





M5 History



Founded in 2013

In Bangkok (Thailand)... by a team of committed foundry professionals with a passion for the metal casting industries.



Objective

To implement high-end technology and to provide technical solutions to F & NF foundry's... HPDC, LPDC, GDC, SAND CASTINGS in SEA.



Competence

We set high importance on our technical competences to optimize Your casting production and to contribute to the growth of Your foundry.



Mission

We aim to provide best equipment, machinery, spare parts and after-sales service locally to our clients!



Vision & Goal

Be the Best technology & solution provider in South-East Asia!





M5 Partners & Operational Area

FONDAREX[®]
SWISS VACUUM TECHNOLOGY

Switzerland

M5 Partners
Locations

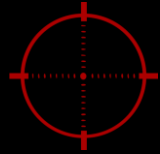
Sweden

NOVACAST

Germany

WOLLIN





Vacuum

High end parts need vacuum!



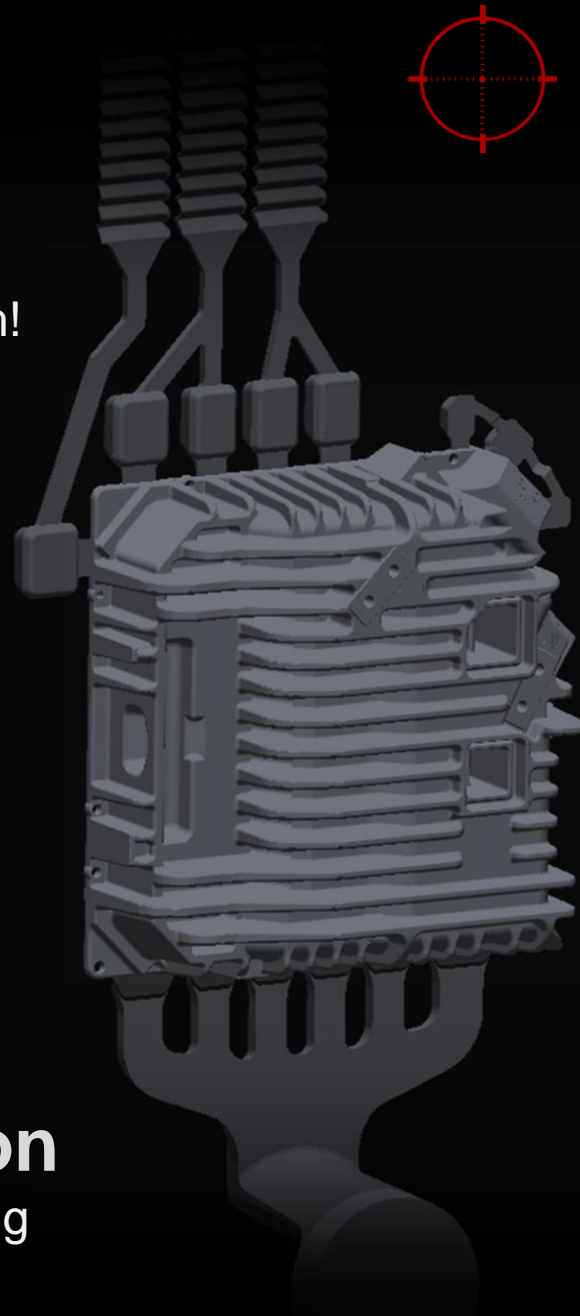
Spray & Lubricants

Less is more!



Thermal Regulation

Needed to control the working temperature of the die!



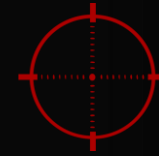
Die-Casting Machine

A good die-casting machine!



Mold / Die

A good “die design” is the key to a good casting!



Piston & Shot Sleeves

Important to reduce cycle times and other production related points.



Alloy

Proper melt treatment will reduce metallurgical defects!



The background of the slide shows a dimly lit industrial environment with several large, white, industrial-grade vacuum casting machines. The machines are arranged in a row, and some have labels like 'FX SQUEEZE', 'FX JET', and 'FX VAC' on them. The 'FONDAREX' logo is visible on the front of the machines. The overall scene is dark, with the machines being the primary light source, creating a professional and technical atmosphere.

Importance of vacuum applications

**TECHNOLOGICAL
REFERENCE
FOR HIGH QUALITY
PRODUCTION**

IN DIE CASTING



Vacuum

Vacuum is a “must” to reduce defects and get the required casting properties as mentioned below:



Surface aspects

Vacuum will improve the surface properties of the casting due to the reduction of oxygen!



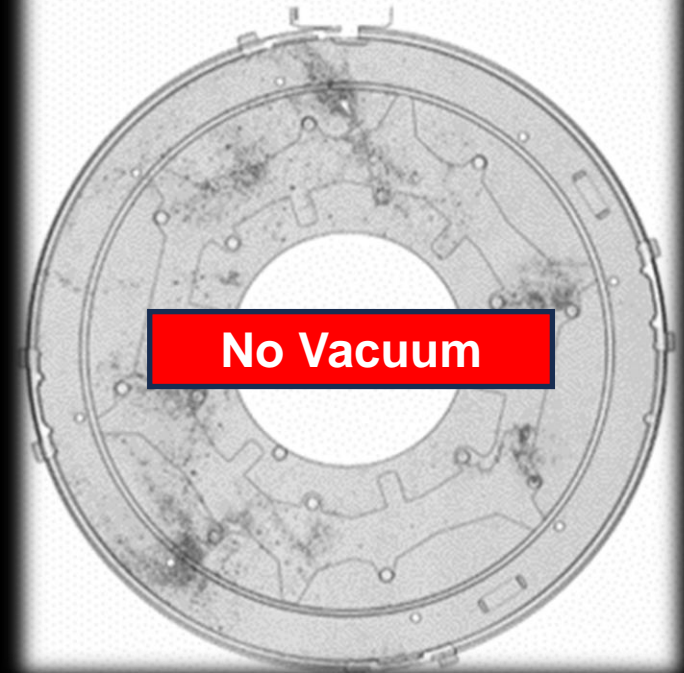
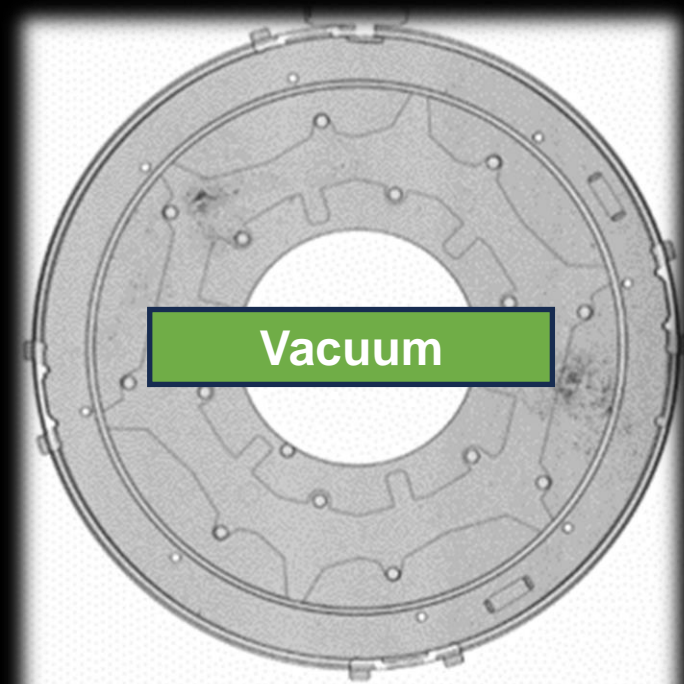
Structural parts / Complex geometry's

Vacuum will improve the filling of the die especially for thin-walled parts and complex geometries.



Leakage / Porosity / Pressure tight parts

Wherever leakage and porosities are a problem... vacuum will help to improve the parts!





Benefits on the process



Reduce the speed
of the 2nd phase

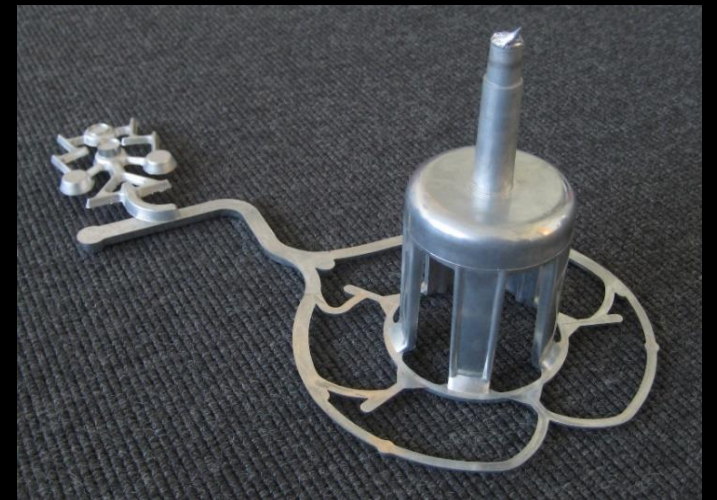
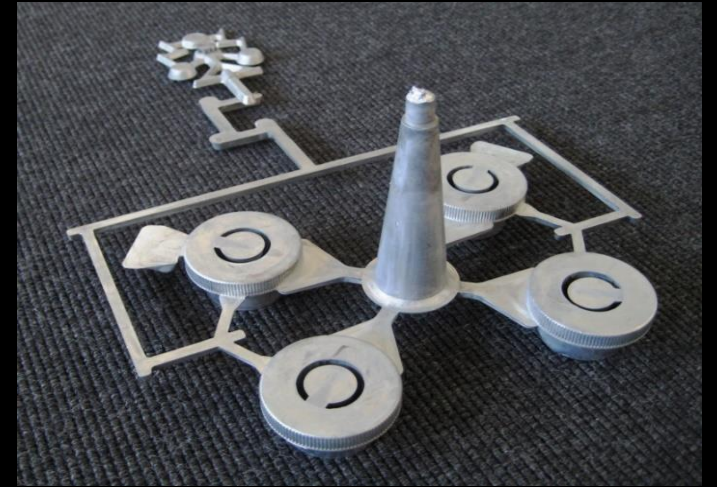
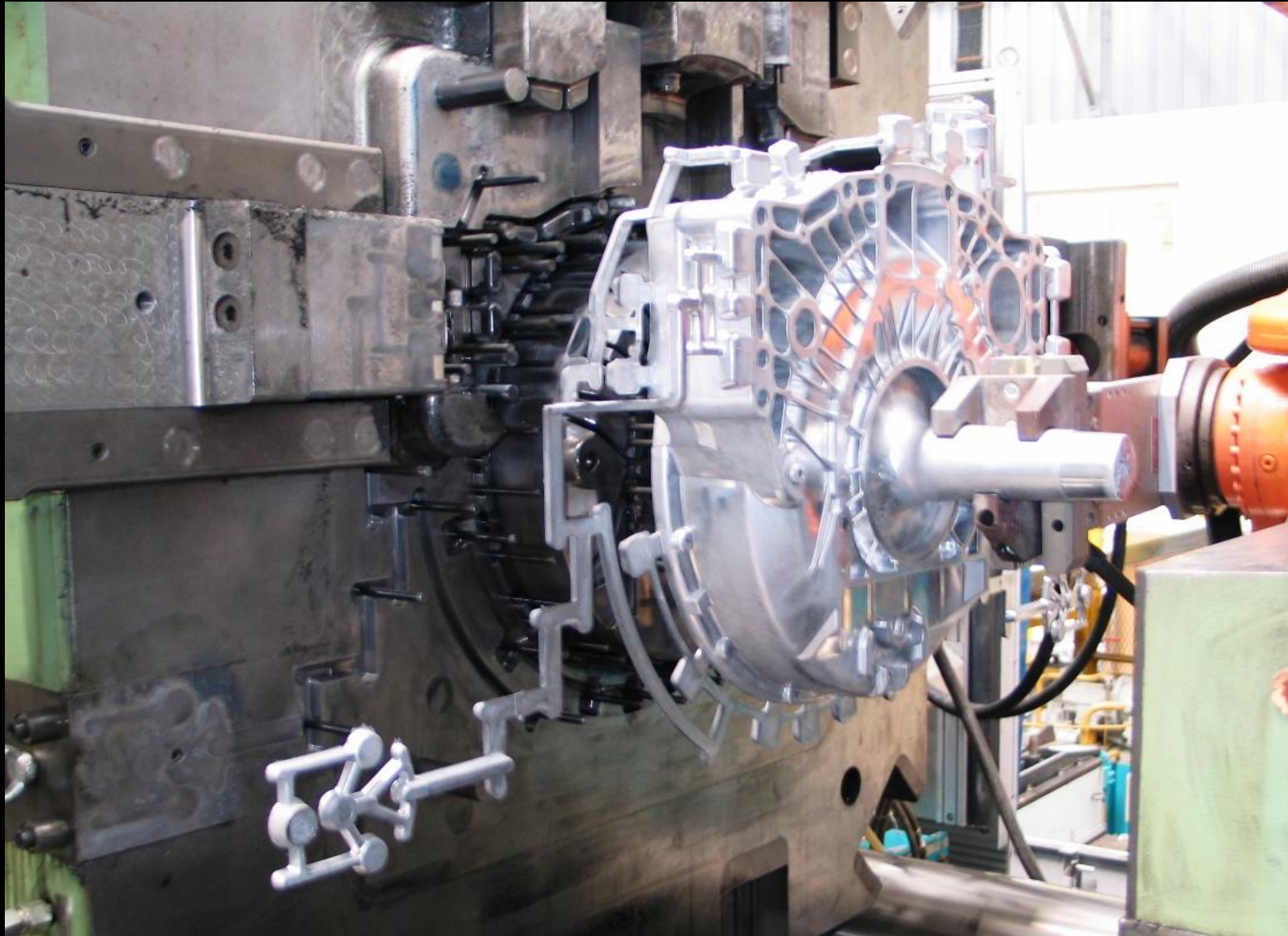


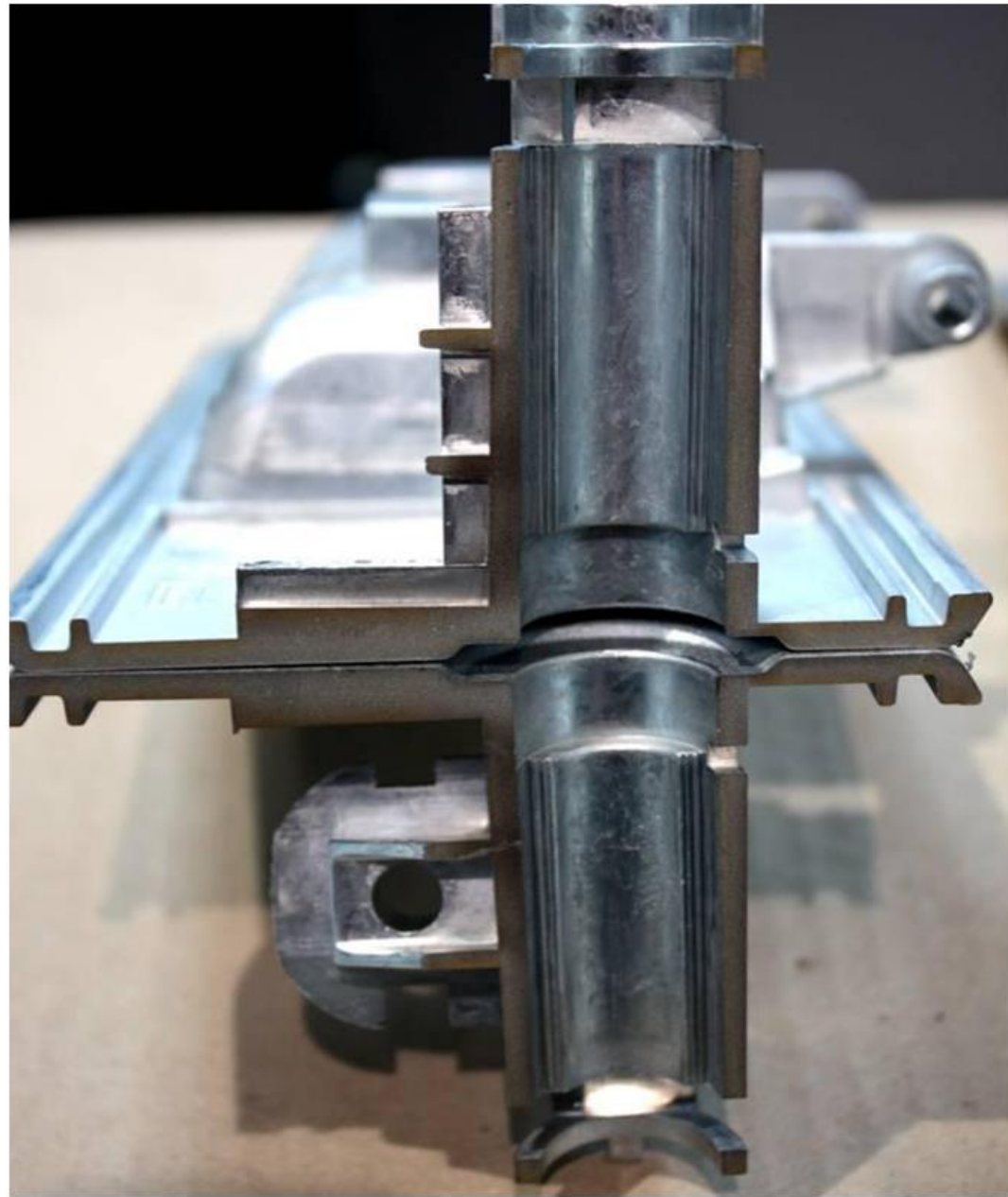
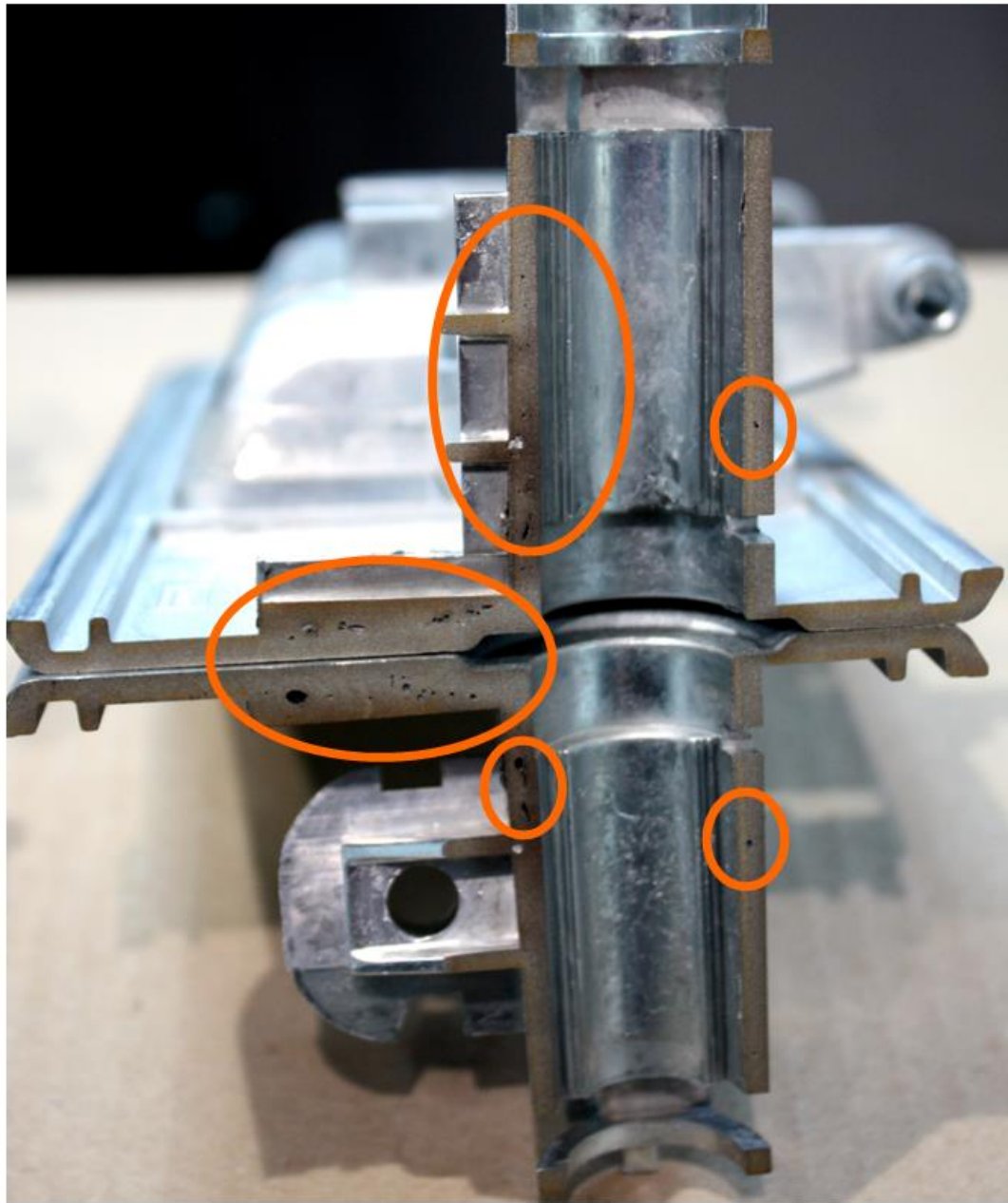
Less die erosion



less stress on locking
force...Less die maintenance





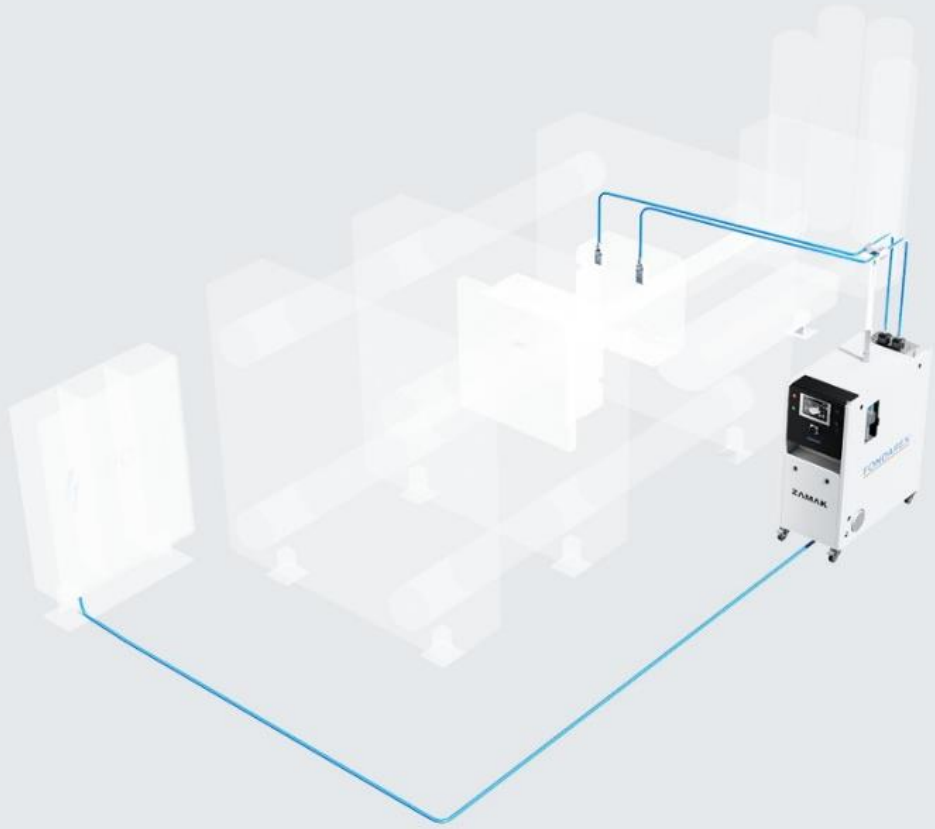




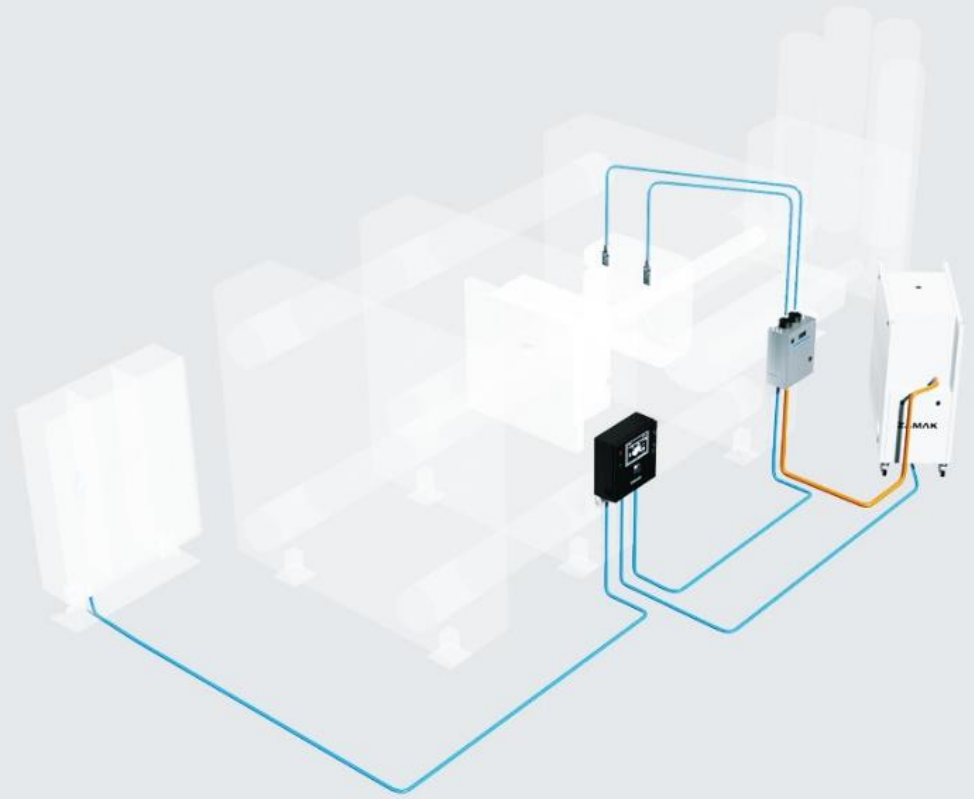
Vacuum solutions



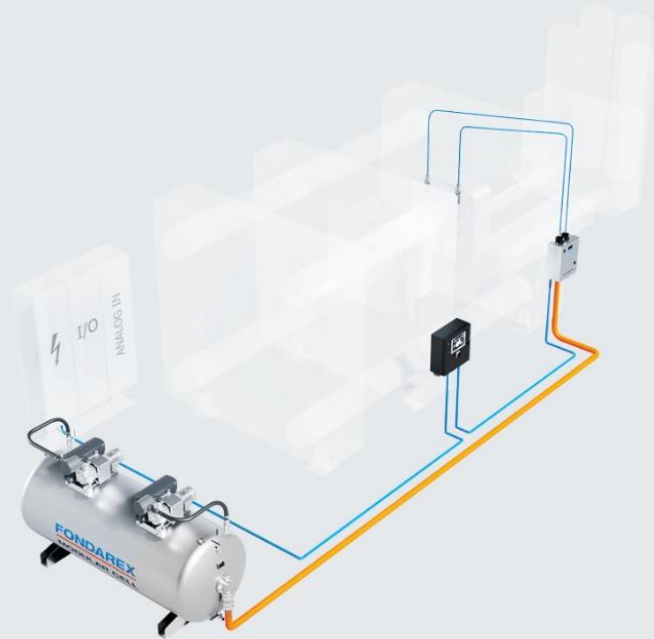




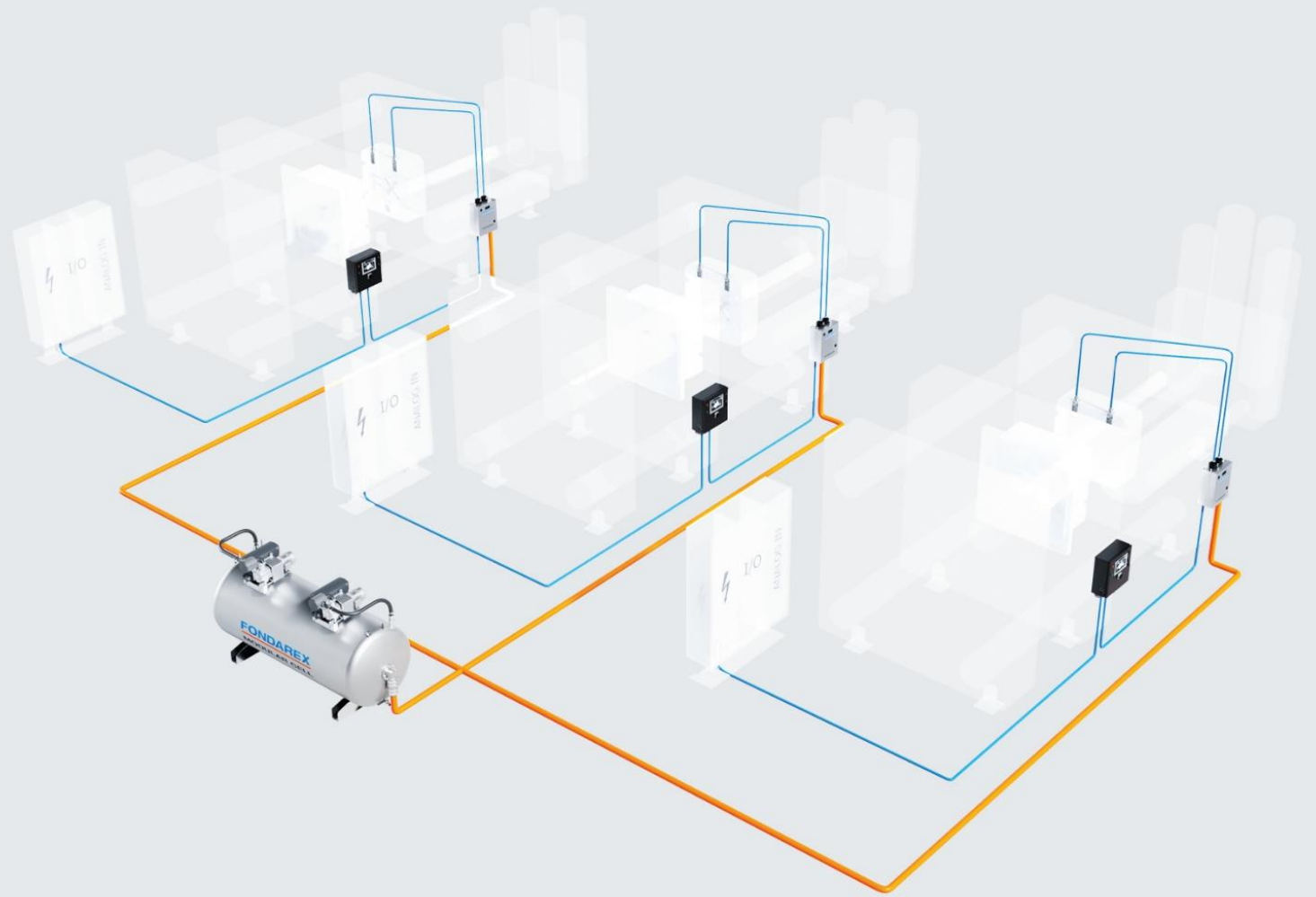
MOBILE



EXTENDED



CELL



CENTRAL

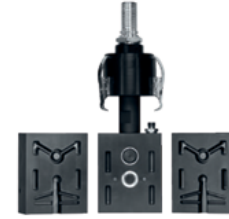






MODEL	SCCZ 12-1		SCS 30-1		SCS 60-1		SCS 100-1		SCS 140-1	
SECTION [mm²]	12		30		60		100		140	
DCM TONNAGE [t]	< 200 approx.		< 400 approx.		200 - 1200		800 - 2800		1600 - 4500	
SHOT WEIGHT Al [kg]	/		0.1 - 1.5		0.7 - 10		5 - 22		10 - 40	
SHOT WEIGHT Mg [kg]	0.05 - 0.8		0.07 - 1		0.5 - 6		3 - 12		6 - 26	
SHOT WEIGHT Zn [kg]	0.1 - 3		0.2 - 4		1 - 20		/		/	
DIMENSIONS	A	B	C	D	E	F	G	H	I	J
WIDTH [mm]	63	63	63	63	100	100	140	140	150	150
DEPTH [mm]	63.4	63.5	50	50	50	50	60	60	80	80
HEIGHT [mm]	100	99	150	149	250	249	300	299	360	359

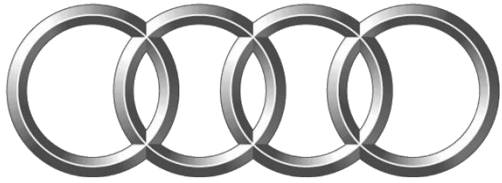




MODEL	KINETIC VALVE 12		KINETIC VALVE 40 / 25		KINETIC VALVE 100 / 75		KINETIC VALVE 300 / 200	
PROFILE [mm ²]	12		25 40		75 100		200 300	
DCM TONNAGE [t]	20 - 200		80 - 800		200 - 2000		1200 - 6000	
SHOT WEIGHT [kg]	ZN 0.1 - 2		ZN 0.2 - 8 AL 0.2 - 5		ZN 0.8 - 14 AL 0.6 - 15		AL 7 - 50	
DIMENSIONS	A	B	C	D	E	F	G	H
WIDTH [mm]	40	40	55	55	100	100	125	125
DEPTH [mm]	44	20	50	25	75	50	95.5	57.5
HEIGHT [mm]	50	50	65	65	125	125	175	175



Our Reference



HONDA

mazda

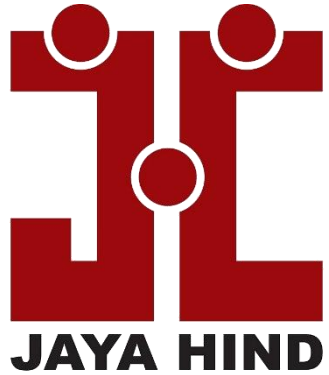


TOYOTA



BAJAJ



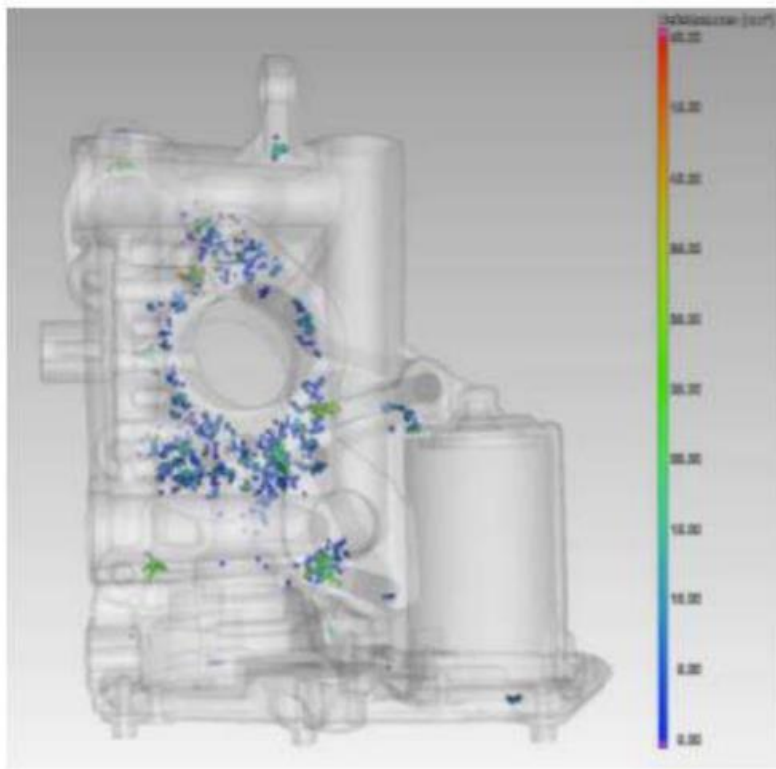


Case Studies

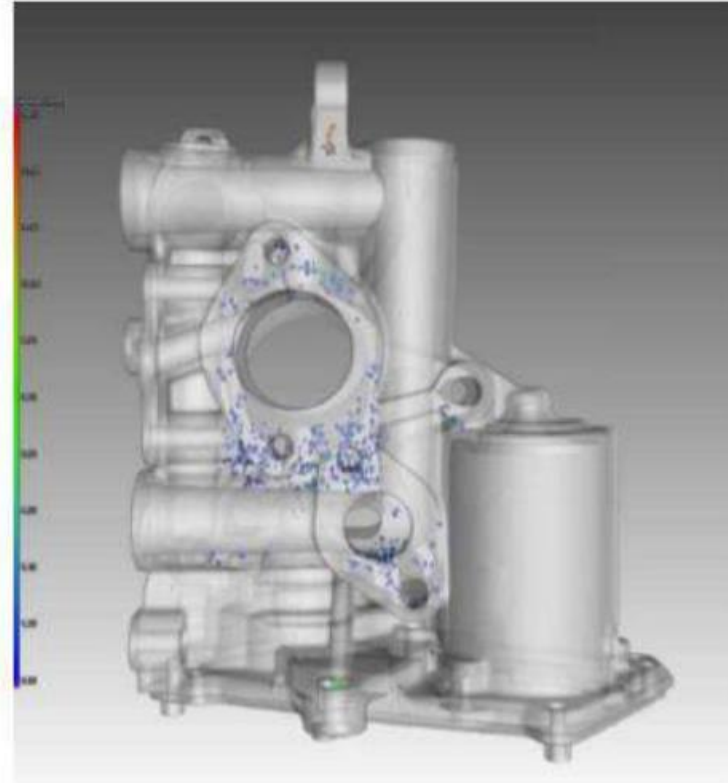




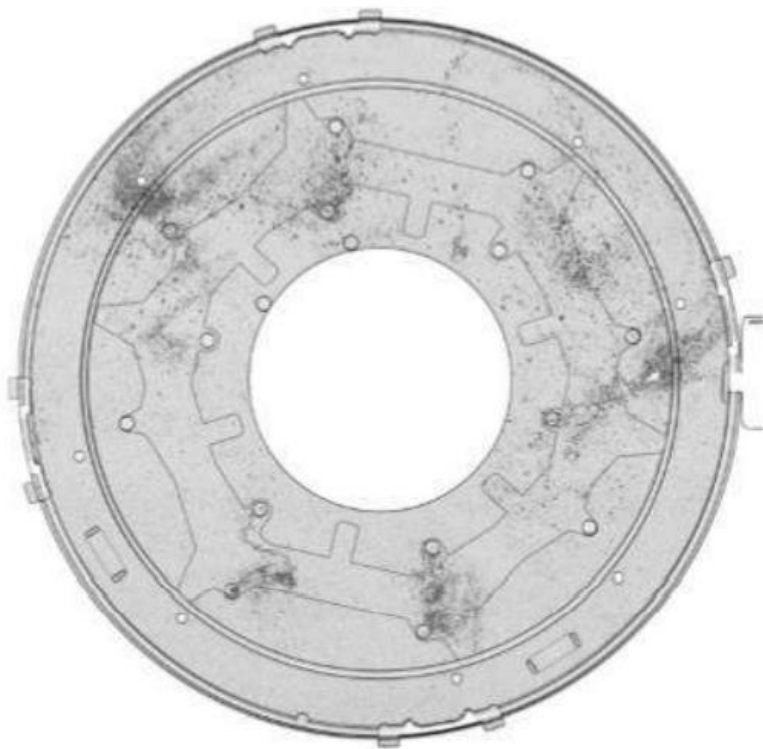
Without vacuum



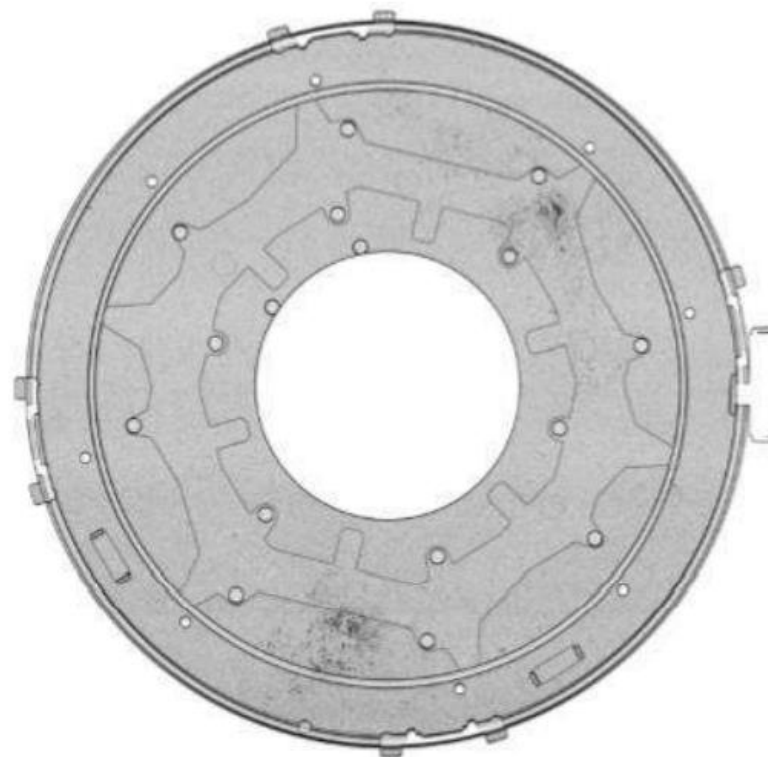
With vacuum



Without vacuum



With vacuum

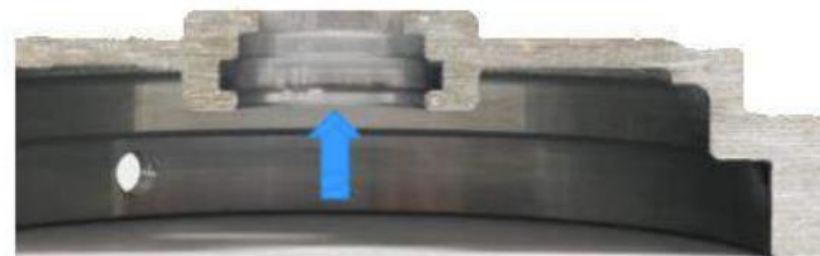




Machining



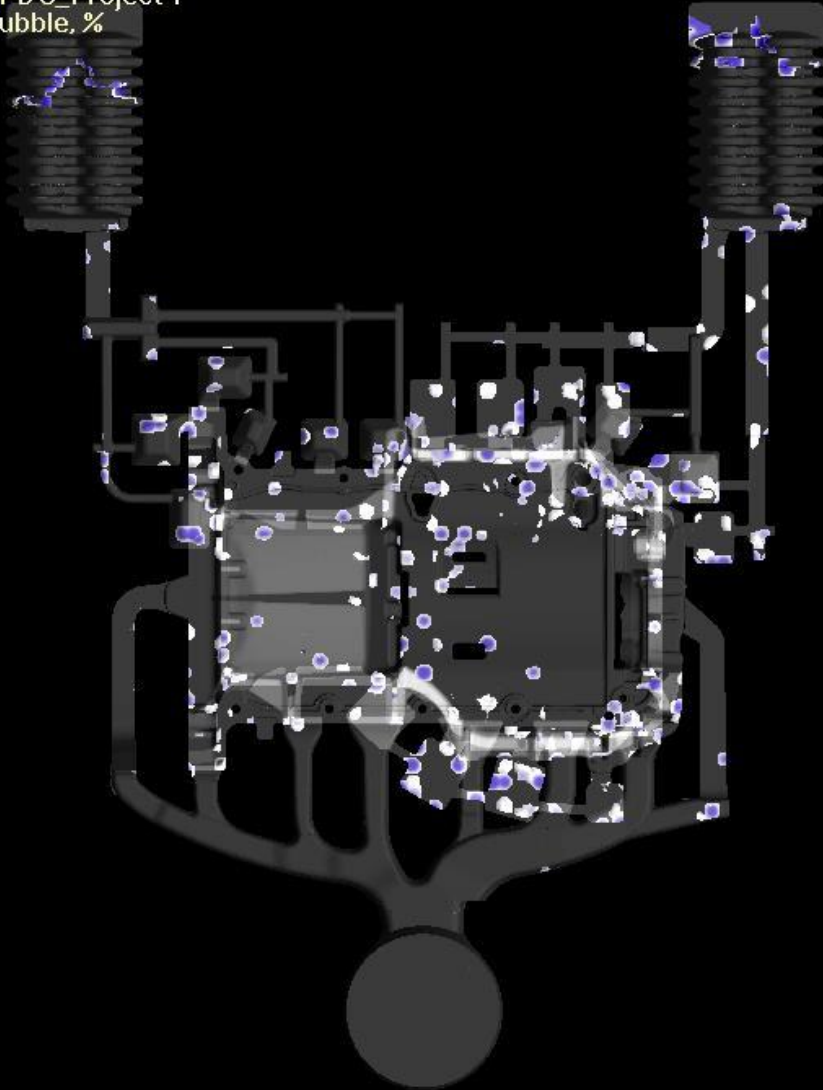
Without vacuum



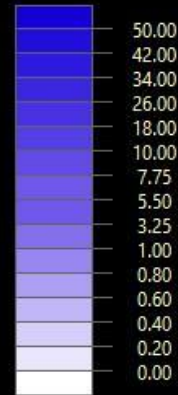
With vacuum

Apply Vacuum

HPDC_Project 1
Bubble, %



Bubble, %



Transparency : 100.00 - 0.10

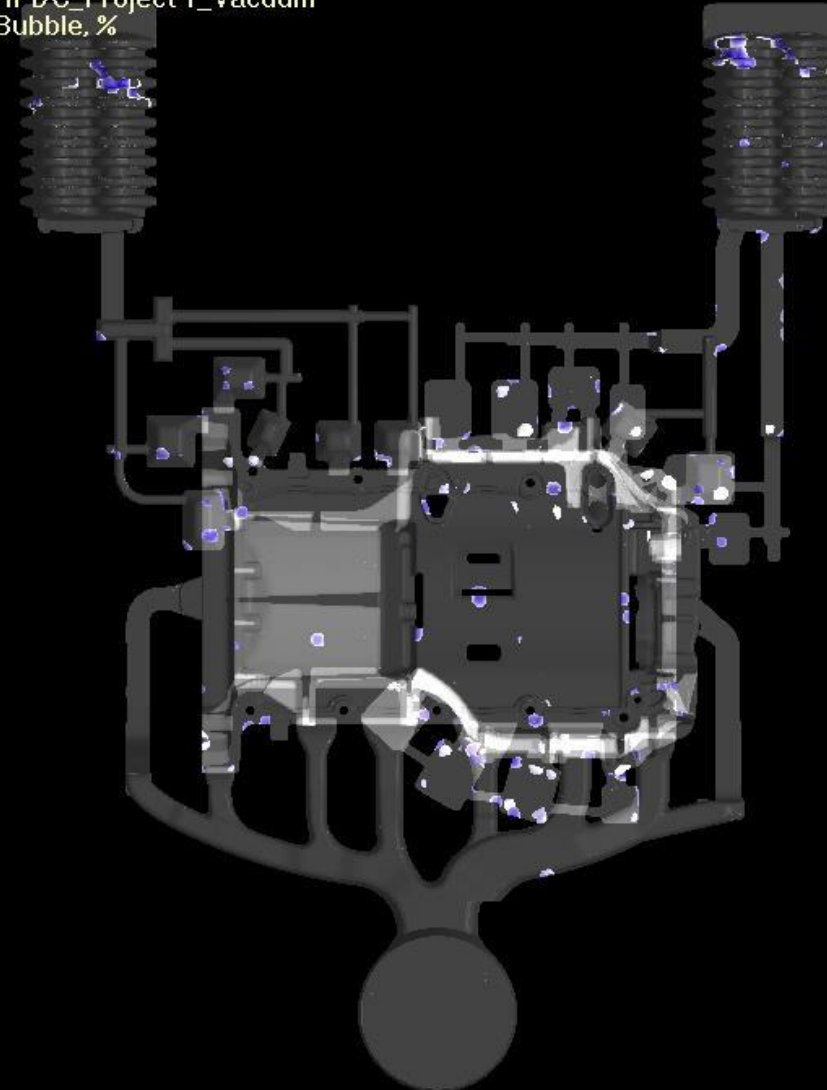
Time, (h,m,s) 000:00:48,369
Filled volume, % 95.61
Liquid phase, % 0.00
Shrinkage, % 1.01

YZ plane, mm 338.12 [68]

NovaFlow&SolidHPD
Descriptor : HPDC_Project 1.psp
Date : 8/7/2024

NovaCast Systems AB
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HPDC_Project 1_Vacuum
Bubble, %



Bubble, %



Transparency : 100.00 - 0.10

Time, (h,m,s) 000:00:48,368
Filled volume, % 95.57
Liquid phase, % 0.00
Shrinkage, % 1.01

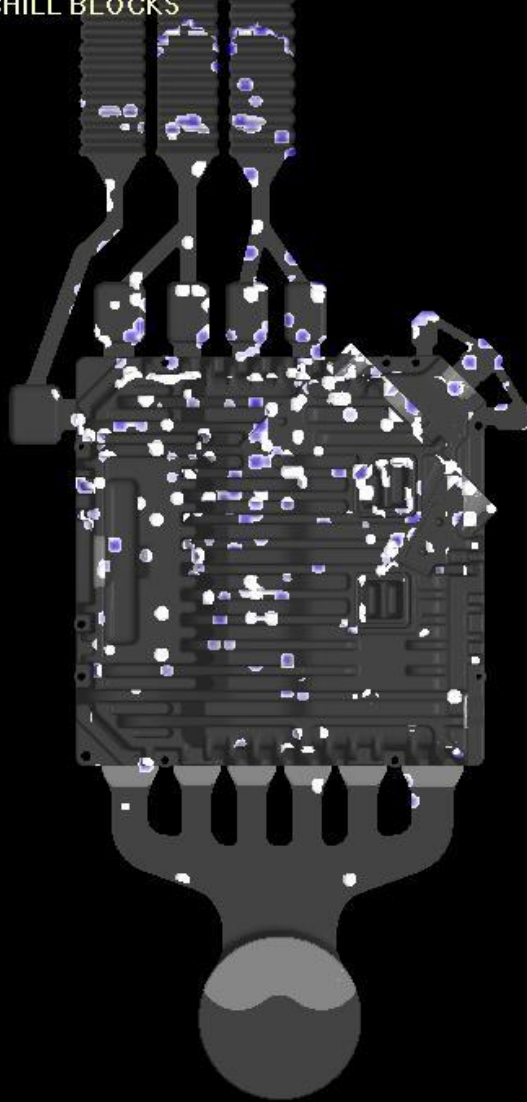
YZ plane, mm 338.12 [68]

NovaFlow&SolidHPD
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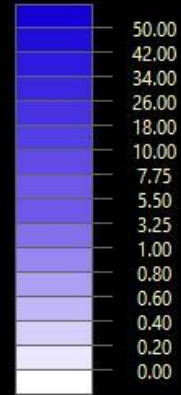
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Apply Vacuum

HPDC with CHILL BLOCKS
Bubble, %



Bubble, %



Transparency : 100.00 - 0.10

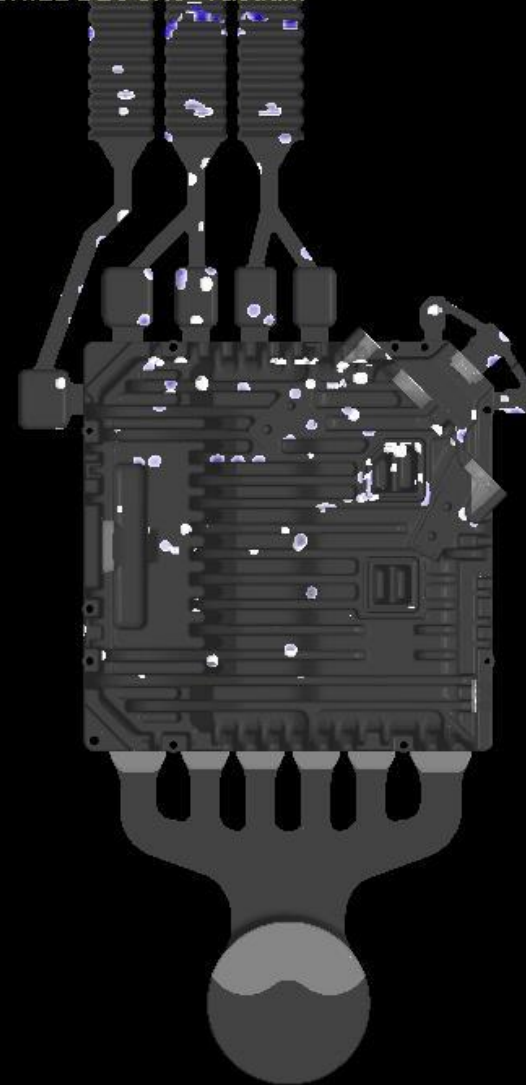
Time, (h,m,s) 000:00:28,882
Filled volume, % 96.42
Liquid phase, % 0.00
Shrinkage, % 0.93

YZ plane, mm 162.70 [54]

NovaFlow&SolidHPD
Descriptor : HPDC with CHILL BLOCKS.psj
Date : 8/7/2024

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HPDC with CHILL BLOCKS_Vacuum
Bubble, %



Bubble, %



Transparency : 100.00 - 0.10

Time, (h,m,s) 000:00:28,392
Filled volume, % 96.41
Liquid phase, % 0.00
Shrinkage, % 0.93

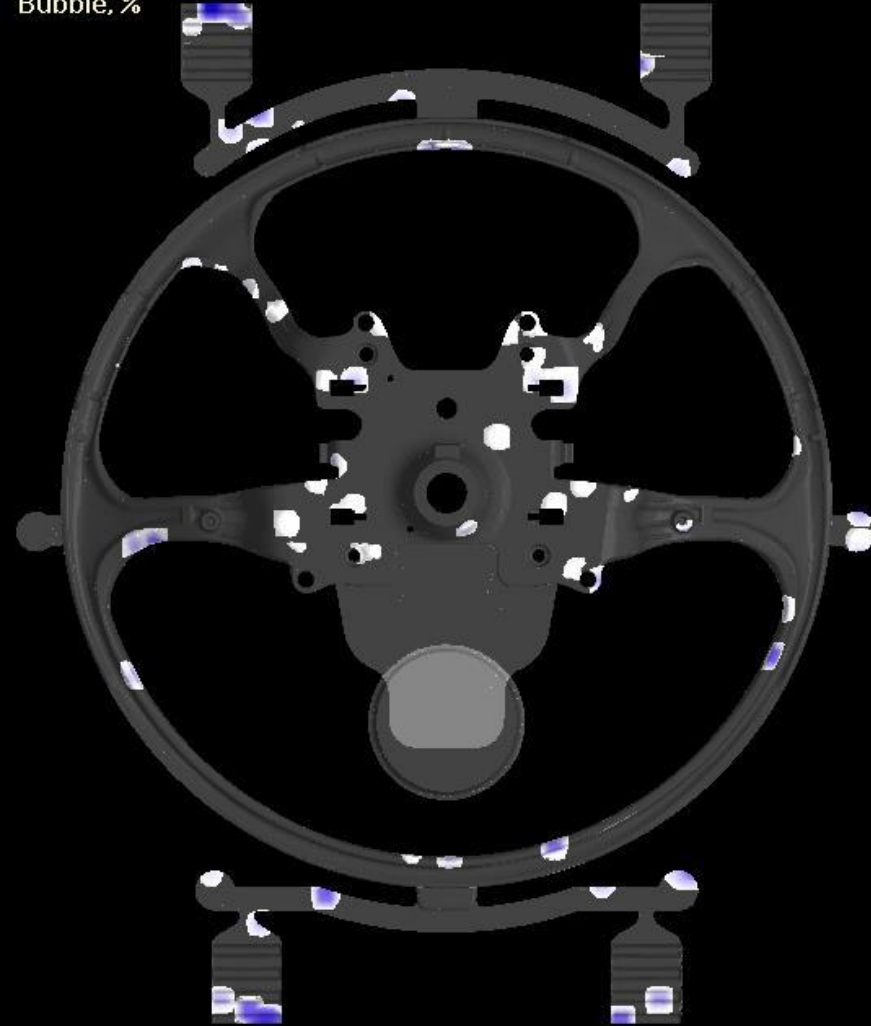
YZ plane, mm 162.70 [54]

NovaFlow&SolidHPD
Descriptor : HPDC with CHILL BLOCKS_Vacuum.psj
Date : 8/7/2024

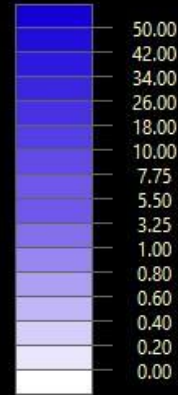
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Apply Vacuum

HPD_Steering wheel
Bubble, %



Bubble, %



Transparency: 100.00 - 0.10

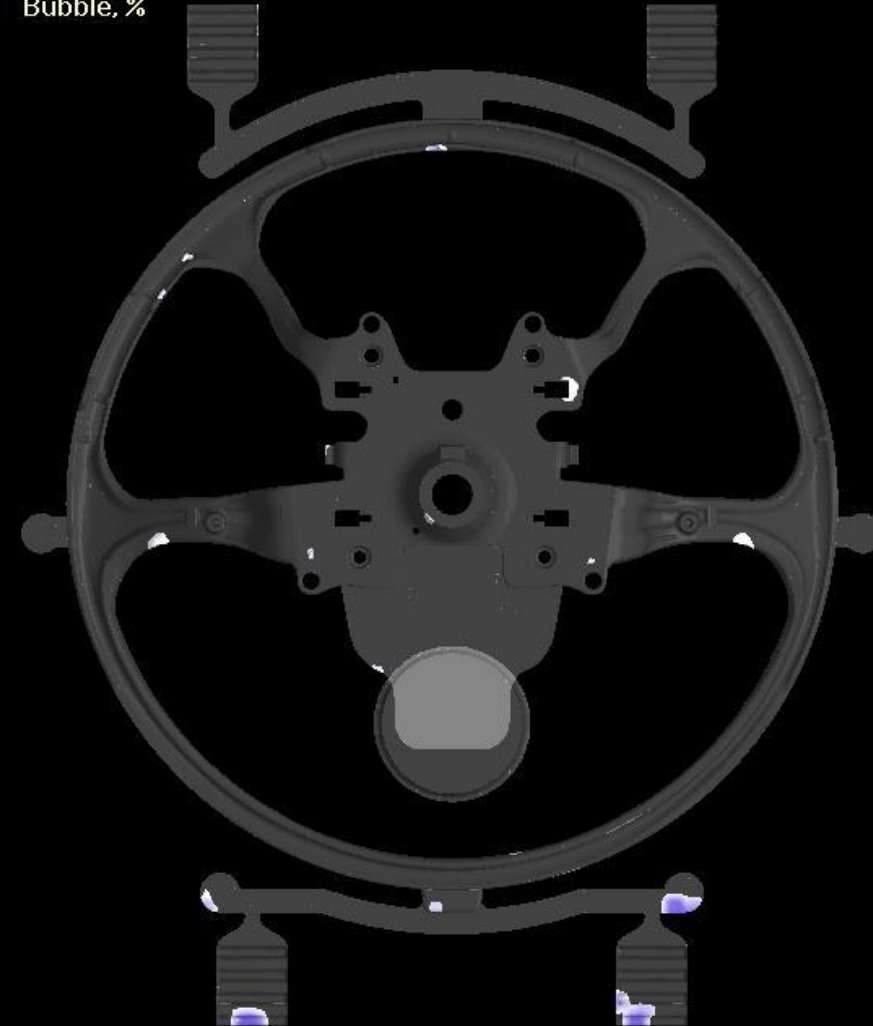
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Liquid phase, % 0.00
Shrinkage, % 1.39

YZ plane, mm 625.70 [131]

NovaFlow&SolidHPD
Descriptor: HPD_Steering wheel.psp
Date: 8/8/2024

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HPD_Steering wheel_Vacuum
Bubble, %



Bubble, %



Transparency: 100.00 - 0.10

Time, (h,m,s) 000:00:20,795
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Liquid phase, % 0.00
Shrinkage, % 1.38

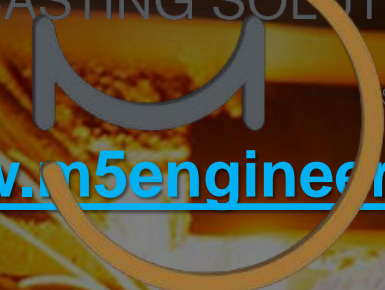
YZ plane, mm 625.70 [131]

NovaFlow&SolidHPD
Descriptor: HPD_Steering wheel_Vacuum.p
Date: 8/8/2024

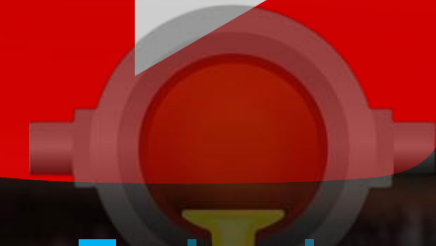
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