

Diecasting Technology. Innovations by KSK.

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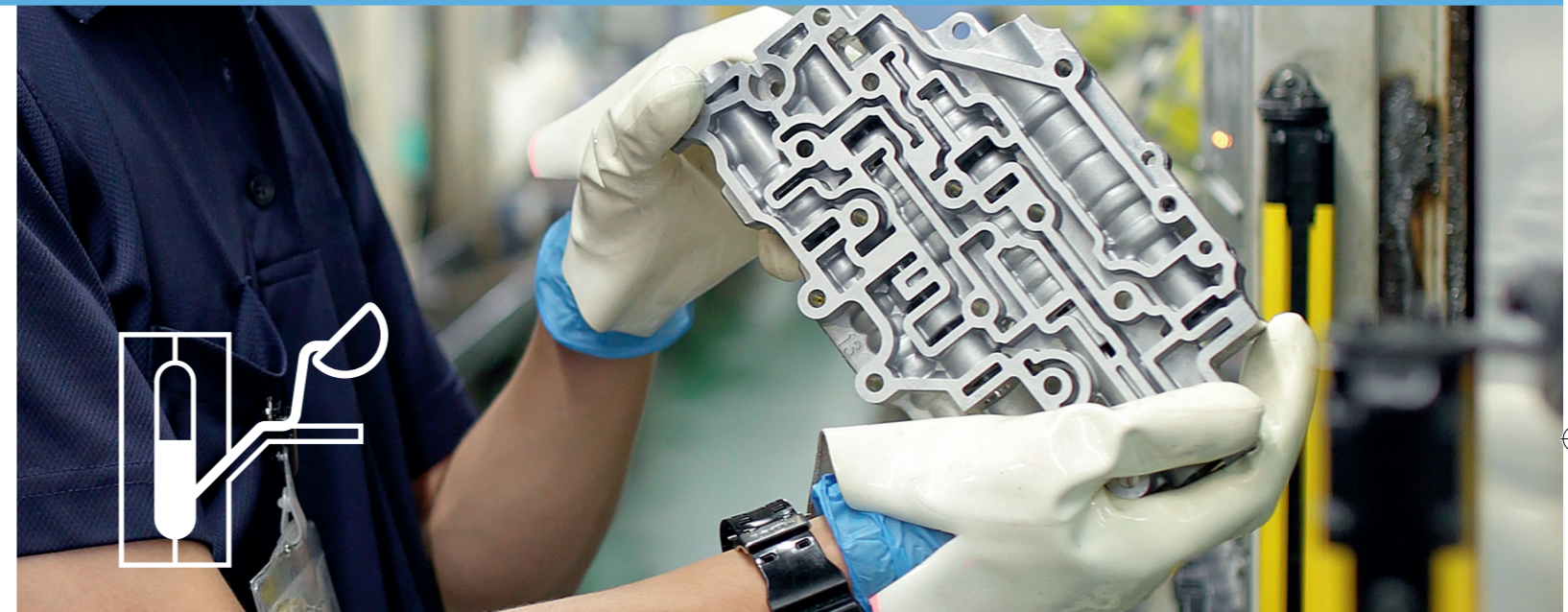
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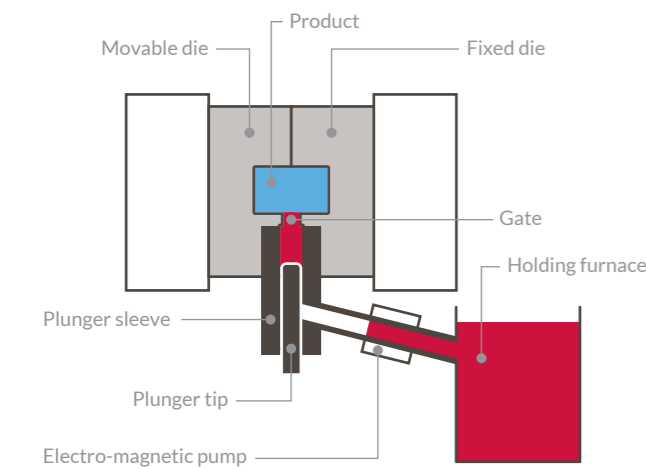
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KSK'S DIECASTING TECHNOLOGIES

'SEMI HOT CHAMBER DIECASTING'

Together with a major Japanese diecast machine maker, the 'Semi Hot Chamber Diecasting' technology has been jointly developed by KSK. The technology creates high quality, high precision, high performance aluminum parts with the properties of steel. The results are low porosity-castings which can be heat-treated. This allows for converting steel parts to KSK's high-strength, air-tight diecast aluminum. Weight and cost reduction effects can thus typically be achieved.



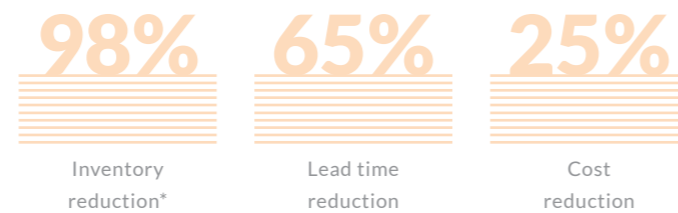
The vertical, low speed diecasting method enables the production of high-density products with extremely few blowholes. A switch from steel to aluminum thus becomes possible.

1.74 kg
ENGINE MOUNTING
Previous product made of steel

0.95 kg
ENGINE MOUNTING
Aluminum diecast product developed by KSK

THE 'ULTIMATE ONE PIECE FLOW-LINE'

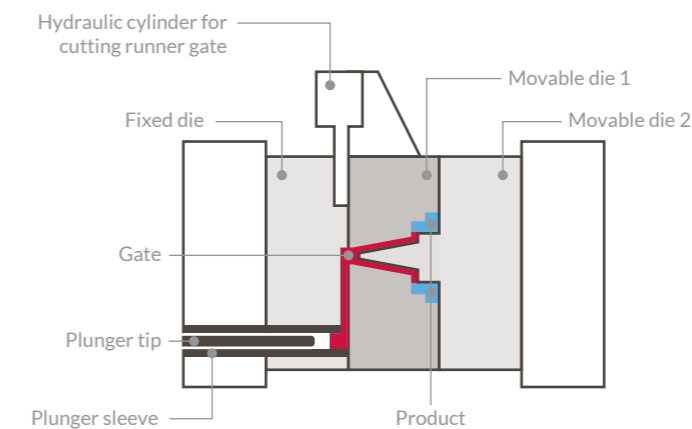
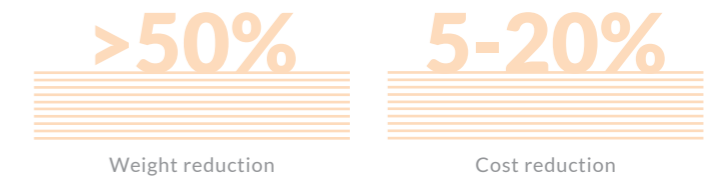
KSK has taken Lean Production to a new level: One Piece Flow from diecasting to packaging. In collaboration with a major Japanese diecast machine maker, a machine that is extremely compact and clean has been jointly developed. Thanks to its small size and lack of emissions it was possible to incorporate the diecasting process into one single line that runs from diecasting through machining until final inspection. This line was installed in KSK's Hokkaido plant in 2011 and has led to substantial reductions in inventory, lead time and costs. Toyota acknowledged KSK's 'Ultimate One Piece Flow-Line' by awarding it the first prize at its Global Supplier Convention in 2014. In the same year operation of a second such line with even more efficient deburring, machining and inspection processes started.



* Compared to the former line

'CENTER GATE DIECASTING'

KSK's center gate system enables molten aluminum to be poured uniformly in a radial pattern from the center. This improves the dimensional precision of cylindrical parts and creates high-strength, high-density diecasting parts in a quality that does not require any mechanical processing. This not only eliminates the subsequent processes but also maintains the cast material's surface with its properties such as hardness and tightness.



The molten metal is evenly poured from the center into the mold. Parts with a roundness level of 0.08 mm can thus be attained without any subsequent machining.

2.35 kg
DRUM DIRECT CLUTCH
Previous product made of steel

1.28 kg
DRUM DIRECT CLUTCH
Aluminum diecast product developed by KSK



Diecasting Machining Final Inspection