



BRUSCHI

ZINC IN AUTOMOTIVE SECTOR: A SELECTION OF CASE STUDIES

Summary

The process of zinc die casting is highly popular and very common in automotive industry. In fact, zinc has become one of the most important metals employed in automotive parts, thanks to its features such as strength, ductility and malleability.

These elements can be considered main points to better organize a die casting production. Zinc could be the best solution to design and develop some kind of parts: compared to other materials gives benefits in terms of technology, costs and lead time.

For example zinc die casting assures lower time production, long-life dies and higher precision than aluminium die casting and, compared to plastic injection molding, allows the same precision with lower time production and a different perception from end users.

You can check our Whitepaper Focus on Automotive Sector to get an overview of other important benefits: [Click Here](#)

Otherwise, if you are interested in how you can use zinc in automotive sector, hereunder a selection of case studies.



Automotive case studies

CASE STUDY n° 1 – Same precision without machining

For an important automotive tier 1 Bruschi produces a special component, called yoke body, useful to maintain the right room between pignon plug and gear rack. Thanks to zinc die casting technology this component has same precision, without machining, than other metals that need secondary operations. This means a huge saving.

CASE STUDY n° 2 – The unexpected zinc weight role

For a leading player in door handle systems, specialized in automotive, Bruschi produces special counterweight for locking parts. In this case, zinc alloys added value thanks to its specific weight: surprisingly, in terms of automotive, in this case weight is an advantage. Zinc die casting technology allows to strictly control the weight of the product: in this way, weight becomes a functional factor of the systems.

CASE STUDY n° 3 – Zinc means saving as steel means cost

Bruschi produces for an important automotive player a plug for the steering pinion called pinion plug. This component could be developed in zinc or in steel but, thanks to zinc die casting technology, Bruschi's client has a huge saving choosing zinc instead of steel. The first saving is about material, because zinc costs less than steel, than there is another huge saving thanks to zinc features that allow to avoid secondary operation. In fact, with die casting, it is possible to achieve the requested precision and tolerance without machining.

CASE STUDY n° 4 – No secondary operation for the required surface roughness

For an important car manufacturer tier 1 Bruschi produces brackets with guides for car sunroof. These brackets with guides are very precise running guides with complex shapes. Thanks to zinc die casting technology these components do not need secondary operations for the required shapes and even for the grade of surface roughness.

Hereunder another 2 case study related to zinc die casting and automotive. You can also find them on our Whitepaper Focus on Automotive Sector: [Click Here](#)

CASE STUDY n° 5 – New finishing to avoid blistering

An important automotive player asked to Bruschi to produce a component already produced by other suppliers. Client wanted new solution to develop this particular component, because it had a scrap rate of over 25% due to blistering which appears after treatment of galvanizing coating. Bruschi worked focusing its efforts, involving its supplier network, to avoid blistering. The solution has been achieved changing the finishing: turning from galvanizing coating to passivation. Also nowadays this means a great saving in terms of scrap rate, that has decreased from 25% to only a few parts per million in terms of blistering.

CASE STUDY n° 6 – New finishing to improve SST resistance

For a component, that was already existing, an important automotive player asked Bruschi a solution to improve the salt spray test resistance of the product. Client wanted to use that component for a new project, but it needed a higher SST resistance to reach its customers' expectations. In fact that part was assembled on subcompact cars but, for the new project, this component would be a part of luxury cars. In general, regarding surface of the component, the SST resistance is given by a particular kind of finishing. For subcompact cars the resistance guaranteed was 120 hours, thanks to surface treatment called fe/zn: this treatment was not suitable for luxury cars. To reach the new goal Bruschi had to push the resistance to 1000 hours. Thanks to Bruschi expertise and network client reached its aim improving a special galvanic treatment which allowed SST resistance for over 1000 hours in according to salt spray test.

ABOUT BRUSCHI

For over 70 years Bruschi has been working in industrial production in the field of zinc die casting. Over time the company distinguished itself for efficiency, accuracy, ability to listen to its customers' needs and innovative drive in technology, co-design and mass production. Bruschi technicians apply the know-how acquired by working in many sectors of industry during co-design activities with the client. In fact it is an interdisciplinary knowledge placed at the service of the client's engineers. A huge expertise in the zinc alloy die casting industry allows to anticipate the customers' needs and expectations, by providing engineering solutions to accelerate time of delivery, improve performances, and simplify integrations.

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