WHO ARE WE?

- BELLE is a tool shop who is always focus to build high quality injection mold. Main product:
  - Automotive parts (Engine Intake manifold, Engine Cover, Klima & navigation system, etc.)
  - Home appliance (Food shredder)
  - Industrial parts(door handle, lock components, etc.)
- BELLE is created in May, 2011 by Sean. He & Palo. Zeng.
- BELLE is located in Shenzhen, CHINA.
- BELLE move to new plant with 2500 m^2 & higher capacity on 2014.
- BELLE has 40 employees and with 150sets tools capacity each year.
- BELLE GOAL:
  - TO BE A PROFESSIONAL ONE-STOP SUPPLIER FOR PLASTIC INDUSTRIAL.
  - CONTINUE LEARN & IMPROVEMENT.

COMPANY DEVELOPMENT

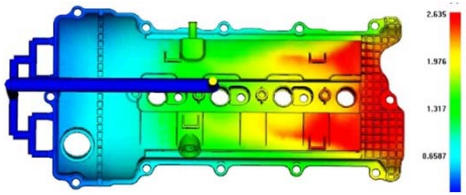
PROJECT BELLE FINISHED – AUTOMOTIVE

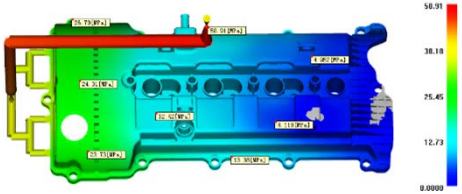
CUSTOMER: MAHLE
PROJECT: ENGINE COVER

HOW WE WORK?

1. MOLD FLOW ANALYSIS:

We made MF by ourselves finalize result together customers' engineer from Japan In tool design period to identify potential issue in the part like warpage / filling / pressure etc. and bring into tool design / machining / testing for counter warpage in the part.





Part name: Engine cover for JAC

Raw material: >PA66< GF35

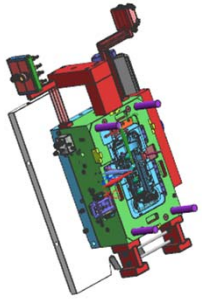
Part size: 580 * 230 * 90mm

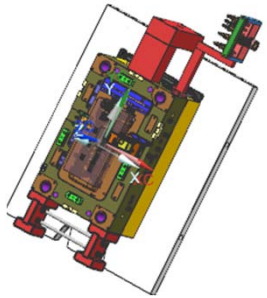
Special feature: thread rotation

Important feature: screw domes position & sealing slot position profile.

2. DFM (PART CHANGE) & TOOL DESIGN:

Make part change (counter warpage) according MF result, and use for mold making.





3. MOLD TESTING:

We together with customer (from Japan) to frozen process parameter and find best option for upcoming testing, use the parts for measurement & tool correction with counter warpage in the part.

PROJECT BELLE FINISHED – AUTOMOTIVE

CUSTOMER: MAHLE
PROJECT: ENGINE COVER

HOW WE WORK?

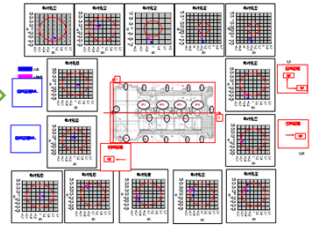
百乐达 BELLE-MOLD

4. MEASUREMENT REPORT:

We made MPP (with fixture) to clarify dimension with important features.



RESULT



5. ITERATION LOOP:

1-TIME Mold tweaking → testing → measurement report to correct all important dimensions in the part all because:

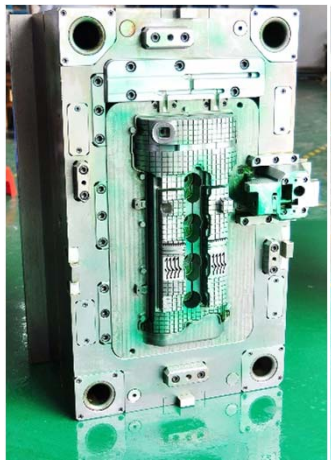
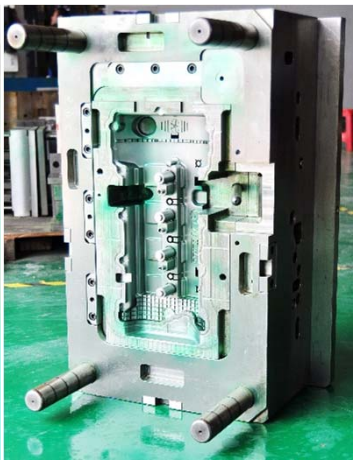
- Pre-investigate during design period.
- Accurate measurement result under right measurement method.

Mold size:	850 * 550 * 816
Mold base steel:	P20 (1.2312)
Insert steel:	738HH
Feature:	warpage of part

6. SAMPLING:

Produce parts to customer to make full assembly testing.

IN TOTAL, 2-TIMES MOLD TESTING TO REACH ASSEMBLY / DIMENSION REQUIREMNT.

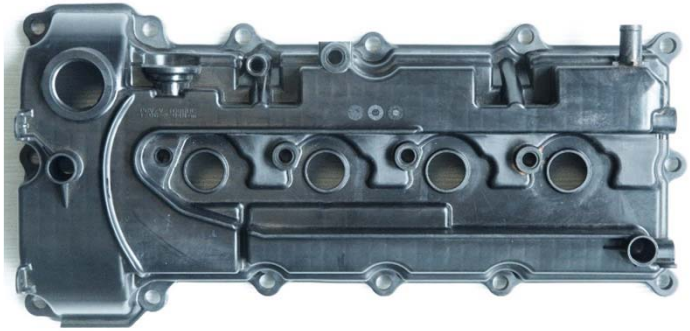
7. SERIES TOOL START:

After full testing is done and part quality released by OEM.

PROJECT BELLE FINISHED – AUTOMOTIVE

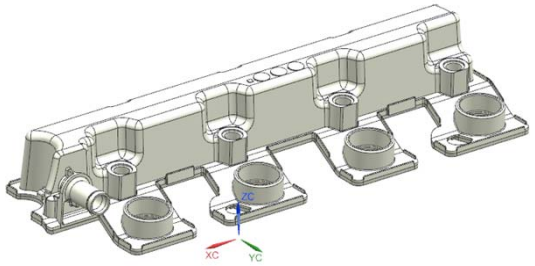
CUSTOMER: MAHLE
PROJECT: ENGINE COVER

SIMILAR PROJECT WE'VE FINISHED – 5 sets



Part name:	Head cover
Project name:	ZHM72-1
Raw material:	>PA66< GF35
Important feature:	screw domes position & sealing slot position profile.
Production place:	customer's planet located in CHINA.

Part name:	Head cover
Project name:	ZHM102
Raw material:	>PA66< GF35
Important feature:	screw domes position & sealing slot position profile.
Production place:	customer's planet located in CHINA.



Part name:	Head cover upper part
OEM:	SUZUKI
Raw material:	>PA66< GF35
Part size:	330 * 100 * 60 mm
Production place:	customer's planet located in Japan..

Part name:	Engine cover for BMPC
Raw material:	>PA66< GF35
Part size:	580 * 230 * 90mm
Important feature:	screw domes position & sealing slot position profile.
Production place:	customer's planet located in CHINA.

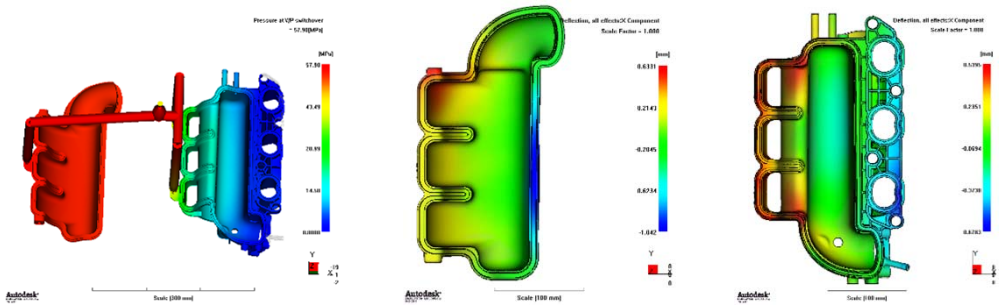
PROJECT BELLE FINISHED – AUTOMOTIVE

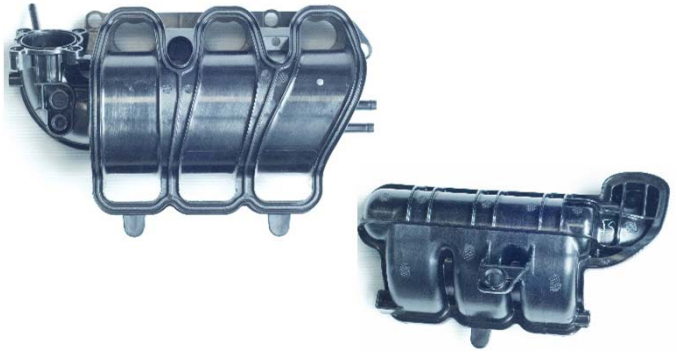
CUSTOMER: SOGEFI
PROJECT: AIR INTAKE MANIFOLD

HOW WE WORK? (TOTAL 6 TOOLS WE BUILT)

1. MOLD FLOW ANALYSIS:

We made MF by ourselves to find best filling / cooling solution In tool design period to identify potential issue in the part like warpage / filling / pressure etc. and identify the best construction of tools – because the part & tool quality requirement is extremely high.





2. DFM & TOOL DESIGN:

Not only to prepare DFM for tooling, but also optimize the part design to find robust solution in the tool to eliminate the potential risk of assembly!

3. MEASUREMENT REPORT:

Measurement report: for each mold testing, we made full measurement report by CMM.

4. MOLD TESTING & SERIES PRODUCTION:

Mold testing: We always frozen the process parameter after T1 and use for all upcoming testing.

5. MOLD RELOCATION:

Mold relocated to customers' production plant in Germany, SOP start without problems in the molds.

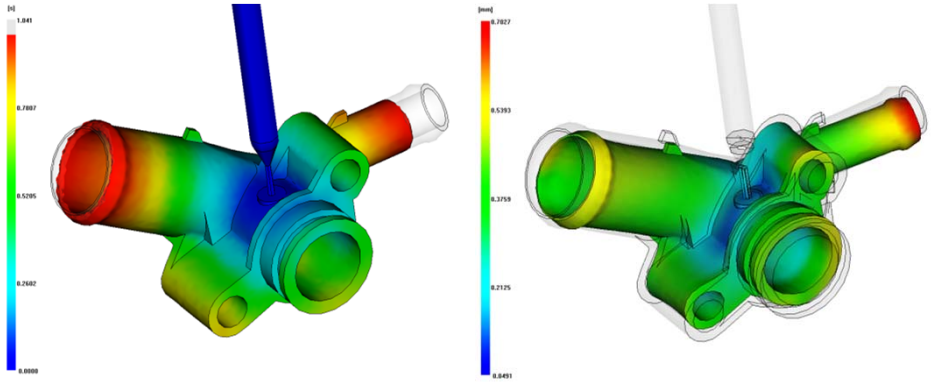
PROJECT BELLE FINISHED – AUTOMOTIVE

CUSTOMER: SOGEFI FRANCE
PROJECT: WATER OUTLET (FORD)

HOW WE WORK?

1. MOLD FLOW ANALYSIS:

We made MF by ourselves to find best filling / cooling solution In tool design period to identify potential issue in the part like warpage / filling / pressure etc. and identify the best construction of tools – because the assembly part quality requirement is extremely high.



Cavity of tool: 4 cavities
Raw material: >PPA< GF35 by DuPont
Mold temperature: 150degree.

2. DFM & TOOL DESIGN:

Not only to prepare DFM for tooling, but also optimize the part design to find robust solution in the tool to eliminate the potential risk of assembly!

3. MEASUREMENT REPORT:

Measurement report: for each mold testing, we made full measurement report by CMM.

4. MOLD TESTING & SERIES PRODUCTION:

Mold testing: We frozen the process parameter after T1 and use for all upcoming testing.

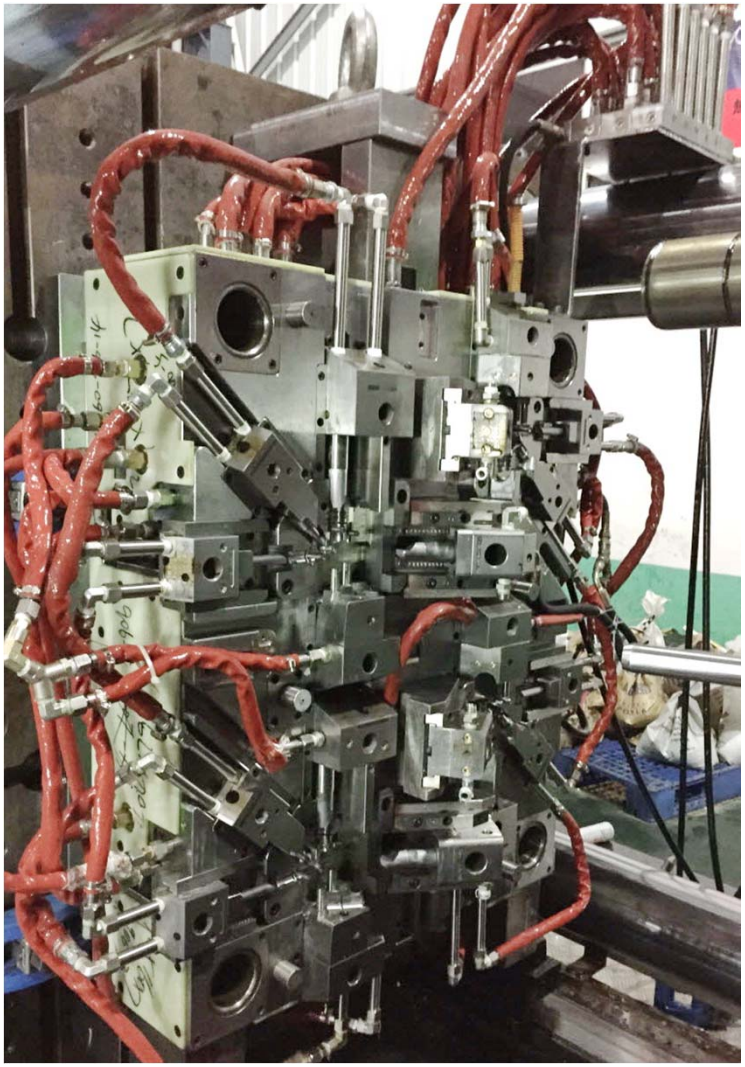
5. MOLD RELOCATION:

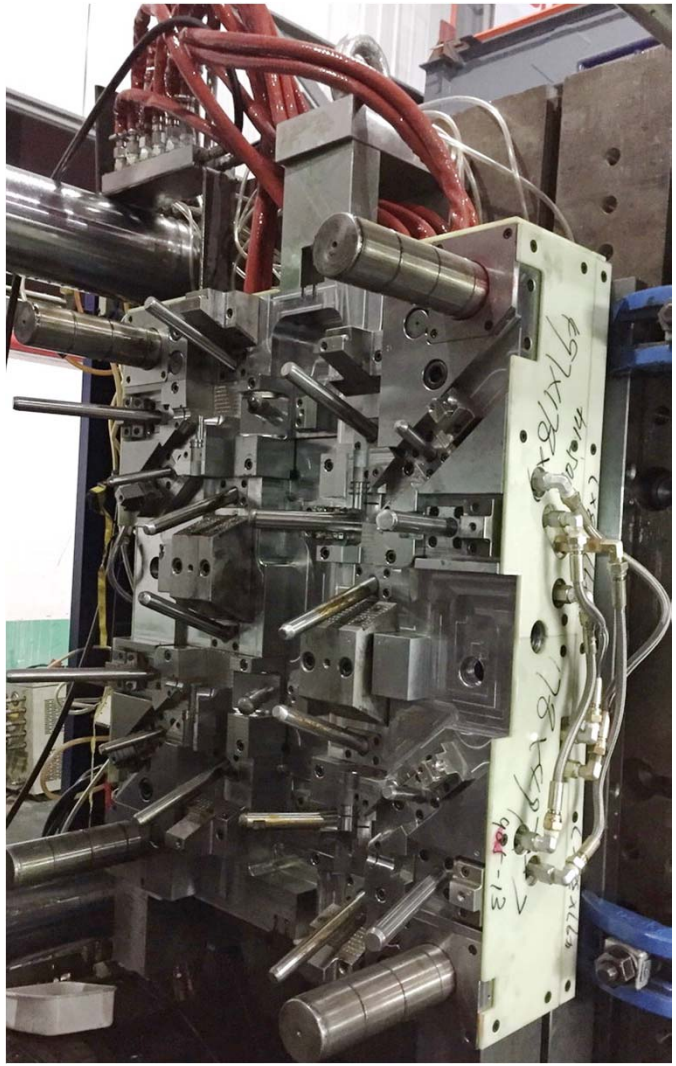
Mold relocated to customers' production plant in France, SOP start without problems in the molds.

PROJECT BELLE FINISHED – AUTOMOTIVE

CUSTOMER: SOGEFI FRANCE
PROJECT: WATER OUTLET (FORD)

HOW WE WORK?





KEY POINT:

1. 4 cavities & 5 sliders each part. Mold must fit to 500ton injection machine.
2. High mold temperature = 150 degree. Full mold covered by insulation plate.
3. All water tubes for cooling must be Tress - Flon & heat resist.

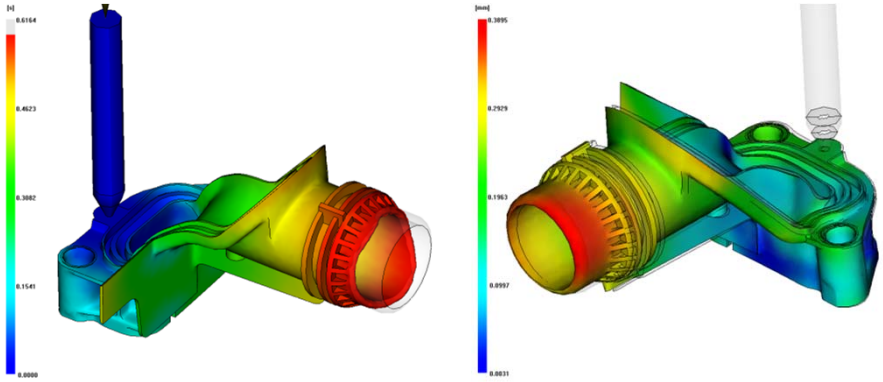
PROJECT BELLE FINISHED – AUTOMOTIVE

CUSTOMER: SOGEFI FRANCE
PROJECT: WATER PIPE (FIAT)

HOW WE WORK?

1. MOLD FLOW ANALYSIS:

We made MF by ourselves to find best filling / cooling solution In tool design period to identify potential issue in the part like warpage / filling / pressure etc. and identify the best construction of tools – because the assembly part quality requirement is extremely high.



Cavity of tool:	1+1 cavities
Raw material:	>PA6T/6I< GF30 by EMS
Mold temperature:	150degree.

2. DFM & TOOL DESIGN:

Not only to prepare DFM for tooling, but also optimize the part design to find robust solution in the tool to eliminate the potential risk of assembly!

3. MEASUREMENT REPORT:

Measurement report: for each mold testing, we made full measurement report by CMM.

4. MOLD TESTING & SERIES PRODUCTION:

Mold testing: We frozen the process parameter after T1 and use for all upcoming testing.

5. MOLD RELOCATION:

Mold relocated to customers' production plant in France, SOP start without problems in the molds.

PROJECT BELLE FINISHED – AUTOMOTIVE

CUSTOMER: SOGEFI & MAHLE
PROJECT: TUBES

SIMILAR PROJECT WE'VE FINISHED – OVER 10 sets

百乐达 BELLE-MOLD

Cavity of tool:	1+1 cavities
Raw material:	>PA6T/6I< GF30
Mold temperature:	150 degree.
Key point:	high temperature

Cavity of tool:	2+2+2 cavities
Raw material:	>PA66< GF30
Mold temperature:	80 degree.
Key point:	complicate tool function

Cavity of tool:	1 cavities
Raw material:	>PA66< GF30
Mold temperature:	80 degree.
Key point:	complicate tool function

Cavity of tool:	1+1 cavities
Raw material:	>PA6< GF30
Mold temperature:	80degree.
Key point:	rotation slider.

Cavity of tool:	2 cavities
Raw material:	>PA6< GF30
Mold temperature:	80degree.

Cavity of tool:	2 cavities
Raw material:	>PA6< GF30
Mold temperature:	80degree.

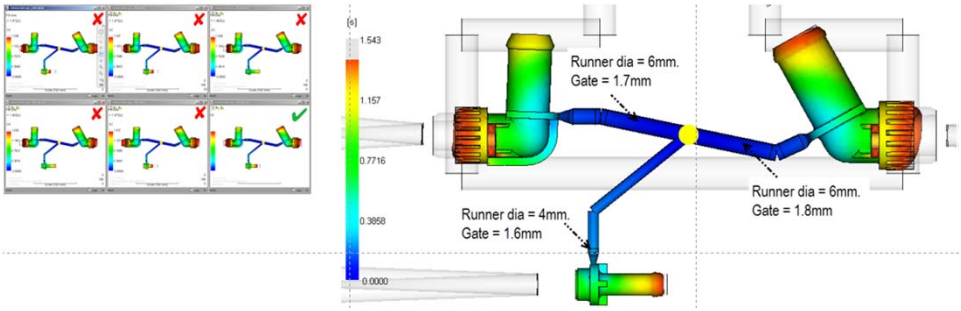
PROJECT BELLE FINISHED – AUTOMOTIVE

CUSTOMER: SOGEFI
PROJECT: TUBES

HOW WE WORK?

1. MOLD FLOW ANALYSIS:

We made MF by ourselves to find best filling / cooling solution In tool design period to identify potential issue in the part like warpage / filling / pressure etc. and identify the best construction of tools – because the assembly part quality requirement is extremely high.



2. DFM & TOOL DESIGN:

Not only to prepare DFM for tooling, but also optimize the part design to find robust solution in the tool to eliminate the potential risk of assembly!

3. MEASUREMENT REPORT:

Measurement report: for each mold testing, we made full measurement report by CMM.

4. MOLD TESTING & SERIES PRODUCTION:

Mold testing: We frozen the process parameter after T1 and use for all upcoming testing.

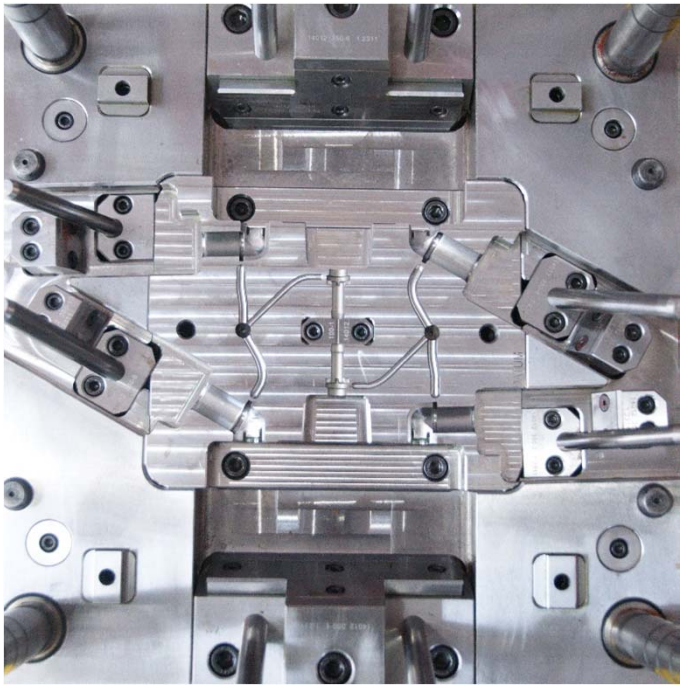
5. MOLD RELOCATION:

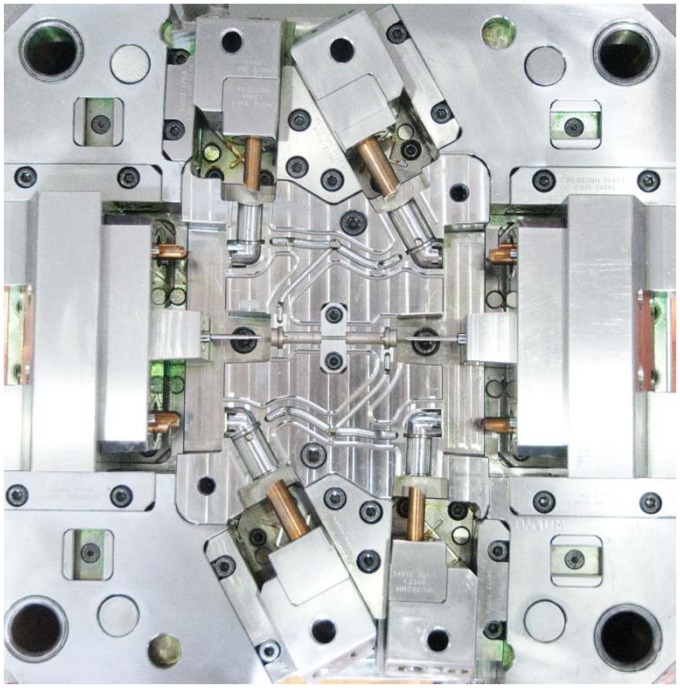
Mold relocated to customers' production plant in Germany, SOP start without problems in the molds.

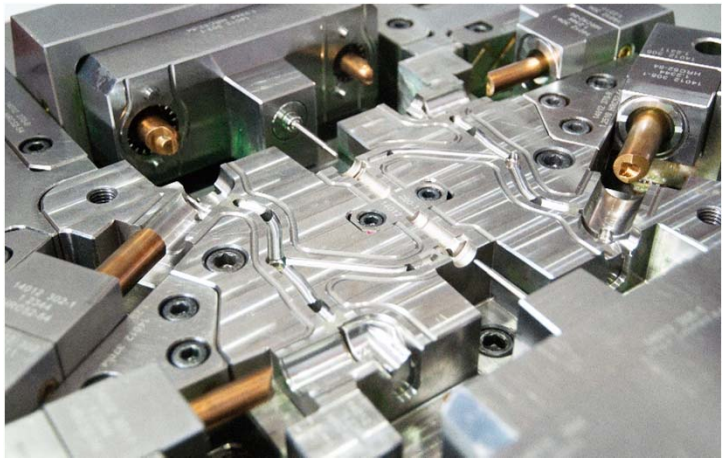
PROJECT BELLE FINISHED – AUTOMOTIVE

CUSTOMER: SOGEFI
PROJECT: TUBES

HOW WE WORK?



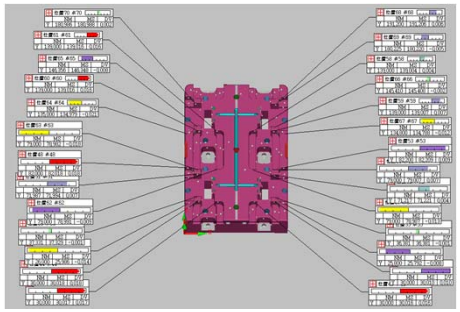




MOLD PICTURES:

Mold size:	600 * 550 * 500
Mold base steel:	P20 (1.2312)
Insert steel:	1.2343 ESR
Key point:	part dimension & reduce molding cycle time
Production place:	SOGEFI India plant

CAPABILITY



Machine name	Machine type	Made by	Quantity	Location	Remark
CNC	DingTai	CHINA, Taiwan	4	BELLE	
High speed CNC	MORI SEIKI	Japan	2	Hong Jia	
EDM	MeiTie	CHINA, Taiwan	3	BELLE	
EDM (CNC)	Diamond Sodick	CHINA	1	BELLE	
EDM (CNC)	Hanspark	CHINA	2	BELLE	With Graphite electrode function.
Wire cut	Sodick	JAPAN	2	YouHe	
Gridding machine	MeiTie	CHINA, Taiwan	3	BELLE	
Gridding machine	MeiTie	CHINA, Taiwan	1	BELLE	
CMM	Hexagon metrology	Switzerland	1	BELLE	Automatically programing available.
Projector	MeiTie	CHINA, Taiwan	1	BELLE	
Injection machine	100 – 250 ton	CHINA	2	BELLE	Mold trial & production
Injection machine	150 – 1200 ton	CHINA	10	Lianxing	5 minutes by car from BELLE

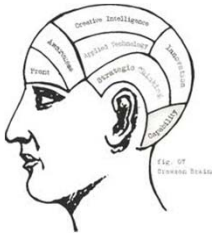
CURRENT RUNNING AT BELLE:

100% AUTOMATICALLY CHECKING ELECTRODE / STEEL DIMENSION BY CMM MACHINE & CREAT REPORT TO CHECK.

CAPABILITY

FOR ALL MOLD TESTING & PRODUCTION, WE HAVE SEVERAL EXTERNAL SUPPLIER TO REALIZE IT WITH:

- INJECTION MACHINE FROM 80 TON TO 1600TON.
- 2K INJECTION MACHINE WITH VERTICAL & HORIZENTAL NOZZLES.
- GAS-ASSISTANT, MUCELL POSIBILITY.



LEARN EXPERIECNE | IMPROVEMENT | SYSTEM | GLOBLE VISION | TEAM WORK | SUCESS

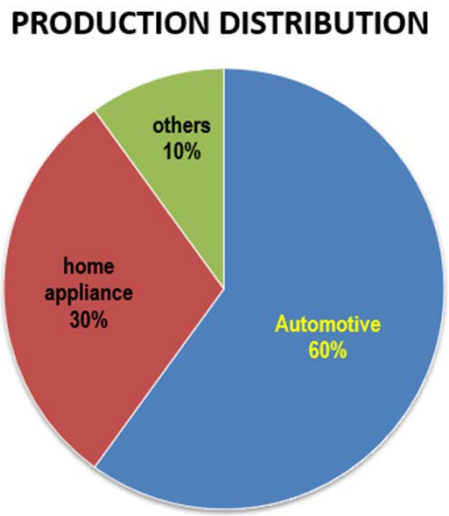
OUR KEY CUSTOMER:

LIEBHERR
MAHLE Driven by performance
SOGEFI GROUP
SOMMER Automation & Radio
Leggett & Platt INCORPORATED
Valeo
JUPITER Für die frische Küche
BO-INNO RESEARCH DEVELOPMENT
HELLA Technology with Vision
TEKNIA
Canon
KESSLER PLASTICS
STEINEL Intelligent technology
PRETTL automotive
FUJI Xerox
DPI form your IDEA
itoolconcepts A DIVISION OF INDUSTRILAS

COMPANY DEVELOPMENT

OUR PRODUCT RANGE COVERED:

AUTOMOTIVE COMPONENT, HOME APPLIANCE, INDUSTRIAL LOCK ETC.



SO WHY BELLE? JUST BECAUSE -

1. WE KNOW WHAT WE ARE DOING & CUSTOMER'S REUIREMENT.
2. WE KNOW HOW TO DO.
3. WE KEEP FOCUS ON CONTINUE IMPROVEMENT.
4. COMPETIVE PRIZE WITH EXPERIENCE KNOWLEDGE.

WE DO ALL PROJECTS FOR ALL CUSTOMER STRIKLY THE WAY AS INDICATE ABOVE.

1. *SMART TOOL DESIGN: put all 'heads' together during design to find intelligent solution for mold & molding!*
2. *STRICK PROJECT CONTROL: quality is always the life of mold & time is blood of mold life.*
3. *SERIOUS MOLD TESTING: to find wide process range for the mold, instead of 'best' process parameter!*
4. *ACCURATE MEASUREMENT: measurement report is the best way to approve if parts are qualified or not!*
5. *CAREFULLY MOLD CHECKING: last but not the only time mold checking to make sure the whole are qualified for customer!*

FINALLY, SIMPLE SAY WHY CHOOSE BELLE:

1. KNOW HOW.
2. QUICK ACTION.
3. KNOWLEDGE SAVE.
4. CREATE WIN-WIN RESULT.

Really appreciated for your attention to our company presentation.
We are looking forward to work together with you under the same line.

Palo Zeng
Key account | co-owner

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Intelligent tool

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