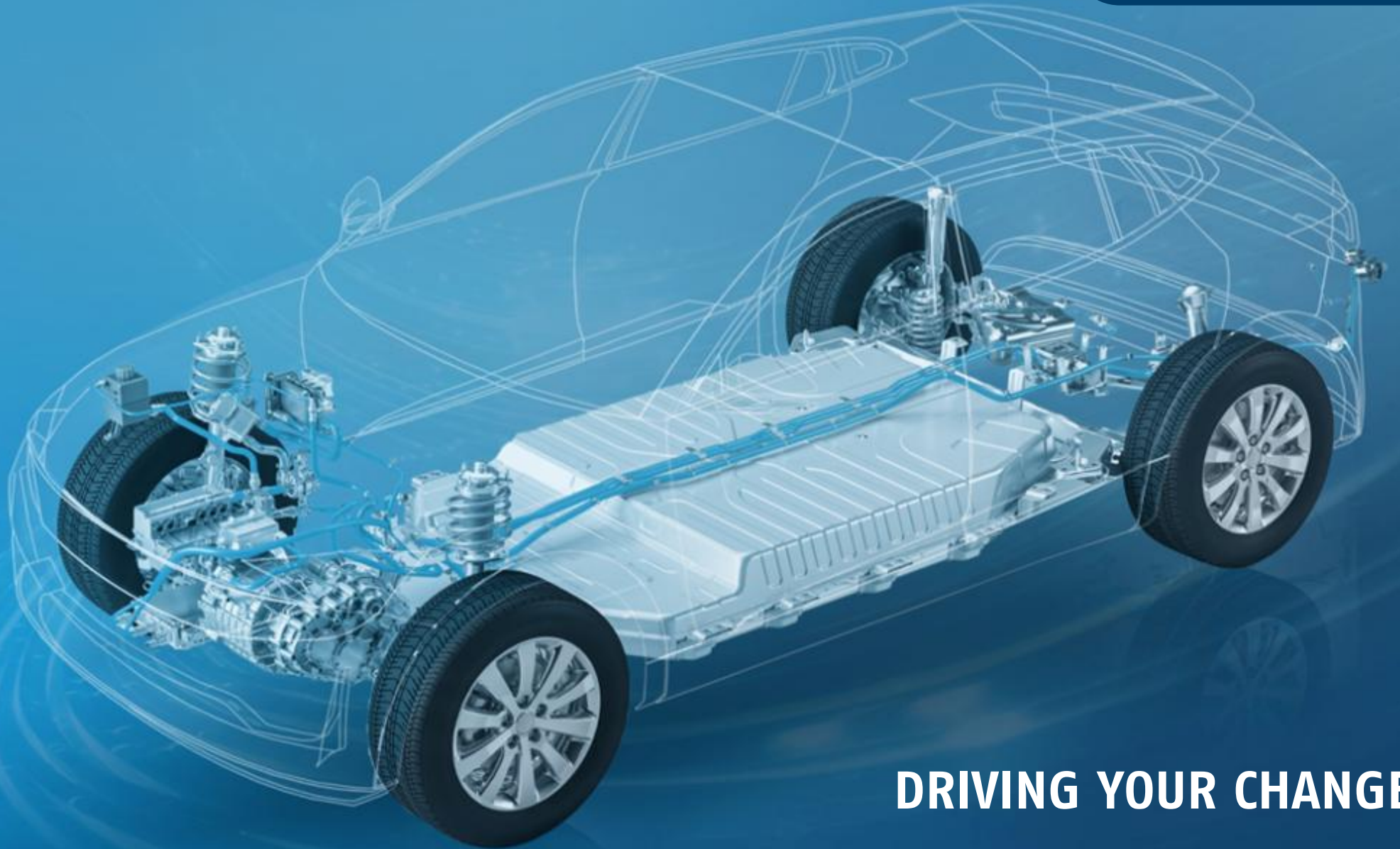
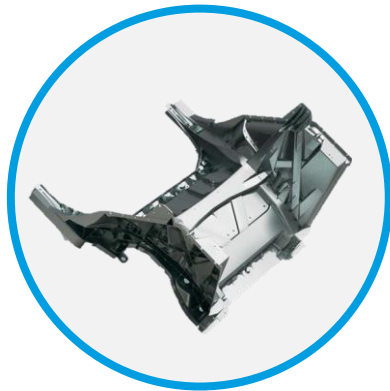


Hand in hand for tomorrow



DRIVING YOUR CHANGE

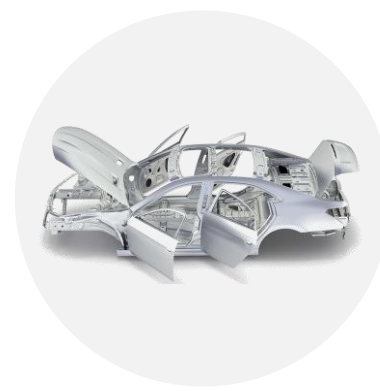
OUR FOCUS



CASTING



FRAMING



ASSEMBLY

What is Gigacasting/ Megacasting/ ...

- Creation of big structural parts via the extrusion of molten metal under high pressure of 6000 – 9000 tonnes
 - Working on presses with over 16.000 tonnes

Main goal:

- Reducing the number of parts
- Elimination of manufacturing costs due to fewer welding spots and lower amount of parts
- Higher rigidity and stiffness

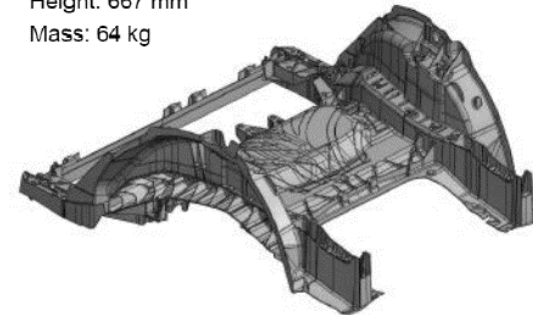


What is Gigacasting/ Megacasting/ ...

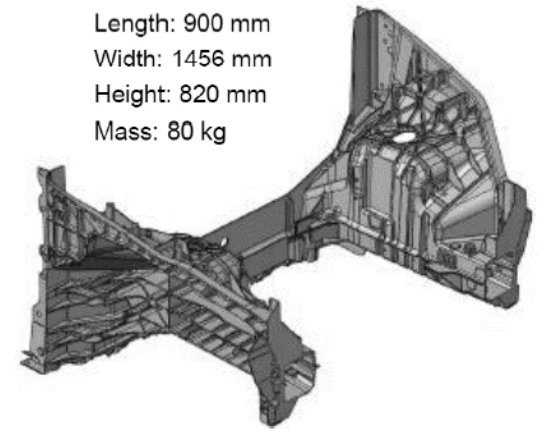
- Challenges:
 - Quality of parts due to the extrusion of molten aluminum
 - Faulty casts can cause cracks
- Critical voices:
 - OEM`s such as BMW are not yet adapting the technice due to quality challenges
 - Repair of damage parts is very difficult if not impossible



Length: 1692 mm
Width: 1505 mm
Height: 667 mm
Mass: 64 kg



Length: 900 mm
Width: 1456 mm
Height: 820 mm
Mass: 80 kg



Parts for Gigacasting – EV

Car:

- Rear & Front structure
- Battery pack
- Wishbone
- Axle carrier

E-Drive:

- Stator
- Stator housing



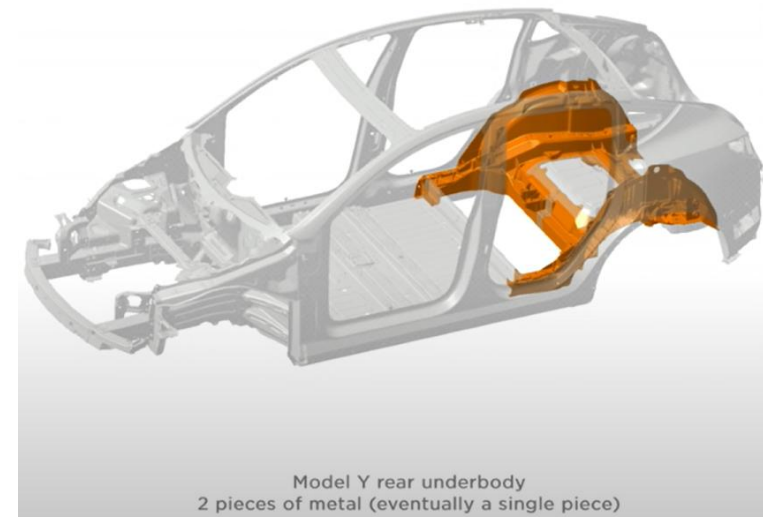
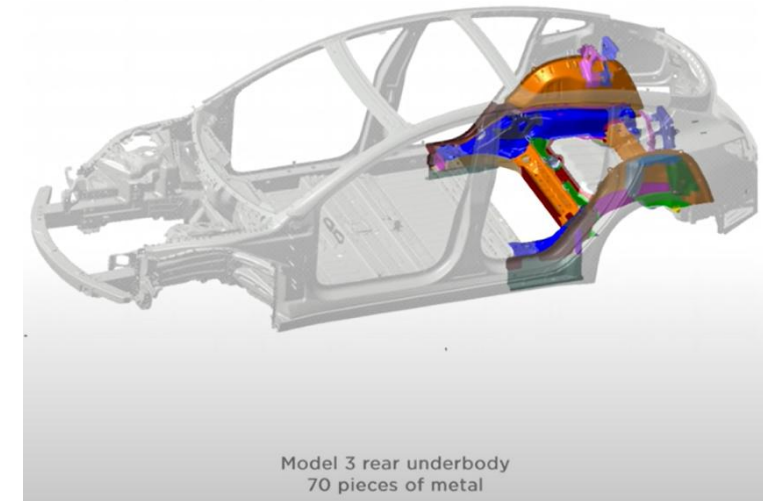
Why Giga casting – car structure

Conventional:

- Rear structure is made of 70 pieces of stamped sheet metal
- Sealing/ welding/ gluing is necessary to assemble final piece
- Stamped parts have a spring back effect which complicates things

Gigacast:

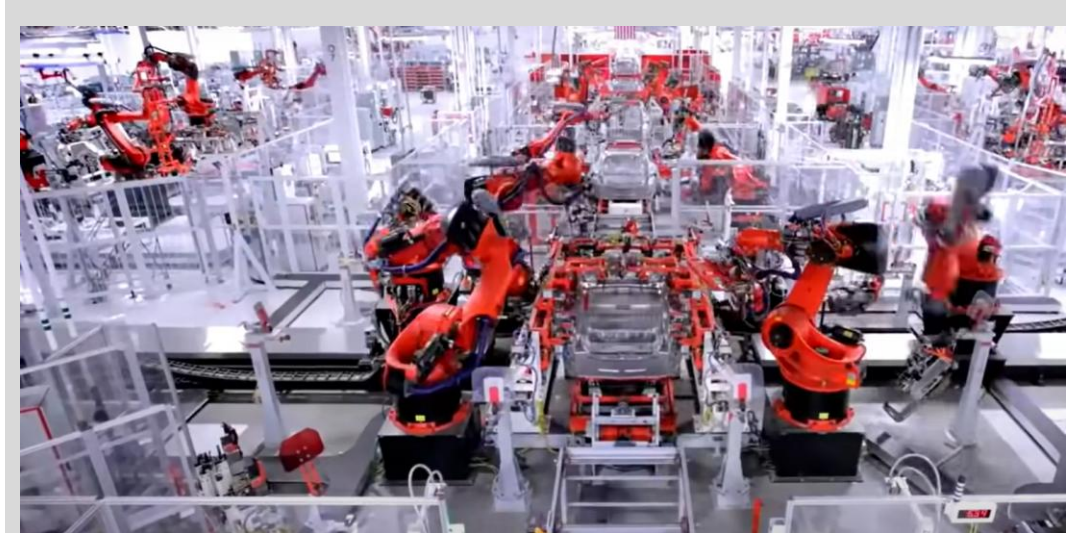
- Removing 79 parts per car
- Cost reduction of 40% for rear underbody
- simplifying mounting operations
- Improving build quality



Why Giga casting – car structure

Giga casting:

- Number of roboter per line can decrease by 66%
 - 1000 Robots -> 300 Robots
- Reduced floor space due to fewer stations
 - Estimation from IDRA -> 20% floor saving
- New alloys were necessary to implement the Gigacasting to generate the necessary quality



Conventional Body in White lines have up to 1000 robots for gluing and welding applications

OEM investing in / using Gigacasting

EUROPE



Mercedes-Benz



ASIA

AISIN



HUAWEI



HYUNDAI



LEXUS



NIO

RYOBI



XPENG



xiaomi



ZEEKR



TOYOTA



HONDA

NORTH AMERICA



TESLA



LINAMAR

Machine builders Gigacasting

EUROPE



CHINA



JAPAN



Machine builders for the machining of Mega Casting



Integrators for the unloading of Mega Casting machines



WE HAVE TOO MANY BLANKS HERE, THERE IS A LOT OF WASTED POTENTIAL

Order books of machine builders

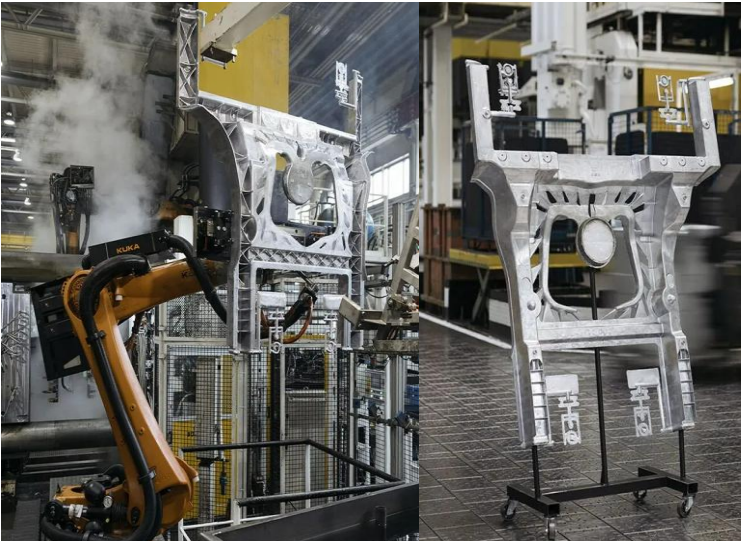
Q1 2024

Machine builder	5.000 T	6.000 T	7.000 T	8.000 T	9.000 T	12.000 T	16.000 T
IDRA		Tesla; Linamar; Ford			Tesla, Hyundai, Volvo		
Bühler		Anhui Unique, IKD, Seojin System, Dongguan Econtec; Handtmann		Volvo; IKD	Anhui Unique		
LK Machinery	Junling Mould; SPHT	Xpeng; Ruili Group; Tesla; Glovitech; Asiaway; Wencan; SPHT; Yunhai Metals	Xpeng; Wencan; Tuopu; Zeekr	Ruili Group	Ruili Group, Wencan, SPHT	Guangdong Hongtu; SPHT	Guangdong Hongtu
Haitan	Anhui Yongtai		Anhui Yongtai	Millison; BAIC Group (Xiaomi)			
Yizumi			Changan, Yunhai Metals				
Ube & Gauss		Ryobi					
ItalPress-Gauss	Nantong; BMW						

Who supplies whom

OEM & Model	GIGA Press Supplier	Giga Cast Supplier	Integrated Parts	Clamping Force (Ton)
Tesla Model Y	IDRA & LK Machinery	Tesla	Rear	6.100
Tesla Model Y RWD Berlin	IDRA	Tesla	Front & Rear	6.100
Tesla Cybertruck	IDRA	Telsa	Front & Rear	9.200
Xpeng G6	LK Machinery	Xpeng	Front & Rear	7.000
Xpeng X9	LK Machinery	Guangdong HongTu	Front & Rear	12.000
Zeekr 009	LK Machinery	Zeekr	Rear	7.200
Volvo M90	LK Machinery	Zeekr	Rear	7.200
Nio ET5 – ES6	LK Machinery	Wencan	Rear	6.000
Nio ES8	Haitian	Millison	Rear	8.800
Huawei AITO M9	?	?	Front & Rear	9.000
Xiaomi SU7	Haitian	Xiaomi (BAIC Group)	Rear	9.100

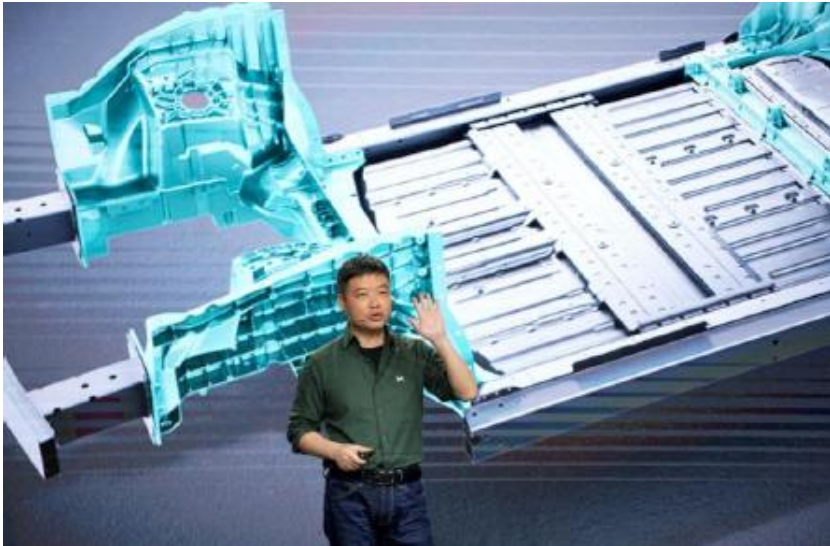
OEM`s Gigacasting



Volkswagen – Trinity, China



Zeeker – China



Xpeng – China



Xiaomi – China

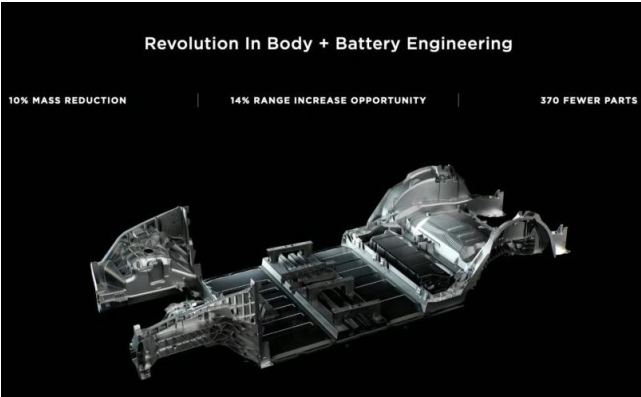


Volvo – China



Toyota – Japan

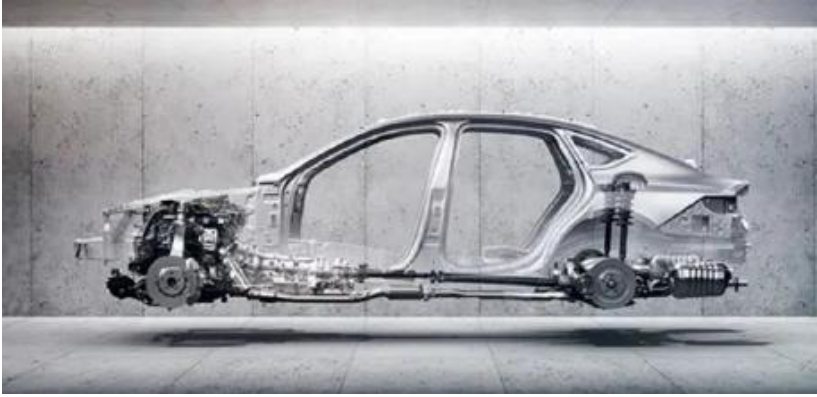
OEM`s Gigacasting



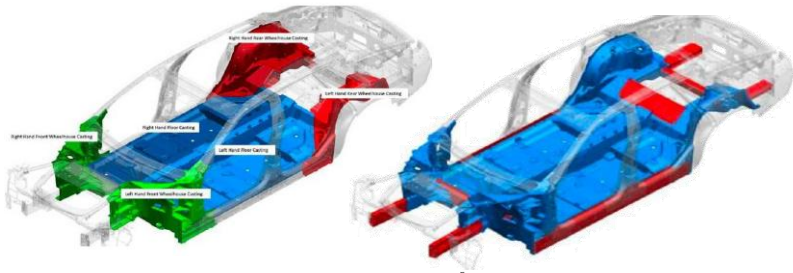
Tesla – Global



NIO – China



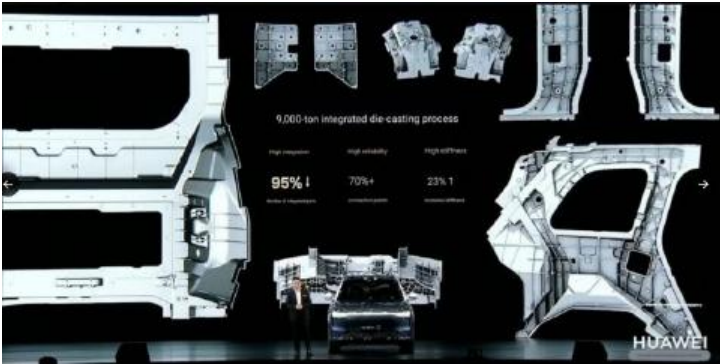
Hyundai – Korea



General Motors – USA

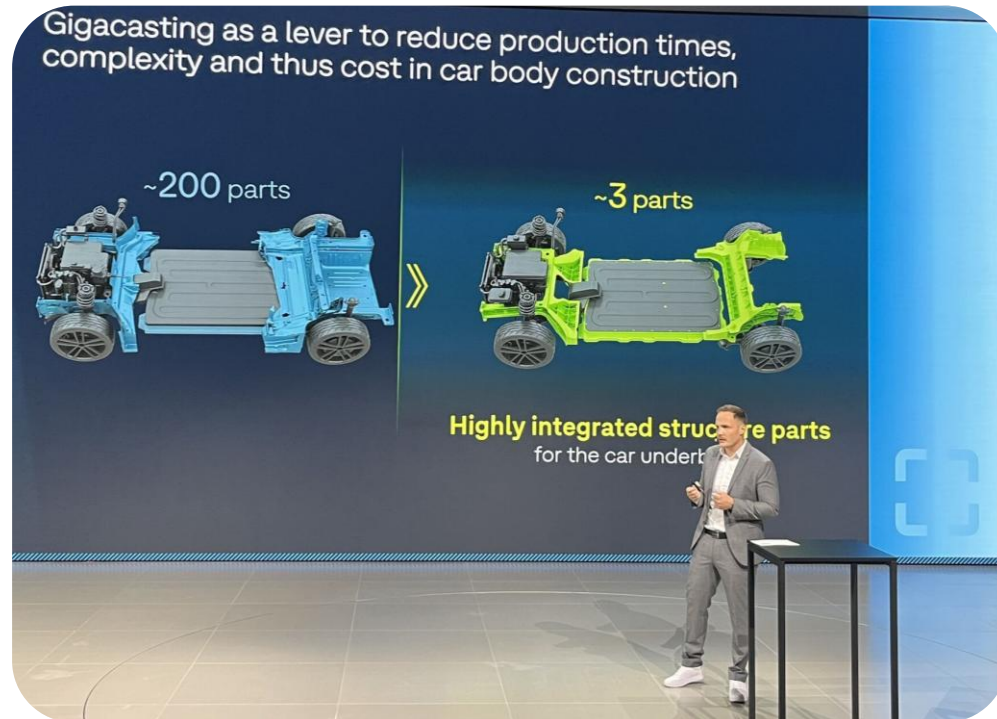


Aisin – Japan



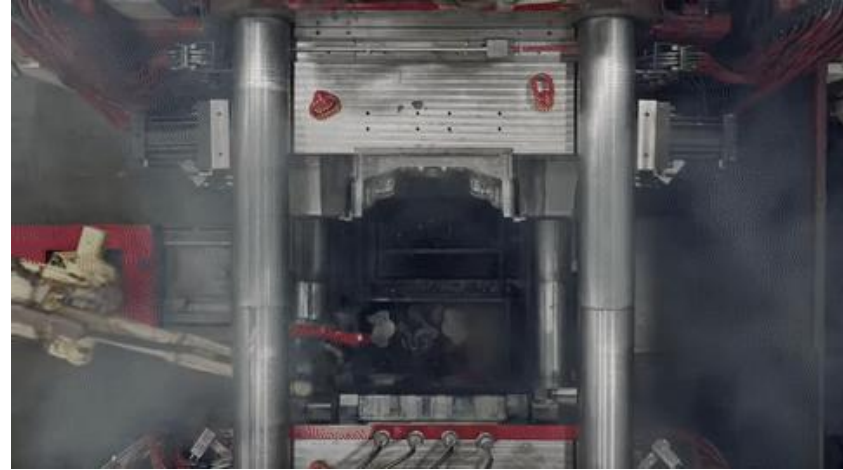
Huawei – China

Volkswagen News – Mega Casting for new car generations



Application environment

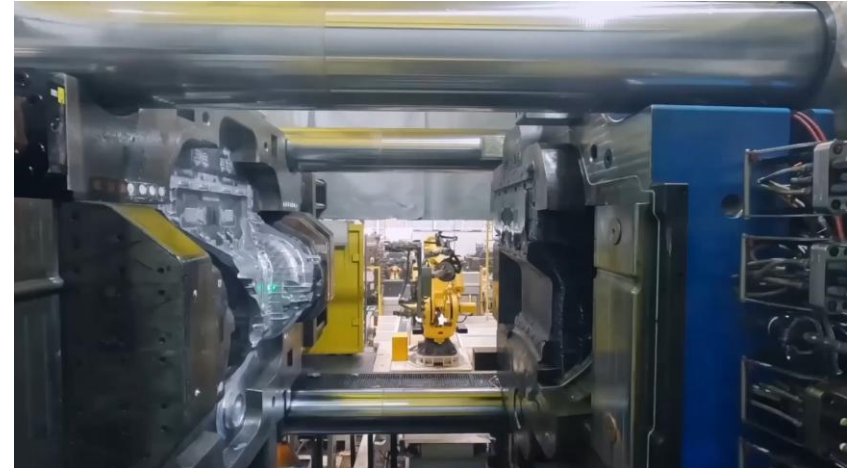
- Heavy workpieces 100KG or more
- Workpiece temperature 250° or more
- Unloading with robot
- Part has to be pulled out of die casting form



- Tesla

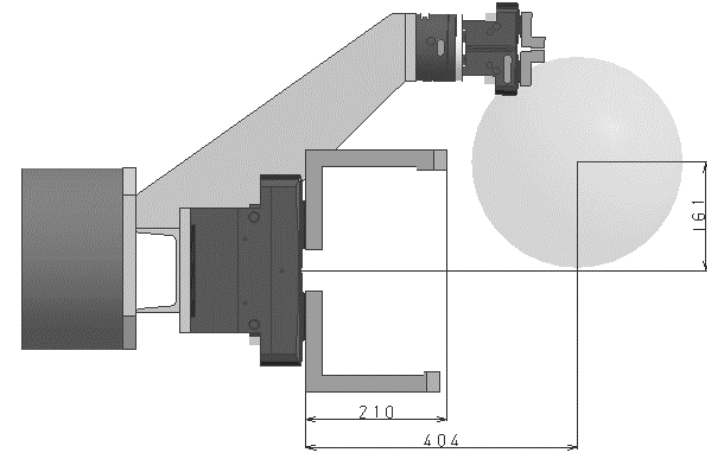
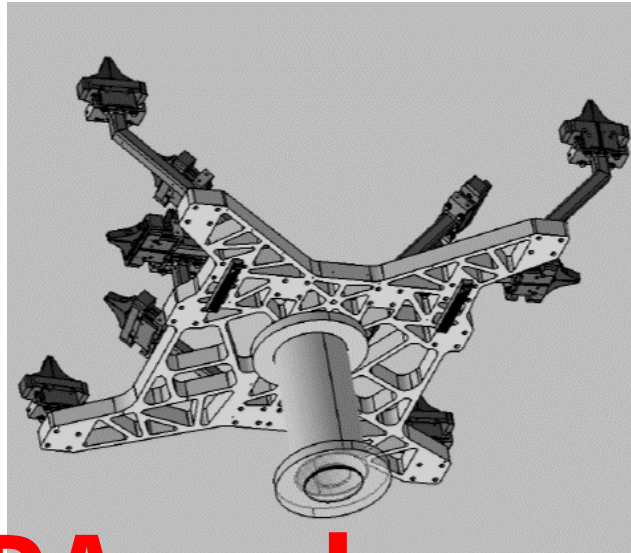
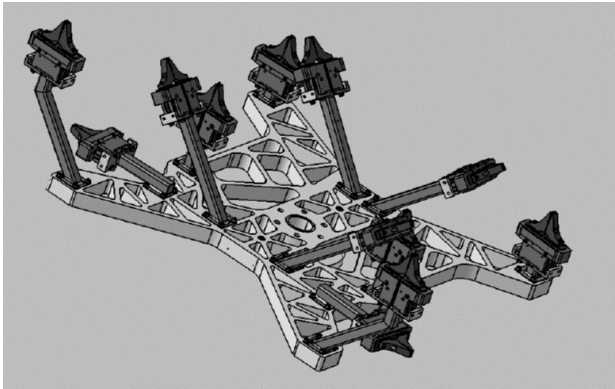


- Xiaomi

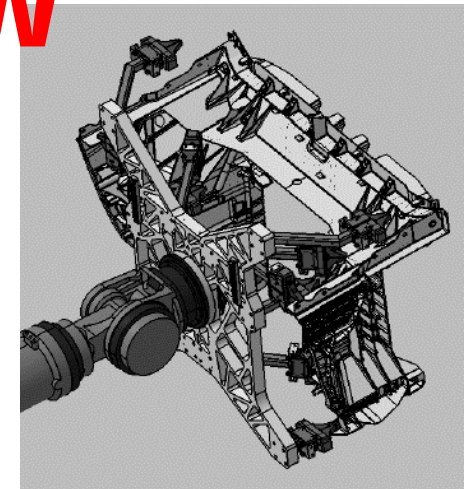
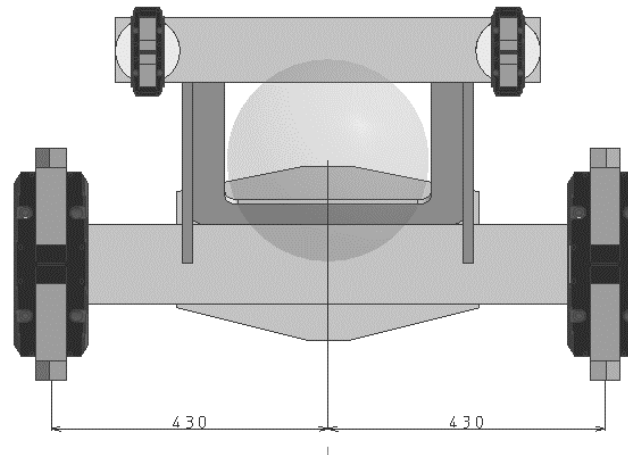
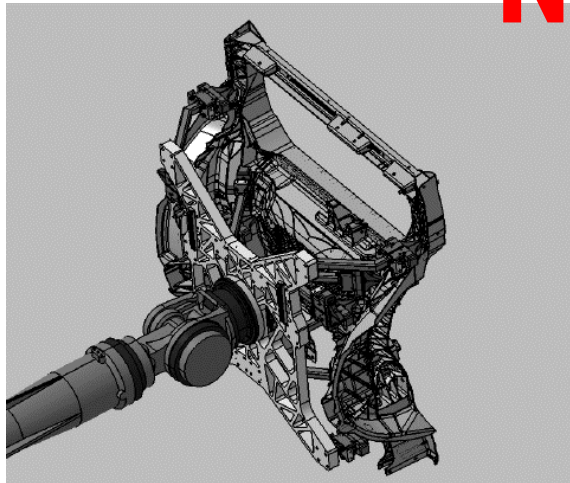


- XPENG

Gripper for Gigacasting

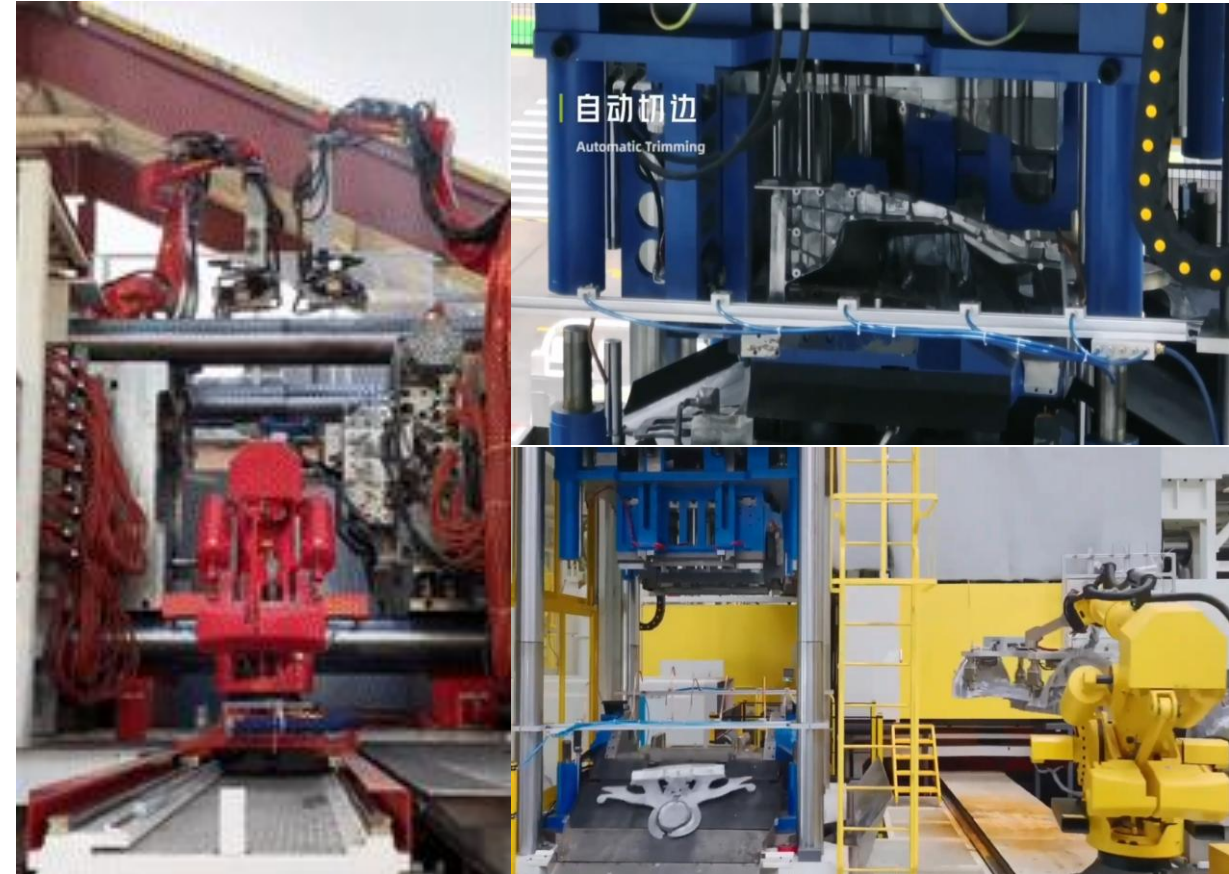


NDA – do not show



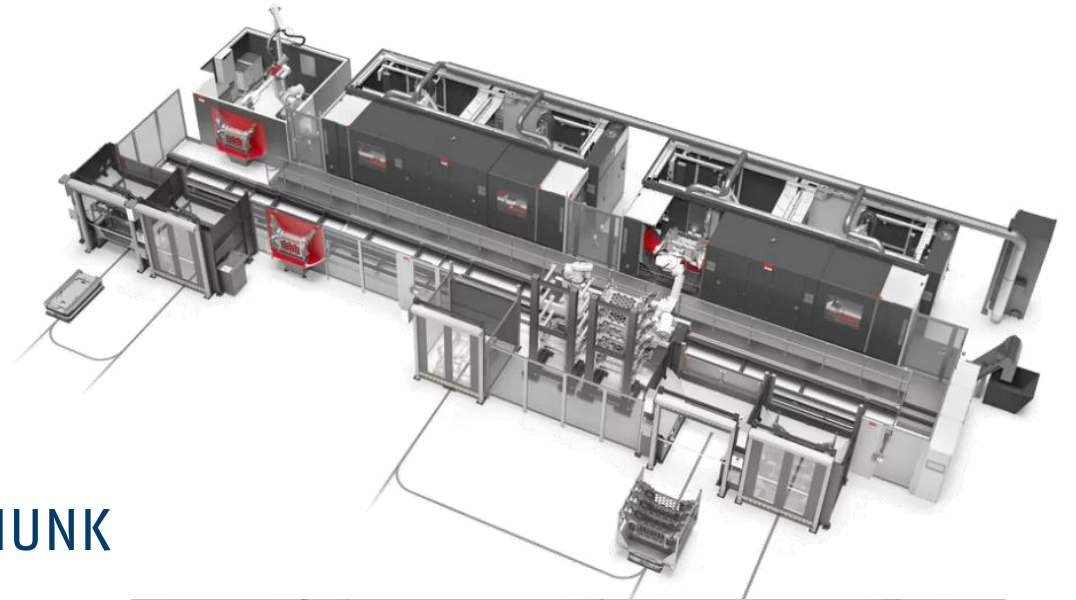
Steps after unloading?

- Removing sprue of giga casting
- CNC machines or other applications also possible
- Laser engraving
- Implementing if threads for mounting applications



CNC machining

- Possible clamping solutions for parts
- CNC also of battery housings
- There are different existing customers from SCHUNK which are building/ integrating such lines





Hand in hand for tomorrow

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