

## Lube measurement helps stamper eliminate scrap

### Situation

Earlier this year stamper Almco Steel Products, Bluffton, Ind., and Fuchs Lubricants Co., Harvard, Ill., were having problems with a difficult deep-draw engine oil pan. All too often scrap was the product instead of a usable part, and they weren't certain why the problem was occurring.

Fuchs believed that the stamping problems possibly were caused by incorrect lubricant thickness. It had specified the lubricant thickness at 250 to 300 milligrams per foot. Too little lubricant would cause the steel to tear, plus damage the dies, while too much lubricant would affect the part dimensions and cause other die problems.

### Resolution

Fuchs hired UPA Technology, a specialist in coatings measurement, to assess the situation using its Micro-derm® instrument, calibrated with a newly developed beta thin film (BTF) probe. The portable instrument measures all stamping lubricants, including oils, dry lubes, and soap- or polymer-based coatings, on a variety of substrates. Accuracy within 4 percent is typically obtained in 15 seconds or less.

Lubricant thickness upon calibration on an uncoated blank was measured on several scrap samples that had torn in the press. The lubricant thickness was found to be only between 30 and 80 mg/ft., much less than the specified thickness.

Additional measurements were made on samples that had been hand-coated with various thicknesses of lubricant, and it soon became apparent that the stampings came out perfect when the lubricant coating was between the originally recommended 250 to 300 mg/ft.

Fuchs advised Almco to contract with Voss Lantz, a Detroit coil and steel processor, to preapply the lubricant to its next batch of coil steel.

Several weeks later personnel from Almco, Fuchs, and UPA met at Voss Lantz's coil coating line, just a few feet from where the coating was being applied to the steel. The Micro-derm instrument was used to

measure the lubricant on the coating line as coils were stopped for removal, attachment, or adjustments. The obtained data was used immediately to adjust the coating process as needed.

The result for the next batch of stamped oil pans, which used the Voss Lantz-coated steel, was nine coils' worth of pans and zero

failures. Soon afterward another 18 coils were measured during coating at a 100 percent success rate, and the problem was considered solved.

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