

# CASE STUDY



## DIE CASTING DIE SLICK® 2015

### CHALLENGES

A global supplier of aluminum transmission cases manufactures high pressure aluminum die-castings for an array of automotive applications. They have facilities located across the globe to provide local support for our diverse customer base. They were facing issues with their die casting operations and were specifically looking to alleviate the following issues:

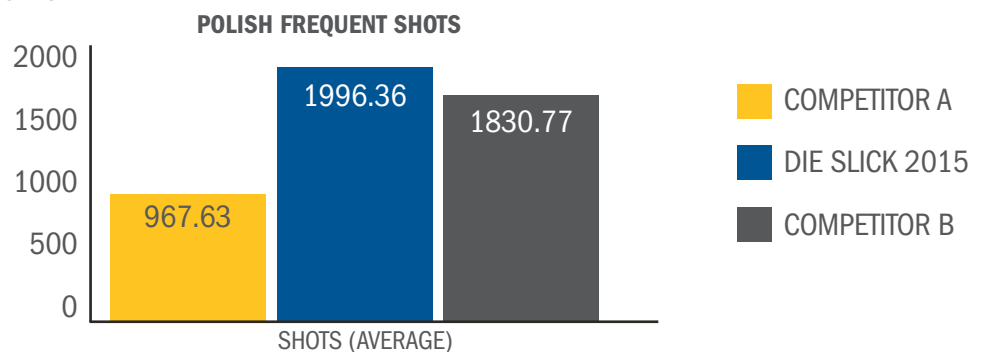
- » Poor quality of die cast parts
- » Prolonged production downtime due to polishing

### THE SOLUTION

GW Smith, a Quaker Chemical Company, met with management at a major automotive casting facility and secured a production trial. The objectives were to reduce downtime from polishing and overall production cost. Initially, the GW Smith team worked closely with the process control department to better understand their casting production utilizing thermal imagery on die surfaces. Based on laboratory analysis and thermal imagery results the soldering and build up problems were identified and the GW Smith team recommended DIE SLICK® 2015, a subset of DIE SLICK® 2050A series. Through trials on several machines and over a six month period, the customer observed a significant reduction in downtime, better part quality and total overall cost savings. The following are some of the benefits realized:

- » Improved performance by reduction in downtime
- » Reduced overall cost by approx. 20%
- » Polishing frequency was improved based on production trial results
- » Production efficiency was improved based on the FFT results

### RESULTS



### PROCESS AND EQUIPMENT

Product replaced	Competitor A
Product trialed against	Competitor A & Competitor B
Concentration:	Competitor A Dilution 60:1 Competitor B Dilution 70:1 GW Dilution 75:1
Material	Aluminum 383
Operation	Die Casting
Machine	Toshiba 600-2500 tons
Problems	Downtime due to solder and die build up

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## DIE CASTING DIE SLICK® 2015

### THE PRODUCT

DIE SLICK® 2015 series is formulated as a concentrate designed for excellent release and bright cosmetic casting finish. DIE SLICK®2015 is a semisynthetic wax free formulation blended specifically to meet customer's production environment and incorporating state of the art Smart Polymer™ technology. DIE SLICK®2015 with Smart Polymer technology is a thermodynamically reactive (heat activated) polymer blend which forms a tough barrier on hot areas of the die while lightly coating cooler less demanding areas. This unique property translates to reduced solder, enhanced release and wetting characteristics while producing bright clean castings. Concentration range: 70:1 to 90:1 depending on type of operation

### THE EXPERTISE

Die Casting lubricants represent a very minor part of the costs in a die casting process, typically less than 1%. This case illustrates the importance of supplier relationship, support and correct fluid selection. The impact of the fluid can be a multiple of its costs, making the price of mold release fluid insignificant. That is why GW Smith, a Quaker company, focuses on developing solutions with the highest performance without compromise, fluids that sharpen your competitive edge.