Case Study

# Tight Leak Standards Force the Need for Vacuum Impregnation

A Godfrey & Wing customer manufactures aluminum gas meter housings and other components for the meter industry. Tight standards (zero leak at 38.5psi) and characteristics of the casting have forced the need for vacuum impregnation.

## The Challenge

The program was launched with a local vendor that utilized a wet vacuum impregnation process in an older batch style impregnation system. Unfortunately the batch system and wet vacuum process could not meet the quality demands of the customer and the costs of poor quality were quickly adding up!

Some of the challenges rooted in the batch system and wet vacuum process were:

1. Parts still leaked after impregnation (poor recovery)
2. Parts were damaged during the impregnation process
3. Contamination of parts during the impregnation process

These challenges quickly led to missed shipments, quality alerts and containments.

The HVLV's single piece part flow allows for better casting recovery and zero leak rate.

## The Solution

Luckily Godfrey & Wing had recently installed its latest innovation in vacuum impregnation technology, the lean HVLV Dry Vacuum and Pressure (DVP) impregnation system, at their Mexico facility which is in close proximity to this customer.

Having never seen this technology the customer decided to run a sample to determine if there truly was a difference between Batch Systems and Godfrey & Wing's HVLV. The goal was to let data determine the path forward.

Godfrey & Wing processed a small number of parts in the HVLV using a standard Godfrey & Wing's DVP process and delivered them to the customer for evaluation. The data collected detailed:

1. 95-98% casting recovery
2. Zero handling damage
3. Zero contamination

A second small sample was process after Godfrey & Wing made some process modifications which resulted in:

1. 100% casting recovery
2. Zero handling damage
3. Zero contamination



*(continued)*

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## The Results

To validate the data the customer requested a 3,000 piece run of the same parts and the results did not vary. The HVLV again achieved 100% recovery, without any damage or contamination. Not only was the customer thrilled with the results, so was their end customer!

*"The results are great, our customer is very happy. We are very happy!"*

## In Summary

Godfrey & Wing's HVLV DVP vacuum impregnation technology increased its customer's profitability by:

1. Increasing the yield of pressure tight castings
2. Eliminating scrap caused by damage and contamination
3. Eliminating premium freight caused by casting rework from poor impregnation processed

The data determined that not only is the HVLV DVP impregnation process robust, it is repeatable and predictable in a way the batch systems can never achieve. It continues to deliver near 100% recovery on aluminum die castings that specify a leak rate of zero.

## About Godfrey & Wing

Godfrey & Wing is a privately held, global leader in vacuum impregnation products and services serving the aerospace, automotive and general manufacturing industries worldwide. Headquartered in Cleveland, Ohio since 1948, Godfrey & Wing operates manufacturing and production facilities in North America, Europe and Asia.

For more information, visit www.godfreywing.com or call +1 330 562 1440.