cold forming or ernoforming	8	4	5	10	10	8	3	2	50 days
	Compression	8	4	5	14	15	9	3	2	60 days
	Trimming & Piercing	14	12	7	14	20	16	5	2	90 days
	Water jet JIG	5	7	5		8		10	3	38 days
Package Tray Covering Shelf	Forming	6	4	5	10	9	9	3	2	45 days
	Trimming & Piercing	6	4	5	15	16	6	3	2	60 days
Partition LWR & UPR	Forming	6	4	5	10	9	6	3	2	45 days
	Trimming & Piercing	6	4	5	15	16	9	3	2	60 days
	Forming+Trimming	6	4	5	15	16	9	3	2	60 days
Wheel Guard	Forming	6 (export:12)	4 (export:15)	5 (export:10)	10 (export:20)	9 (export:15)	6 (export:14)	3 (export:4)	2 (export:4)	45 days (export:90)
	Trimming & Piercing	10 (export:15)	7 (export:20)	5	14 (export:20)	20 (export:25)	12 (export:30)	5 (export:6)	2 (export:4)	55 days
	Water jet JIG	5	7	5		8		10	3	55 days
	Climate Jig									30 days
Under Cover	Forming	6	4	30	10	9	6	3	2	45 days
	Trimming	6	8	9	18	20	14	3	2	80 days
Dash insulation pad	Forming	6	4	5	10	10	5	3	2	45 days
	Foaming	10	4	5	10	12	9	3	2	55 days
	Trimming & Piercing	14	12	7	14	20	16	5	2	90 days
	Forming+Trimming	14	12	7	14	20	16	5	2	90 days
Luggage Side	Water jet JIG	5	7	5		8		10	3	38 days
	Forming	7	4	5	14	8	7	3	2	50 days
	Trimming & Piercing	10	7	5	14	20	12	5	2	75 days
Luggage Mat	Forming+Trimming	14	12	7	14	15	16	5	2	85 days
	Forming+Trimming	6	4	5	14	14	7	3	5	55 days
Trunk Lid	Forming	6	4	5	10	10	5	3	2	45 days
	Forming+Trimming	6	4	5	14	11	5	3	2	50 days

# Mold for Automotive Interior Parts

## 01. Engine Hood Insulation Pad

	Thermoforming	Trimming & Piercing	
			
Product	Type of Mold	Mold material	Lead Time
Engine Hood Pad	Thermoförmung	FC250 / 300	55 days
	Trimming & Piercing	FC300, FCD750, SKD11	55 days

## 02. Dash inner

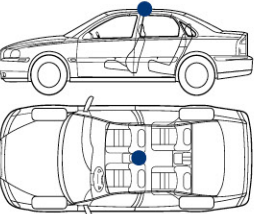
	Cold forming	Thermoforming	
			
	Trimming & Piercing		
			
Product	Type of Mold	Mold material	Lead Time
Dash inner	Cold forming	AC4C	60 days
	Thermoforming	FC300	60 days
	Trimming & Piercing	FCD550, FCD700, HMD1, SKD11	90 days

## 03. Dash outer



	Aluminum pre-molding	Thermoforming	
			
	Trimming & Piercing		
			
Product	Type of Mold	Mold material	Lead Time
Dash Outer	Aluminum pre-molding	FC300	50 days
	Thermoforming	S45C, S55C	60 days
	Trimming & Piercing	FC300, FCD700, HMD1	90 days





04. Headliner





Cold forming Thermoforming



Trimming & Piercing



Compression



Product	Type of Mold	Mold material	Lead Time
Headliner	Cold forming or Thermoforming	AC4C (Cold forming) FC250 / 300	50 days
	Compression	AC4C (Cold forming) FC250 / 300	60 days
	Trimming & Piercing	FC300, FCD700, SKD11	90 days

05. Package Tray



Forming



Trimming & Piercing



Piercing Equipment



Product	Type of Mold	Mold material	Lead Time
Package Tray	Forming	AC4C	45 days
	Trimming & Piercing	S45C, S55C, FC300, FCD550, SKD11	60 days
	Piercing Equipment		50 days

06. Partition Upper / Lower



Forming



Trimming & Piercing



Forming + Trimming



Product	Type of Mold	Mold material	Lead Time
Partition Upper / Lower	Forming	AC4C	45 days
	Trimming & Piercing	FC300, FCD550, SKD11	60 days
	Forming+Trimming	FC300, FCD550, SKD11	60 days

07. Wheel Guard



Forming



Piercing Equipment

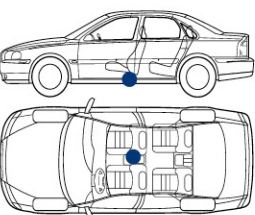


Forming + Trimming







Product	Type of Mold	Mold material	Lead Time
Wheel Guard	Forming	AC4C	45 days (export:90)
	Trimming & Piercing	HMD1, SKD11, FC300, FCD550	75 days (export:120)
	Piercing Equipment		45 days





08. Under cover



Forming



Trimming



Product	Type of Mold	Mold material	Lead Time
Under cover	Forming	AC4C	45 days
	Trimming	FC300, FCD550	80 days

09. Floor Carpet



Forming



Foaming



Trimming & Piercing



Forming + Trimming



Product	Type of Mold	Mold material	Lead Time
Floor Carpet	Forming & Foaming	AC4C	45 & 55 days
	Trimming & Piercing	FC300, FCD550, SKD11, SK5	90 days
	Forming + Trimming	AC4C, FC300, FCD550, SKD11, SK5	90 days



10. Luggage Side



Forming



Trimming & Piercing



Forming + Trimming



Product	Type of Mold	Mold material	Lead Time
Luggage Side	Forming	AC4C (FC300)	50 days
	Trimming & Piercing	FCD300, FCD550	75 days
	Forming + Trimming	AC4C, FC300, FCD550, SKD11	85 days

11. Luggage Mat



Cold forming Thermoforming



Product	Type of Mold	Mold material	Lead Time
Luggage Mat	Forming + Trimming	FC300, S45C	55 days

12. Trunk Lid



Forming



Forming + Trimming



Product	Type of Mold	Mold material	Lead Time
Trunk Lid	Forming	AC4C (FC300)	45 days
	Forming + Trimming	FCD550	50 days

Checking Fixture for Automotive Interior Parts

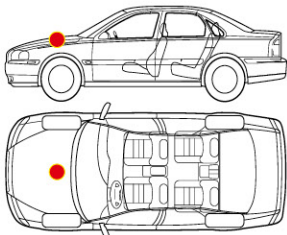
01. Glass Target Point JIG






Type	Material	Lead Time
Glass Target Point JIG	Aluminium	35 days

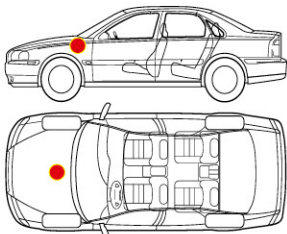
02. Dash inner






Type	Material	Lead Time
Dash inner	Workable Resin (Expoxy)	35 days

03. Dash outer

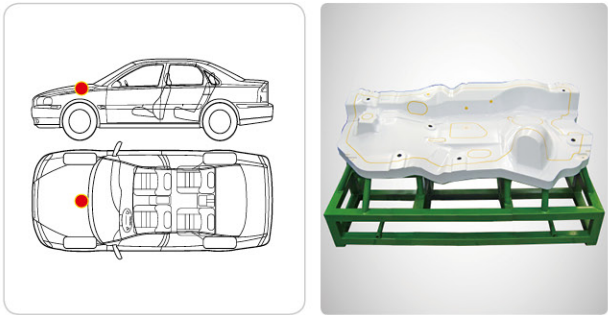




Type	Material	Lead Time
Dash outer	Workable Resin (Expoxy)	35 days

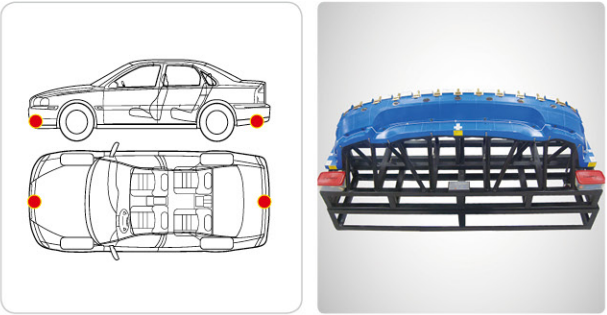


04. Engine Hood Pad



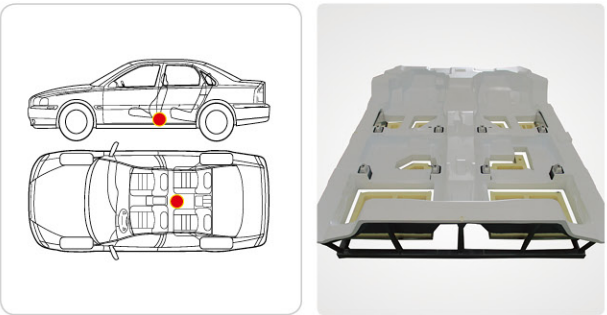
Material	Lead Time
Workable Resin (Epoxy)	35 days

05. Bumper



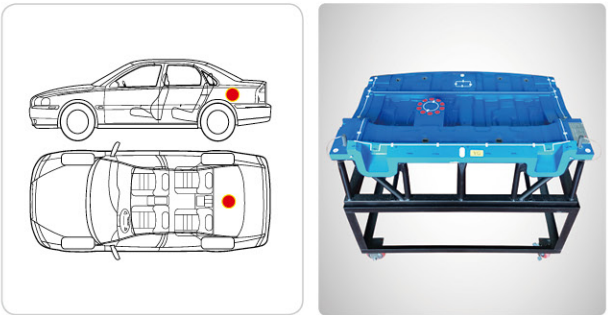
Mold Material	Lead Time
Chemical wood (Epoxy)	35 days

10. Floor Carpet



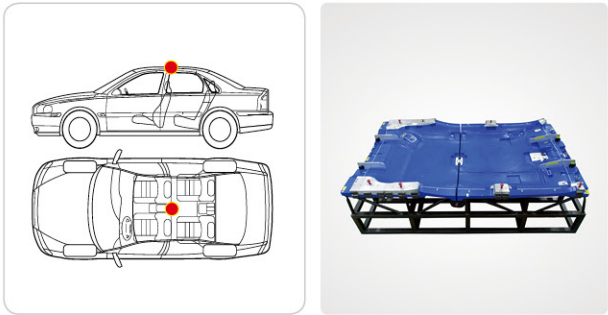
Type	Material	Lead Time
Water Jet JIG	Workable Resin (Epoxy) & GFRP	38 days
Checking Fixture	Workable Resin (Epoxy)	35 days

11. Partition Upper / Lower



Material	Lead Time
Chemical wood (Epoxy)	35 days

06. Head linning



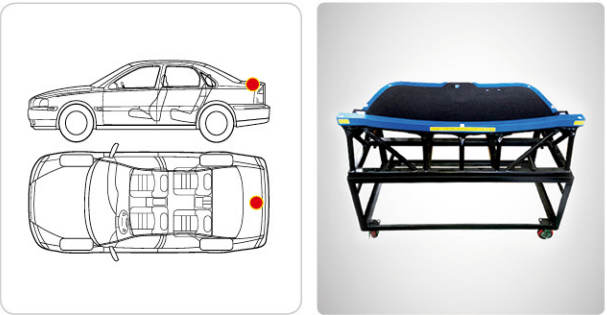
Type	Material	Lead Time
Water Jet JIG	Workable Resin (Epoxy) & GFRP	38 days
Checking Fixture	Workable Resin (Epoxy)	35 days

07. Wheel Guard



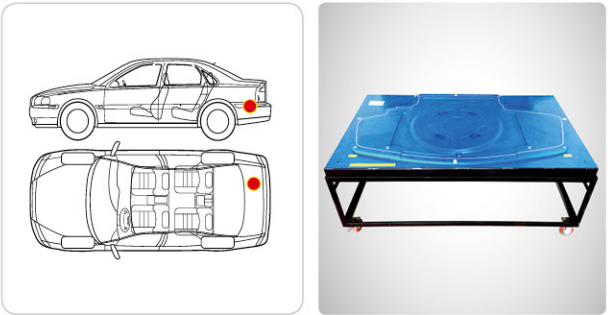
Material	Material	Lead Time
Waterjet shell	Workable Resin (Epoxy) & GFRP	38 days
Checking fixture	Workable Resin (Epoxy)	35 days
Climate jig	Aluminum profile	35 days

12. Trunk Lid



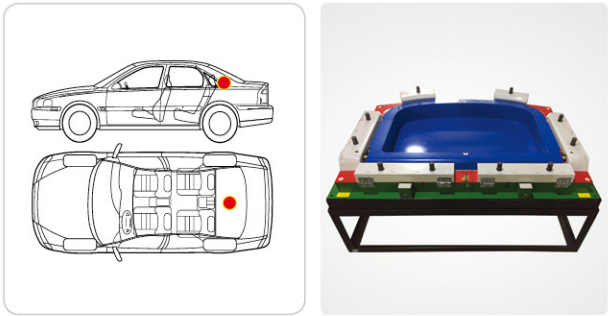
Mold Material	Lead Time
Chemical wood (Epoxy)	35 days

13. Luggage Mat



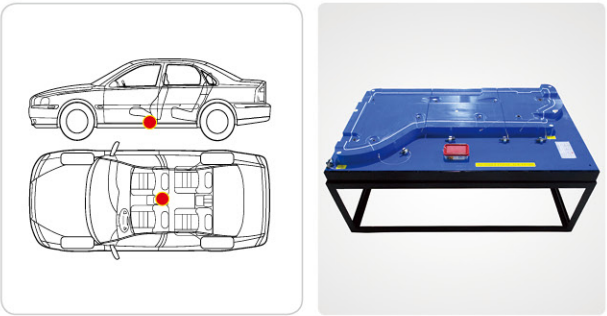
Material	Lead Time
Chemical wood (Epoxy)	35 days

08. Package tray / Covering shelf



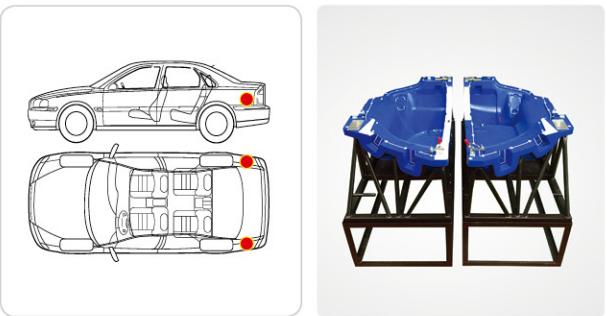
Material	Lead Time
Chemical wood (Epoxy)	35 days

09. Under cover



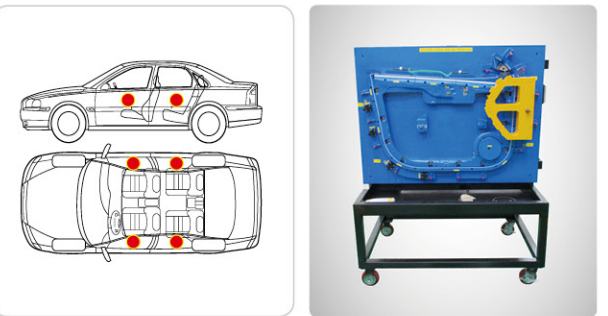
Material	Lead Time
Chemical wood (Epoxy)	35 days

14. Luggage Side



Material	Lead Time
Workable Resin (Epoxy)	35 days

15. Door Trim



Material	Lead Time
Workable Resin (Epoxy)	35 days





**SINHWA TECH CO., LTD.**

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