



Rigid foam for injection molded parts

CASE STUDY

Challenge

A high-production facility manufacturing thermal-insulated mugs was using an impingement mix gun connected to a fixed ratio, non-recirculating metering system, along with an additional line using a hand-mixed pour method. The goal was to replace the current impingement mix gun with a more reliable and lower maintenance pour foam gun. On average, the current gun set-up required rebuilds one to three times every 24-hour period. To rebuild, production was stopped for 10 minutes and guns were removed from the line.

Solution

A Graco EP™ Pour Gun was installed to determine if it met performance requirements for this application. Air pressure was set to 0.7 MPa (7 bar) (100 psi), fluid pressure was set from 4.8 to 5.5 MPa (48 to 55 bar) (700 to 800 psi), shot size of 0.0266 lb (12 g), shot time was between 0.45 and 0.55 seconds. Installation paused production for 15 minutes and resumed without incident. The process engineer and plant manager were extremely impressed that the gun was installed and running in such a short amount of time with minimal disruption. The gun's front head can be quickly disconnected and replaced on the line, increasing production uptime.

Results

The Graco EP Pour Gun exceeded expectations and requirements, resulting in increased uptime and easier maintenance. The gun performs for 10 days before it needs a rebuild, an average of three times a month. Additionally, with the advanced pneumatic design coupled with integrated lubrication technology, the EP Pour Gun can be left on the line without difficulty or purging if production stops. Overall, the new gun saves substantial time and money on labor since the front head can be removed and replaced while production is still running. In the first six months of installation, the gun accumulated 522,869 shots and dispensed over 13,000 lbs of material.



MANUFACTURING PROCESS:

Aladdin Temp-Rite uses the Graco EP™ Pour Gun to manufacture thermal-foam insulated products. Polyol and isocyanate are metered through hoses out to the EP Pour Gun where they are then mixed together via high-pressure impingement mixing within the EP Pour Gun mixing chamber before exiting the gun and being poured into the part cavity.

<http://www.aladdintemprite.com>

For more information, contact us at 1-877-844-7226 or info@graco.com. Visit us at www.graco.com

PROVEN QUALITY. LEADING TECHNOLOGY.

SPECIFICATIONS

END USER

Aladdin Temp-Rite

INDUSTRY

Injection molded parts

APPLICATION

Amount of products being produced per day: 1,300 – 9,000

Material Specs

Iso (A): Elastopor P1001
Poly (B): Elastopor 13930R

Material Supplier

- BASF Elastopor

Typical Properties

- Ratio (B:A) by volume: 1:1

GRACO EQUIPMENT

Graco EP Pour Gun

- Part number: 24C932
- Orifice size: 0.020 in (0.508 mm)



Innovative air-powered pour gun simplifies mixhead rebuilds for easy maintenance and increased uptime.



MANUFACTURING PROCESS:

Rigid foam is applied on three lines using a semi-automated set-up where the operator picks up the mug, places it under the gun, and triggers a dispense.