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Tesla Gigapress

July 27th 2022



Total cost of a giga press incl. equipment are around € 14 Mio. plus 10-15% costs for logistics.

Insights of Giga Press

- IDRA delivered the OL 6100 CS to Tesla
- The costs of the Giga Press according to L.K. management are as follows:
 - The single equipment of the DCC 6000 Impress Plus die casting machine is about 6 million euros, the die casting peripheral equipment costs about 8 million euros.
 - Logistic costs of a Giga Press from IDRA are approx. 10-15% of the value of the machine.

Additional Information:

- Tesla's role in the development of the Giga Press was confirmed by Liu Siong Song, founder of LK Technology, which acquired IDRA in 2008.
- Being IDRA's parent company, LK knew the intimate details about Tesla's Giga Press concepts.
- And according to Liu, Tesla actually worked side by side with LK and IDRA for over a year to make the Giga Press. Liu even referenced revisions that Tesla would make on their concept, which resulted in LK and IDRA rolling out revisions on their end as well.



L.K. Technology Holdings, China is the parent company of IDRA S.r.l.

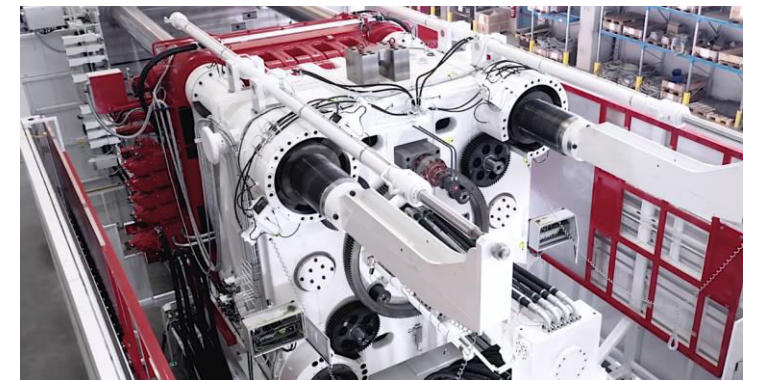
As per the Giga Press' specifications, each machine has a cycle time of ~80-90 seconds, allowing an output rate of 40-45 castings per hour i.e. about ~1,000 castings per day for each Giga Press.

Insights of Giga Press

- Castings Gigafactory Berlin:
 - Area: 16.800 sqm
 - Number of employees (target): 340
 - Number of robots: 28
 - Planned number of Giga Presses: 8 (currently 3 in operation)

Additional Information:

- IDRA ships the Gigapress from three locations in Italy either by ship or truck transport. When it arrives the Gigapress is disassembled by specialized teams.
- The lead time is approximately one month.
- Drone flyovers in the area suggest that Tesla's Fremont-based Giga Presses have a cycle time of about **170 seconds per casting**, likely due to the machines not being fully optimized yet. Considering that IDRA estimates each Giga Press to have a **cycle time of ~80-90 seconds**, Tesla's Fremont machines still have a lot of space to optimize their operations.



Maintenance service and operation is done by Tesla

Tesla Team Gigafactory Berlin (excerpt)

- Melter for aluminum die casting
- Quality Inspector Casting
- Quality technician foundry /CNC/ casting
- Foreman / shift manager maintenance die casting/injection molding
- Foreman / shift manager tool maintenance die casting/injection molding
- Industrial mechanic focus on foundry
- Castings Tooling & Process Engineer
- Tool mechanic foundry/die casting
- Control technician die and injection molding

Additional Information:

- Tesla receives ongoing support from IDRA (see page 04)
- Assumptions of staff for Gigafactory Shanghai
- No. of Giga Press:3 / Shifts: 3 / Total staff: 80

Notes



High pressure die-casting tool
Gigafactory Berlin

IDRA development team for the Giga Press and support activities

IDRA Team

- In total 12 team members are directly involved in the design of a Gigapress.
- 1 project manager for the entire project
- 2 mechanical engineers and 2 hydraulic engineers
- 1 person who follows the cell layout upgrades
- 1 hardware engineer and 2 software engineers and 2 human interface engineers
- 1 person who checks bill of materials and the variations Idra has to follow in agreement with the customers when the machine is customized

Additional Information:

- Idra supports all the people involved in the production flow after the engineering phase is complete.
- That means Idra supports purchasing, assembly, testing, shipment and commissioning on site of the customer.
- Because of different time zones it is often required to deliver 24 hours support availability to the teams of the customer.



IDRA works closely with a network of independent industry experts to equip powerful and efficient casting cells for the Giga Press.

Foundry Star Alliance

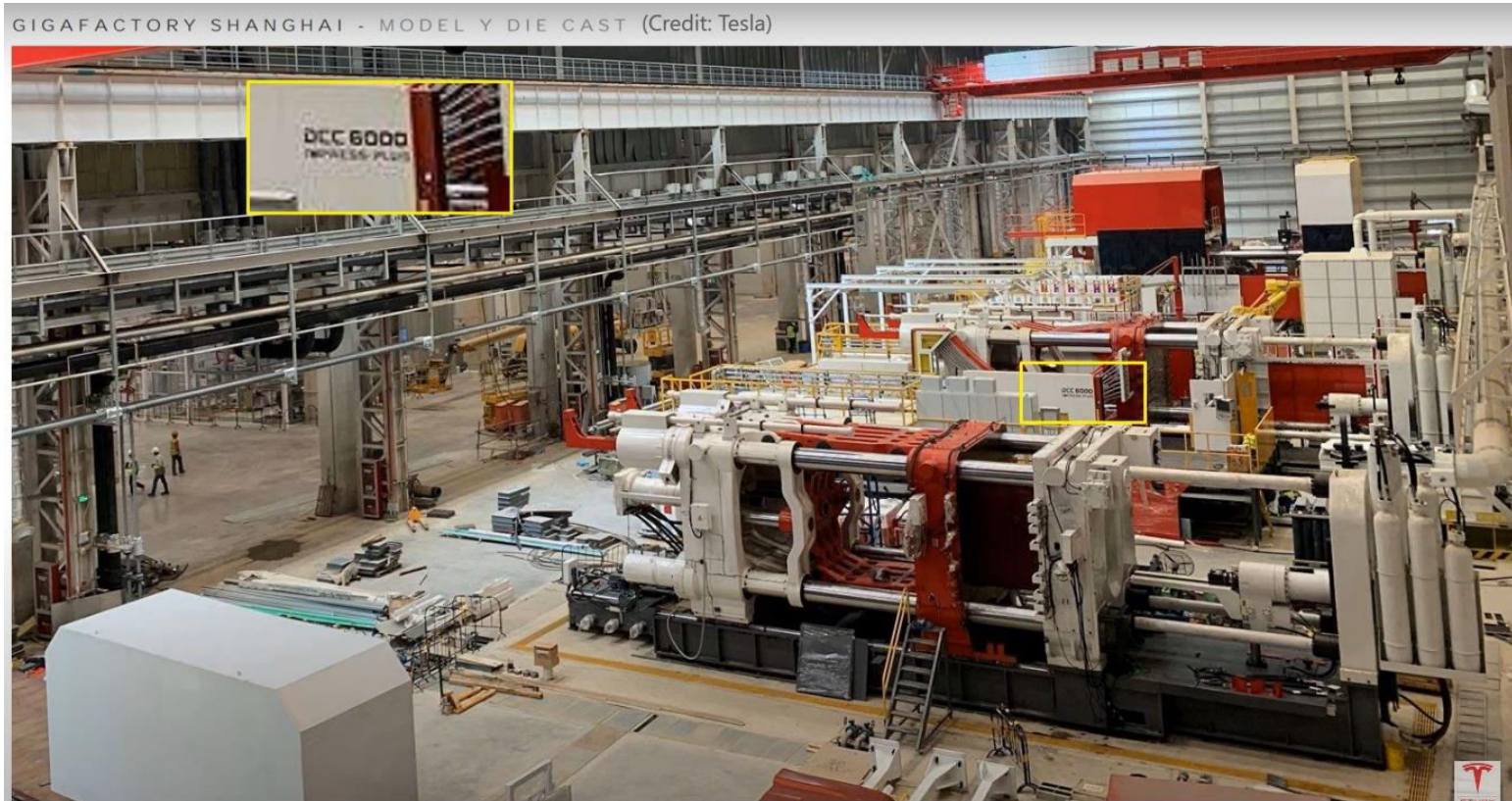
- This collaboration of industry leaders has been brought together under the title of the Foundry Star Alliance (FSA). In addition to IDRA, the FSA includes the companies
 - Støtek – manufacturer of melting and dosing furnaces
 - Costamp – manufacturer of molds
 - Fondarex – manufacturer of vacuum systems
 - IECI – manufacturer of temperature control systems
 - Wollin – manufacturer of spray systems
 - KMA Umwelttechnik – manufacturer of exhaust air filters and heat recovery and
 - Meccanica Pi.Erre – Manufacturer of trimming and post-processing systems.



IDRA shared a photo of the 9,000 ton Giga Press to their LinkedIn page, showing off the machine's impressive scale with an employee standing in front of it. If the employee is about 6 feet tall, we estimate the machine is close to 25 feet tall.

Giga Press in Gigafactory Shanghai: DCC 6000 delivered by L.K. Machinery, China – not by IDRA.

Giga Press DCC 6000 Impress Plus Giga Shanghai



Giga Press in Gigafactory Shanghai: DCC 6000 delivered by L.K. Machinery, China.

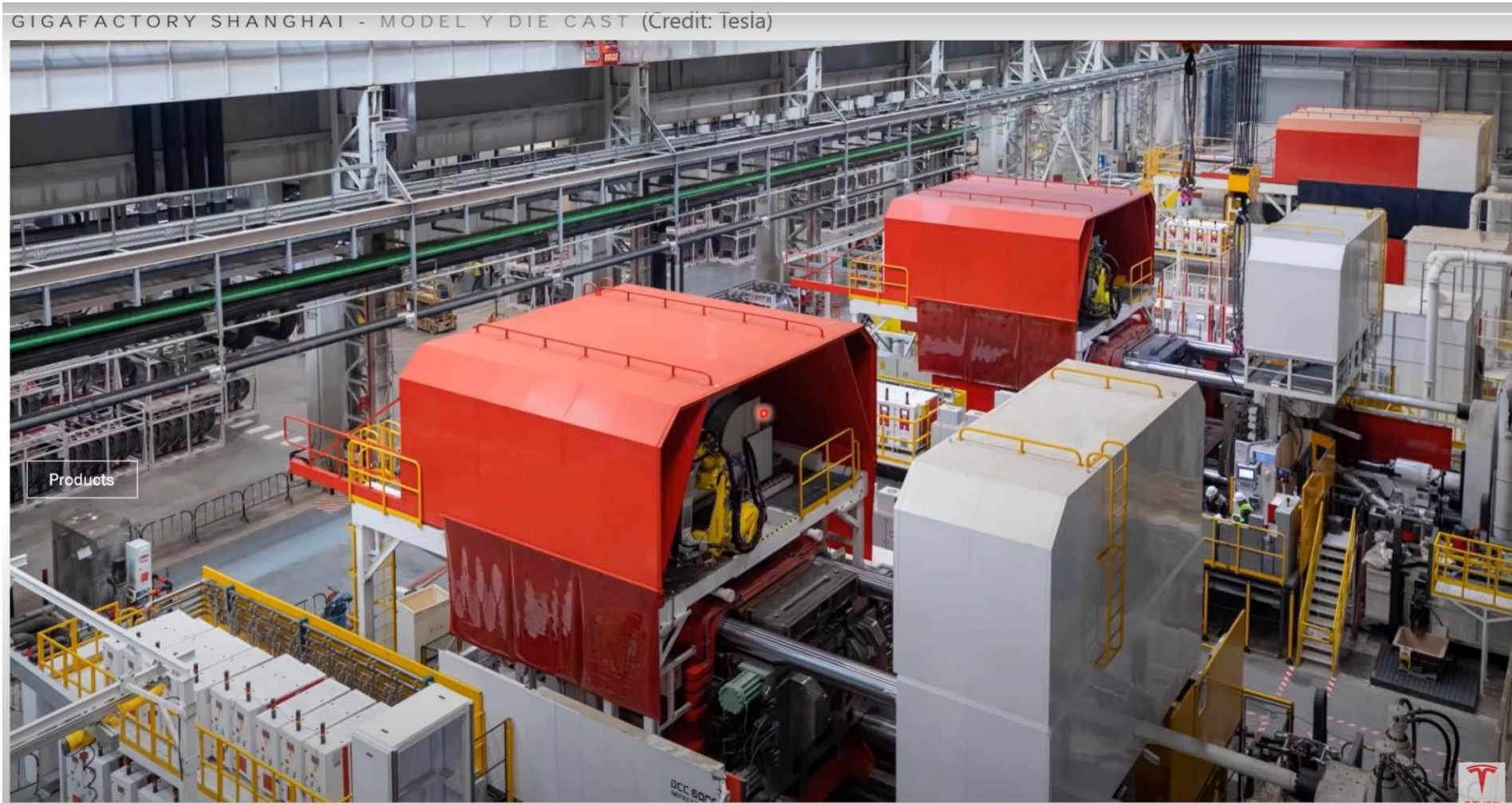
Giga Press DCC 6000 Impress Plus



Giga Press in Gigafactory Shanghai



Giga Press in Gigafactory Shanghai



Giga Press in Gigafactory Shanghai

(Credit: Tesla)



Natural light

storage
section on
this side



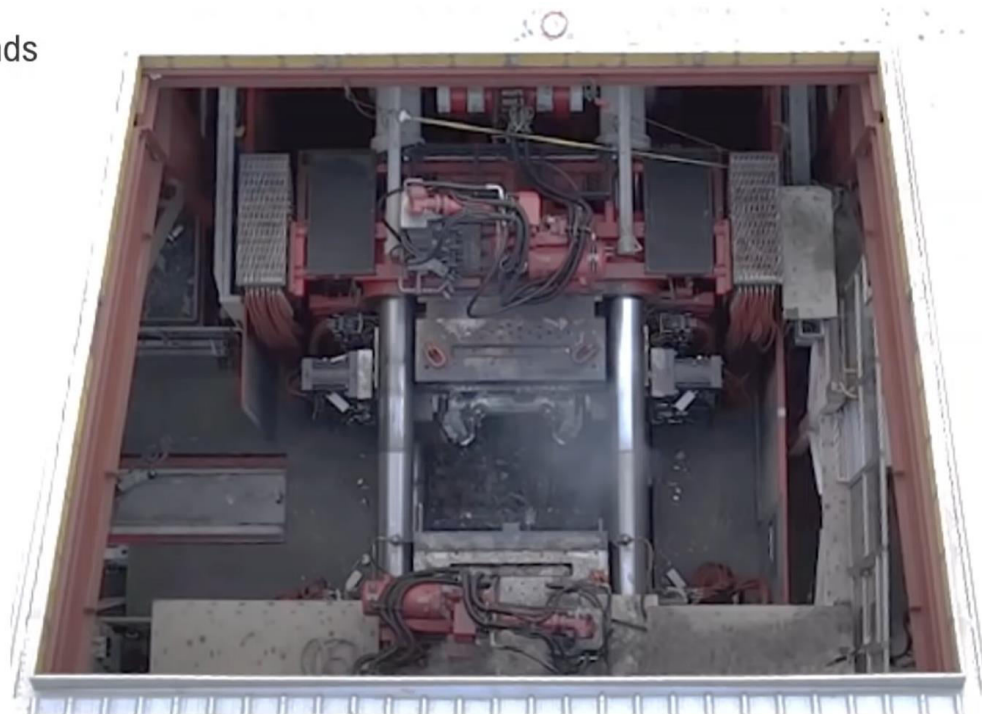
Giga Press in Gigafactory Shanghai



Giga Press in Gigafactory Shanghai

Capacity of Three Giga Presses

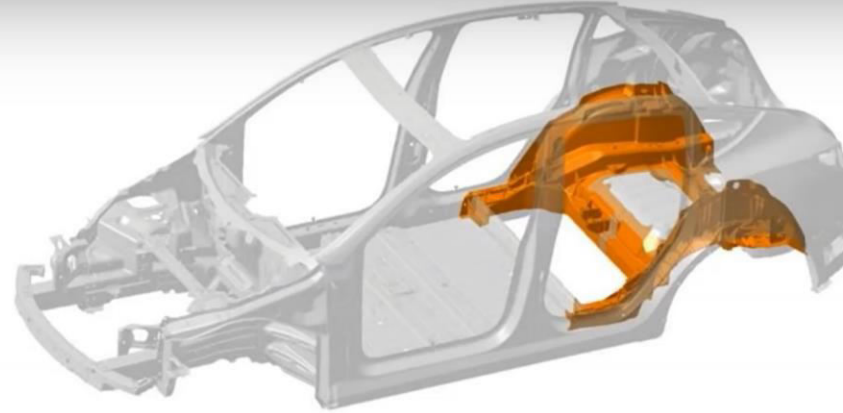
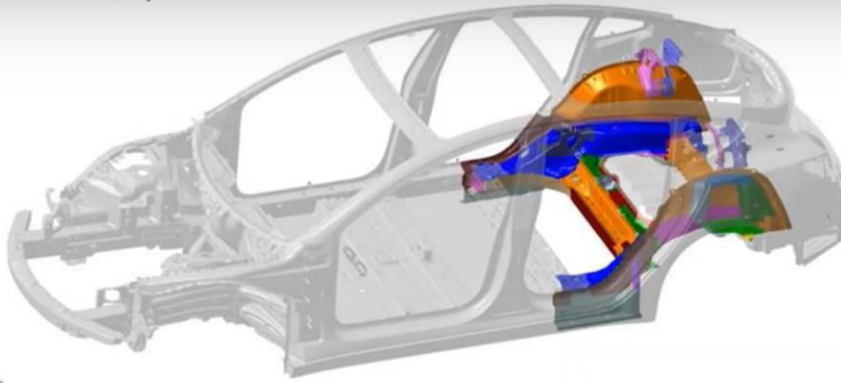
- Per footage of “Fremont flyover Gigapress”, 190 seconds per unit, that is 455 units / machine / day
- Assume 20% downtime, 90% product yield rate, ~330 units / machine / day
- Three machines for ~ 990 units / day.
- One year (360 day) capacity = ~ 356,000 units.



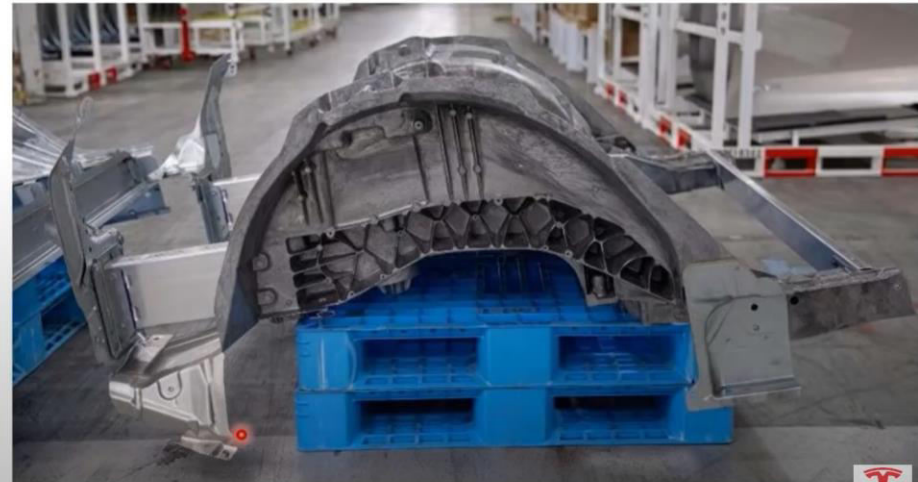
Tesla Fremont Flyover Gigapress Operation Captured - Jan 21, 2021
<https://youtu.be/BwoiFC-HwPE?t=321> by [Gabeinca](#)

Giga Press in Gigafactory Shanghai

(Credit: Tesla)



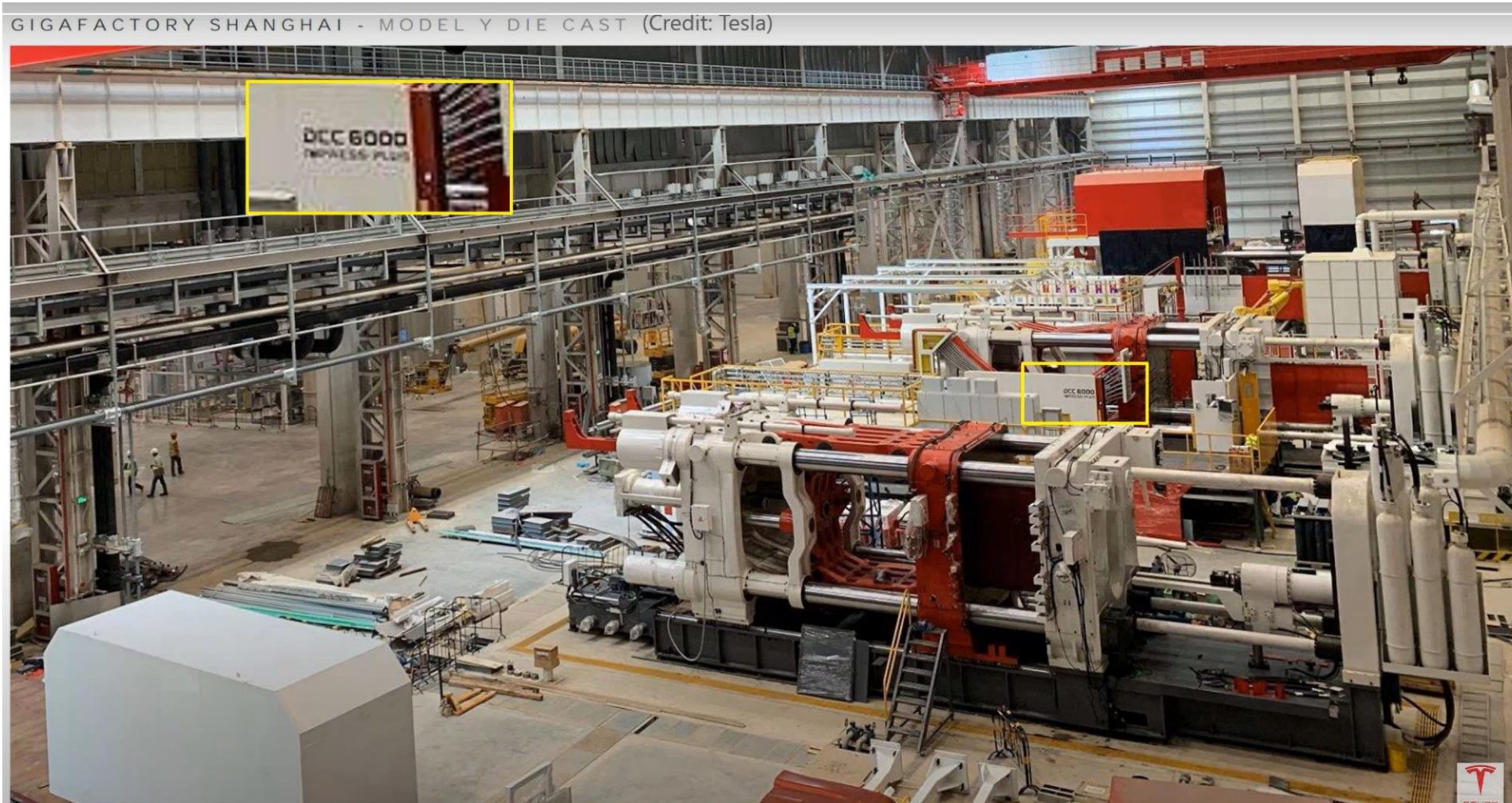
Model 3 rear underbody



Model Y rear underbody



Giga Press in Gigafactory Shanghai

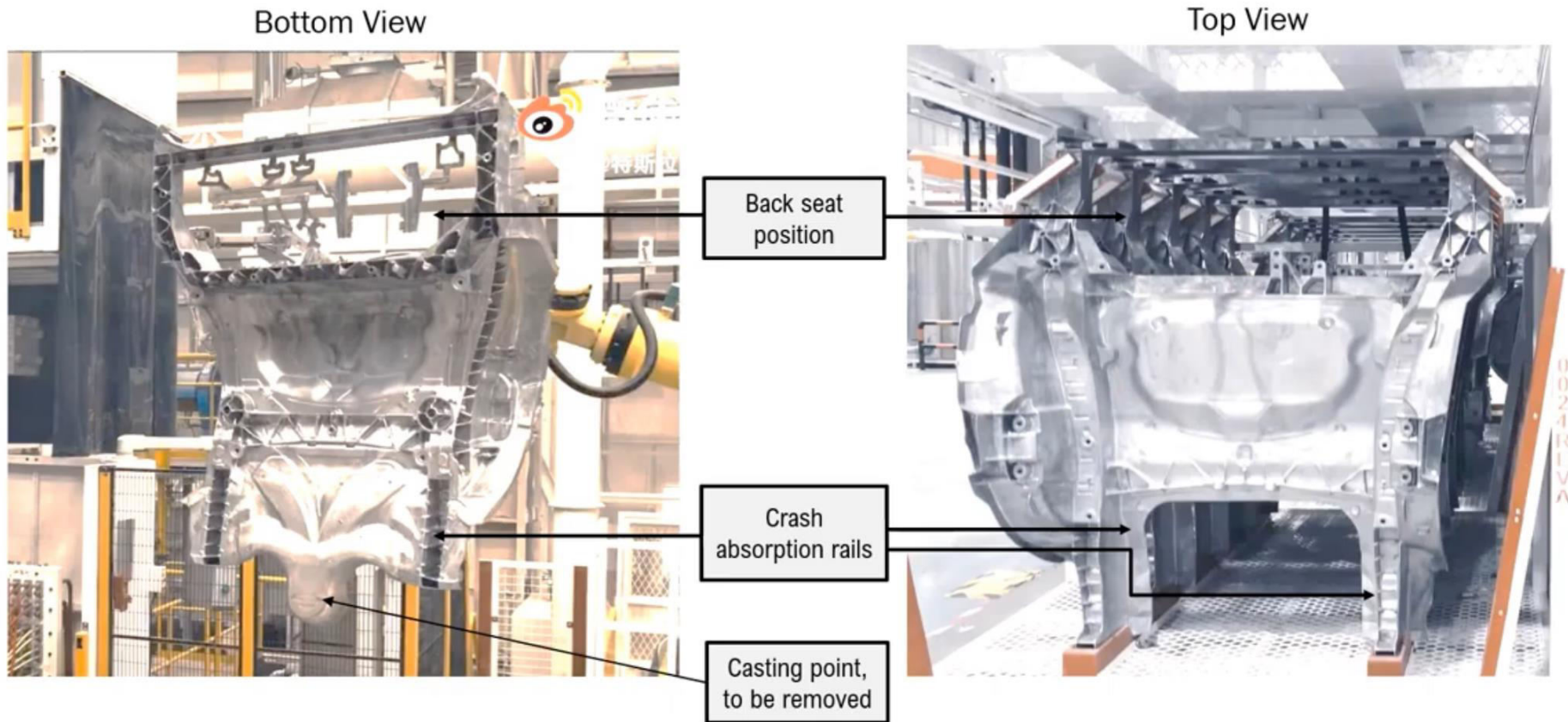


Repairing solution for the Giga Press parts



Repairing solution for the Giga Press parts

Closer Look of Casted Rear Underbody



Sources

Tesla – IDRA – L.K. Holdings Technology

- **L.K. Technology:** Giga press costs ([LINK](#))
- **L.K. Technology:** DCC 6000 Impress Plus: ([LINK](#))
- **L.K. technology / IDRA:** L.K. Technology acquires leading European die-casting machines manufacturer Idra Srl ([LINK](#))
- **IDRA:** Team ([LINK](#))
- **IDRA:** Logistics ([LINK](#))
- **IDRA:** Foundry Star Alliance: ([LINK](#))
- **Giga Press Economics:** ([LINK](#))
- Elon Musk gives a subtle shoutout to IDRA, LK for Giga Press' development ([LINK](#))
- With 8 Giga Presses, Tesla Berlin's 500k annual estimate looks conservative ([LINK](#))

Do you have any questions or would
you like to discuss your project with us?

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