TRANSMET CORPORATION

Die Casting Porosity Issues, Delamination From Steel Shot

BUSINESS CHALLENGE

This custom zinc die casting company from Wisconsin was casting a zinc part that required a highly cosmetic surface finish. The company was suffering from a high reject rate after powder coating. It was determined to be the shot blasting process causing the reject parts.

The shot blasting step, using Steel Shot, was delaminating the zinc castings and exposing porosity just under the surface. When they slowed down the wheel to try and solve the problem, they could not keep up with production and created a bottleneck.

TRANSMET APPROACH

Transmet was approached by the zinc die casting company to review their shot blasting process and help reduce the high reject rate. Transmet requested production parts be sent to Columbus, Ohio for testing.

Multiple test blasts were performed on batches of parts. Machine and media variables were documented to identify the best conditions for removing flash from these parts. Transmet changed the type of shot blasting media, machine wheel speed, blast cycle time, load size, and other variables throughout testing.

PROJECT OUTCOME

Switching from hard carbon steel shot to softer Cast Zinc Shot allowed wheel speeds to increase, resulting in a faster shot blasting step. Transmet found that increasing wheel speed using Cast Zinc Shot effectively removed flash without delaminating the castings in half the time of carbon steel shot.

The Cast Zinc Shot eliminated the delamination issue while wheel speed eliminated the bottleneck issue. This custom zinc die casting company avoided an investment in additional equipment or outsourced contract blasting.