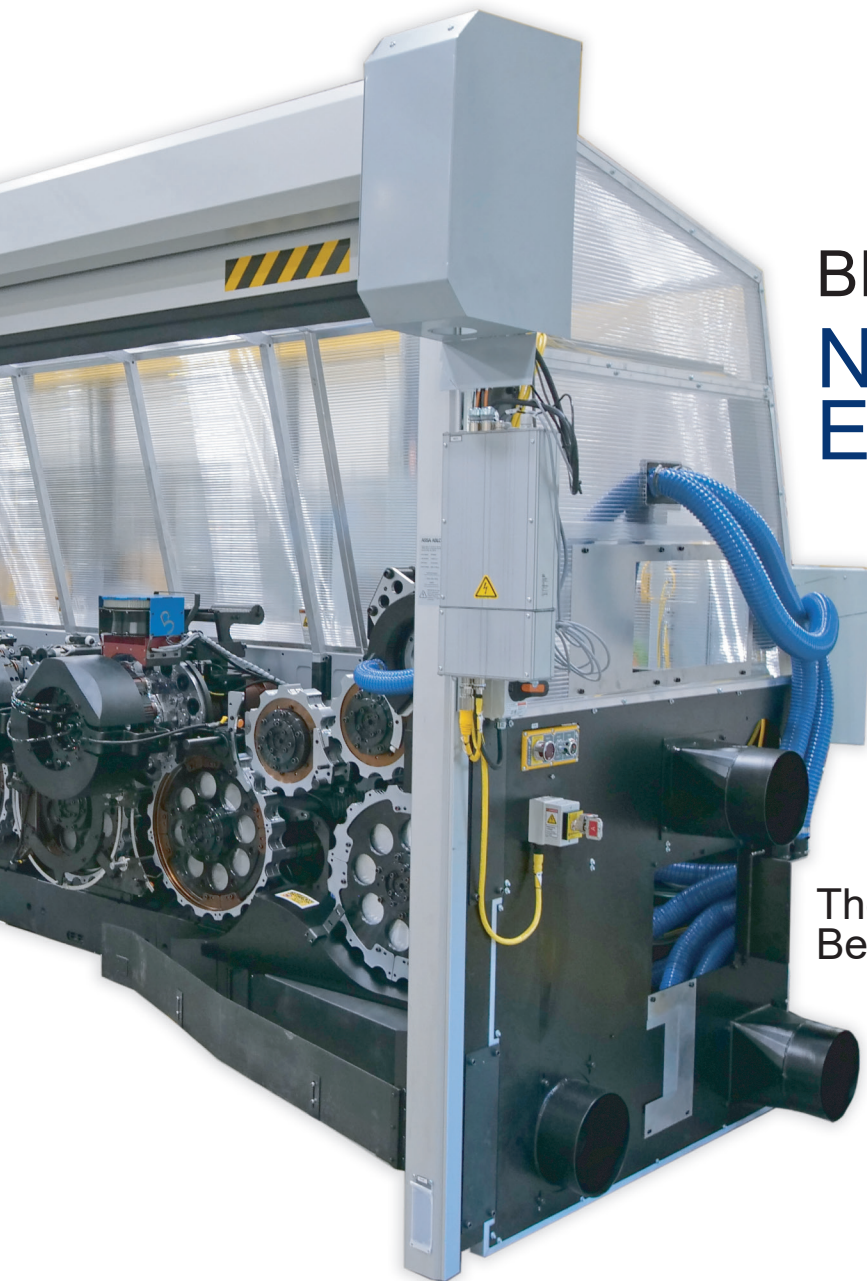




BELVAC Necking Equipment

The Servo
Belvac Necker

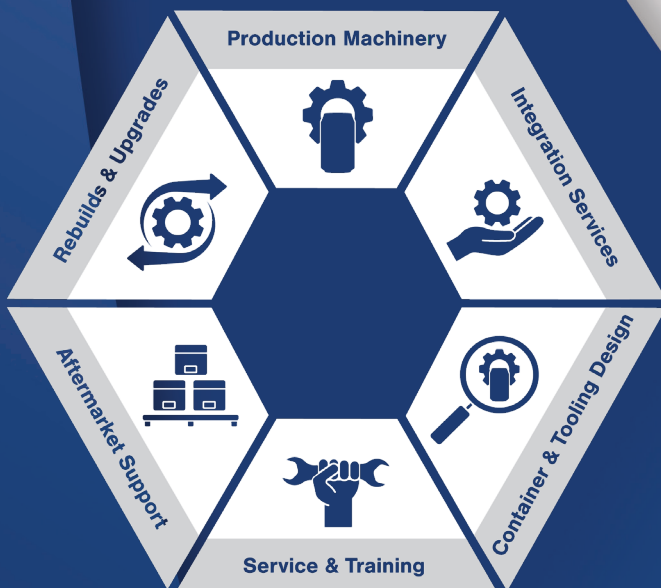


PROVEN TECHNOLOGY *Sustainable Solutions* | FOR OVER 60 years

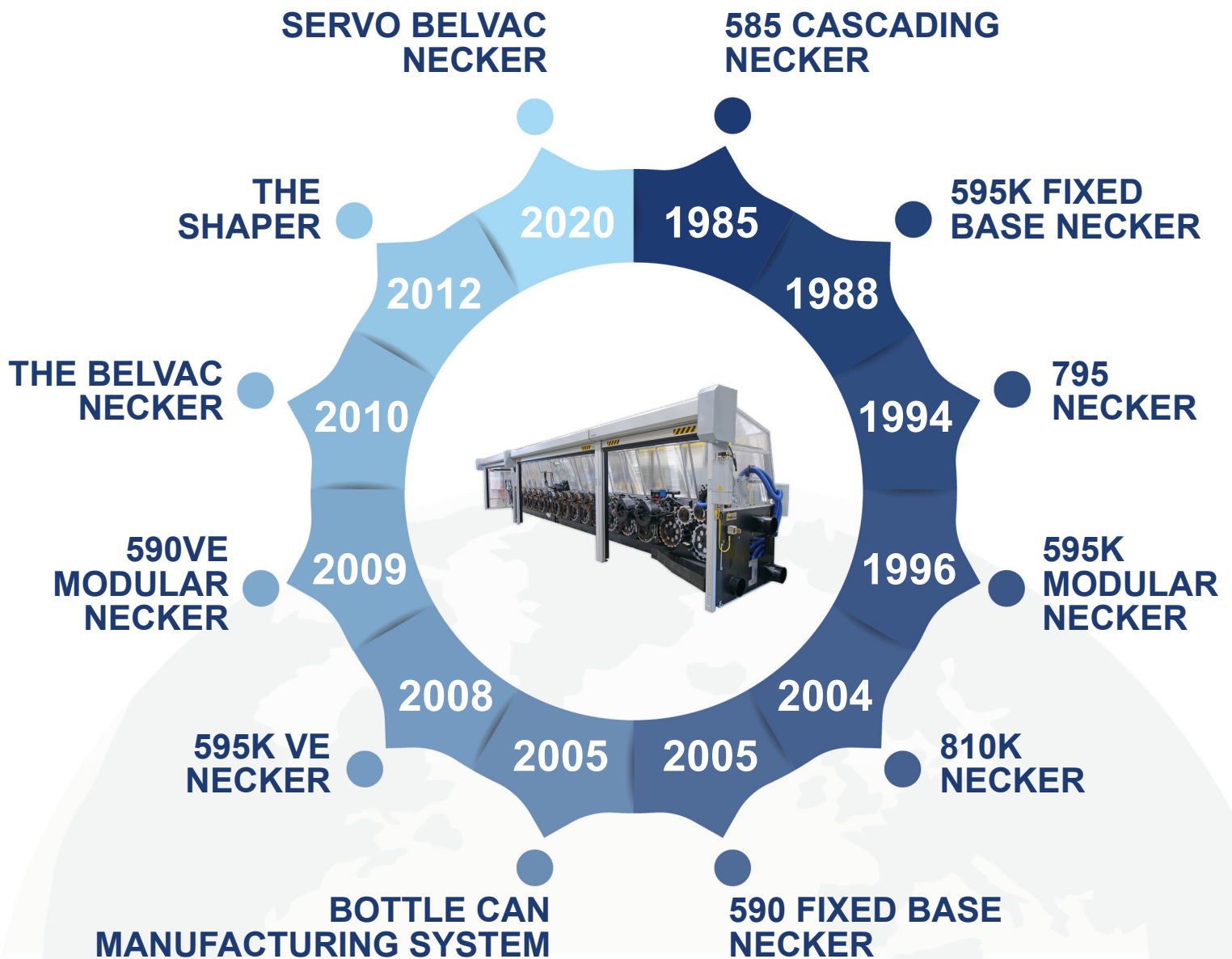
REDEFINING **WORLDWIDE** **PRODUCTION SPEEDS**

Belvac's Necking systems have a distinguished legacy in the metal packaging industry, consistently setting and exceeding new production speeds worldwide. For more than 60 years, Belvac has been dedicated to crafting and refining machinery designs that ensure operational excellence.

The foundational roots of Belvac, particularly Necking technology, trace back to early industry innovations. From the initial concept of a Horizontal Necking System to more current models, much has evolved, yet our unwavering commitment to delivering exceptional, durable designs remains steadfast, aimed at maximizing your operational throughput.



A HISTORY OF INNOVATION



INTEGRATED FEATURES

Pocket-to-Pocket Integrity

All Belvac Neckers demonstrate pocket-to-pocket integrity meaning that each turret transfers the can to the same working pocket. This innovative feature makes it easier to find the root cause of spoilage.

Fully Piloted Tooling

By fully supporting can between the outer diameter and the inner part of the die throat, Belvac reduces the required number of necking stages while maintaining a more uniform neck.

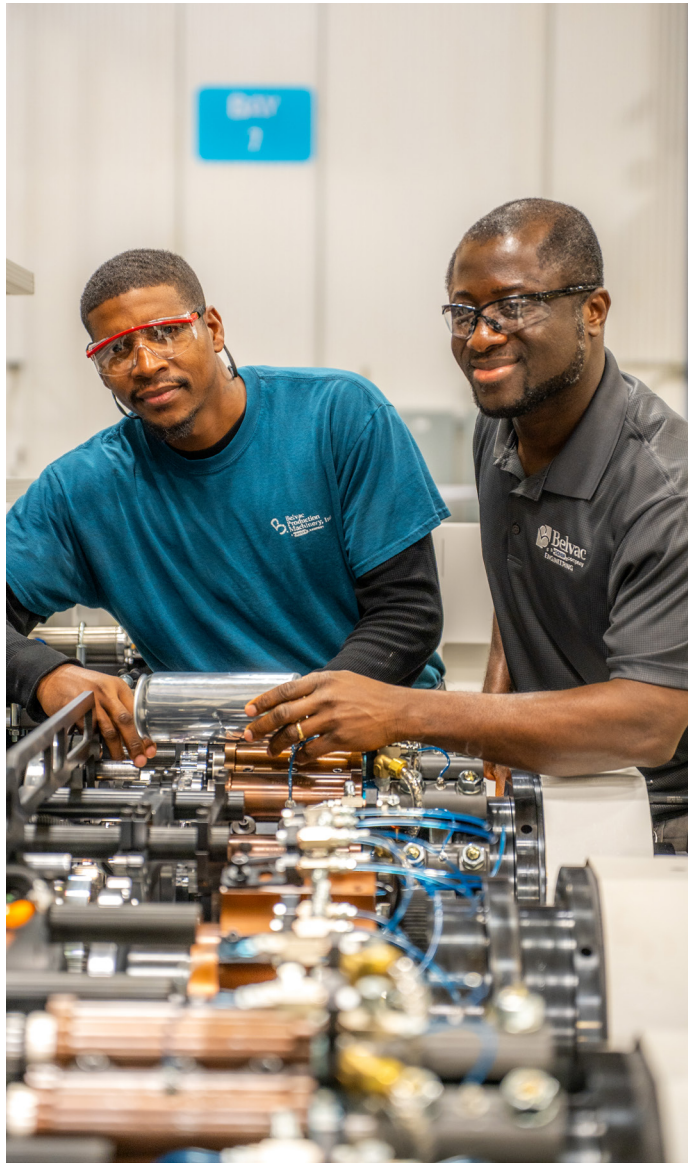
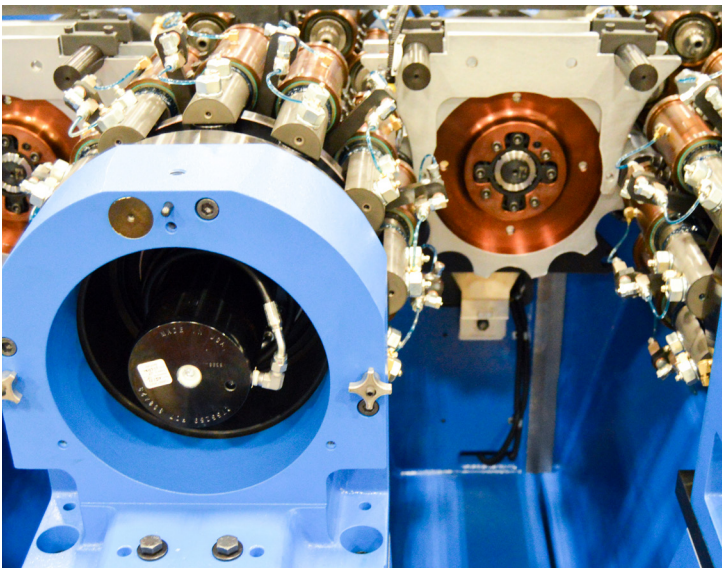
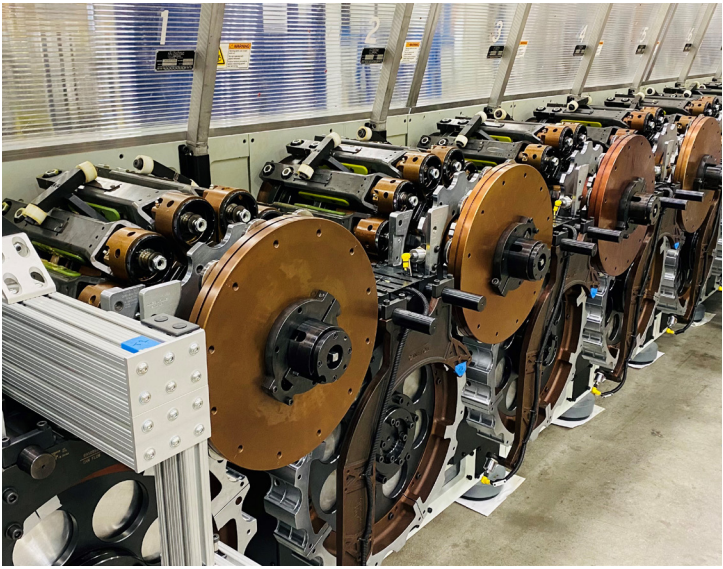
Reformer

Bottom reforming significantly enhances the dome reversal strength. This low maintenance design ensures that despite material thickness reduction, Belvac cans maintain their integrity under high pressure.

Inspection Systems

Integrated inspection systems help ensure maximized can quality before discharging from the Necker. Innovative features like Belvac's Intelligent Manufacturing System further enhance quality analysis capabilities.

	595VE	TBN	SBN	810K
CAN SIZE RANGE	202 (52.8 mm) to 211 (66.2 mm)	202 (52.8 mm) to 211 (66.2 mm)	202 (52.8 mm) to 211 (66.2 mm)	211 (66.2mm) to 307 (83.8mm)
RATED SPEED	3,000 CPM	3,600 CPM	3,600 CPM	1,800 CPM
CAN EVACUATION SYSTEM		✓	✓	
VISION SYSTEMS	✓	✓	✓	✓
INTERMEDIATE INFEED	✓	✓	✓	✓
CAN NECK LUBRICATOR	✓	✓	✓	✓
IMS HS3	✓	✓	✓	
QUICK-CHANGE	✓	✓	✓	✓
GUARDING STYLE	RAVE	RAVE	RAVE	RAVE



Necking Systems

595 VE NECKER

The 595VE Series is Engineered for Longevity and Reliability With a Focus on Efficiency

The 595VE Necker series is a robust modular machine. With features such as a solid ram design contained within a removable assembly for workshop rebuild, it's designed for longevity and reliability while delivering a consistent production quality can. The 595VE Necker is available in two models, the K and SK, at 2400 and 3000 CPM respectively.

The 595 Necker series have been valued engineered with a focus on efficiency and cost effectiveness. The turrets have been standardized, making machine operations streamlined by reducing, combining, and simplifying components. This standardization reduces the time required for can size dependent change overs while giving operators more flexibility by using common hand tools when making machine adjustments.

The 595VE SK model is fitted with spring-loaded cam followers, which facilitates a significant reduction in size changeover times.



This feature along with higher drive power and better lubrication increased the rated speed, to achieve 3000 CPM.

Belvac's Intermediate Infeed was designed to increase flexibility and efficiency for the customer while saving equipment cost and floor space requirements. The addition of an Intermediate Infeed allows cans to be fed into the machine "downstream" of the primary infeed.

Secondary can sizes can be run while requiring fewer necking stages than the primary without utilizing idle through kits on turrets prior to the Intermediate Infeed. By shutting operation off on the front half of the machine, operators save on costly utilities.

Similar to other Belvac Necking machines flanging, reforming, reprofiling, light tester, and inspection modules are available on the 595VE series.



TWO MODELS

- "K" Style Continuously Operating up to 2400 CPM
- "SK" Style Continuously Operating up to 3000 CPM

ENHANCED EFFICIENCY

- Quick-change Adjustments for Height and Diameter
- Advanced Face Seal Manifold
- Solid Ram Design within a Removable Assembly

LOW MAINTENANCE

- Standardized Turrets
- Flexibility by Using Common Hand Tools During Adjustments
- Hard Chrome-plated Can Guides and Starwheels
- Modular Design

SCAN ME



595VE TECHNICAL DATA

MACHINE DIMENSIONS PER MODULE

Length	27	in	685.8	mm
Width	106	in	2692.4	mm
Height	99	in	2514.6	mm

PRODUCTION SPEED

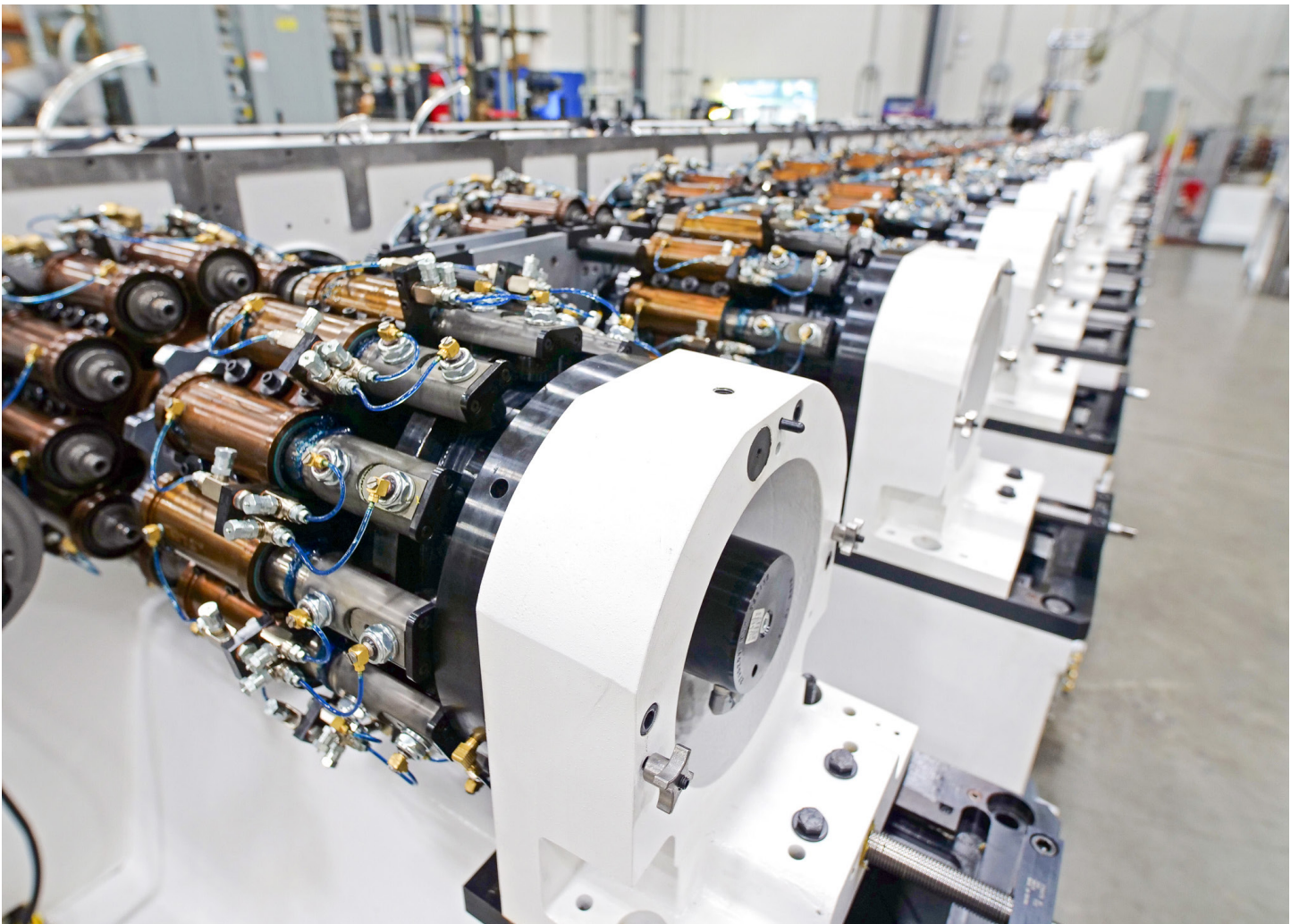
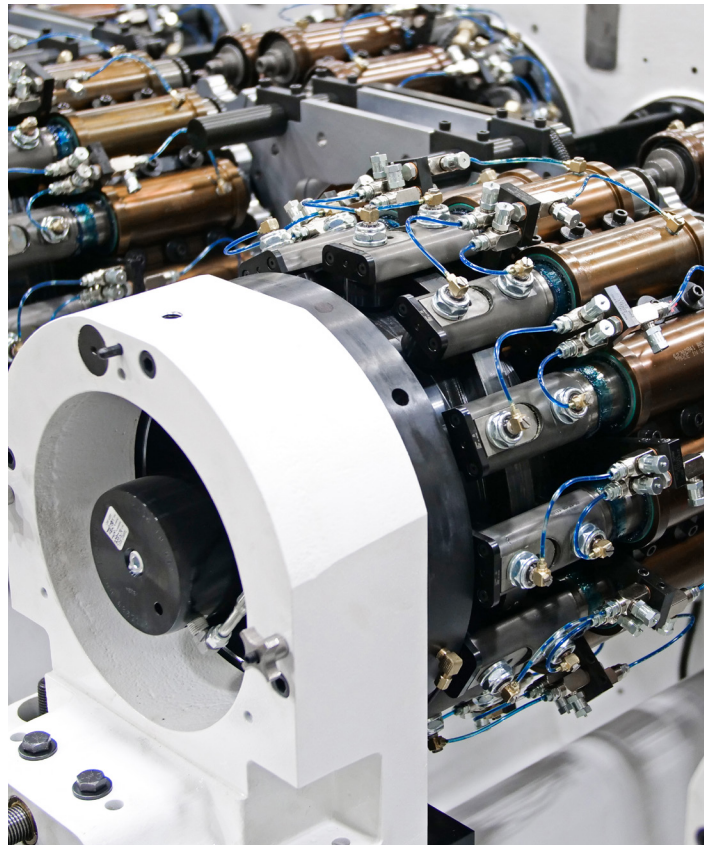
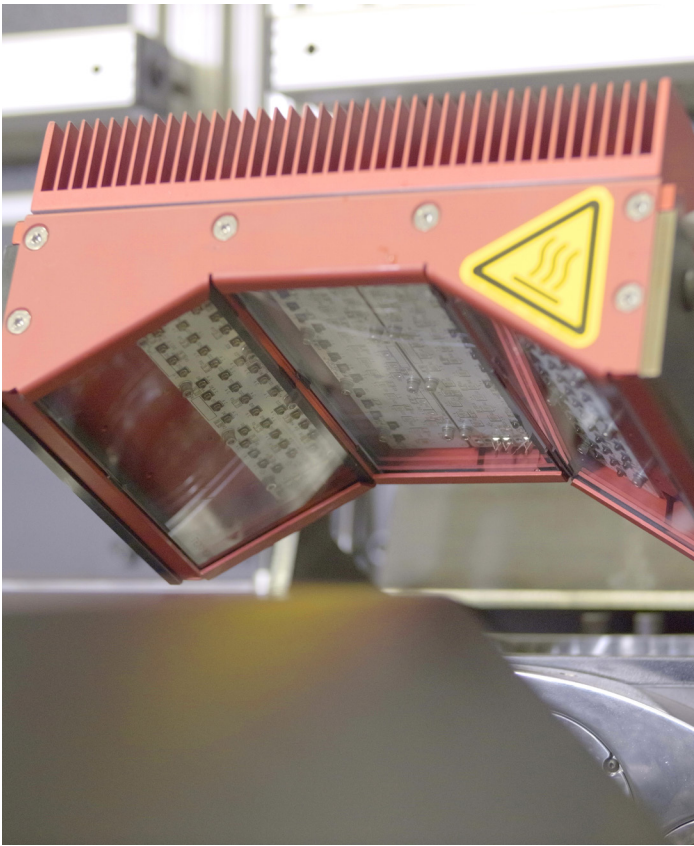
"K" Style	2,400 CPM	200 RPM Max Turret Speed
"SK" Style	3,000 CPM	250 RPM Max Turret Speed

CONTAINER SPECIFICATIONS

Can Diameter Range	202	diameter	211	diameter
	52.8	mm	66.2	mm
Can Height Range	3.30	in	7.51	in
	83.8	mm	190.8	mm
Neck Length Range	0.23	in	0.75	in
	5.8	mm	9.1	mm
Neck Shoulder	0.81	in	20.6	mm
Neck Size Range	200 to 209			
Applicable Materials	Aluminum, Steel			

ASSEMBLY SPECIFICATIONS

Working/ Transfer Pockets	12/12			
Maximum Cam Stroke Push Side	1.75	in	44.5	mm
Maximum Cam Stroke Knock-out Side	0.917	in	23.3	mm
Cam Working Arc	180 Degrees			
Ram Assembly Style	Cast iron Bushing with Dual Cam Followers			
Main Shaft Assembly Style	Horizontal			
Main Drive Motor and Gearbox	Single/ Multiple Drive and Gearbox (Configuration Dependent)			
Drive System	Traditional Motor with Gearbox			
Waxer	Optional, Can Neck Lubricator (Hot Wax or Mineral Oil)			



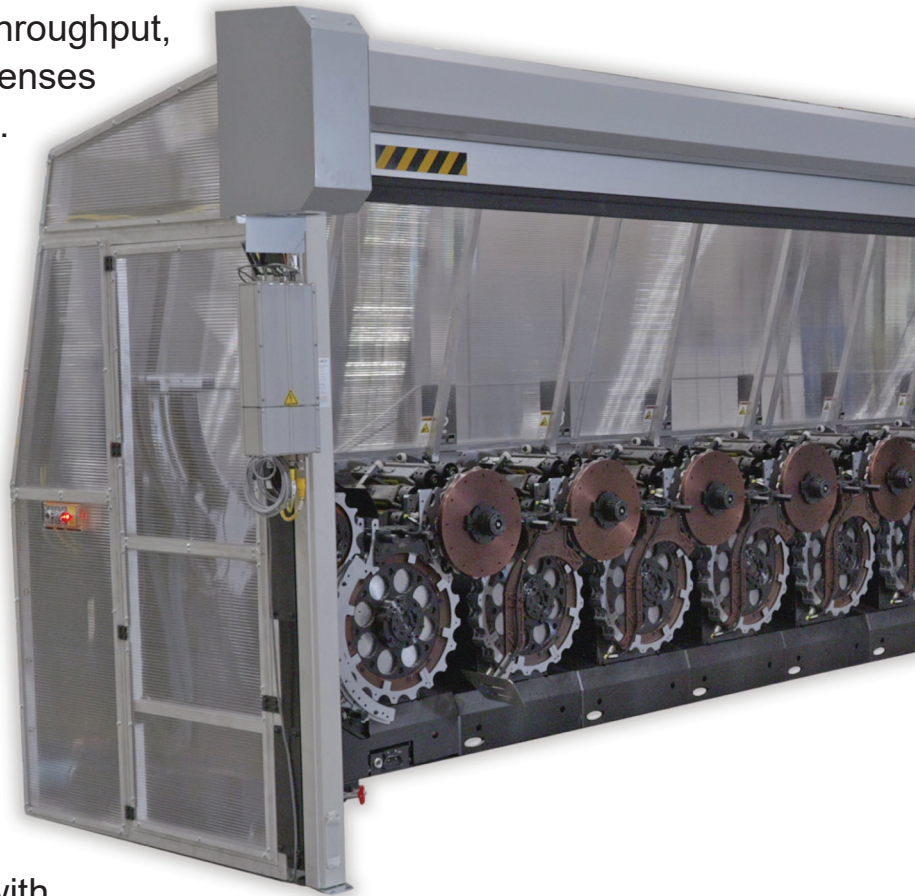
Necking Systems

THE BELVAC NECKER

*Setting a New Standard of Speed While
Optimizing Container Quality,
Production Throughput, and Return on
Investment*

The Belvac Necker marks a new generation in Belvac Necking systems. Designed to be the fastest necking system on the market, The Belvac Necker optimizes production throughput, container quality, and operational expenses maximizing your return on investment. The modular cantilevered design provides unprecedented ease of access which reduces downtime during can jam situations and part change overs.

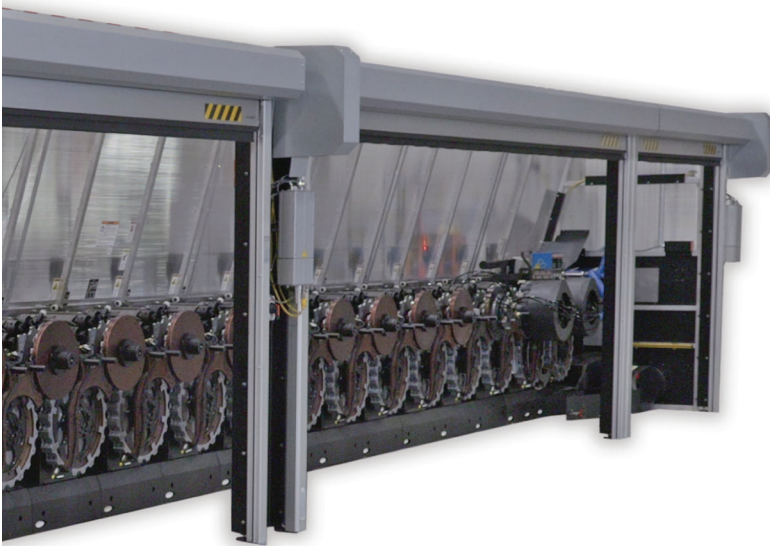
The Belvac Necker set a new standard for speed reaching 3600 cpm, while still retaining can quality. This is achieved through a precise design that incorporates piloted tooling and a larger working arc. The revolutionary cantilevered design of The Belvac Necker has a common modular base so any module can host the drive motor gearbox. The Belvac Necker utilizes a main motor with an integrated gearbox.



This eliminates the previous pulley belt system which reduces overall wear parts and is optimized for a wide range of speeds.

The integral Can Neck Lubrication infeed applies a consistent strip of hot wax or mineral oil on the open end of the can, which occurs without touching the wick. This design removes roller assemblies and the gear drive box resulting in reduced parts, and less maintenance.

The Belvac Necker comes with an improved guarding system to facilitate rapid access to the working side of the machine by utilizing high speed industrial doors with clear panels for visual viewing of the machine in operation. The dropped can evacuation system is also available to allow for improved efficiency by eliminating the need to stop the machine to clear out can accumulation.



HIGH SPEED OPERATIONS

- Continuously Operating up to 3600 CPM
- Dual Ram Assemblies with Linear Slides and Bearings

SUPERIOR DESIGN

- Internal Air Passages
- Cantilevered Design for ease of Access
- Common Modular Base Design so any Module Can Host the Drive Motor and Gearbox

LOW MAINTENANCE

- Significant Grease Reduction
- Multi-Starwheel Infeed with Pneumatic Can Stop
- Quick-change Height and Diameter
- Can Neck Lubricator

SCAN ME



TBN TECHNICAL DATA

MACHINE DIMENSIONS PER MODULE

Length	29.23	in	742	mm
Width	101.95	in	2590	mm
Height	123.37	in	3134	mm

PRODUCTION SPEED

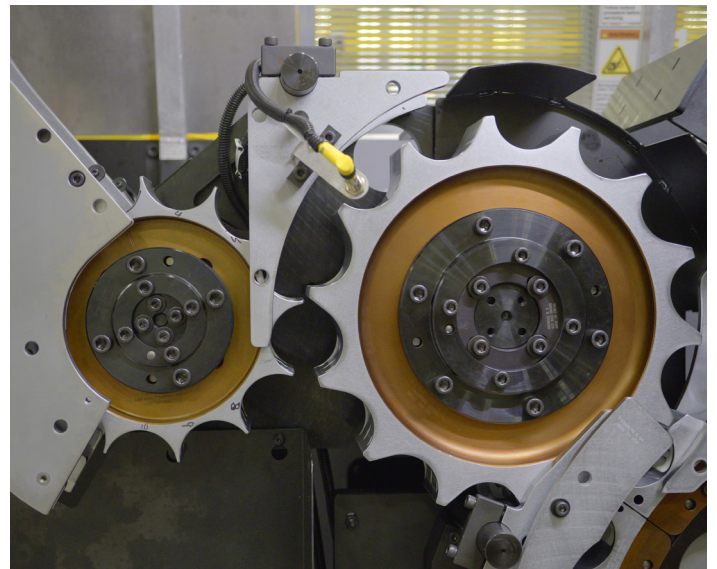
Rated Speed	3,600 CPM
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CONTAINER SPECIFICATIONS

Can Diameter Range	202	diameter	211	diameter
	52.8	mm	66.2	mm
Can Height Range	3.30	in	7.51	in
	83.8	mm	190.8	mm
Neck Length Range	0.23	in	0.75	in
	5.8	mm	9.1	mm
Neck Shoulder	0.81	in	20.6	mm
Neck Size Range	200 to 209			
Applicable Materials	Aluminum, Steel			

ASSEMBLY SPECIFICATIONS

Working/ Transfer Pockets	12/20			
Maximum Cam Stroke Push Side	1.98	in	50.2	mm
Maximum Cam Stroke Knock-out Side	1.26	in	32.0	mm
Cam Working Arc	270 Degrees			
Ram Assembly Style	Precision Linear Bearings with Dual Cam Followers			
Main Shaft Assembly Style	Horizontal, Cantilevered			
Main Drive Motor and Gearbox	Single/ Multiple SEW Drive; Configuration Dependent			
Drive System	Spur Gear, Inline Steel Oil Bath Lubed			
Waxer System	Optional, Can Neck Lubricator (Hot Wax or Mineral Oil)			



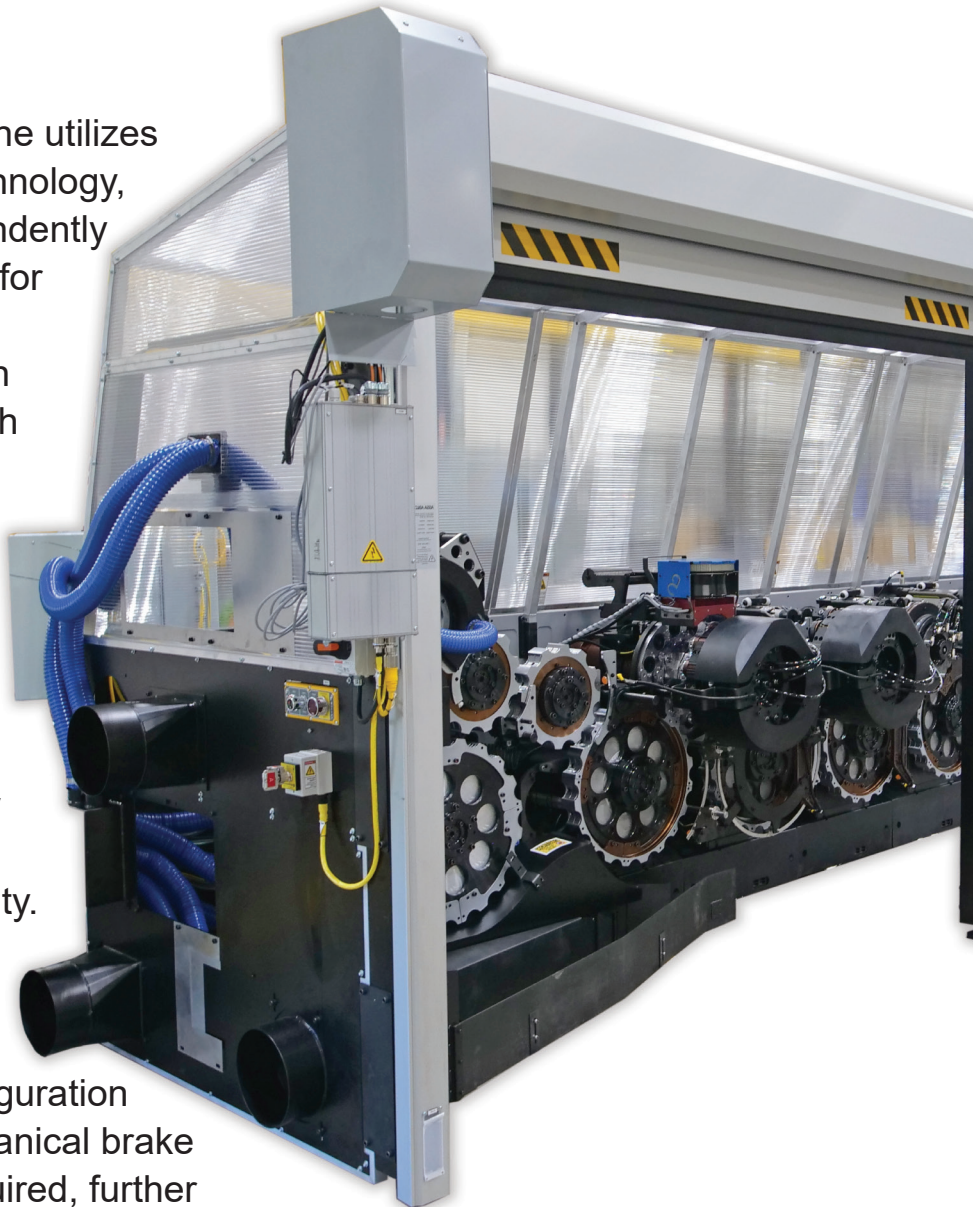
Necking Systems

SERVO BELVAC NECKER

Utilizing Advanced Servo Motor Control, the SBN Offers the Highest Level of Flexibility While Reducing Machine Downtime

The Servo Belvac Necker machine utilizes advanced servo motor control technology, allowing for every turret to independently rotate. This design aspect is ideal for quicker tooling change overs and resolving can jam situations, which significantly reduces downtime with faster synchronization and system resets. The independent motor controls along with the common base platform allow for increased flexibility regarding machine configurations and future can size upgrades.

The Servo machine continuously operates at 3600 CPM while sustaining pocket-to-pocket integrity. When operating at this rated speed, the electrical consumption is up to 15% lower than the standard motor and gearbox configuration on a traditional Necker. The mechanical brake system and gear train are not required, further simplifying maintenance requirements.



The turret side of the Servo Belvac Necker maintains the commonality of the previous design which allows for interchangeable components between the two models. All the features of The Belvac Necker are also available on the Servo Model. Similarly, to The Belvac Necker, the Servo design can be equipped with modules to perform other processing functions including Intermediate Infeeds, Flanging, Reforming, and Inspection systems.

The Belvac Necker is equipped with an improved guarding system to facilitate rapid access to the working side of the machine by utilizing high speed industrial doors with clear panels for visual viewing of the machine in operation. The dropped can evacuation system is also available to allow for improved efficiency by eliminating the need to stop the machine to clear out can accumulation.



SCAN ME



HIGH SPEED OPERATIONS

- Continuously Operating up to 3600 CPM
- Independent Motor Control
- Higher Output with Lower Maintenance Costs
- Improved Machinery Uptime

SERVO MOTOR CONTROL

- Free Rotation of the Turrets Allowing Operators to Easily Clear Jams
- Automatic Machine Re-timing via the HMI
- Up to 15% Reduction in Electrical Consumption

SUPERIOR DESIGN

- Common Base Platform
- High Access RAVE Guarding
- Quick-change Height and Diameter Adjustment
- Maintains Commonality with TBN for Spare Parts

SBN TECHNICAL DATA

MACHINE DIMENSIONS PER MODULE

Length	29.2	in	742	mm
Width	113.4	in	2881	mm
Height	123.4	in	3134	mm

PRODUCTION SPEED

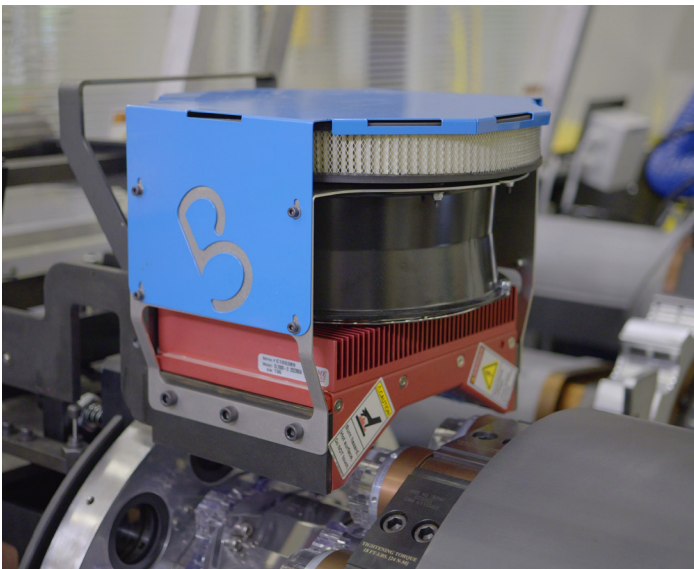
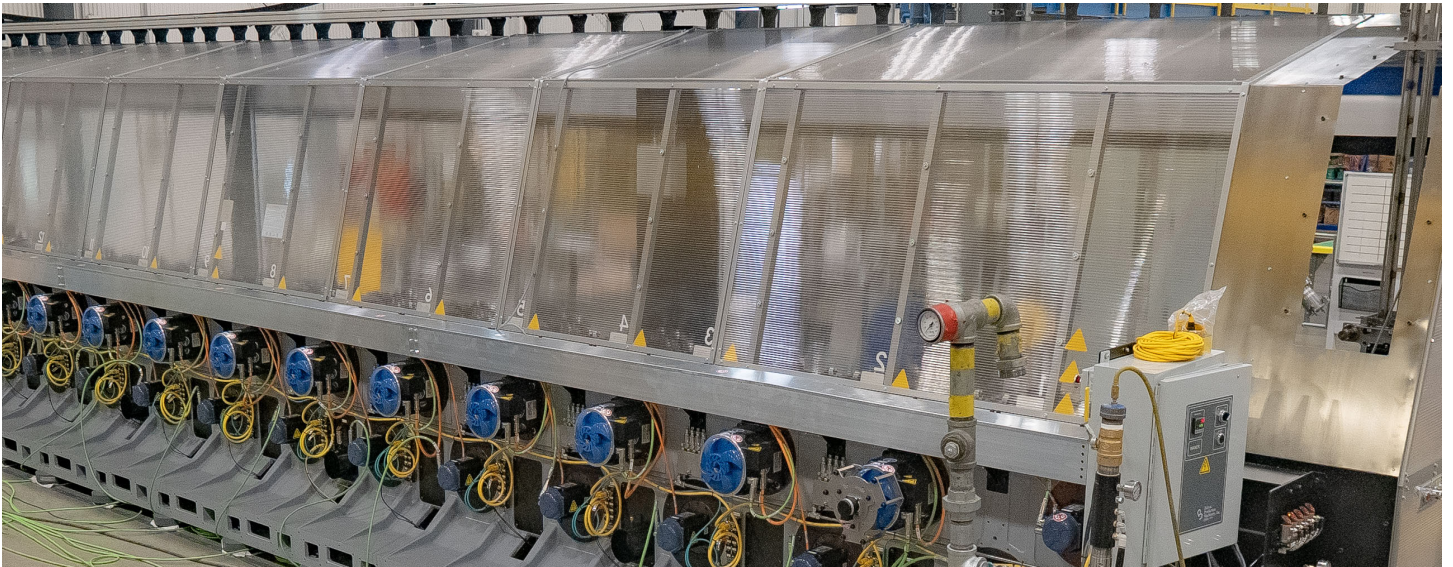
Rated Speed	3,600 CPM
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CONTAINER SPECIFICATIONS

Can Diameter Range	202	diameter	211	diameter
	52.8	mm	66.2	mm
Can Height Range	3.30	in	7.51	in
	83.8	mm	190.8	mm
Neck Length Range	0.23	in	0.75	in
	5.8	mm	9.1	mm
Neck Shoulder	0.81	in	20.6	mm
Neck Size Range	200 to 209			
Applicable Materials	Aluminum, Steel			

ASSEMBLY SPECIFICATIONS

Working/ Transfer Pockets	12/20			
Maximum Cam Stroke Push Side	1.98	in	50.2	mm
Maximum Cam Stroke Knock-out Side	1.26	in	23.3	mm
Cam Working Arc	270 Degrees			
Ram Assembly Style	Precision Linear Bearings with Dual Cam Followers			
Main Shaft Assembly Style	Horizontal, Cantilevered			
Drive System	Cartridge Direct Drive Rotary Servo Motors			
Waxer System	Optional, Can Neck Lubricator (Hot Wax or Mineral Oil)			



Necking Systems

THE 810K NECKER

Necking Large Diameter Cans, the 810K Necker Seamlessly Blends Belvac's Precision Engineering into a Large Can Platform

The 810K Necker, an unparalleled innovation in the industry, designed to neck large diameter cans with exceptional precision. Engineered to accommodate an extensive range of can body sizes, from 211 to 307 diameters, and neck sizes from 200 to 209 diameters, with heights spanning from 3.50" to 8.31", the 810K Necker rounds out Belvac's versatile necking capabilities. The Neckers modular design facilitates seamless expansion, allowing can makers to efficiently adapt to varying production needs. This flexibility coupled with the machine's impressive operational speed, the 810K is capable of continuously operating up to 1800 CPM.

The 810K's solid ram design is contained within a removable assembly for easy workshop rebuilds delivering longevity and reliability, ensuring consistent production quality over time. The 810K has been engineered with a focus on efficiency and cost-effectiveness.



With features such as standardized turrets, machine operations have been streamlined, reducing, combining, and simplifying components, thus minimizing the time required for can-size dependent changeovers. Operators benefit from increased flexibility, utilizing common hand tools for machine adjustments, further enhancing operational efficiency.

The 810K Necker optimizes production throughput and container quality while significantly reducing downtime for maintenance, thereby maximizing return on investment.



SCAN ME



An integrated Can Neck Lubricator (CNL) infeed applies a consistent strip of hot wax or mineral oil the open end of the can without contacting the wick. Similar to other Belvac Necking machines, the 810K offers flanging, reforming, reprofiling, light tester, and inspection modules. Additionally, the 810K features an improved guarding system with high-speed industrial doors and clear panels for visual monitoring, facilitating rapid access to the working side of the machine.

FLEXIBLE FEATURES

- Continuously Operating up to 1800 CPM
- Necks Can Body Sizes from 211 to 307 and Neck Diameters from 206 to 300
- High Access RAVE Guarding

REDUCED DOWNTIME

- Quick-change Height and Diameter Adjustments
- Automatic Lubrication
- Solid Ram Design within a Removable Assembly

SUPERIOR DESIGN

- Advanced Face Seal Manifold
- Flexibility by Using Common Hand Tools During Adjustments
- Hard Chrome-plated Can Guides and Starwheels

810K TECHNICAL DATA

MACHINE DIMENSIONS PER MODULE

Length	31	in	787.4	mm
Width	115	in	2921	mm
Height	107	in	2718	mm

PRODUCTION SPEED

Rated Speed	1,800 CPM
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CONTAINER SPECIFICATIONS

Can Diameter Range	211	diameter	307	diameter
	66.2	mm	83.8	mm
Can Height Range	3.5	in	8.3	in
	89	mm	211	mm
Neck Length Range	0.23	in	1.06	in
	5.8	mm	26.9	mm
Neck Shoulder	1.2	in	30	mm
Neck Size Range	200 to 209			
Applicable Materials	Aluminum, Steel			

ASSEMBLY SPECIFICATIONS

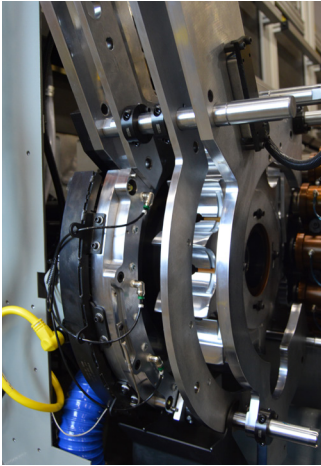
Working/ Transfer Pockets	10/10			
Maximum Cam Stroke Push Side	2.5	in	63.5	mm
Maximum Cam Stroke Knock-out Side	1.7	in	42.7	mm
Cam Working Arc	180 Degrees			
Ram Assembly Style	Cast Iron Bushings with Dual Cam Followers			
Main Shaft Assembly Style	Horizontal			
Main Drive Motor and Gearbox	Single/ Multiple Drive and Gearbox; Configuration Dependent			
Drive System	Traditional Motor with Gearbox			
Waxer System	Optional, Can Neck Lubricator (Hot Wax or Mineral Oil)			



KITS & UPGRADES

Designed for Belvac Neckers

MAXIMIZE YOUR NECKING OPERATIONS



CAN NECK LUBRICATOR

The Can Neck Lubricator an enhanced design featuring a quick-change wick which applies a consistent strip of hot wax or oil to the open end of the can. The can does not directly contact the 3-piece wick during this process. Instead, the lubricant pools on the wick's surface as the can fully rotates over the wick. A precise application of lubrication is achieved by spinning the can on a cushion of air. The "no contact" feature extends the life of the wicks and reduces the need for frequent wick replacements.



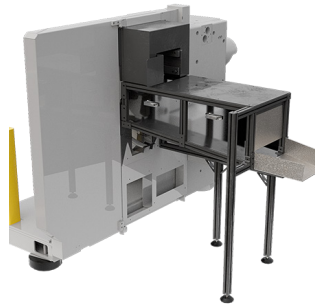
LED LIGHT TESTER

The LED Light Tester is designed to detect pinholes by surrounding the entirety of the can with light and rejecting defective cans prior to the exiting the discharge. The Light Tester assembly is mounted independent of the guard assembly, including a lift-off feature to quickly resolve can jam situations. Utilizing LEDs lengthens bulb life and decreases frequency of replacement. LEDs are able to detect pinholes ten times more often than the previous halogen design. This design also eliminates the need for a shutter assembly.



AIR CONSERVATION KIT

Designed to reduce Necker air consumption by 40% to 60%. The new style replaces existing manifolds and incorporates a positive-sealing, three-pressure rotary air distribution system that virtually eliminates air leakage. It allows high pressure air volume recovery from inside the can, which is an improved design. These two features significantly reduce overall Necker air consumption.



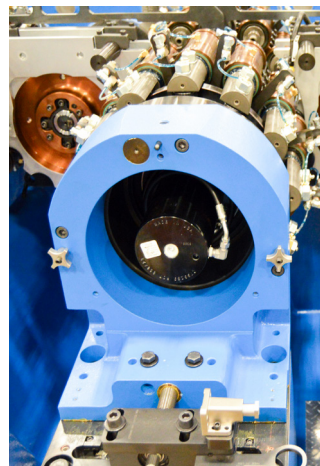
IMS AND HS3

Integrated into existing necking processes to optimize can plant productivity through dynamic quality control and sampling at full production speeds. The IMS combines software and hardware to group and prioritize vision system defects to help locate the root cause of the spoilage. Its dynamic quality control allows for upstream troubleshooting diagnosis of can quality issues. The High-Speed Selective Sorter is a Necker add-on to sample or sort without interrupting normal production speeds.



RAVE GUARDING

RAVE Guarding is an available upgrade for existing Steel Bifold guarding on The Belvac Necker. The RAVE Guarding utilizes motor driven translucent doors that are quick opening allowing for high visibility of the machine. The design allows for access to the entire working side of the machine, facilitating efficient maintenance access. The RAVE Guarding is fitted with safety sensors ensuring they cannot close while operators are inside the machine.



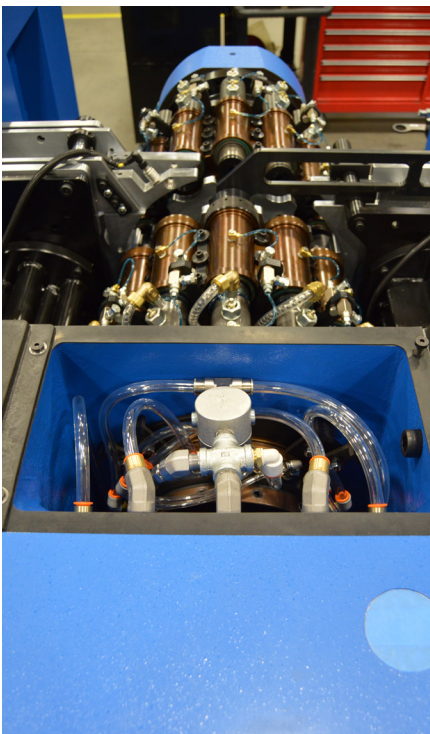
QUICK-CHANGE

Quick-change turrets greatly reduce change-over time when adjusting can height or diameter and provide better flexibility for can sizes. The standard QC design has been engineered into a Kit Program for all 595 Fixed Base Neckers. It is beneficial to those customers who spend a lot of time and energy converting from one can size to another. This QC retrofit eliminates redundant settings or measurements to speed up the overall process.

KITS & UPGRADES

	590 MODULAR	595 FIXED- BASE	595K FIXED- BASE	595K MODULAR	595SK MODULAR	595VE K/SK MODULAR	810 K	THE BELVAC NECKER	SERVO BELVAC NECKER
CNL	✓	✓	✓	✓	✓	✓	✓		
AIR CONSERVATION KIT	✓	✓	✓	✓	✓	✓	✓	✓	✓
RAVE GUARDING				✓	✓	✓	✓	✓	✓
LED LIGHT TESTER	✓	✓	✓	✓	✓	✓			
IMS HS3				✓	✓	✓		✓	✓
QUICK-CHANGE		✓	✓	✓	✓				
CAN CONVERSIONS	✓	✓	✓	✓	✓	✓	✓	✓	✓
SPEED UPGRADES		✓	✓	✓		✓	✓		

NEW ADVANCED AIR CONSERVATION UPGRADE KIT SUSTAINABILITY STARTS HERE



Reduces Overall Air Consumption by up to 60%

- Significant Cost Savings on Energy Bills
- Environmentally Friendly by Reducing Carbon Footprint

One-for-one Size Replacement

- Easy Installation with Minimal Downtime
- No Need for Extensive Modifications or Additional Parts

Positive-sealing, Three-pressure Rotary Air System

- Virtually Eliminates Air Leakage
- Enhances System Efficiency and Reliability

Pressure Air Volume Recovery from Inside the Can

- Maximizes Resource Efficiency by Reusing Air
- Helps Reduce Operational Costs and Increases Sustainability

INTELLIGENT MANUFACTURING SYSTEM HIGH SPEED SELECTIVE SORTER



KEY BENEFITS

- Optimized Profitability and Productivity
- Real Time Dynamic Monitoring
- No Downtime for Quality Control and Sampling
- Track Container Loading Issues
- Avoid Starving Back-end Equipment of Cans
- Eliminate Sampling Spoilage
- No Can Damage During Sampling
- Dynamic and Accurate High Speed Sampling
- Unlimited Sampling Options

Optimize Can Plant Productivity and Profitability

Belvac attacks the problem of downtime from both directions with the revolutionary Intelligent Manufacturing System (IMS) and High Speed Selective Sorter (HS3). Integrated into your current Neckeing systems this technology introduces real time dynamic monitoring of both the machine's process and product as well as the smart sampling of containers without downtime and at full production speeds.

Belvac's solution is a combination of hardware and software working in tandem. The result is improved production efficiencies, increased accuracy of quality control, reduced downtime for sampling and troubleshooting and most importantly increased profit.

HIGH SPEED SELECTIVE SORTER

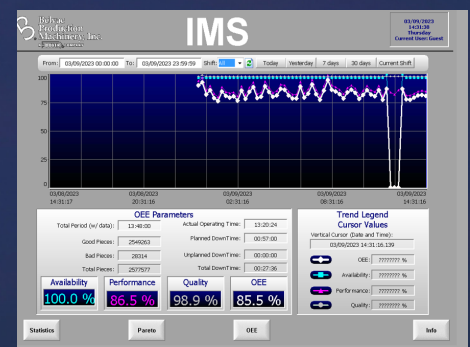
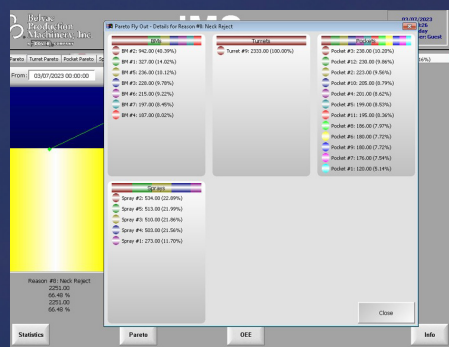
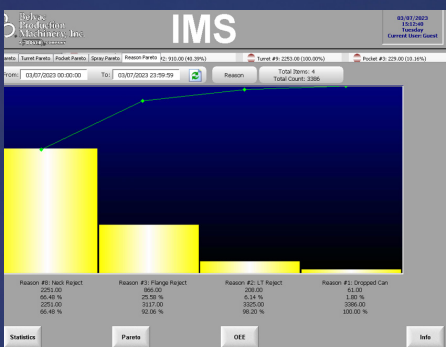


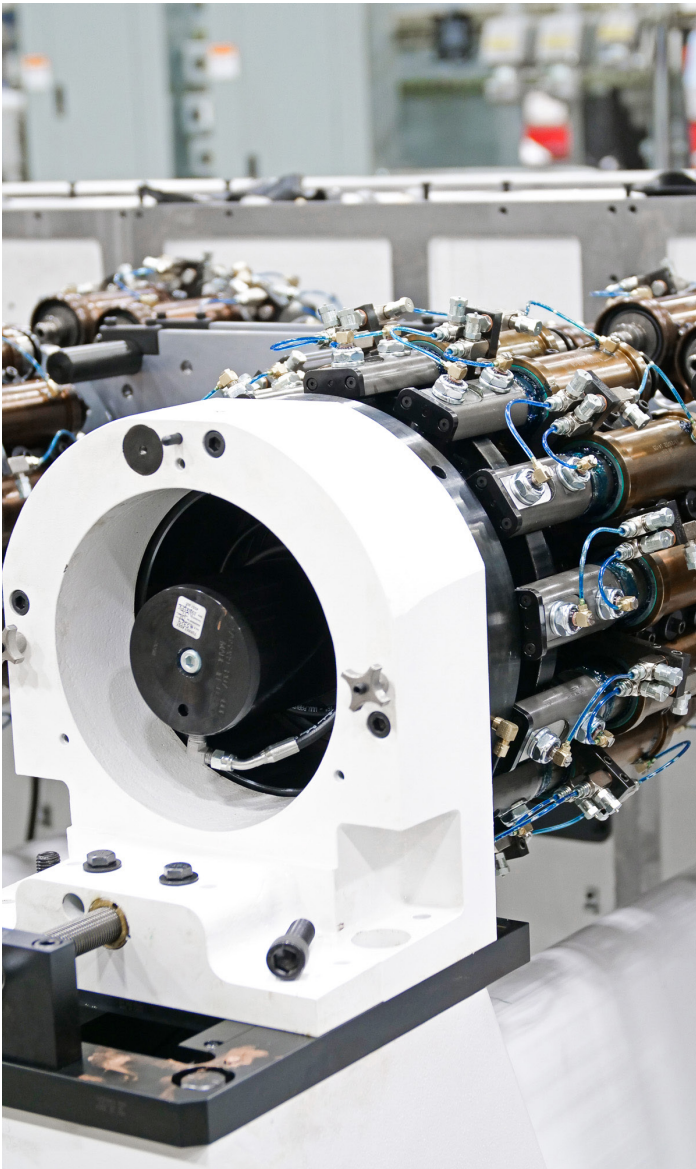
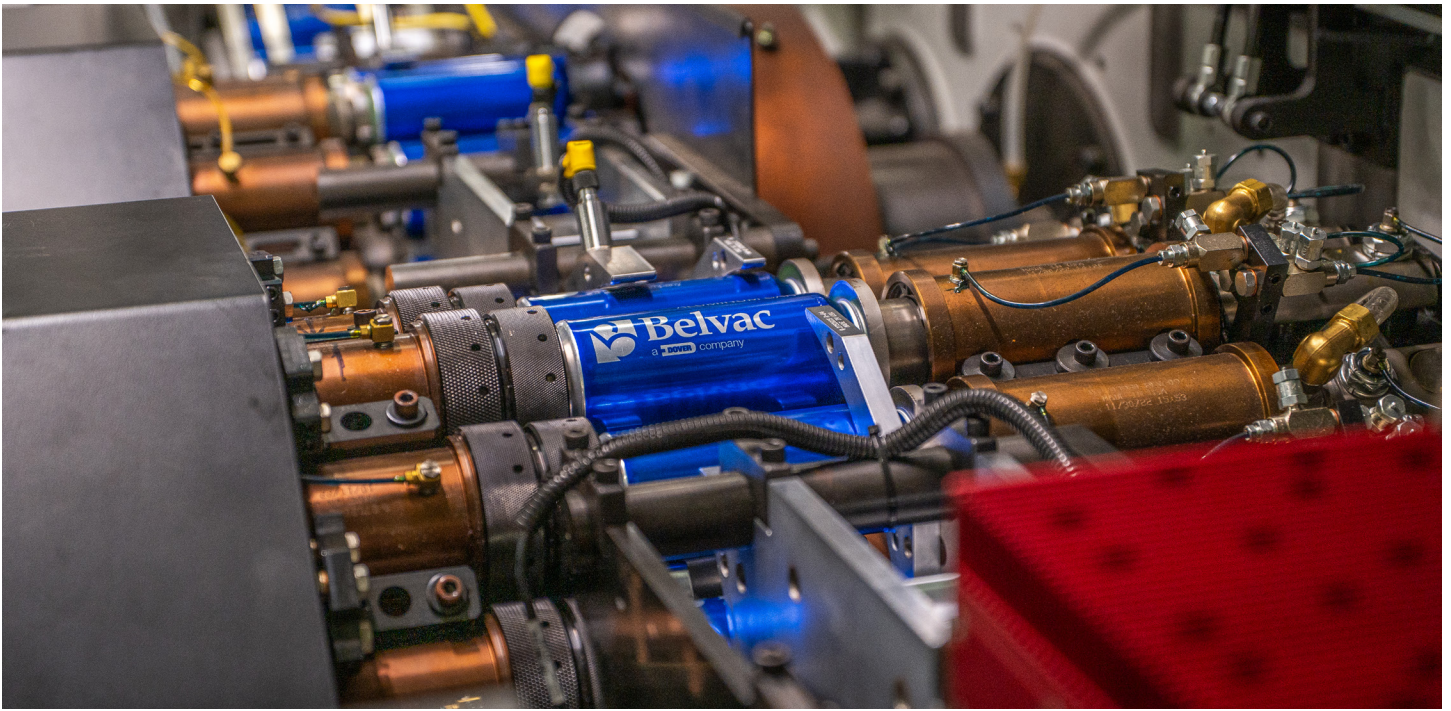
- The HS3 allows for sampling, sorting without interrupting normal production speeds.
- Utilizing the Intelligent Manufacturing Systems, operators have more freedom in configuring sample selection, such as selecting a specified pocket to sample from.
- Programming within the system allows for repeated schedules and routine sampling.
- These configurations are done through the operator interface and can be stored for later use.
- Plant Supervisory Control and Data Acquisition (SCADA) can be accessed remotely to configure sample requests based on QA scheduling and process driven quality sampling requirements.

INTELLIGENT MANUFACTURING SYSTEM



- Dynamic quality control by tracking and storing important reject data, obtained from the following vision systems: Bodymaker ID, Inside Spray ID, Neck/ Flange, and Sidewall/ Dome Inspection.
- This data allows operators to troubleshoot both front and back end issues.
- For every defective can, the IMS stores reject reason, starwheel pocket, Bodymaker ID and Inside Spray ID.
- Reject reasons include dropped cans, light tester, flanger defects, neck defects, dome defects, spray coverage, and upper/ lower wall defects.
- Operators can quickly review Pareto charts which sorts defects under the user's specified parameters allowing operators to troubleshoot issues more efficiently.





Service Support Available Globally

Belvac supports customers worldwide with a comprehensive range of services designed to maintain uninterrupted and efficient Necking 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 Necker or a single module, 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 all style Neckers.



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.

Ready to Learn More About Belvac's Neckers?

Contact us today at
sales@belvac.com to discover
how Belvac can help enhance your
Necking operations.

