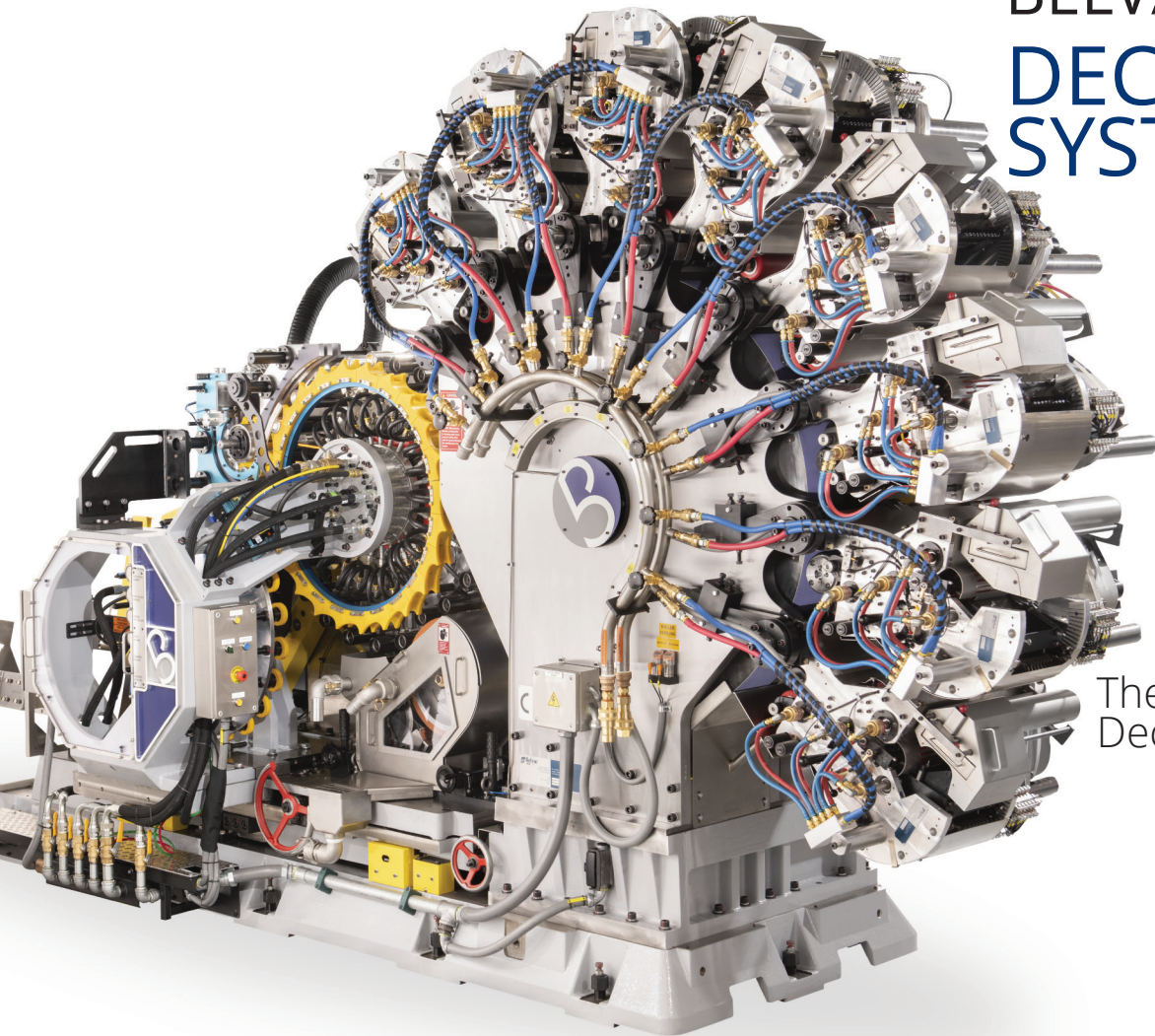




BELVAC DECORATING SYSTEMS



The Belvac
Decorator



PROVEN TECHNOLOGY *Sustainable Solutions* | FOR OVER 60 Years



Right Image:

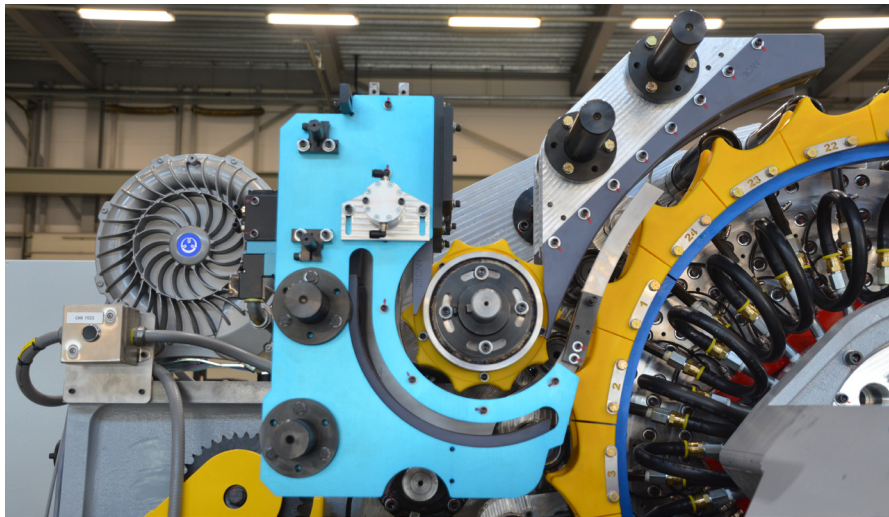
An upgraded Linear Spindle Disc with Precision Linear Bearings on the Mandrel Arms allows for precise contact of the can on the Blanket Segment.

Top Left Image:

The Eight Colorkit is designed with a runout under 0.02 mm on the Bullgear and under 4 microns on the Blanket Wheel which produce the highest level of print quality.

Bottom Left Image:

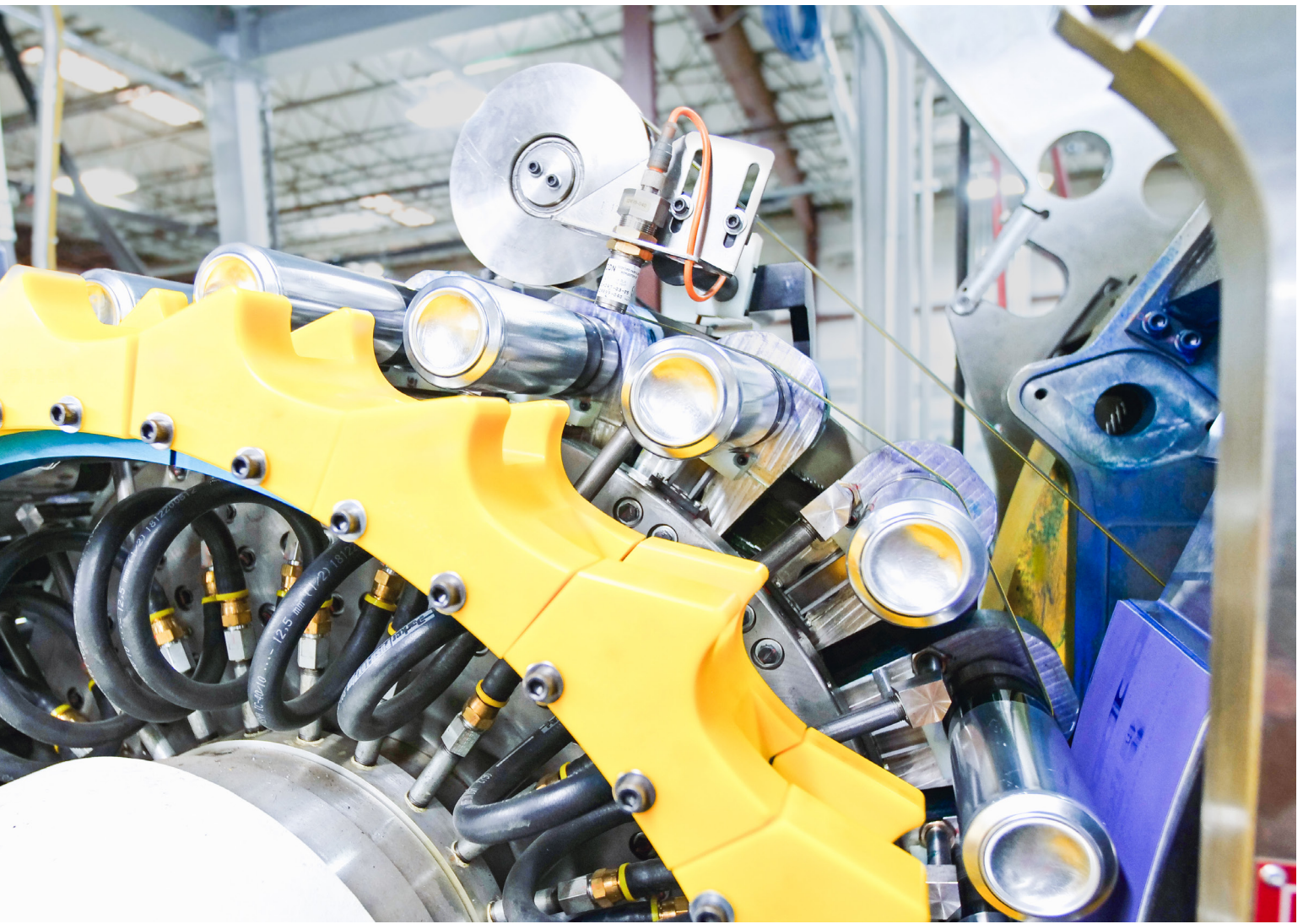
The Cantilevered Vertical Infeed revised the loading angle of cans into the Decorator to eliminate can gapping, machine trips and subsequently reducing can spoilage.



PROVEN TECHNOLOGY **ENGINEERED** **FOR SUSTAINABLE OPERATIONS**

The Belvac Decorator and Basecoater

The Belvac Decorator and Basecoater is based on proven technology that has been value engineered to meet current demands of the advanced can making industry. With speeds ranging up to 2200 cpm, the Decorator has eight-color print capabilities.



The Belvac Decorator produces optimal print results at all speeds.

This is achieved by minimizing runout through precision components which allows the advanced inker design to produce the highest level quality of image on the can.

The latest design improves upon a legacy platform including user friendly operator setups that reduce downtime. The Spindle Disc auto lubrication system eliminates the need for weekly downtime to grease the linear slides. The Reverse Over Varnish Unit utilizes a quick-change Gravure and applicator sleeve to

improve changeover related activities. The carriage trip cam followers are fitted on the outside of the machine providing quick access for changeovers. Unlike other Inker models, Belvac's Pneumatic Ductor Roller assembly can be easily removed facilitating quick and easy maintenance. Automatic lubrication and Washup reduces maintenance related downtime adding to the Decorator's efficiencies.

The Decorator has a standard body range of 202 (52mm) to 305 (84 mm) and a height up to 173 (mm), optional extended height range for taller cans up to 254 mm.

ADVANCED TECHNOLOGY FOR EFFICIENT OPERATIONS

Decorator Key Assembly and Kits Overview

VERTICAL INFEED

- Cantilevered Vertical Infeed eliminates gapping between cans due to drag on rail.
- High accessibility for operators during maintenance.
- Easy removable Starwheel assembly during height and diameter changes allowing for changeover time to be reduced from four hours to five minutes.

LINEAR SPINDLE DISC

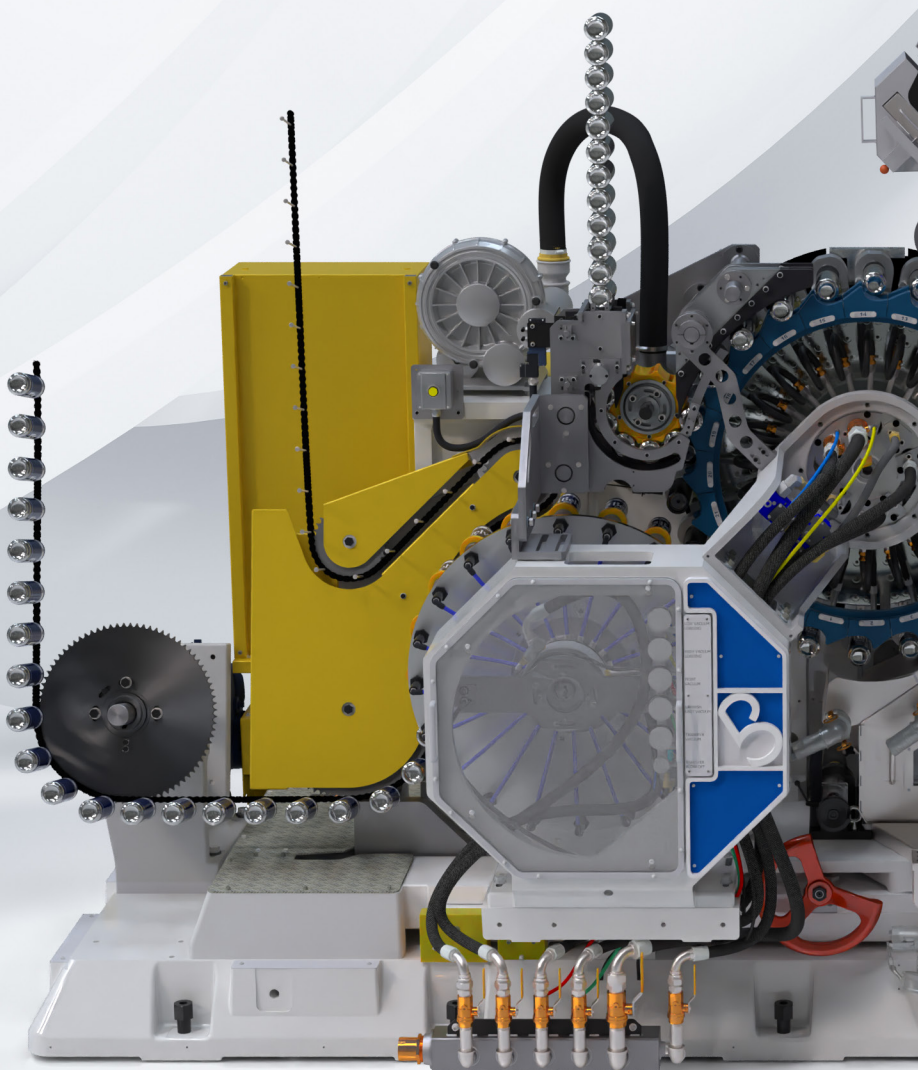
- Precision Linear Slide Bearings which achieve a “soft touch” printing pressure.
- Ringfeder locking mechanism which results in a runout and wobble under 0.01mm for smooth can loading and transfers.
- One Mastercam for all can sizes with easy access for maintenance of linear arms.
- CCR pre-assembled ring set in two half moon segments for easy removal reducing the required downtime for height and diameter changes.
- Open Goose Neck design for easy access to wear parts.

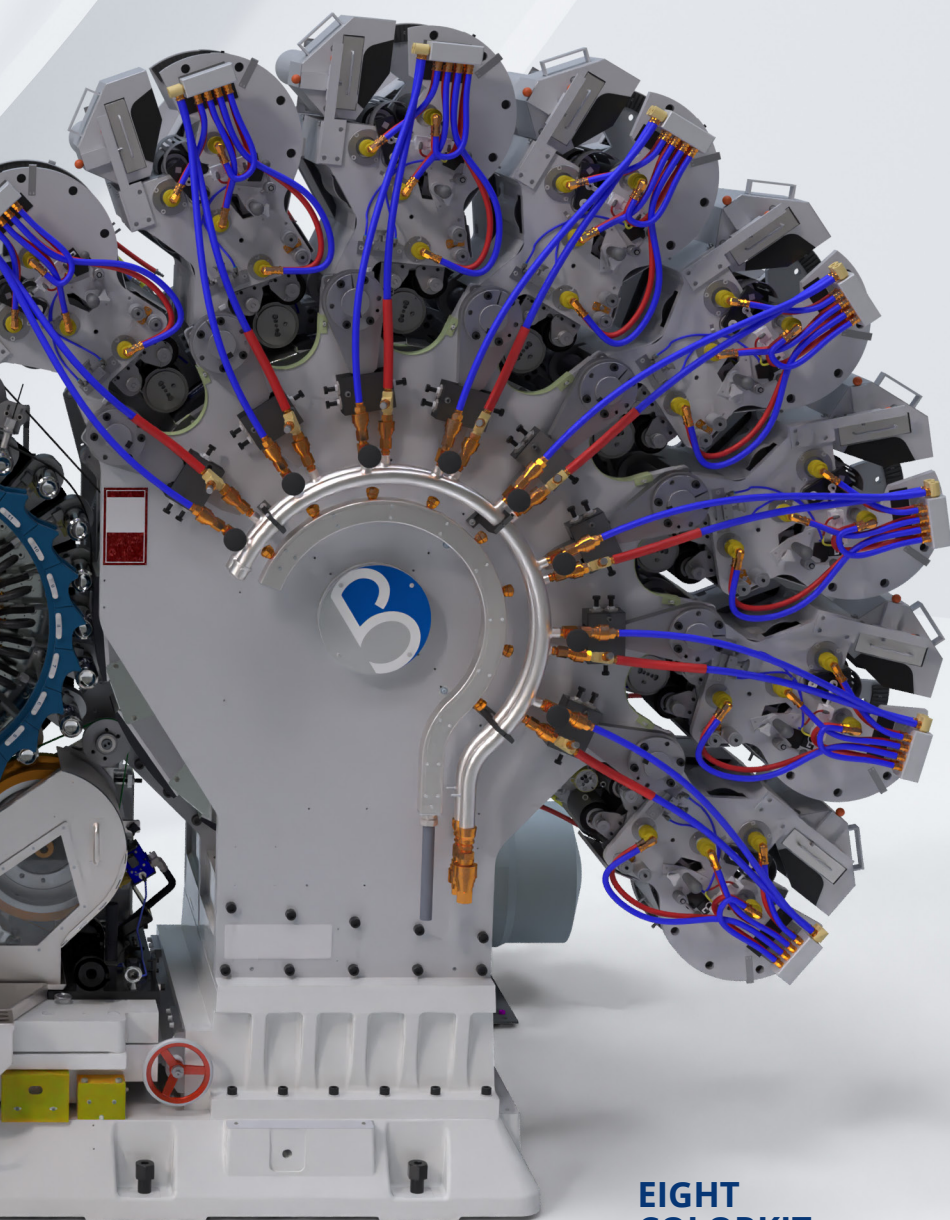
SPLIT SPINDLE SHAFT

- Split Spindle Shaft design that features a removable tip for the portion that carries the Spindle Disc load.
- Operators achieve a significant material and maintenance related downtime savings through this enhanced design.

EASILY ADJUSTABLE TRANSFER DISC

- Easily Adjustable Transfer Disc design allows the Disc to move horizontally from the sprocket frame reducing downtime for size changes to five minutes.
- The movement of individual stations is eliminated which reduces wear parts and energy usage up to five percent.





EIGHT COLORKIT

- Class Zero Bearings on the shaft.
- Blanket Wheel runout is under 4 microns. Bull Gear runout is under 0.02mm. Resulting in the highest level of print quality.

BELVAC INKERS

- Belvac's Two Form Roller Inkers include key design enhancements like Automatic Ink Washup.
- Belvac's Three Form Roller Inkers includes a Servo Driven Fountain to achieve anti-ghosting, no additional ink requirements for dual tone colors and reduces misting by up to fifty percent.
- Inkers can be fitted with Belvac's latest technology including Printing Sleeve systems, Segmented Ductor Rollers, Automatic Ink Washup Units and more.

REVERSE OVER VARNISH UNIT

- Mist captured in three locations to minimize spillage and new guarding design for increased operator safety.
- Easy removable Gravure Sleeve design where the roller stays on the shaft.
- Associated downtime is reduced from fifteen to two minutes for changeovers.
- Handybase design ensures the hub stays on the shaft so the Roller and Spacer are removable for height and diameter changes.
- Easy Adjustable Fountain with removable inserts for all can heights.

DUAL VACUUM AIR DRUM

- A dual port design for low and high vacuum helps facilitate a smoother can loading.
- The low vacuum allows the cans to pilot onto the mandrels. The high vacuum air loads the can onto the mandrels.
- Taller cans are able to maintain a running speed of 2,200 cpm.
- The output volume of cans also increases with less machine trips.

LABEL REGISTRATION MADE SIMPLE

The Belvac Printing Sleeve



The difference is in the details. The Belvac Printing Sleeve allows for faster label changes, higher definition printing, and spoilage reduction, resulting in increased production output.

When utilizing the Printing Sleeve, eight color label changes can be achieved three times faster than with conventional printing plates.

The Printing Sleeves offer higher definition printing of the cans when compared to traditional methods. The Direct Laser Engraving of the sleeves achieves up to 120 lines per inch with no image distortion. The cylindrical shape

allows for no image distortion when engraving the sleeve resulting in a higher quality printed image. The lightweight sleeves are formed from a proprietary polymer material with an inner core which improves the sleeves stability.

The accuracy of the locator pin allows for a consistent and repeatable registration alignment which results in a significant reduction in can spoilage. Registration can be reached within fifty cans per label change, which reduces spoilage by more than 97% compared to conventional printing plates, resulting in a significant savings opportunity and simplicity of label changes.

SEGMENTED DUCTOR ROLLER

Unlike traditional Ductor Rollers that actuate entirely, the Segmented Ductor Roller's innovative design divides the roller into individual segments. Each segment precisely controls ink application, optimizing ink consumption by targeting specific areas on the can. This segmented approach not only enhances efficiency but also reduces waste, ensuring superior performance and cost-effectiveness in metal decorating processes.

SERVO DRIVEN FOUNTAIN

The Servo Driven Fountain Roller utilizes a precision Servo Motor, that synchronizes the roller's speed with the precise ink transfer for each can. This innovation eliminates the limitations imposed by traditional gear ratios, allowing for optimal ink application and superior print quality.

A LOOK INTO THE FUTURE OF INKERS

Key Enhancements Shown on a Belvac Inker

AUTOMATIC INK WASHUP

The easily removable eccentric roller facilitates seamless ink transfer during operation. During color changes, the Automatic Ink Washup system replaces the eccentric roller, accelerating the ink cleaning process with unmatched efficiency.

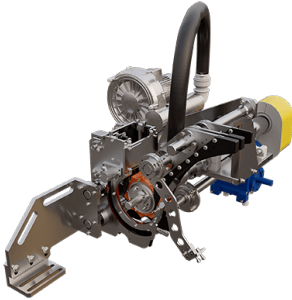
THREE FORM ROLLERS

Belvac's Inker integrates a pioneering Three Form Roller system, offering superior ink transfer compared to traditional Two Form configurations. Enhanced with oscillating ceramic rollers, this system ensures consistent and refined ink application on cans.

KITS & UPGRADES

Designed for Rutherford Style Decorators

MAXIMIZE YOUR DECORATING OPERATIONS



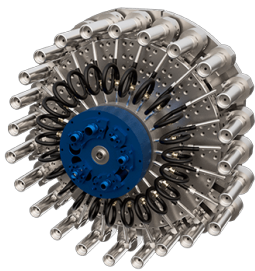
VERTICAL INFEEED

The Cantilevered Vertical Infeed enhances machine speed and throughput. The redesigned 45-degree loading angle eliminates can gapping, boosting performance to 2200 cpm. Easy track work adjustments and a quick-change starwheel minimize downtime, ensuring seamless, efficient production and superior operational efficiency.



LINEAR SPINDLE DISC

The Linear Spindle Disc has an overall power savings of up to 15% due to the linear bearing design. This design also features auto lubrication which reduces maintenance and prolongs part life. With runout under 0.01mm and no wobble, the Spindle Disc delivers smooth, low-vibration printing, while significantly minimizing machine downtime.



DUAL VACUUM AIR DRUM

The Dual Vacuum Air Drum enhances operational efficiency by employing a dual vacuum design for smoother can loading. The low vacuum port pilots the can, while the high vacuum port ensures precise loading, reducing machine trips. This innovation allows taller cans to run at higher speeds, minimizing spoilage and maximizing productivity.



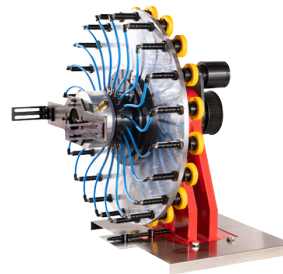
SPLIT SPINDLE SHAFT

The Split Spindle Shaft significantly reduces maintenance downtime and material waste. This innovative design features a removable stub from the shaft that holds the majority of the Spindle Disc weight. By adding a removable stub, downtime is reduced by over 90% and manpower requirements are decreased by 50%.



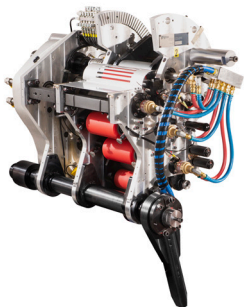
REVERSE OV UNIT

The Reverse Over Varnish (OV) Unit minimizes varnish consumption and misting, while reducing downtime for can size changes. Featuring a quick-change Gravure Sleeve, an adjustable Gravure Fountain, and advanced mist extraction unit, downtime and varnish waste are reduced, ensuring optimal performance and reliability in Decorating operations.



TRANSFER DISC

The Easily Adjustable Transfer Disc enhances operational efficiency by delivering a 5% savings in energy requirements and minimizes downtime. The design eliminates individual station movements and reduces wear parts, while the adjustable disc facilitates swift can size changes, for seamless, efficient production.



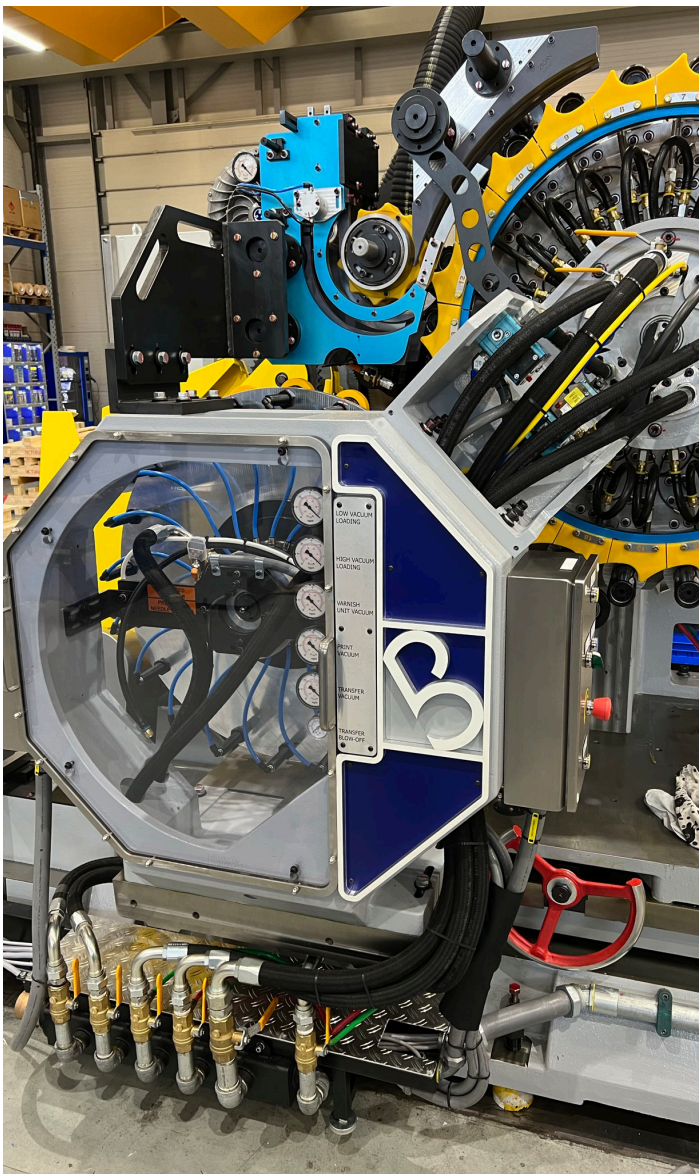
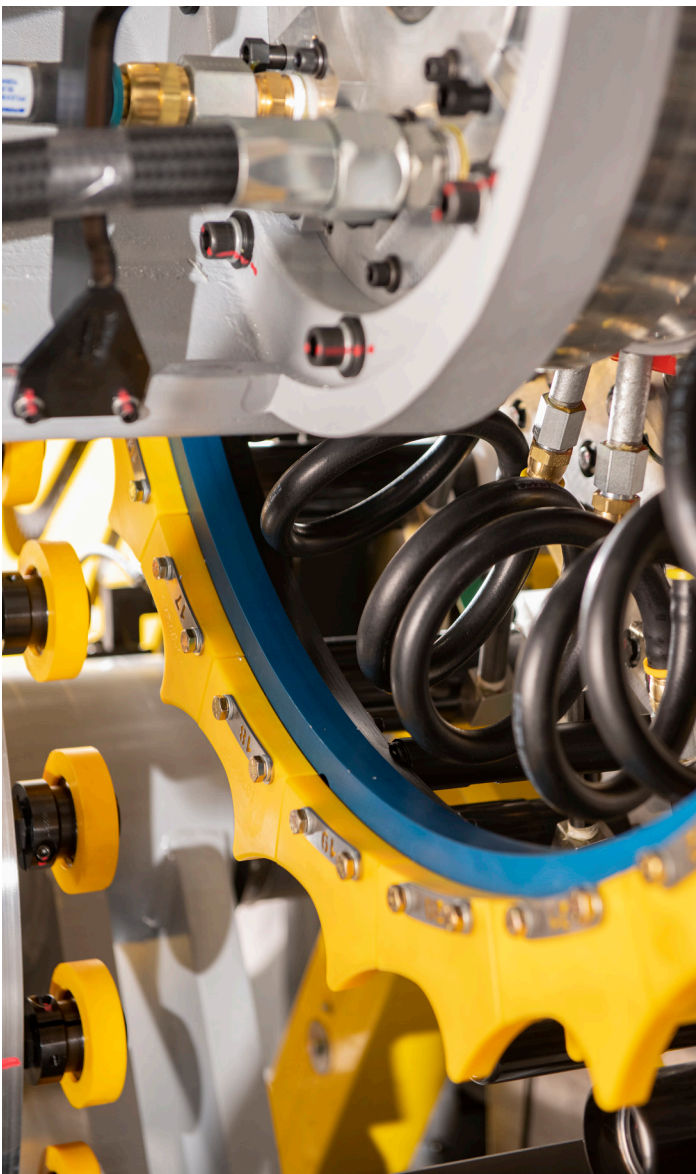
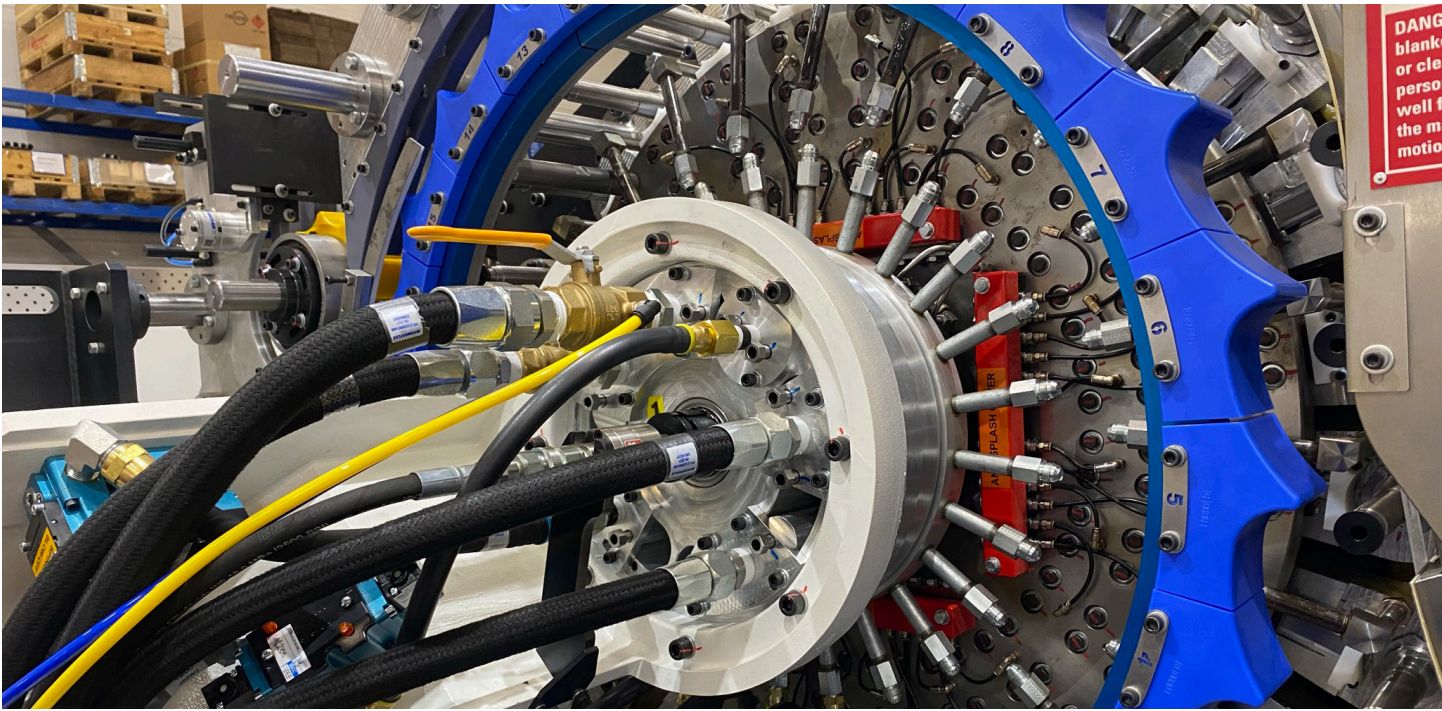
INKER UPGRADE

Belvac's latest Inker design eliminates the need for "double bumping," resulting in significant ink savings. Improved misting control reduces power consumption for the mist extractor, while an optimized ink spray direction ensures precise application.



PRINTING SLEEVE

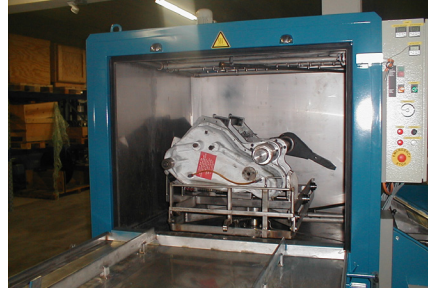
The Printing Sleeves enable label changes three times faster with consistent registration, reducing downtime by a third. This precision technology minimizes can spoilage while ensuring advanced high-definition print results. Eight-color label changes can be achieved with a 97% reduction in spoilage improving your machines production efficiency.





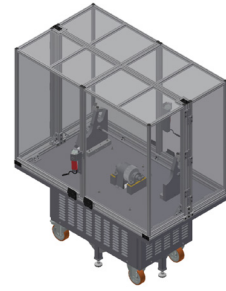
PIN TIP CLEANER

The Pin Tip Cleaner is an advanced stand-alone unit designed for seamless installation atop the Pin Oven. This unit ensures advanced cleaning of Pin Tips on the Pin Chain by eliminating ambient air contaminants prevalent in can plants. Post Pin Stripper, the chain runs through the Pin Tip Cleaner, where strategically arranged cloth elements provide comprehensive tip sanitation.



INKER WASHER

The Inker Washer is a stand-alone machine, designed for comprehensive cleaning of Inkers during the rebuilding process. Capable of accommodating an entire Inker, the unit ensures thorough cleansing, removing all ink and debris on the Inker. The waste material is segregated into dedicated tanks, facilitating easy disposal and maintaining a clean surrounding environment.



INKER TEST STAND

Belvac's High-Speed Inker Test Stand is engineered to operate at 2200 cpm, enabling comprehensive testing of newly built or rebuilt Inkers for any operational irregularities prior to installation on the decorator. This stand-alone unit allows customers to validate the performance of their Inkers at full operational speeds which reduces downtime and manpower requirements.



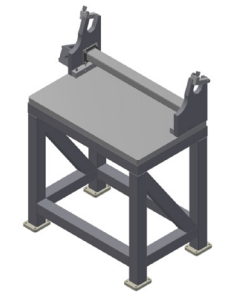
INKER LIFTING FIXTURE

Belvac's Inker Lifting Fixture minimizes downtime while streamlining the operation of mounting or removing Inkers on the Colorkit. This fixture incorporates a precise calculation of the Inkers' center of mass, ensuring effortless balance. The remarkably versatile, a single unit can handle the removal of all eight Inkers in various positions. The fixture can be operated by a single individual.



INKER BUILD STAND

The Inker Build and Test Stand is an essential tool within the Inker assembly line, for real-time testing and build verification. This sophisticated setup stand is equipped with a precisely engineered motor, allowing for seamless integration into the flow line. The unit's advanced capabilities enable technicians to test specific build sequences on-the-go, ensuring optimal performance and reliability.



TOE-IN SETUP TABLE

Belvac's Toe-In Setup Table is an indispensable asset for any Decorator maintenance facility. This precisely engineered table is securely anchored to the floor for stability while making toe-in adjustments. The table's surface, crafted from machined granite, is finished to exacting tolerances for a flat base. This feature is essential for accurate and consistent Inker setup.

AUXILIARY UNITS

Designed to Enhance Operational Efficiency

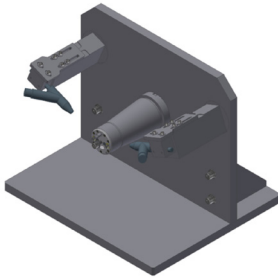


PLATE ALIGNMENT TOOL

The Plate Alignment Tool is designed to ensure precise plate alignment on the Plate Cylinder during label changes. This setup tool allows operators to achieve perfect squareness, significantly enhancing both efficiency and accuracy in the production process. This innovative technology, minimizes setup time and reduces material waste, helping optimize operational efficiency.



INKER TROLLEY

Belvac's Inker Trolley is engineered to ensure safe transport of Inkers between the build point and the decorator, enhancing operational efficiency and safety. This auxiliary unit is a testament to Belvac's commitment to innovation and excellence in manufacturing solutions. The Inker Trolley helps minimize the risk of damage to the Inker Units during transit.



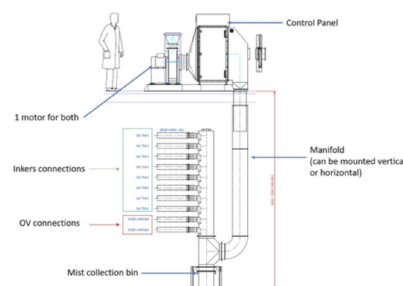
OV HYDRAULIC TROLLEY

Belvac's Over Varnish Hydraulic Trolley is designed to facilitate the seamless transport of the over varnish unit between the build area and the Decorator. The trolley's sophisticated hydraulics system ensures precise lifting and secure placement of the Over Varnish Unit onto the carriage during both installation and removal processes.



OV UNIT DAYTANK

The Over Varnish Daytank ensures optimal varnish performance with advanced viscosity and temperature regulation, precise level control, and an efficient stirrer. The system facilitates consistent varnish quality, enhancing operational efficiency and operational excellence. The temperature can be controlled via the HMI allowing for efficient operational controls.



MIST EXTRACTION UNIT

Belvac's Mist Extraction Unit is engineered to efficiently capture ink mist from all eight Inkers, as well as varnish mist from the OV Unit, ensuring a clean and safe operational environment. Leveraging advanced filtration technology, this unit enhances air quality and minimizes health risks, thereby promoting compliance with stringent industry standards.



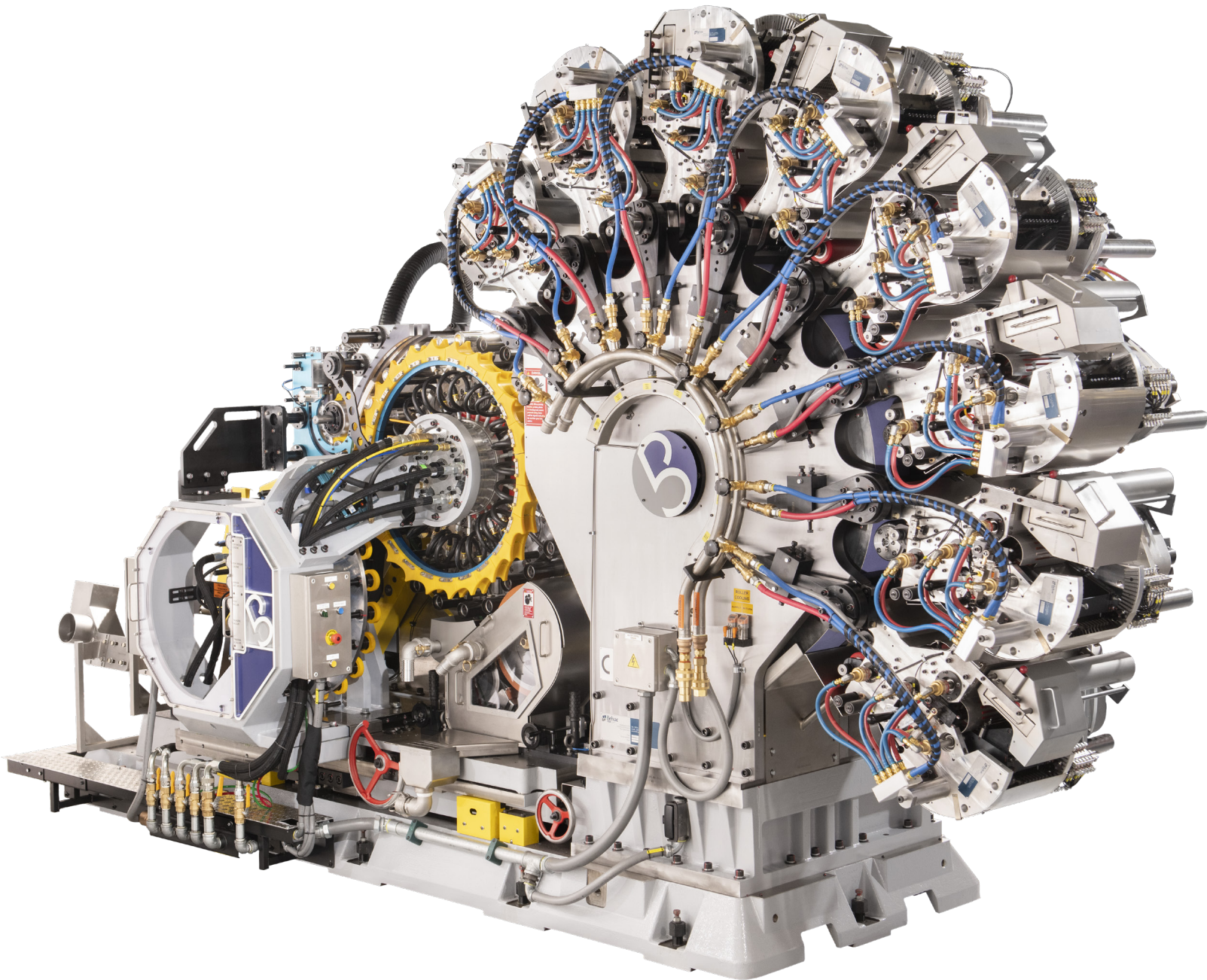
DECORATOR CHILLER UNIT

The advanced Decorator Chiller Unit, featuring a closed-loop system, is engineered to supply cold water to Decorators, effectively cooling inkers and gearboxes. This state-of-the-art unit receives hot water back from the Decorator, efficiently cooling it for continuous supply. By maintaining optimal temperatures, the Chiller Unit ensures enhanced performance and longevity of the Decorating equipment.

SERVICES DESIGNED FOR YOU

SUPPORT, TRAINING, AND SPARES

Decorator and Inker Services



Service Support Available Globally

Belvac supports customers worldwide with a comprehensive range of services designed to maintain uninterrupted and efficient Decorating operations throughout the entire service life of equipment. Belvac's dedication to excellence is evident not only in an extensive offering of original spare parts and retrofits but also within a knowledgeable Service team who delivers expert problem-solving solutions. Whether you are in need of maintenance support, spare parts, machine rebuilds, or kits & upgrades, Belvac's global reach ensures assistance and support are available whenever and wherever needed.

SERVICE SOLUTIONS

- **Detailed Evaluation by Qualified Technicians:** Belvac's technicians identify maintenance deficits, wear, or potential damage early.
- **Early Detection of Maintenance Deficits:** Prevent unplanned downtime and extend equipment lifespan by addressing issues early.
- **Regular Maintenance:** Regular assessments ensure optimal machinery efficiency and minimal interruptions.
- **Problem-Solving Solutions:** Immediate, effective solutions to operational challenges for seamless production.
- **Rebuild and Retrofits:** Whether you are looking to rebuild an entire Decorator or an Inker, services to support your specific needs are available on-site or at select Belvac locations.

TRAINING PROGRAMS

- **Vital for Machinery and Operational Success:** Proper training is crucial for effective use of Belvac machinery.
- **Customized Training Programs:** Tailored training available on-site or at Belvac locations.
- **Hands-On and Personalized Training:** Blend of classroom and hands-on training with small class sizes for extensive practical experience.

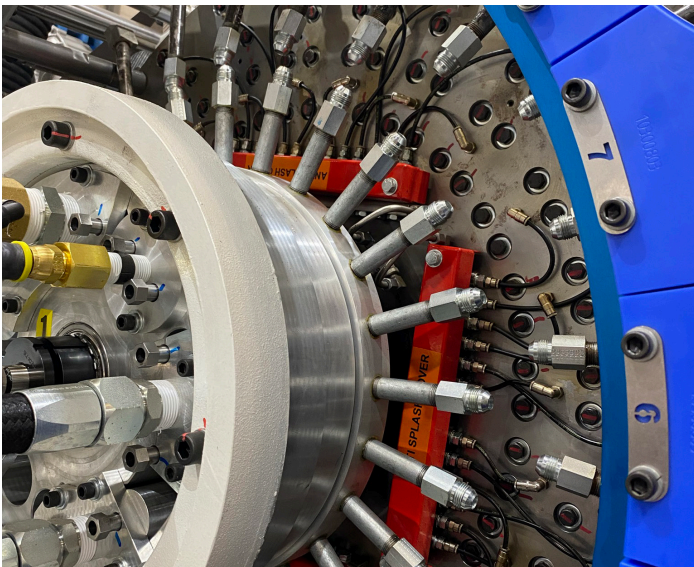
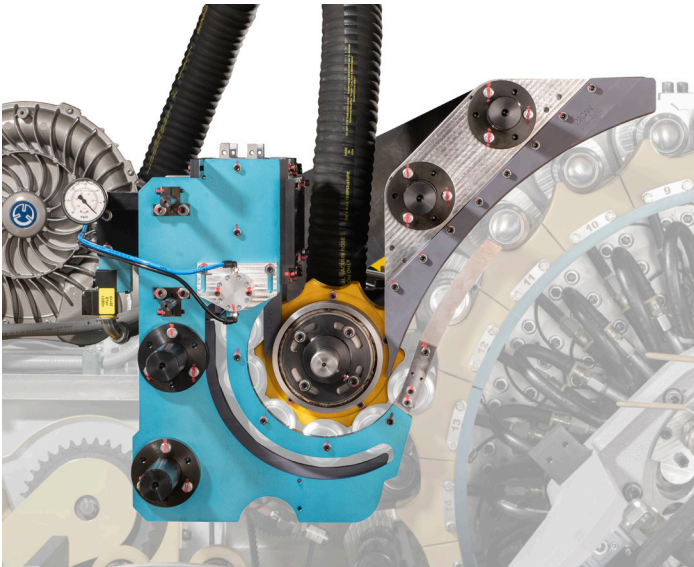
SPARE PARTS AND KITS

- **Manufactured to the Highest Quality Standards:** Spare parts meet stringent quality criteria for superior performance and longevity.
- **Ensure Reliability:** Original parts maintain equipment reliability and operational efficiency.
- **Safeguard Value:** Protect equipment value and ensure a sound return on investment with our high-quality parts.
- **Enhance Your Efficiencies:** Belvac offers a large variety of Kits & Upgrades for Rutherford style Decorators.



Interested in learning more about Belvac's Service, Spares and Kits & Upgrades offerings?

Email us at sales@belvac.com to speak about your equipment today.



TECHNICAL DATA

MACHINE DIMENSIONS

Length	13.7	feet	4.14	meter
Width	4.8	feet	1.43	meter
Height	10.9	feet	3.27	meter
Weight	70,547.9	pounds	32,000	kilograms
Foundation	Special Requirements			

PRODUCTION SPEED

	2,200 CPM			
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CONTAINER SPECIFICATIONS

Can Diameter Range	202	diameter	305	diameter
	52	mm	83.8	mm
Can Height Range	3.5	in	10	in
	89	mm	254	mm
Applicable Materials	Aluminum, Steel			

UTILITY REQUIREMENTS

Air	3100	LPM	6	bar
Vacuum	2100	LPM	500	mm Hg
Exhaust Requirements	6550	m ³ /h	250	mmWg
Electrical	460/380 VAC 50/60 Hz 255 amps			
Main Drive Motor	90 kW			
Over Varnish Motor	9.2 kW			

ASSEMBLY SPECIFICATIONS

Spindle Disc	8CD7-A-23 Style with Linear Slide Arm Assemblies			
Infeed Configuration	CB4-A-301 Style Cantilevered Infeed			
Print Section Assembly	8 Color Print Section			
	7.50 inch Label as Standard (8.25 inch Available)			
Over Varnish (OV) Unit	8CD6-A-34-1 Style Reverse OV Unit			
	75 mm diameter Gravure Shaft Standard			
Transfer Assembly	20 Station Flat Disk			
	Stationary or Adjustable Transfer and Stationary or Rotating Bumpers			
Mandrel Break	CD-A-669-WB Style			
Inker Assembly	8RS7-A-90 Style			
	Urethane or Nitrile Rollers			
	Parallel Water Flow Transfer Rollers or Parallel Rollers with iFlow			

Ready to Learn More About Belvac's Decorating Systems?

Contact our team today at sales@belvac.com to discover how Belvac can help enhance your Decorating operations.

