

A Component for the Largest Driver's Door in the Automotive Industry

Weldable die cast aluminum parts with high mechanical properties – manufactured with a Vacu² system from Pfeiffer Vacuum

The idea: Developing a new door structure that replaces six stampings, and reduces the weld spots from 66 to 23 by integrating the hinges and the door check. As the part is crash relevant, it needs to be designed for safety and durability, and offer a better stiffening of the A-pillar.

COMP
Rheocasting *tech*

Rheocasting technology is a special casting process in which aluminium is processed in a semi-solid or semi-liquid state.)

The realization: To cast these 4'10" tall (approx. 1.4-metre-long) hinge pillars in one piece is only possible by rheocasting production under vacuum (COMPtech's rheocasting technology is a special casting process in which aluminium is processed in a semi-solid or semi-liquid state.)

The target is to achieve very high mechanical properties with 150MPa yield strength, 220MPa tensile strength and 12% elongation. To ensure the necessary vacuum values before heat treatment, the die cast process needs to be monitored constantly. The process vacuum is between 30mbar and 50mbar.

A 1650-ton die casting machine (in conventional/ liquid die casting a 2600-ton DCM would have been required) combined with a Vacu² 10025 does the job.

The Vacu² system, designed according to the Canadian standard "CSA", ensures that the required vacuum is achieved in the mold during the die casting process and continuously monitors the entire vacuum process during the casting.

Dynatool Industries at Montreal / Canada was awarded the **dynatool** "Die Cast Award 2022" by the "North American Die Casting Association" for this great development.

The keys to success: Technical discussions on an equal footing throughout the entire tender phase leading to great mutual cooperation. Service availability with our local partner in the area of Montreal / Province Quebec.



Pfeiffer Vacuum, Inc.
24 Trafalgar Square | Nashua,
NH 03063 - USA

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www.pfeiffer-vacuum.com

Pfeiffer Vacuum, Inc. facility in Indianapolis, IN

One of ten Pfeiffer Vacuum
manufacturing facilities worldwide.

Pfeiffer Vacuum, Inc. offers turnkey solutions with customized vacuum systems and leak detection that utilize our extensive line of vacuum components and vacuum expertise.

- 16,400 sq. ft. facility
- ISO 9001:2015 Certified
- Electrical, Mechanical & Software Engineering
- ISO 17025:2017 A2LA Accredited Lab
- Machine Shop
- Assembly
- Service
- Warehouse
- 25 Employees on Site



Vacu² is perfect for users that need their parts to fulfill high expectations

- Weldable die cast aluminum parts
- High mechanical properties
- Ability to become heat treated



Application Report



Product Information



**Your contact for all questions
related to this product:**

Ms. Heidi Siwik
Market Manager – Industry
M + 1 412 496 9774
Heidi.Siwik@pfeiffer-vacuum.com

Pfeiffer Vacuum, Inc.
24 Trafalgar Square | Nashua,
NH 03063 - USA

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