[FUNDAMETALS]

A newsletter publication of the International Metal Decorating and Packaging Association | 2021

IMDPA | Q4

Excellence in Quality

GRAND AWARD WINNER

Cheetos Popcorn, printed and manufactured for Pepsi Co., by Independent Can Company

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Defining the Optimal Packaging for Food

By Jenny Wassenaar, Vice President Sustainability and Omar El Nayal, Sustainability Affairs Manager: Trivium Packaging
(excerpts from original whitepaper, by permission)

Choosing the right packaging for their products is a decision that brands will often dedicate considerable time to—and rightfully so. Optimal packaging, in terms of format, size, and material can help maintain product integrity and enhance the customer experience.

Selecting the right type of packaging is particularly important for food products, which require exceptional protection to reduce the risk of damage and food waste during storage, handling, and consumption. Many companies within the food industry have therefore opted to enclose their products in metal cans, a type of packaging offering superior levels of robustness and durability relative to alternatives on the market. In fact, such has been the predominance of the metal can that the United Kingdom's Royal Society named it as one of the three most significant inventions in the history of food and drink.[1]

Notwithstanding the prevalence of the can, consumers often seek clarification on the effects of canning on the quality and nutritional content of food, and if the inks and labels on the outside walls of cans interact with food contents. Newer questions are also emerging as the momentum for sustainability grips individuals and policymakers around the world. For example:

- What role does canning play in the fight against food waste?
- How can metal cans keep products and materials in perpetual loops of use?
- To what extent does metal packaging challenge the conventional tradeoff between packaging functionality and its recyclability?

Advances in can-manufacturing technologies have primarily focused on optimizations in three core areas: safety, speed, and environmental impact. Technological feats aside, the effectiveness of cans can be attributed to the material from which they are made — metal.

> Metal allows cans to fulfill the primary function of any packaging, namely protecting contents from contamination, spoilage, and damage at all stages of the supply chain.

The expectations of food producers and consumers have evolved, however: rarely is today's packaging expected to only protect its contents. Packaging, for example, often serves as a promotional platform that, when correctly designed, can help brands stand out on crowded shelves, and drives sales by communicating the brand's values, backstory, and other purchase-driving messaging. At a time when the environment is at the forefront of consumers' and regulators' minds, today's packaging is also being increasingly assessed on the basis of its sustainability credentials.

The Three Ps of Optimal Food Packaging

The abovementioned criteria lead us to a three-P framework for evaluating the effectiveness of any packaging placed on the market, including packaging designed for food products. Specifically, we define optimal packaging as packaging that effectively protects products and promotes brand values—all while preserving natural resources in the process. In this article, we subsequently demonstrate that metal cans are often the optimal packaging choice for food products.

Dear IMDPA Members, Partners, and friends,

Each year the metal decorating industry gathers to network and participate in all that the IMDPA offers during our Annual Conference. The setting is conducive to meeting new people, networking and learning about the latest technology and market trends. With health and safety measures in place for an in-person conference, 2021's Conference did not disappoint.

The IMDPA leaders filled a 2 ½ day agenda to the brim. It all started with the Scholarship Golf Outing & Banquet on Tuesday, followed by the membership meeting, general session, awards luncheon, breakout sessions, and tabletop exhibits on Wednesday. We had over 40 exhibitors set up in a large ballroom where refreshments and hors d'oeurves were served compliments of our 40 conference sponsors. The event concluded on Thursday after a general session and luncheon. The meetings rooms were packed, the hallways buzzing from networking and the exhibits provided the ideal platform for companies to introduce products and services to a qualified audience.

The Independent Can Company was presented the Excellence in Quality Grand Award and Elena West from The Ohio Art Company, the Member of the Year Award. We also presented Robert Barbato of Tecnocap, and Samuel Martinez and Doug Roschel of J.L. Clark Decorator of the Year Awards in addition to provided scholarship funds to 4 family members of IMDPA members. A complete list of winners can be found in this special Awards Issue of Fundametals.

Thank you to the planning committee for their tireless efforts, the sponsors for their generous support and all of our speakers for giving their valuable time to present the knowledge needed to stay in great shape for our future challenges. To share your feedback or if you have any ideas for the 2022 IMDPA Annual Conference please email info@metaldecorators.org.

Sincerely, Renee Schouten
President, International Metal Decorating
and Packaging Association

Protecting Nutritional Content

Canned foods make up a significant component of individuals' diets in developed countries, offering year-round nutrition and round-the-clock availability. The convenience that metal cans deliver to consumers is often cited as their key strength, but cans additionally lock in essential nutrients and preserve food freshness. In fact, canning is one of the most effective ways to maintain food quality at its peak.

Locking in the Good and Keeping Out the Bad

The key to the nutritional value of canned food lies in the particularly short lag between getting the food from the farm (or ocean) and into the can. Fruits and vegetables are often canned very quickly after harvesting, sometimes in as little as three hours.[2] Quick processing preserves the nutritional content of food and reduces vitamin loss. Many types of fish also undergo rapid canning shortly after being caught, preserving essential nutrients such as omega 3 fatty acids.[3]

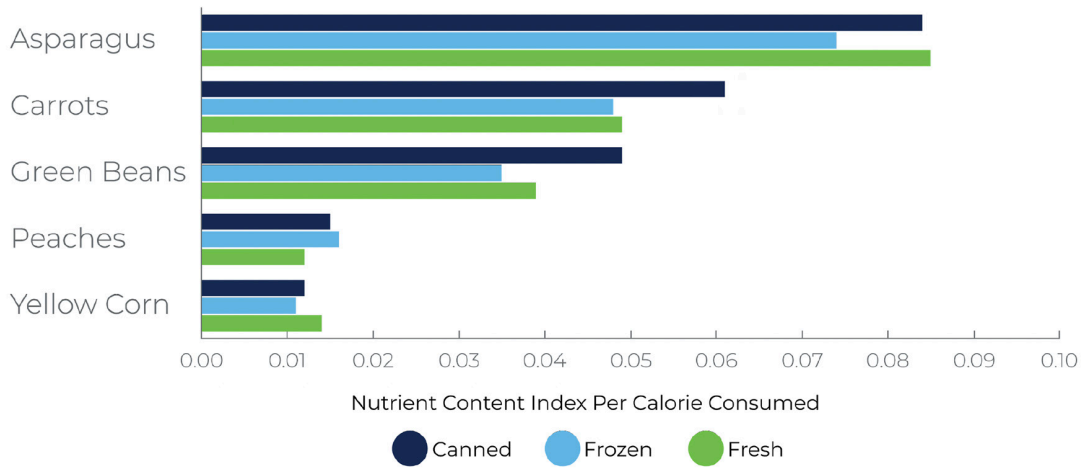
After packing, canned items undergo sterilization through a heating process that is more effective than blanching and pasteurization. Sterilization under high temperatures destroys a variety of pathogens and micro-organisms, and further neutralizes spores that might otherwise cause food spoilage. The process is meticulously regulated to ensure that heat does not jeopardize vitamins and minerals within the food or affect its sensory characteristics.

> "…the United States Food and Drug Administration has reported zero incidents of food-borne illness resulting from a failure of metal cans in more than three decades.[6]"

The combination of rapid processing and heat-based preservation has helped canned food deliver a strong record of safety. For example, the United States Food and Drug Administration has reported zero incidents of food-borne illness resulting from a failure of metal cans in more than three decades.[4]

Research additionally shows that cans are excellent preservers of nutrients, delivering food that has comparable nutritional value to its fresh and frozen counterparts when prepared for a table dish.[5] In some cases, canned food holds even higher nutrient levels than fresh produce (Figure 1). Canned tomatoes, for instance, hold up to four times the amount of lycopene—a rich nutrient with heart health promotion and cancer-fighting qualities—found in freshly prepared tomatoes. Similarly, canned 'sauerkraut' (sour cabbage) contains almost two times the amount of calcium found in its freshly prepared counterpart.[6]

Figure 1.
Canned Fruits and vegetables offer comparable nutritional content to fresh and frozen produce



Source: Miller and Knudson (2014)[7]; Nutrient Content Index is a standardized composite measure of nutrient density encompassing 29 different vitamins and minerals that are benchmarked against the average adult dietary reference intake

Here to Stay

Once placed on the market, canned food enjoys the added advantage of having exceptionally long shelf lives, typically ranging between 1 to 5 years.[8] Metal cans and closures provide a hermetically sealed functional barrier that insulates food contents from sunlight and oxygen, the two primary drivers of premature quality degradation in food. Such exceptional barrier qualities contrast sharply with those of materials such as paper and plastic, which are generally more permeable to gases, water, organic vapor, and low molecular weight compounds.[9] Thus, whereas canned foods have shelf lives that are normally measured in years, foods stored in other packaging materials often have shelf lives that are measured in weeks or months.[10] For food categories that have an intrinsically short shelf life—such as meat, poultry, and seafood—or those with low oxygen tolerance—such as tomato-based products—the shelf-life extending benefits of metal packaging can therefore be enormous.

Promoting Brand Values and Differentiation

In competitive markets, successful brands are those that find effective ways of promoting their products and connecting with customers. Packaging can help.

Pick Me!

Within the Consumer Packaged Goods sector, some of the fastest-growing companies are leveraging the power of attention-grabbing packaging to have their products stand out on crowded shelves.[11] In particular, brands are increasingly opting for packaging with prominent prints and labels that 'speak' to what people are looking for in a product—be it ice cream or corned beef.

Yet, depending on the type of packaging material, the use of colors and labels as a differentiation tactic can come at a considerable cost to the environment. Plastic packaging is a case in point. Relative to clear or white plastic, dyed and pigmented plastic packaging is significantly challenging to recycle. Because of its pigmentation, colored plastic can only be recycled into darker shades of the original dye (or black), which limits its recycling potential (and market value). For this reason, many recycling facilities regard pigmented plastics as contaminants to the recycler stream and subsequently send them for incineration or landfill[12,13]

In contrast, metal packaging provides greater and more sustainable opportunities for brands looking to differentiate their product offerings. Market research indicates that consumers naturally associate metal packaging with a "premium" look and feel relative to other substrates.[15] In addition, brands can make use of advanced graphics and prominent colors on their cans without sacrificing packaging functionality and/or recyclability. Can-printing does not compromise product safety because of the impermeability of metal, and because inks used for food cans are fully compliant with strict food safety regulations (e.g. Article 3 of Regulation (EC) No 1935/2004, GMP 2023/2006, CEPE/EuPIA exclusion list, Swiss Ordinance 817.023.21 Annex 10). Similarly, printing does not undermine the recyclability of metal packaging given that cans around the world are commonly sorted and recycled together, irrespective of their size, shape, and the color of their overcoats.

The Fine Print Matters

Colorful, eye-catching packaging can be the reason why a consumer will pick up a product from the shelf, but it will not guarantee that a subsequent purchase will be made. This is because consumers today are spending more and more time reading the information on the packaging before deciding whether to buy a product.[16] For food products in particular, consumers are often eager to know more about the food that they're buying, including its ingredients, how and where it's been produced, its nutritional content, and safety accreditation. Importantly, consumers want to know more about a product's packaging as well, particularly its environmental impact.

Trivium's 2021 Buying Green Report shows that up to 52 percent of consumers look for information on the recyclability of the packaging of the products they buy, and that 73 percent of them are willing to pay a premium for products that come in more sustainable packaging.[17]

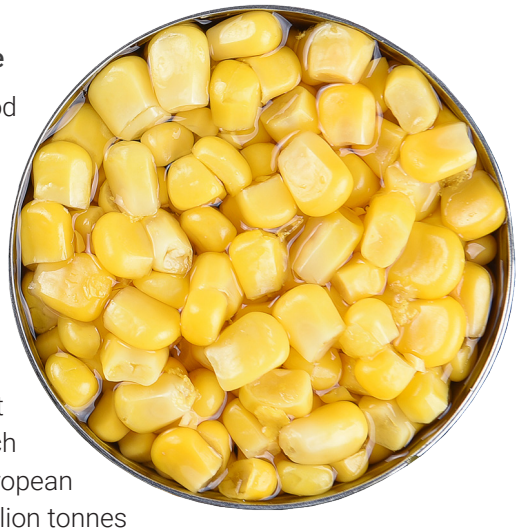
As consumer-driven demand for additional product information increases, so does the importance of packaging as a crucial tool for communication. Yet not all packaging is fit to meet this challenge. Displaying more information on glass jars, for example, obstructs consumers' ability to preview their contents, thus undermining a main reason why glass is selected to pack food in the first place. Similarly, several types of plastic packaging do not support direct printing, leading to the incorporation of product information on printed paper sleeves. Though sleeves can be enlarged to fit additional information or visual elements when needed, doing so severely undermines their recyclability[18] , meaning that brands, once again, are forced to make a tradeoff between the functionality of their packaging and its sustainability.

This is not the case for metal packaging. Direct, full-body printing is possible for cans, which eliminates the need for secondary materials for labels and retains the can's inherent recyclability. In effect, metal cans provide brands with a 360° canvas on which they can display attention-grabbing graphics and communicate key product information that drives sales.

Preserving the Environment

Food requires robust protection to ensure safe and convenient consumption, but a traditional perspective on packaging has typically pitted functionality and/or safety against sustainability. Quality packaging does not have to be at odds with the environment, however. As demonstrated by metal packaging, cans are both durable and inherently sustainable. Furthermore, by combating food waste and supporting repeated recycling, cans are at the very forefront of the circular economy.

Fighting Food Waste



According to the Food and Agriculture Organization of the United Nations, around one- third of global food production—approximately 1.3 billion tonnes—is lost or goes to waste each year.[19] Within the European Union, around 88 million tonnes of food waste—the equivalent of 20 percent of total food production—are generated annually.[20] In the United States, food waste is estimated at between 30–40 percent of the overall food supply.[21]

The reason why so much food is wasted differs between emerging and developed economies. Within emerging economies, food waste is primarily attributed to mismanagement in the early stages of the food value chain. Food is often lost during storage and transportation due in part to inadequate facilities and infrastructure.[22] In developed economies, 40 percent of food is wasted in later stages of the value chain, namely, at retail and consumer levels.[23] For example, food is often lost by retailers due to limited product shelf lives, and by consumers due to suboptimal meal planning (e.g. excess buying) and poor in-home storing.

The challenges posed by food waste are twofold. With 11 percent of people living on Earth today being undernourished[24], food waste is first and foremost a pressing humanitarian concern. Yet, as the United Nations World Food Programme makes abundantly clear, world hunger is not a problem of food supply (the amount of food we produce each year can by some estimates feed the world's hungry four times over) but rather of accessibility and sound food management. Accordingly, calls for action on food waste have emphasized the need for packaging solutions that enable more robust product protection; longer shelf lives; and better portioning possibilities.[25]

Food waste also poses a pressing environmental concern given the sizeable carbon footprint associated with the production and disposal of (spoiled) food. The Intergovernmental Panel on Climate Change estimates

that food waste alone is responsible for 8–10 percent of global greenhouse gas emissions.[26] To put this figure in perspective, emissions from food waste are almost six times greater than those generated from aviation, and are comparable to emissions from road transport.[27] It is worth emphasizing that these emissions are entirely avoidable—that is, they are generated from food that is produced but ultimately not consumed.

Given its severity, food waste is recognized today as a subject of urgent concern by policymakers, non-governmental organizations, and members of the public. Companies are also responding by committing to food waste prevention targets. In doing so, many have turned to metal cans as allies in their fight against food waste. It is easy to see why.

- **Canned food is synonymous with year-round availability**. By significantly extending product shelf-life, canning maintains the quality of food products for longer periods of time and limits the extent of spoilage and quality deterioration that such products would otherwise undergo if not consumed immediately. For food products with more sizeable harvest or production-associated carbon footprints, such as meats, dairy, and seafood, the environmental benefits of reducing spoilage through canning can be especially substantial.
- **Canning comes hand-in-hand with sustainable agricultural by delivering an effective solution to surplus production.** Surplus food, such as fruits and vegetables, that would otherwise be wasted can be preserved for future consumption through canning. Maximizing the amount of (food) resources that remain in the loop lies at the very heart of circularity.
- **The structural robustness of metal means that canned food can be easily and safely transported globally at ambient temperatures, with minimal risk of damage and without the need for additional cooling systems.** This robustness is crucial for food products that move through complex retail supply chains or cover long distances from the point of harvest to the point of consumption. That canned food additionally requires no refrigeration makes it among the most cost-effective and environmentally responsible ways to get food safely and sustainably to where it is needed.
- **The versatility of metal means that cans can be sized to suit a broad range of portions, including family, single-serve, and on-the-go portions.** Correct portioning ensures that the amount of product matches end consumers' preferences, thus reducing the amount of food that goes to waste.

Circular by Nature

Today's consumers are more environmentally conscious than they have ever been. They are also more likely to act on their eco-friendly values when buying products. In fact, up to 57 percent of consumers hesitate to buy products with packaging that is harmful to the environment, and around three quarters of consumers are willing to pay more for sustainable packaging.[28] But what exactly makes some types of packaging more sustainable than others?

Experts note that the gold standard of sustainability for packaging is its recyclability. Sustainable packaging is packaging that can be effectively and efficiently separated from the waste stream; recycled at scale globally; and produces recyclates of sufficient quality to make new

Continued, page 24

Round Table Discussion

Continuous Material Shortages & Delays Spark Flexible Thinking & Innovative Approaches

Shortages of raw materials for inks and coatings, as well as other core ingredients for the metal packaging and decorating industry, keep our Round Table contributors regularly reevaluating their approach to meet customer orders. Extensive supply chain networks and creative problem solving has helped them all stay ahead of the demand.

Manoel Rodrigues
Regional Commercial Director, Metal Coatings Americas, AkzoNobel

Eduardo Alegria
Global Sales Director, Metal Packaging Inks, Sun Chemical S.A.

Chad Butler
V.P. Sales, Metal & Rigid Packaging, INX International

Our contributors are experts in material procurement and supply chain logistics.

Question 1: Given the shortages of raw materials right now, how are you/your company working to shore up your supply chain to meet customer demand?

Manoel Rodrigues

Raw material supply shortages continue to impact our ability to manufacture the products we need to meet customer demand. Shortages come in two categories: market shortages and unexpected delays. Many of our feedstocks are in formal Force Majeure (high in Q2) or allocation meaning suppliers cannot produce enough to meet market demand (highest in Q3). We work with the supply base and customers to manage the situation and minimize the impact. Factors including capacity outages and COVID-19 have also disrupted the flow of raw materials used in our manufacturing processes.

The more difficult supply shortages occur when raw materials are delayed unexpectedly. Delays occur with little or no notice given by the supplier and can range from a day to several months depending on supply points and the relation to our manufacturing sites. The unexpected delays impact our production capacity and our ability to supply our customers as expected. We are working to keep customers supplied and expect some normalization of the supply situation into mid-2022.

Eduardo Alegria

Sun Chemical has an excellent global supply chain team that is constantly monitoring all ink ingredient markets. Locally for the Metal Packaging Ink market, we have dedicated more resources to ensure raw material availability. We utilize both our technical and purchasing teams to search for alternate raw material suppliers to meet commitments to customers..

Chad Butler

We began increasing our raw material inventory immediately when we became aware of shortages and the other supply chain disruptions. Several of our vendors also keep raw materials for us in their US warehouses. As the supply chain disruptions have continued we have been able to manage through random shortages through back up supply and bringing materials in by air freight as needed. Ultimately,

this has not disrupted the supply to our Metal customers. The unprecedented conditions this year have also caused us to update our Business Continuity Plans to a higher level globally.

Question 2: If reshoring is an option for you, how are you chasing it?

Manoel Rodrigues

The audience for your newsletter is in North America and we understand reshoring is an important topic in the region. As a global coatings company, we have resources and people ready to assist customers with their product needs wherever they choose to manufacture.

Eduardo Alegria

We are currently expanding our manufacturing footprint with a plan to produce in every continent. We are already doing so in Europe, Southeast Asia, and China and now we are looking West. As a vital supplier to CPGs around the globe we have always seen a clear benefit in having regional manufacturing locations.

Chad Butler

Our manufacturing is set up very well globally so we are able to supply our Metal customers from within the regions they are located in. In fact, we have invested significantly to ensure that our manufacturing capacities globally are staying ahead of the expected growth in aluminum can production. We have over 4,300 employees located at 32 subsidiaries across 18 countries working together every day to meet the needs of our customers by providing quality, service, and innovation in metal decorating.

Question 3: How much higher do you see your product costs increasing over the next 12 months?

Manoel Rodrigues

As a global coatings organization, we have seen dramatic swings in the supply chain in 2021. We are all feeling this in how we supply our customers and in turn, how our customers supply their customers down the value chain. Price increases are impacting the entire value chain and we expect to see double digit inflation into 2022 with the footnote that we're hopeful for no additional major freeze events in the chemical value chain like we saw earlier this year.

Eduardo Alegria

Despite the excellent job done by our sourcing and supply chain teams, all raw materials are suffering price spikes. It's unclear where the upper limits are at this point, but we are hoping that they will only average between 5 percent and 10 percent in the immediate future. But this is dependent on the ink series as well as how quickly supply line issues get resolved.

Chad Butler

For 2022, we are forecasting our Metal product costs increasing at a level that will require a 6–7 percent increase in pricing. This is based on input we have received from our vendors.

Question 4: Do you think the supply chain shortages will drive more consolidation in your industry?

Manoel Rodrigues

The company does not comment on speculative suggestions like industry consolidation. The struggles in the supply chain for coatings has been tough in 2021. Earlier in the year, many base feedstocks were in Force Majeure and impacted much of the portfolio. Over the last few months, the shortages have moved down the supply chain and now tend to be in additives and specialty resins. Communication channels and transparency up and down the chain is critical during these difficult times and it has improved over the year and must continue to improve into 2022. We continue to work with customers, vendors and logistical carriers to look for new ways to improve reliability throughout the network to meet our customers' needs.

Eduardo Alegria

Our industry, (printing inks) is a very mature business that has already undergone several acquisition cycles in the last few years. We could see some additional moves in this direction—not related specifically to material shortages, but to the natural market maturation process.

Chad Butler

Consolidation in the industry is likely to occur to some extent with or without the issues in the supply chain. Metal product consolidation and standardization is also expected in the future to control the current supply climate.

Question 5: Are the supply chain shortages driving new innovations in your industry? If so, how?

Manoel Rodrigues

Innovation is important to AkzoNobel regardless of the struggles in the raw material supply chain. We make very specific products for the food packaging and coil and extrusion markets that have extremely long lead times for testing and approvals. We have worked with our suppliers, vendors, logistics partners and our customers to find solutions to keep customers supplied and successful.

Eduardo Alegria

Our efforts in the last months has been firstly to ensure product quality and consistency, especially if we move to alternate raw material suppliers. This leaves little time for innovation as such, but it has provided an opportunity to look at our formulations from other perspectives, and we have discovered some opportunities for improvement.

Chad Butler

The situation this year is definitely driving us to restructure our supply chain management resources and approach so that we can gain more control over our critical raw materials and freight services. Product innovations are an ongoing effort, however, there is more focus on the availability of materials that are part of those innovations. The many different country and regional regulatory guidelines also play heavily into any new product or innovation as those guidelines limit what chemicals can be used. **[FM]**

IMDPA Decorator of The Year

The IMDPA Decorator of the Year Award recognizes individuals for their level of competency. This award program allows companies to acknowledge and nominate their press operator(s) so they may be recognized by their peers for their skill and ability. The IMDPA is pleased to bestow upon three metal decorators the Decorator of the Year Award.

Robert Barbato
Tecnocap
Warren, OH

Bob Barbato is a lead Pressman at Tecnocap operating a 2 Color Mailander Printing Press with an upgraded computerized inking and controlled dampening system. Bob has mastered this system taking our print capabilities to the next level. He is a 30-year veteran in the Lithography Industry starting his career in 1991 as a stacker operator and working through every phase of the Lithography process where he has been a Pressman for the last 18 years.

Samuel Martinez
J.L. Clark
Rockford, IL

Sam has been with JL Clark since 2004 performing various roles in the litho area. He started as an oven tender and has worked his way up thru positions such as coater operator, Ink technician, Lead Plate Maker, and pressman. He is currently the Litho Utility Clerk which is a flexible position that fills in wherever the need arises from pre-press platemaking to proof press to coating to press operation.

Doug Roschel
J.L. Clark
Lancaster, PA

Doug is the lead pressman on our 6 color KBA Metal Star press. He has been a pressman at JL Clark for 23 years. He started on our tandem press and moved to the KBA press when it was installed in Lancaster. Doug is a team player and a leader on the line. He shares ideas with the other shifts and is always looking for ways to increase quality and productivity.

The winners were awarded for:

Identifying and improving the quality of the metal decorated container, being a quality champion correcting errors as they occur, finding solutions to persistent problems on the press line, creative thinking and developing new ways of performing his job, doing more than is required to perform his job, being a team player, performing in an efficient manner, consistently meeting or exceeding company production standards.

2021 Excellence in Quality

As one of the longest running and most prestigious annual metal decorating competitions, the Excellence in Quality Contest recognizes the skillful achievements of the metal decorating and packaging industry. Entries from around the globe are judged in nine categories for the quality of printing, the degree of difficulty, the appearance of coating finishes, registration, and the technical expertise required for each piece. Congratulations to this year's winners!

AEROSOL & BOTTLES

1. Trivium Packaging
N.A./Youngstown, OH USA
Gen Z Water

2. Trivium Packaging
France
Saint-Gervais Mont Blanc

CLOSURES & ENDS

3. G-3 Enterprises
Modesto, CA USA
Tropic Mist

4. Tecnocap LLC
Warren, OH USA
Rao's Sauce

CRAFT CANS

5. Crown Cork & Seal
LaCrosse, WI USA
Boqueron Brewing Caja de Muerto

6. Ball Corporation
Broomfield, CO USA
Great Lakes Brewing Christmas Ale

DIGITAL PRINTING

7. Canimal
Longmont, CO USA
Worthy Brewing

8. DigiCan Printing
St. Charles, MO US
DigiCan Printing Promotional

Best of Category

Award of Excellence

FOOD & GENERAL LINE

9 TinPak Pvt Ltd.
Sri Lanka
Munchee Cheese Buttons Biscuits

10 Shetron Limited
India
Sen Cafe

MISCELLANEOUS

11 The Ohio Art Company
Bryan, OH USA
Batman The Long Halloween Part 1

12 The Ohio Art Company
Bryan, OH USA
Batman The Long Halloween Part 2

SPECIALTY & FANCY CANS

13 Independent Can Company
Belcamp, MD USA
Cheetos Popcorn

14 The Ohio Art Company
Bryan, OH USA
Alabama 2020 National Champs

TWO-PIECE BEVERAGE

15 Crown Cork & Seal
Sugarland, TX USA
The Strait & Narrow

16 Ardagh Group
Elk Grove Village, IL USA
Monster Juice Papillon

Best of Category

9

11

13

15

Award of Excellence

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Thank You to the following 2021 Quality Showcase sponsors:

FINZER ROLLER™ · INTERCAN can decorating technology GROUP · PERM MACHINE & TOOL CO. · Heraeus · ES&T · SunChemical a member of the DIC group · SGS

IMDPA Events

2022 Industry Events

GulfCan Conference 2022

Febbruary 8–10
Dubai U.A.E.

CanTech The Grand Tour 2022

March 14–16
Warsaw, Poland

Cannex & Fillex Asia Pacific 2022

June 7–10
Guangzhou, China

2022 IMDPA Webinars

Webinar Curing 101:

Session 1: Ovens & Oxidizers

January 26, 2022
2 p.m. (EST)

Webinar Curing 101:

Session 2: UV Oven Fundamentals, Maintenance, Everyday Operation

February 23, 2022
2 p.m. (EST)

Q1 IMDPA Webinars

The IMDPA is planning to host several webinars in 2022. Let us know the topics that you would like for us to address and we will do our best to provide the information. Email: weste@ohioart.com

Save the date

IMDPA Annual Conference and Exhibition

October 5–6, 2022
Itasca, IL

Committees

IMDPA members can ***participate*** in a variety of ***committees*** which provide the opportunity to get involved and ***have your voices heard***. These groups are key for the organization to be able to ***respond to the needs*** of the metal decorating and packaging ***industry***.

Interested? Contact info@metaldecorators.org

- Membership
- Conference
- Golf
- Quality Awards
- Decorator of the Year
- Newsletter
- Education
- Technical Resources
- Social Media
- Website
- Webinar

Communication Corner

2021 Conference Presentations and updated By-Laws

You can find this year's Conference presentations and your Association By-Laws in the Resource Section of your Growth Zone membership portal.

Membership Dues

We depend on your support to continue to provide membership information, scholarships and events. There are still members with unpaid dues for this year and we would be grateful for your continued support. If you need another dues invoice, please email info@metaldecorators.org or visit our website to pay online.

If member dues are unpaid by December 31, 2021, membership will be automatically dropped from our database and all future Conference fee discounts will be removed as will IMDPA membership communications in the future. Don't get left out!

Welcome New Members!

We are pleased to have the following industry personnel as new members of our Association and look forward to many years of participation in membership activities.

Matthew Kittell
The CMM Group

Patrick Romelli
Olberding Brand Family

Patrick Pottillo
Olberding Brand Family

Chris Carreras
Ball Corporation

Nathaniel Yokum
Ball Corporation

Roy Downham
The CMM Group

Ruben Robles
Belvac Production Machinery

Craig Polsky
Southern Graphic Systems

Gary Martin
Zion Packaging

Patrick Ryan
SGS

Ken Schafer
Newell Brands

Guilherme Ribeiro
INX International Ink Co.

Eric Kuhns
Henkel Corp

Zachary Madden
PPG

Charles Konowalski
Kono Kogs, Inc

William Parish
Cleveland Steel Container Corp.

Jeremie Thiel
The Ohio Art Co.

William Bowers
Chromatic Technologies Inc.

David Racino
American Canning

Marvin Foreman
Tonejet

Stay up-to-date on social media

For the latest news and event information, connect with IMPDA on Facebook, Twitter, and LinkedIn. While you're at it, don't forget to like, share, and comment on our posts!

Membership Statistics
(as of November 30, 2021)

Members 455; Honorary, 23; Privileged, 21; TOTAL: 499

Interested in becoming a member? Join us! www.metaldecorators.org/membership

IMDPA Member of the Year

Elena West, CEO The Ohio Art Company

The IMDPA is pleased to award Elena with this year's Member of the Year. As one of our newer board members Elena has already served the Association in many ways. She plays an integral role on the Newsletter Committee, participated on the Membership committee and just recently was appointed Chairperson of the ever-so-important Webinar Committee. Without her active involvement the progress these 3 committees have made over the last year would not be possible. It is a tremendous honor to award Elena West with the Member of the Year award.

Elena brings more than 30 years of sales, marketing, and product development experience to her role as CEO of The Ohio Art Company.

Ohio Art and their various Quality, Member of the Year, and Decorator of the Year awards.

From left to right: Martin Killgallon, Derrick Beck, Bill Waters, Elena West, John Caperton, Jeremie Thiel.

Past IMDPA Member of the Year Recipients

2019	Mark VonBokel	2011	Joe Finan	2004	Eugene Furey	1996	Daniel Sitler
2018	John Clark	2010	Dr. William Hoyle	2003	Norman Christian	1995	Kenneth Matyska
2017	Kyle Hurla	2009	Michael Masenior, Lifetime Award	2002	Charles Erikson*	1994	F. William Graue
2016	Allan Sayers	2008	Renee Schouten	2001	Robert Finley	1993	Michael Masenior
2015	John Greenwald	2007	Rick Clendenning	2000	Robert Coe	1992	Peter Collias
2014	Mike Yavorski	2006	Jack Knight	1999	Joseph Kwai*	1991	David Sheldon
2013	Neal Santangelo	2005	Craig Eberts	1998	Peter Costello	1990	David Morris
2012	John Friedman			1997	Gary Silke*	1989	George Scalamera

IMDPA
2021 Conference

It was great to have an on-site conference and get to network with and learn from our industry peers as we collectively work to foster and encourage improvements and advancements in the art of metal decorating and packaging.

The Can Making Process: A Bodymaker's Point of View

Procedure for pivoting mandrels and quick-change features

By Zach Hart

When you look at a beverage can what do you think? "CRACK! ENJOY!"? Or maybe, given this audience, "Check out that INK!" or, "That is an amazing design!"

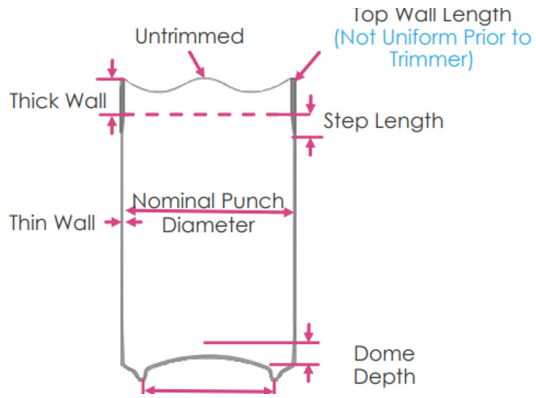
Sound familiar? That is what the beverage can is designed for after all—to capture your attention and entice you to sample the inside. But, if you are anything like I was, you may have also wondered "How the heck is that thing made?"

Let's dive into it from a Bodymaker's point of view. First, let's clarify what kind of machine a Bodymaker is. In simple terms, it is a machine that forms the body of a two piece beverage or food can.

Elementary, right? Not so fast. There is a little more to it than the simple explanation above. Let us touch briefly on just a few things that happen in this "body making" machine.

WHAT IS A BODYMAKER?

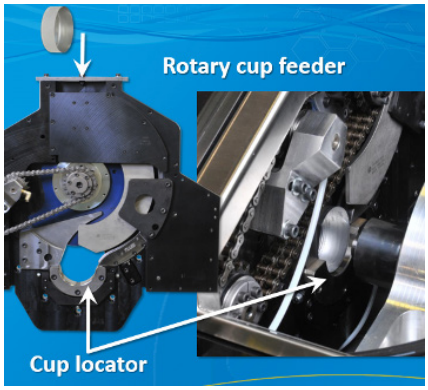
A horizontal press that is configured to exert force onto an aluminum cup. The cup is drawn through a carefully laid-out set of tool stages that will progressively produce the desired can diameter and untrimmed height needed for the remaining process of making the cup into a can. Moreover, it is possible to produce up to five cans a second in production.



STEPS INVOLVED IN FORMING THE CAN

The Infeed and Redraw Process–Step 1

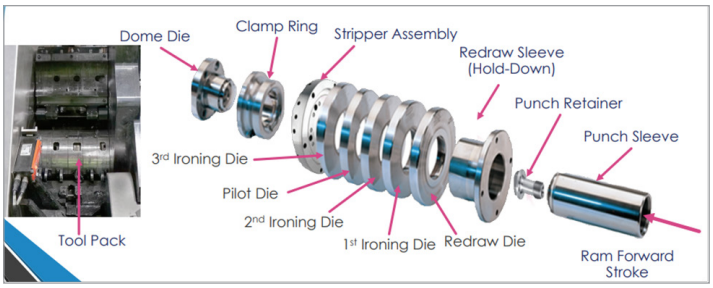
After the coil sheet has gone through the cupping press where the initial blank has been formed as noted in above, the cups will then move down the conveyance to the feed table for the Bodymakers. Here the cups feed single file to the machine. Through the infeed of the machine, cups are placed into position to begin the redraw operation. This is done during the reverse stroke of the machine where the drive mechanism is reversing direction and preparing for the next operation. As the drive changes position, a carefully timed cam (infeed wheel), will place the cup in position. Timing of this cam is crucial; as the incoming cup must be placed in position while the ram returns to the back through the tool pack.



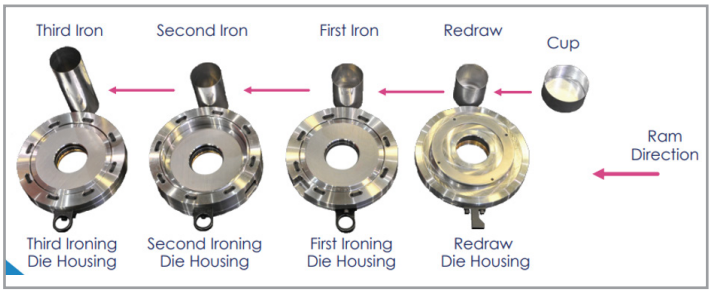
On the forward stroke of the machine, the cup will be clamped in place against a redraw die by a draw sleeve. The geometry, material surface finish, and applied clamping force of these two tools will affectively be what determines the flow of the material as the ram and punch draw the material into the tool pack through this first stage. This first stage is where the cup changes to the determined diameter. Therefore, alignments of tools in this area must be maintained at close tolerances at all times.

Drawing Stages–Step 2

Now that the machine has effectively drawn the material to the correct diameter of the container, it is time to produce the correct untrimmed can height. To achieve this, more critical alignments are needed. However, and most importantly, staged carbide dies placed in a progressive reduction in diameter are needed. As these, combined with the punch, will ultimately determine the placement of the material as it is reduced in thickness and drawn-up the punch surface.



Normally in aluminum beverage cans, there are three Progressive Drawing Stages or Three Ironing Dies within the tool pack that have a calculated reduction based on the amount of work that they would be doing. These progressions are laid out in predetermined locations so that the material is not at risk of being in two progressions at once. This would stress the material and cause issues with remaining progression and finished product. First Stage or First Iron Progression is up right after the Redraw Operation. This Stage takes the redraw step and begins the initial draw up the punch sleeve. While important, it does not work the material as much as the remaining stages. The Second Progression, progressing even further, will work the material up the punch more and may or may not do as much or more work as the Third Progression. The Third and Final Progression is the last chance to finish the untrimmed can height to the required specification that is needed to move onto trimming operations after the Bodymaker is finished.

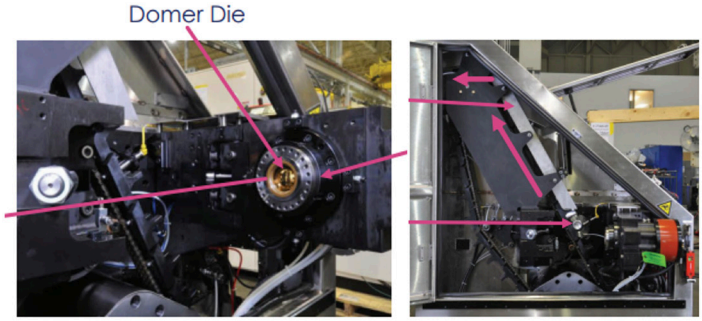


Doming and Discharge–Step 3

At this point, the can has a body diameter and the correct untrimmed height to move onto the trimmer. However, we are not done just yet. With the material drawn up the punch sleeve and exiting the tool pack, we head to the Doming Tools. The Doming Tools geometry will correspond to that of the punch nose. The reason for this is that not only does the material have to flow one last time, it also has to take form into the bottom of the can.

First, the punch nose profile is caught by the Doming Clamp Ring. This piece of tooling catches the incoming punch, guides it, and starts an outer profile of the dome.

Second, the punch has guided the captured material at the facing Dome Tooling before it contacts the Dome Die. This part is where the material moves one last time. As the material contacts the Dome Die, it is pushed towards the punch retainer and forms the inner profile of the Dome. This also creates an affect that is called a "pull down" where the material that is being pushed inwards also draws outer material into the Dome Profile and effectively sets the final placement of all the material of the can.

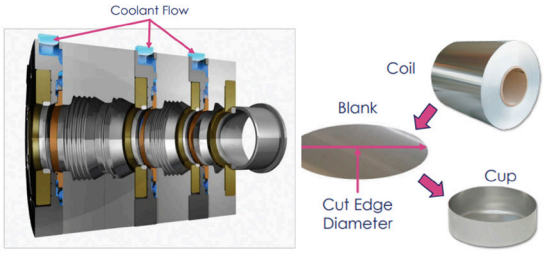


As the doming operation continues, the machine is now triggering compressed air to help remove the can from the punch. At this stage, the take-away mechanism is progressing to capture the finished can in the overall process so that the can continues down the line.

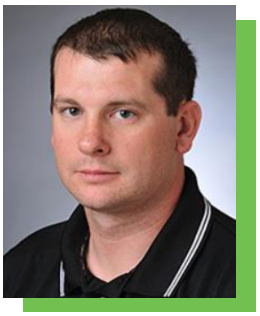
PROCESS INPUTS

Just as we have briefly touched upon some of the things that happen within the Bodymaker, we need to also touch upon the inputs to the process that are critical to a successful can output.

- First, material–Material quality and lube specifications coming from the cupper are very important.
- Second, coolant–The levels of all additives mixed into the Coolant Filtration Systems, as well as water quality, are equally as important as the incoming material specification.
- Third, temperature levels–Running the machine at the specified temperatures and the coolant at specified temperatures is also required for maintaining a stable process in the machine.



And finally, that is a little more of what happens in a Bodymaker and its critical role in the process of making a can. **[FM]**



Zach Hart is the Standun/Canceptor Bodymaker Product Director for Stolle and has been with the company for over 10 years. He first started on the shop floor building the subassemblies for Standun Bodymakers and quickly advanced his skill level of being able to do final construction and alignments of the machine to present the equipment to our customers.

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2021 Annual Education scholarships

Since its inception the IMDPA has awarded nearly $100,000 in education grants which have been distributed to IMDPA family members as partial college scholarships to be used to offset some of the high costs of higher education. This year the Association awarded the following students with scholarship money.

The Scholarship recipients for 2021 are as follows:

First Place	**$1,500**	Kloe Hurla
First Place	**$1,500**	Archer Defterios
Second Place	**$500**	Jessica Partite
Third Place	**$500**	Blake Fennessy

"Thank you so much for awarding me a scholarship at this years' International Metal Decorators and Packaging Association's Scholarship. With only a few years left at the University of Cincinnati, this scholarship money will go a long way toward covering the costs of my core coursework and textbooks. I am really honored to have been selected as a scholarship recipient, thank you again."

Sincerely, Kloe Hurla

"Thank you! I am so honored to be recognized by the IMDPA with a scholarship award. I am grateful for this special opportunity and recognition. I really appreccciate the generous assistance towards my tuition. Thank you again."

Best regards, Archer Defterios

Continued from pg. 7

products. On this count, a wide array of packaging formats on the market perform underwhelmingly. Multilayered or composite packaging, such as beverage cartons and plastic pouches, are significantly challenging to break down into individual components. Other materials, such as certain classes of plastic, can only be downcycled, meaning that they can only be recycled once or twice before they suffer such quality loss that they have to be discarded entirely. To the detriment of the planet, a considerable amount of plastic and composite packaging therefore remains unrecycled and ends up as landfill or ocean waste.

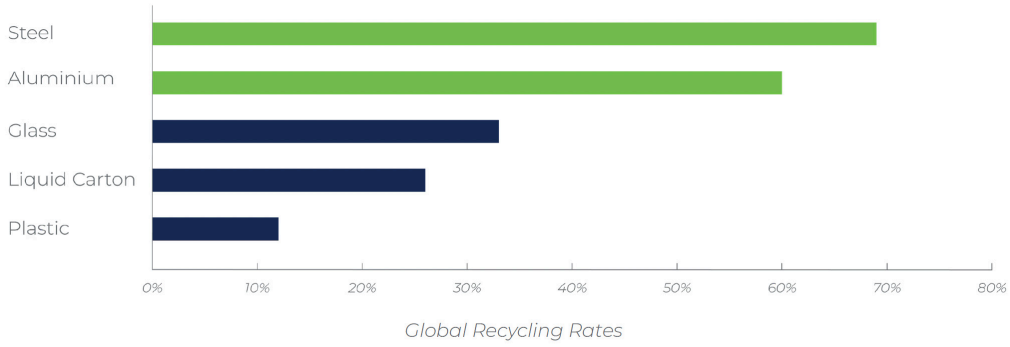
Packaging material made of steel or aluminum, however, stands clearly above the crowd. Metal is an infinitely recyclable permanent material. Its inherent properties do not change or degrade over time, meaning that it can be used and recycled endlessly with no loss in quality. That is why, today, up to 80 percent of all metals ever produced are still available or in use.[29] With well-established and efficient recycling channels around the world, metal packaging is also among the most recycled materials globally (Figure 3).

Behold the Canned Revolution

The modern can has evolved into something much more ambitious than a simple functional housing for food. Today's metal cans offer superior barrier qualities that extend product shelf life and reduce food waste; provide superior possibilities for promotional branding without compromising on the packaging's functionality and recyclability; and boast excellent circularity credentials owing to the infinite recyclability of metal. On the basis of the three key performance criteria of packaging—the three Ps—, our assessment shows that metal cans hold a clear advantage over other substrates on the market.

For many brands, choosing metal packaging for food could thus constitute a meaningful and environmentally responsible step towards enhancing their product offering in an increasingly competitive market. Research and experience demonstrate that this strategy is especially likely to pay off when complemented with the following:

Figure 3.
Metal packaging boasts unrivaled global recycling rates



Source: Association of European Producers of Steel for Packaging; Ellen MacArthur Foundation/World Economic Forum/McKinsey & Company; European Aluminium/Metal Packaging Europe; Eurostat; Global Recycling; International Aluminium Institute; Recovery; UNEPA, SPC, CalRecycle, Carton Council

The sustainability credentials of metal cans are especially impressive considering the way some packaging materials are attempting to tackle food waste. For example, to better preserve food contents, some formats have opted for thicker barriers or additional layers, but in doing so have increased packaging weight (and associated carbon footprint) and reduced packaging recyclability, respectively.[30] In contrast, metal packaging boasts superior recyclability and has simultaneously undergone significant light-weighting over time.

- **Collaborating with the right packaging partners.** Choosing the right metal packaging partner is key to ensuring optimally designed and produced food cans. Such collaborations are even more effective if partners are involved early in the project as they can provide guidance on which formats, sizes, and technologies could be most effective at achieving the brand's desired goals.
- **Cans as marketable collectibles.** Today, collecting a series of packaging designs for a specific brand is a growing trend among young consumers in particular, who see the design

of the package as part of the allure and desire to "collect them all." Differentiating between the design of different product flavors can therefore open the opportunity to brands to reach younger markets who may buy and try the product simply because of the look of its packaging. With their direct printing possibilities and long-term durability, metal cans are ideally suited to serve as collectibles.

- **Promoting metal packaging as an environmentally conscious choice.** Brands that opt for cans are opting for sustainability. By adding labels such as the "Metal Recycles Forever" logo to their products, brands can visibly reinforce their environmental commitments and commend customers on their responsible purchasing decisions. **[FM]**

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Tel: +1 603-622-2481
acu-gage.com

Advanced Color Technologies
200 Capri Court
Greenville, SC 29609 USA
Tel: +1 864-370-2990
measurecolor.com

Applied Vision Corporation
2020 Vision Lane
Akron, OH 44223 USA
Tel: +1 330-926-2222
appliedvision.com

CMC-KUHNKE, Inc.
1060 Broadway
Albany, NY 12204 USA
Tel: +1 518-694-3310
cmc-kuhnke.com

ISRA Vision
4470 Peachtree Lakes Drive
Duluth, GA 30096 USA
Tel: +1 770-449-7776
isravision.com

Intelligent Sensing, Inc
46828 Butternut Road
Oberlin, OH 44074 USA
Tel: +1 440-774-4411
intelsen.com

Pressco Technology, Inc
29200 Aurora Road
Cleveland, OH 44139 USA
Tel: +1 440-498-2600
pressco.com

SACMI
3434 106th Circle
Urbandale, IA 50322
Tel: +1 515-276-2052
Sacmi.com

Sencon
6385 W. 74th Street
Bedford Park, IL 60638 USA
Tel: +1 708-496-3100
sencon.com

Sensory Analytics
405 Pomona Dr
Greensboro, NC 27407 USA
Tel: +1 336-315-6090
specmetrix.com

REPAIR (SPARE) PARTS

Beckon Worldwide
see Bodymaker Spare Parts

Cleveland Folder Service
4330 Lee Ave, Gurnee, IL 60031
Tel: +1 847-782-5850
clevelandfolder.com

REBUILDS

Integrated Packaging Solutions
4010 Youngfield Street
Wheat Ridge, CO 80033
Tel: +1 303-426-4881
intpacsol.com

2 PIECE DECORATOR MACHINERY

Belvac Production Machinery
237 Graves Mills Road
Lynchburg, VA 24502
Tel: +1 434-832-6300
belvac.com

Intercan Group Ltd
38 Burners Lane
Kiln Farm, Milton Keynes
MK11 3HB United Kingdom
Tel: +44 1908 270 041
intercan.co.uk

Stolle Machinery
6949 South Potomac Street
Centennial, CO 80112
Tel: +1 303-708-9044
stollemachinery.com

USED EQUIPMENT DEALERS

Perm Machine & Tool
(see oven parts & services)

UV EQUIPMENT

American Ultraviolet Aetek UV
212 S. Mt. Zion Road
Lebanon, IN 46052
Tel: +1 765-483-9514
auvco.com

Heraeus Noblelight America
910 Clopper Road
Gaithersburg, MD 20878
Tel: +1 301-527-2660
heraeus.com

IST METZ GmbH
Lauterstrabe 14-18
D-72622 Nurtingen, Germany
ist-uv.com

Miltec UV
146 Log Canoe Circle
Stevensville, MD 21666
Tel: +1 410-604-2900
miltec.com

WASHERS, WASH COAT SYSTEMS, CAN WASHERS

International Thermal Systems
4697 West Greenfield Avenue
Milwaukee, WI 53214
Tel: +1 414-526-0431
internationalthermalsystems.com

Stolle EMS Group
Unit 3B Barnfield Way
Altham Business Park
Altham, Accrington
Lancashire, BB5 5WJ, UK
Tel: +44 1282-858-930
stollemachinery.com

[FUNDAMETALS]

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Let's keep in touch

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