TECHNICAL BRIEF

IMPROVE DRAWING AND IRONING (D&I) PERFORMANCE AND REDUCE TOTAL OPERATING COST

Featuring Global Filter's **GRTB-Series**
High Rigidity Polypropylene Meltblown
Filter Cartridges

GLOBAL FILTER
Filtration Group®

In aluminum can manufacturing, the drawing and ironing (D&I) process relies on drawing fluids to reduce friction, dissipate heat, and protect tooling. During operation, aluminum fines are continuously generated and recirculated within the system.

Contamination in drawing fluids directly impacts quality, tooling life, and production efficiency.

Aluminum fines present in drawing fluids act as abrasive particles within the forming system. If not removed efficiently, they accumulate and create a range of process and quality issues:

THE CHALLENGE

- **Accelerated die wear:** Fine particulates erode tool surfaces, reducing die life and increasing replacement frequency
- **Increased defect rates:** Contamination contributes to splits, tears, and surface imperfections in finished cans
- **Higher scrap rates:** Even small increases in defects scale significantly in high-speed production environments
- **Reduced lubricant performance:** Contaminated fluids lose effectiveness in friction reduction and heat transfer
- **Increased maintenance demands:** Systems require more frequent cleaning, filter changes, and intervention

Because modern can lines operate at extremely high throughput, even marginal inefficiencies translate into measurable increases in cost and downtime.

THE ROLL OF FILTRATION

Filtration systems are designed to remove suspended solids from drawing fluids, maintaining consistent fluid quality and stable forming conditions. Among available technologies, depth filtration is particularly well-suited to this application.

Unlike surface filtration, which captures particles primarily on the outer layer of the media, depth filtration retains contaminants throughout the entire media matrix. This enables:

- **Higher contaminant holding capacity**
- **More stable performance under varying differential pressure**
- **Reduced risk of premature clogging**
- **Consistent effluent quality over longer service intervals**

These characteristics are essential in continuous, high-load processes where fluctuations in filtration performance can directly impact production stability.

GLOBAL FILTER
Filtration Group®

Corporate Office
1201 Continental Pl NE
Cedar Rapids, IA 52402 USA

Phone
Office: +1-877-603-1003
Fax: +1-319-743-0220

Online
Website: www.globalfilter.com
Email: gfcustomerservice@filtrationgroup.com

WHY DEPTH FILTRATION MATTERS

In can forming applications, filtration systems must operate reliably under high flow rates, variable contaminant loads, and extended service intervals. Advanced depth filtration designs address these requirements through a combination of structural and functional attributes:

- **High dirt-loading capacity:** Captures larger volumes of aluminum fines before requiring replacement, reducing operational interruptions
- **Rigid media structure:** Maintains integrity under high differential pressure, preventing contaminant unloading or channeling
- **Optimized surface geometry:** Grooved or extended surface designs increase effective filtration area and improve particle capture efficiency

Stable flow characteristics: Ensures consistent fluid delivery to the forming process, minimizing variability

Together, these features contribute to improved process control and reduced total cost of ownership.

GLOBAL FILTER GRTB-SERIES

The **Global Filter GRTB-Series** is engineered to meet the specific demands of metal forming applications, providing a robust depth filtration solution for drawing fluid systems. Designed as a direct equivalent to established rigid depth cartridge technologies, the GRTB Series delivers consistent performance in high-throughput environments.

Key design features include:

- **Thermally bonded rigid depth matrix**
  Ensures structural stability and eliminates media migration under high differential pressure conditions
- **High contaminant holding capacity**
  Extends service life and reduces filter change-out frequency
- **Grooved surface geometry**
  Maximizes effective filtration area and enhances dirt-loading efficiency
- **Binder-free construction**
  Provides broad chemical compatibility and minimizes extractables in process fluids
- **Low pressure drop design**
  Supports energy efficiency and maintains consistent system flow rates

These attributes enable reliable operation while supporting both performance and cost objectives.

GLOBAL FILTER
Filtration Group®

Corporate Office
1201 Continental Pl NE
Cedar Rapids, IA 52402 USA

Phone
Office: +1-877-603-1003
Fax: +1-319-743-0220

Online
Website: www.globalfilter.com
Email: gfcustomerservice@filtrationgroup.com

PROCESS IMPACT

Implementation of high-efficiency depth filtration, such as the **GRTB-Series High Rigidity Polypropylene Meltblown Depth Cartridges**, results in measurable operational improvements:

QUALITY

Improved fluid cleanliness reduces the occurrence of defects such as splits and tears, resulting in more consistent product quality and lower scrap rates.

RELIABILITY

Cleaner operating conditions extend die life and reduce unplanned maintenance, contributing to increased uptime and more predictable production schedules.

EFFICIENCY

Longer filter service life, reduced maintenance frequency, and improved fluid longevity contribute to lower operating costs and improved overall equipment effectiveness (OEE).

CONCLUSION

Filtration is a critical control variable in aluminum can manufacturing, directly influencing product quality, tooling performance, and operational efficiency. Effective removal of aluminum fines from drawing fluids enables more stable forming conditions and reduces the total cost of production.

The Global Filter GRTB-Series provides a durable and high-performance depth filtration solution designed to meet the demands of modern can forming operations, supporting improved process control and long-term operational reliability.

GLOBAL FILTER
Filtration Group®

Corporate Office
1201 Continental Pl NE
Cedar Rapids, IA 52402 USA

Phone
Office: +1-877-603-1003
Fax: +1-319-743-0220

Online
Website: www.globalfilter.com
Email: gfcustomerservice@filtrationgroup.com