

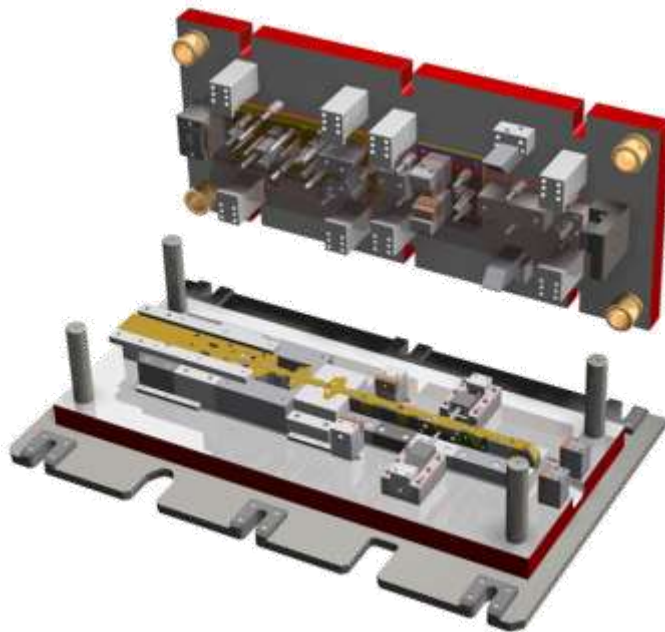
Choice Tooling™

Automotive & Home Appliance Stamping Die
in-housing Non-Stop Manufacturer in Korea.

Specialized in - **Progressive**

- **Tandem**

- **Transfer** Steel Dies



Choice Tooling Co., LTD

Advanced Motion & Die Simulation

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Tel: +82-62-945-8835 Fax: +82-62-945-8836

Address: #225-38, Pyeongdongsandan-ro,
Gwangsan-gu, Gwangju, South Korea. 506-253

We Know how to ---

We Know
how to ---

- _ **Quote** for customer satisfaction.
- _ **Design** based on customer's die specification.
- _ **Build** die based on die specification.
- _ **Submit CMM**(Geometry Measurement) Data based on Customer's requirement.
- _ **Buyoff** for final examination.
- _ **tryout** at customer's location.

- 1 Company History
- 2 Major Products
- 3 Organization
- 4 Financial & Employee
- 5 Facility in Brief
- 6 Customers
- 7 Quality Strategy

Company History

- 1995 .Started as Tooling Dept. in Samsung Electronics Die Center
- 2001 . A-TECH SOLUTION CO., Ltd. Branch Office Manager
- 2003 .ISO 9001 Certification. ISO 14001 Certification
- 2006 .Kicking-Off manufacturing Automotive Stamping tools.
- 2009 .SAMSUNG Electronics Rewards as The Second Prominent Supplier.
- 2010 .Introducing 500T Mechanical Press
- 2013 .Introducing 800T Mechanical Press
- 2015 .Introducing 1000T Hydraulic Press



Products Group-Automotive Parts

Automotive Parts

- Base, Upper & Side Panel,
- Side Member Reinforcement
- Fronttunnel, Mountingplate,
- Various Bracket
- Comp. Case, More



Floor



Member Lwr & Upr



Dash Lower Panel



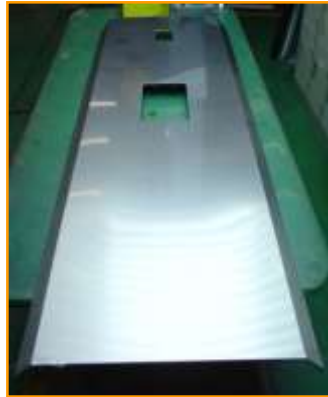
Door Hinge



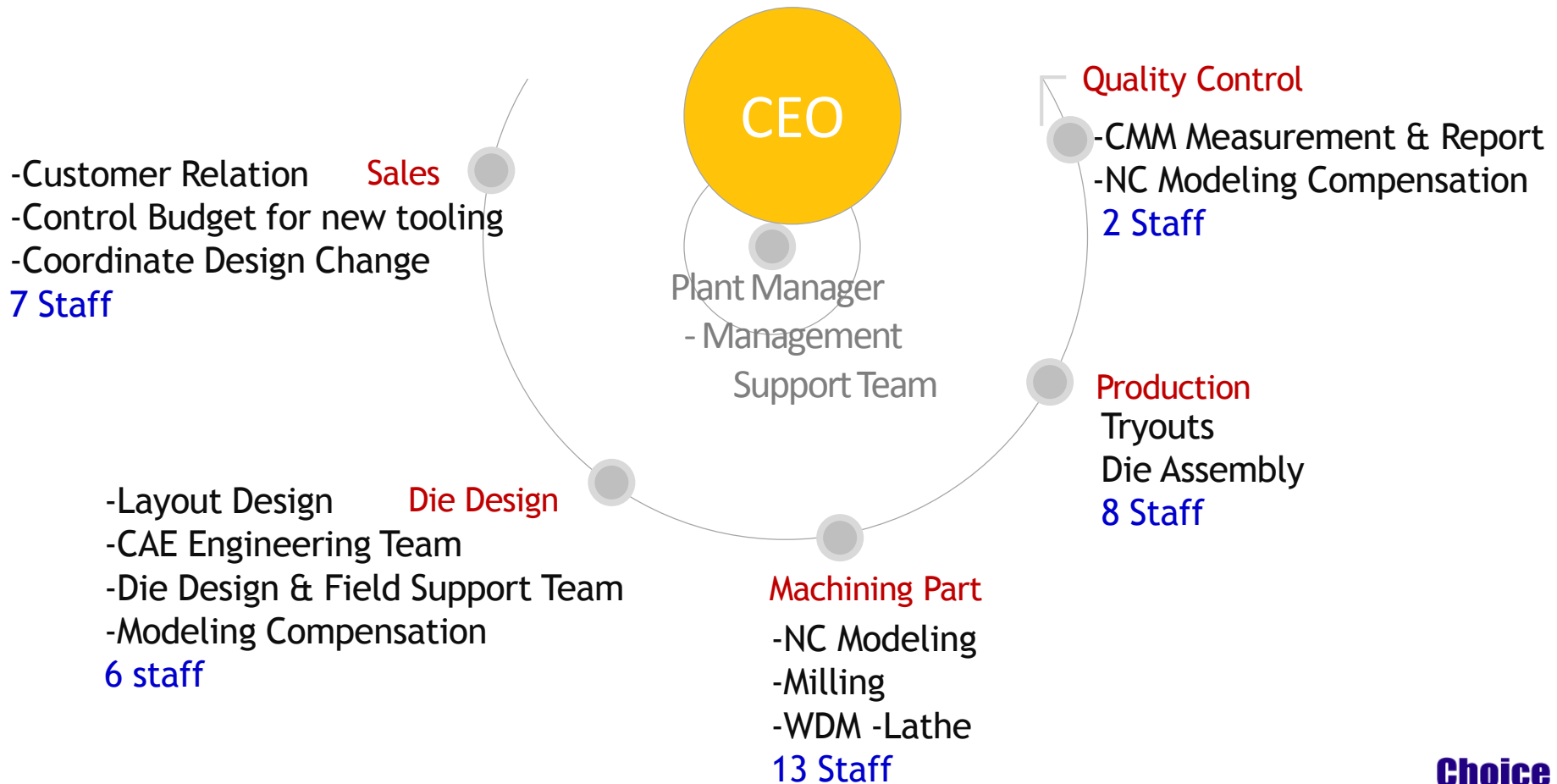
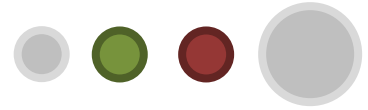
Various Bracket



Products Group- Electronic Home Appliance Parts

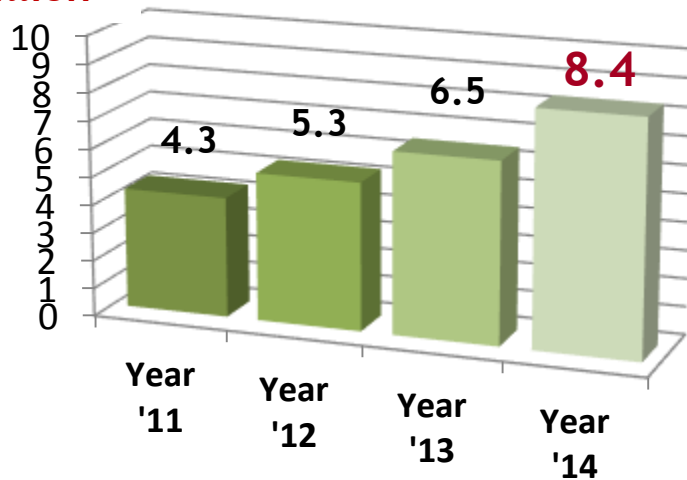


Organization



Financial & Employee

Unit:
Million

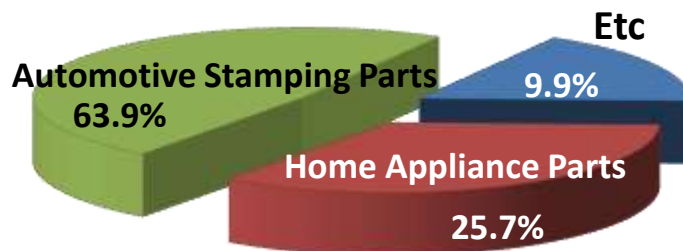


Financial Status

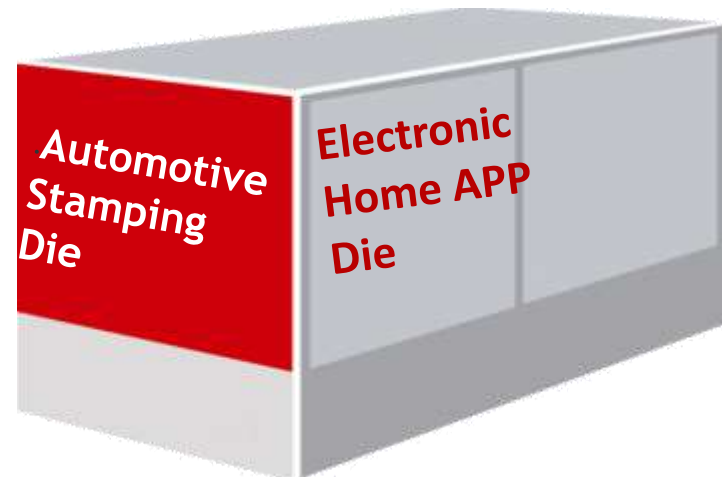


- Annual Turnover(2014)
- 8.4 **Mil US\$**
- Assets: 3.5 Mil.
- Capitals: 2.2 Mil.
- Total Employees: 38

Products Breakdown



2014. YR



Facility in Brief



1

Software

▪ CAD / CAE / CAM	Qty
- Siemens NX (UG)	6
- Auto CAD	12
- Catia	1
- Hypermill	6
- HexaGon-PC Dims	1



2

Hardware

▪ Tryout Press	Qty
- Hydraulic(1000T)	1(Bed Size 5,000 x 2,500)
- Mechanical(800T)	1(Bed Size 3,600 x 1,600)
- Mecha. (600T)	1(Bed Size 2,800 x 1,400)
▪ CNC	Qty
- CNC Machine	6(max 4,200 x 2,600)
- Wire EDM	6(max 1,000 x 600)
- Milling	2
- Lathe	1
▪ CMM Measurement	1

Customer

Global Customers(T2)

- Volkswagen
- BMW
- Mercedes Benz
- Audi

Domestic(T1 or T2)

- Samsung Electronics
- Renault Samsung Motors
- Hyundai Motors
- Kia Motors
- Sungwoo Hitech



Certificates

Quality Management System

- Enhancement of Customers' Reliability

ISO14001

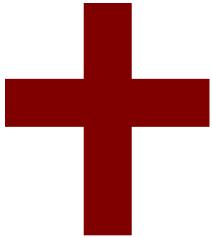
Environmental Management System

- Investment in the Future

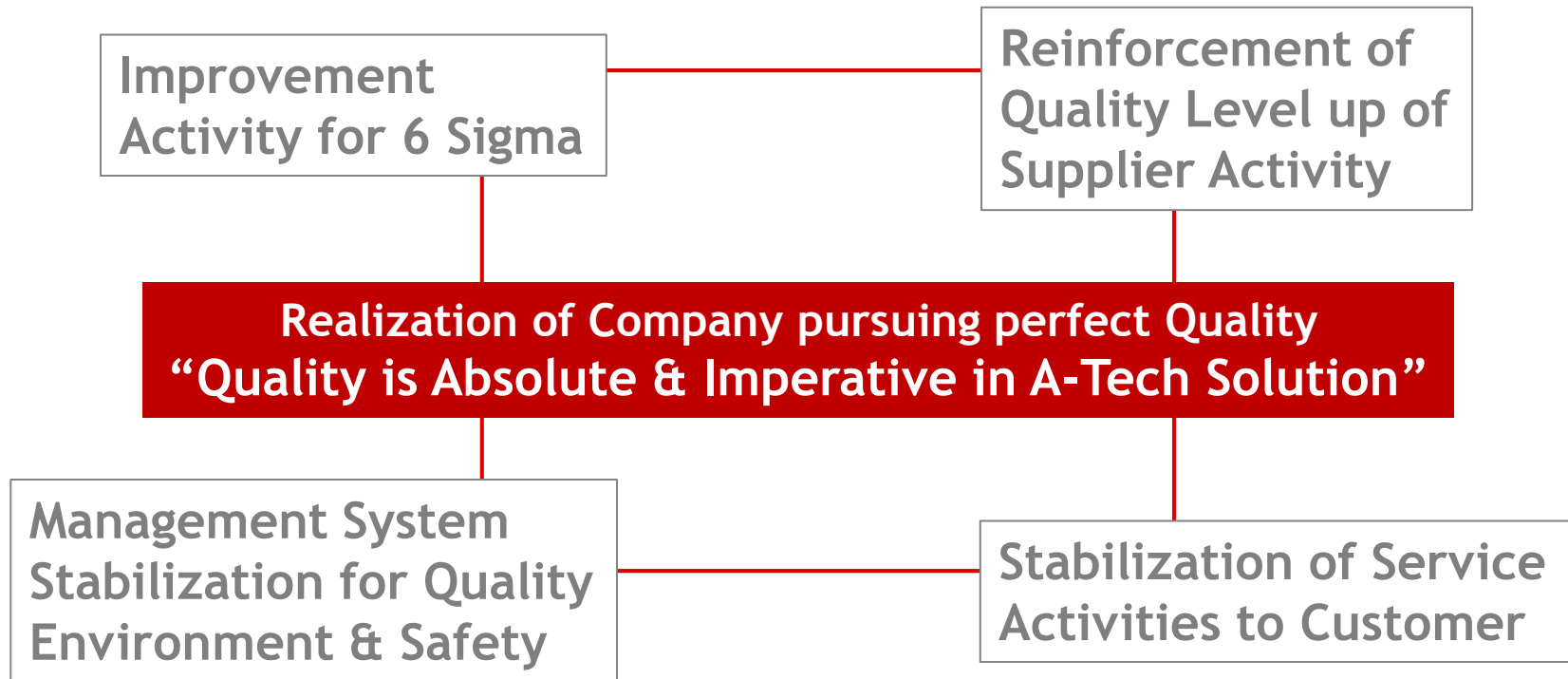
QS9000

Special Requirements for Automotive Industries

- Ceaseless Effort toward Quality



Quality Strategy

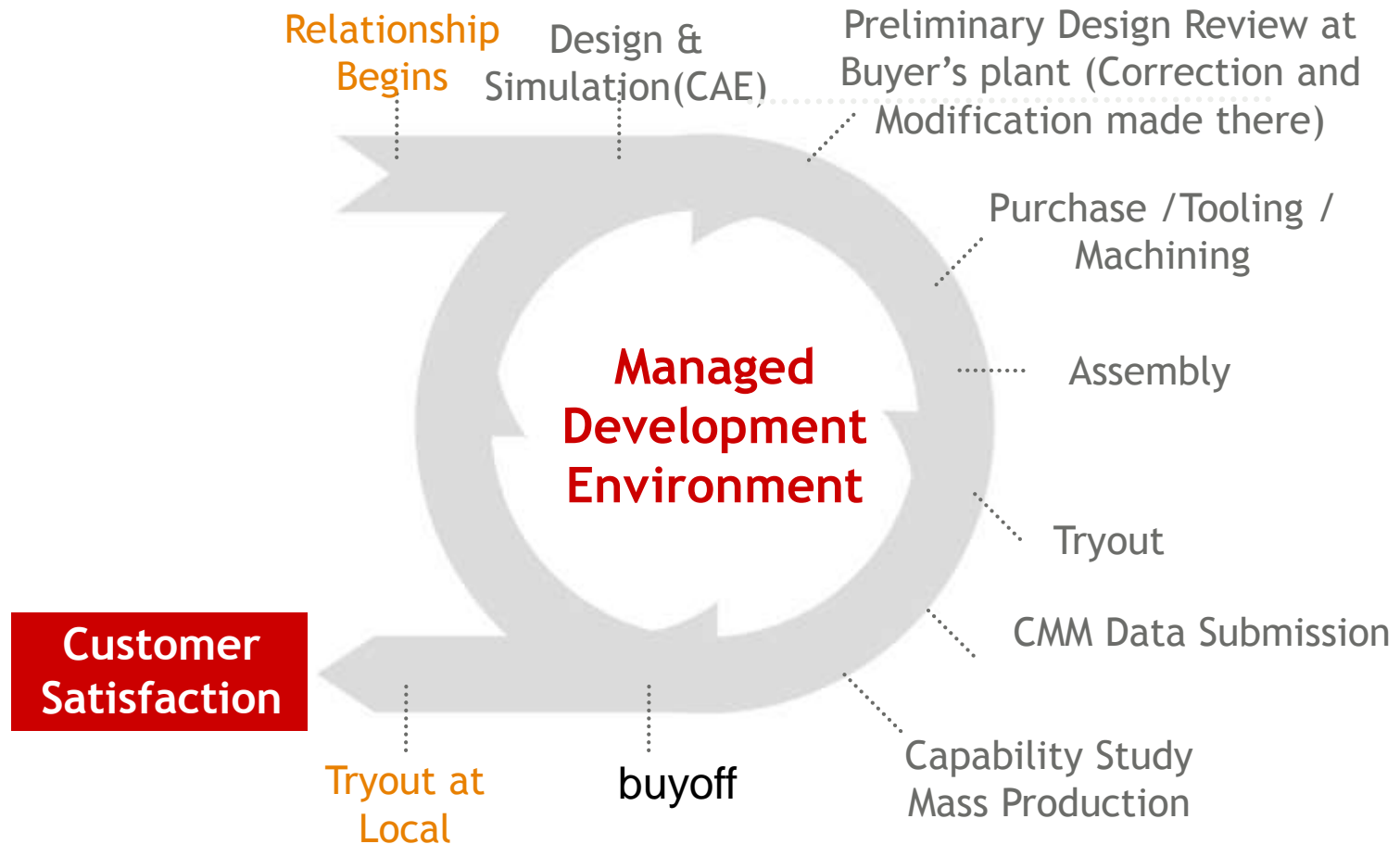


System Introduction

- 1 Product Group
- 2 Die Manufacturing Flow Chart
- 3 Automotive Parts & Home Appliance Parts
- 4 Choice Tooling Lead Time
- 5 Facility & Plant Pictures & CMM Room etc..

Provide **In-Housing** Non-Stop Solution

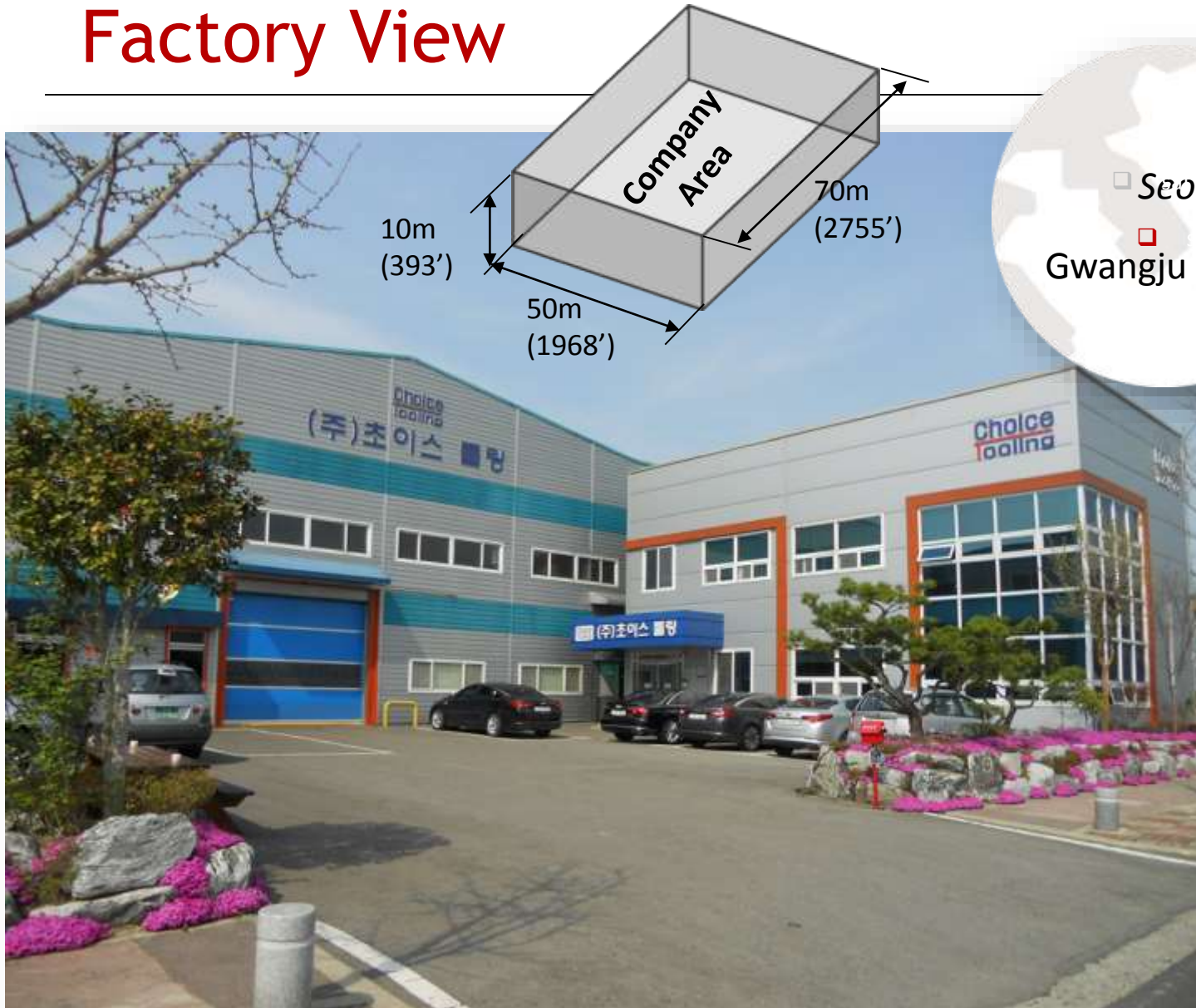
English Support Engineering Project Manager, Quote, Layout Design, Simulation(SE Activity), Die Design, Machining, WDM, Lathe, Assembly, Tryout, Modeling Compensation, CMM, Tryout,



Tooling Lead Time - Progressive & Transfer Die

			<i>1st MONTH</i>				<i>2 nd MONTH</i>				<i>3rd MONTH</i>				<i>4th MONTH</i>				<i>5th MONTH</i>				
			1ST	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th	16th	17th	18th	19th	20th	
SCHEDULE-TOTAL PROGRESS %			0%																				
Design	<i>Strip Layout</i>	0%	█																				
	<i>Die</i>	0%	█	█																			
	<i>Approval</i>	0%			█																		
Material	<i>Die Set</i>	0%			█	█																	
	<i>Comp., Tool Steel</i>	0%				█	█	█															
Machining	<i>Machining</i>	0%					█	█	█														
	<i>Wire EDM</i>	0%						█	█														
Assembly	<i>Die Assembly</i>	0%							█	█													
Development	<i>Part Development</i>	0%								█	█	█	█										
Adjust &	<i>Die Adjustment</i>	0%											█	█									
	<i>Try-out</i>	0%											█	█	█								
Parts	<i>T1</i>															█							
	<i>T2</i>																█						
	<i>MP</i>																	█					
Design Change	<i>Tool</i>	N/A																					
	<i>Checking Fixture</i>	N/A																					
Check. Fixture	<i>Concept Approval</i>	0%				█	█																
	<i>Completion</i>	0%						█	█														
	<i>QA Inspec./Approv.</i>	0%								█	█												

Factory View



Assembly Shop



1st Assembly Shop

- No. of Employees: 11
- Annual Capacity: 120Sets

2nd Assembly Shop



Machining Field

- Maximum Manufacturing Size 4,200 X 2,600

- No. of Employees: 7

- No. of Machine: 6



WDM & Milling Machining Field

- Maximum Manufacturing Size 1000 X 600

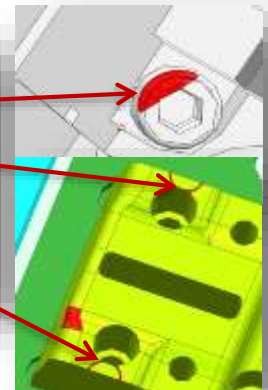
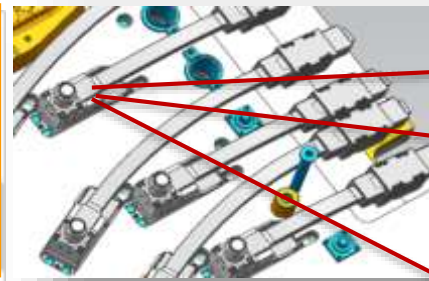
- No. of Employees: 3

- No. of Machine: 7



Die Design Room

Our R&D center established systematic R&D system, implements Total Engineering Service from design to die manufacturing for interior auto parts and home appliance products, and does its utmost efforts to develop new technology in order to leap to the worldwide die manufacturer.



**3D Static & Dynamic Interference Check in advance
(Assembly Interference & Collision Check Simulation)**



Tryout Facility

1

1000 Ton Hydraulic Press



Manuf. : KUK DONG(KTMP-1000)
Capacity : Hydraulic-1000Ton
Bed Size : **5000mm(196") X 2600mm(102")**
Die Height : 300mm~2000mm

Tryout Facility

2

800 Ton MECH Press



Manuf. : SIMPAC
Type : Mechanical
Bed Size : **3600 X 1600**
Tonnage : **800Ton**

3

500 Ton Mech Press



SIMPAC
Mechanical
2800 X 1400
500Ton

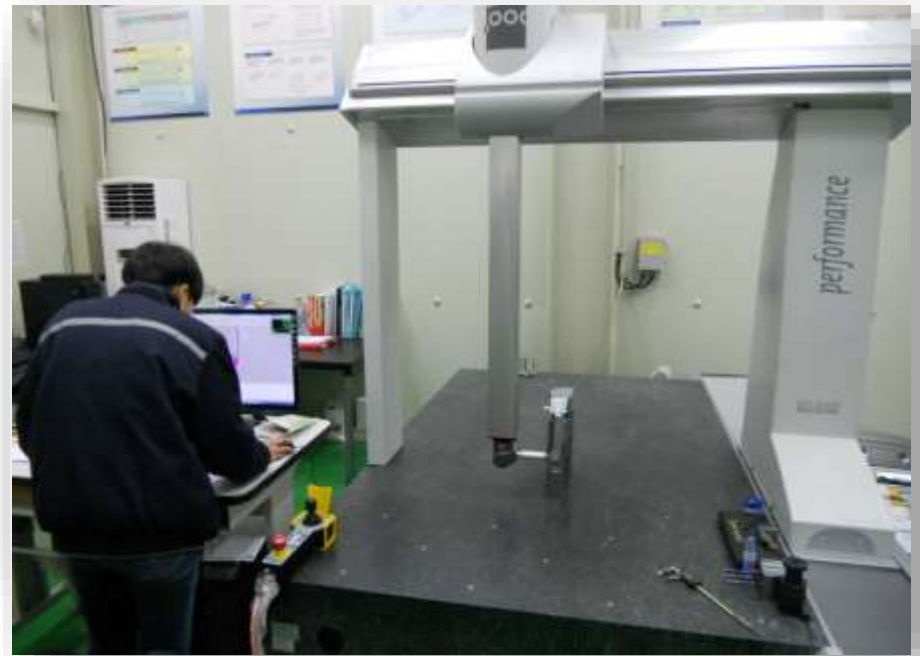
Feeder & Leveler



- | | | | |
|-------------|---|----------------|--------------------|
| ❖ Model: | NC LEVELLER | ❖ Line Speed: | Max 34m/min |
| ❖ Capacity: | Thickness 5mm
Width 1000mm | ❖ Coil weight: | 5,000KG |

Quality Analysis - CMM Measurement

Our highly skilled craftsmen are known for their ability to work with the customer through all stages of a project. Capability studies conducted during the tryout process ensure that the customer's quality standards are met.



3 Dimensional Measuring M/C

- Maker: **HEXAGON (Made in USA)**
- Model: **Bright-A1230**

- Operational Size: **1500 x 1800 x 1200**
- Software: **PC Dims**

Quality Analysis-Hardness Testing Unit



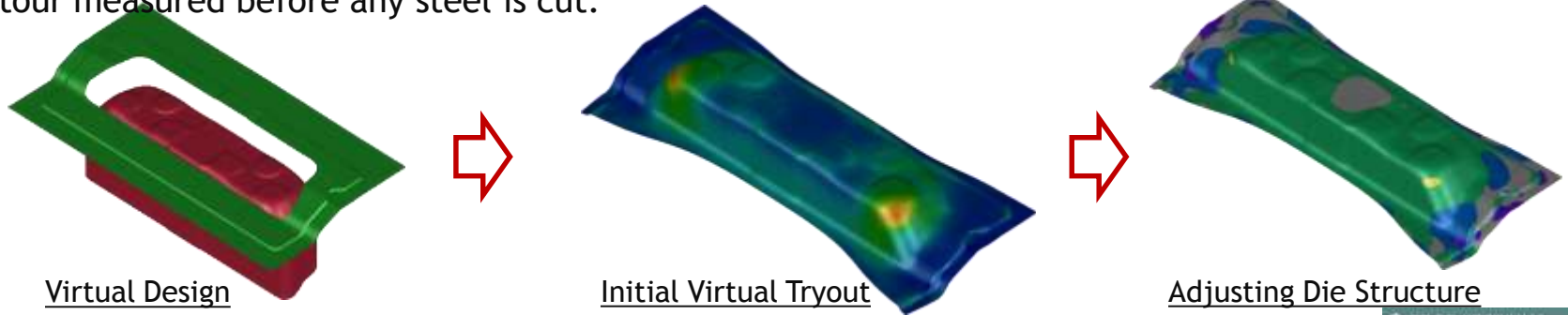
❖ **Maker:** MITUTOYO

❖ **Model:** HH-411 Series 810 Impact

Engineering Solutions

Forming Simulation

The Virtual Tryout is previewed before any hard tooling is made. The wrinkles and splits can be found and contour measured before any steel is cut.

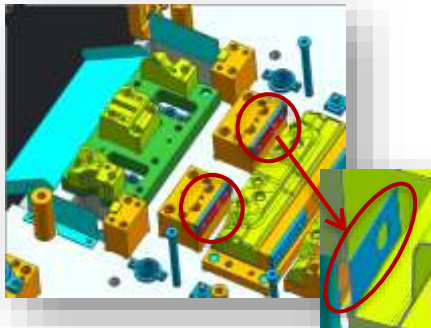


Mechanical Simulation

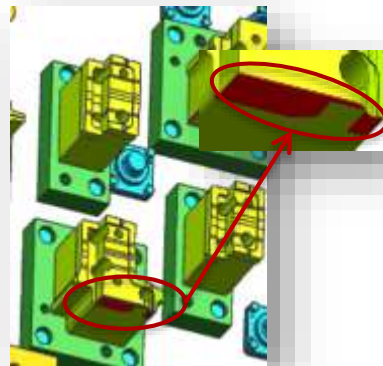
Performing 3D Static & Dynamic Interference Check in advance
(Assembly Interference & Collision Check Simulation)

Choice Tooling Software for interference & collision check program.

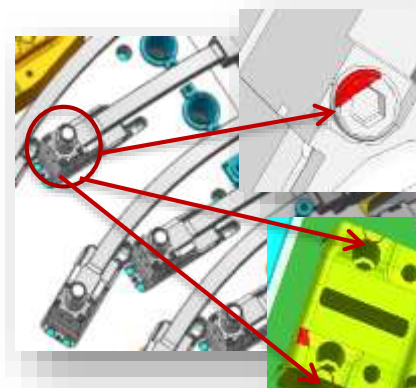
Case1. Interference.



Case2. Interference.

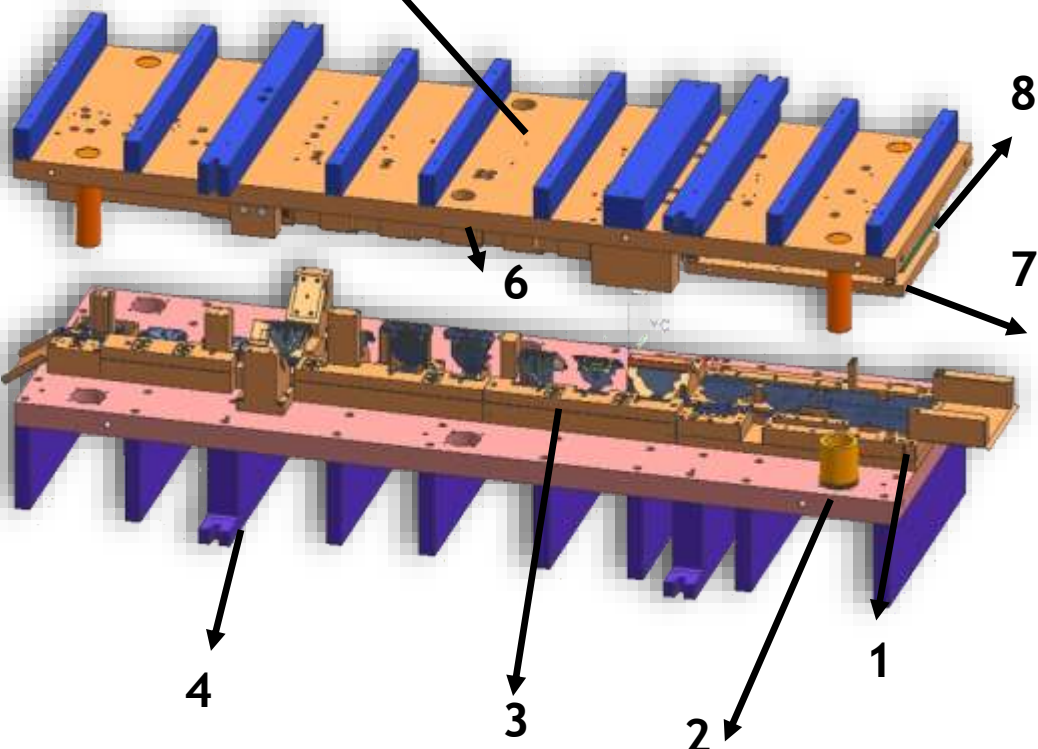


Case3. Collision



Die Nomenclature & Tooling Materials

AISI / SAAE	Material	DIN	BS	EN	AFNOR	SS	UNI	UNE	KS JIS
									
D2	1.2379	X155CrVMo121	BD2	Z160CDV12	2310	X155CrVMo12 1KU	F-520.A	SKD11	
1020;1023	1.0402	C22	055M15;070M20 2C	AF42C20;XC25;1C22	1450	C20; C21; C25	1C22F.112	S20C; S22C;SM20C	
1045	1.0503	C45	080M46	CC45	1650	C45	F.114	SM45C	



1. Die back Plate: STD11/D2 (HRC55)
2. Lower Shoe: SM20C/1020
3. Die section: STD11/D2(HRC 58)
4. Parallels : SM20C/1020
5. Upper Shoe: SM20C/1020
6. Punch: STD11/D2 or A2 (HRC60)
7. Stripper: SM45C/1045
8. Punch plate: SM45C/1045

- Supplier of steel:
POSCO, Changwon Specialty Steel
ASSAB, AMPCO

In Summary

- Provide Competitive Costs**
- 3D accelerated design for higher accuracy**
- Simple Mechanism for Stability**
- Easy to Maintenance & Handle**
- Provide a complete solution to any kinds of contour**
- Low Maintenance Cost.**