



BELVAC Front End Equipment

The Belvac
Bodymaker



PROVEN TECHNOLOGY *Sustainable Solutions* | FOR OVER 60 years

FRONT END

CUPPING PRESS

The Belvac Cupping Press Features High Process Reliability, High Output, and Unsurpassed Quality, Continuously Operating up to 300 SPM

Belvac offers state-of-the-art technology in the design and manufacturing of the Cupping Press. The unique proven design requires no additional foundation requirements prior to installation, removing costly facility upgrades. The low maintenance design has a high precision guidance system, dynamic counter balancing with low vibration, and a decoupled main drive installation.

Other features include a quick lift for shorter reaction time, and an encoder controlled automatic slide adjustment and clamped pressure point. The Belvac Cupping Press has reduced downtime for tool and coil change as well as maintenance and service. Innovative ideas such as the dynamic counter balance facilitates high production speeds.



A welded monoblock frame with reinforced bed provides increased durability and reduced die wear. Dynamic mass counterbalance combined with absorbing spring dampers allows the Cupping Press to reach speeds of 300 spm with low

vibration and no foundation requirements. The press is mounted on anti-vibration pads and damper elements to further eliminate vibration. The Cupper has a separated hydraulic and lubrication unit and a motorized size adjustment.



SCAN ME



LOW MAINTENANCE

- Hydrostatic Press Reducing Wear Parts
- High Precision Guidance System
- Decoupled Main Drive Installation
- Zero Maintenance Direct Drive

DYNAMIC BALANCING

- No Foundation Requirements
- Removes Costly Facility Upgrades
- Anti-vibration Pads and Damper Elements
- Operating up to 300 SPM

FLEXIBLE FEATURES

- Encoder Controlled Automatic Slide Adjustments and Clamped Pressure Point
- Quick Life for Shorter Reaction Time Reducing Downtime for Die Jam Situations

CUPPING PRESS TECHNICAL DATA

MACHINE SPECIFICATIONS

Total Force	154	tons	1,400	kN
Working Energy	15.5 kJ			
Phase Shift	60			
Strokes Per Minute	100 to 300			
Bed Size Width	84	in	2,135	mm
Bed Size Depth	44	in	1,120	mm
Applicable Materials	Aluminum, Steel			

OUTER SLIDE

Force	77	tons	700	kN
Stroke Height	2	in	50.8	mm
Adjustment	1.96	in	50	mm
Shut Height SDAU	22	in	560	mm
Size Width	84	in	2,135	mm
Size Depth	36	in	915	mm

INNER SLIDE

Force	77	tons	700	kN
Stroke Height	5	in	127	mm
Adjustment	1.96	in	50	mm
Shut Height SDAU	28.5	in	720	mm
Size Width	59	in	1,500	mm
Size Depth	17	in	430	mm



FRONT END

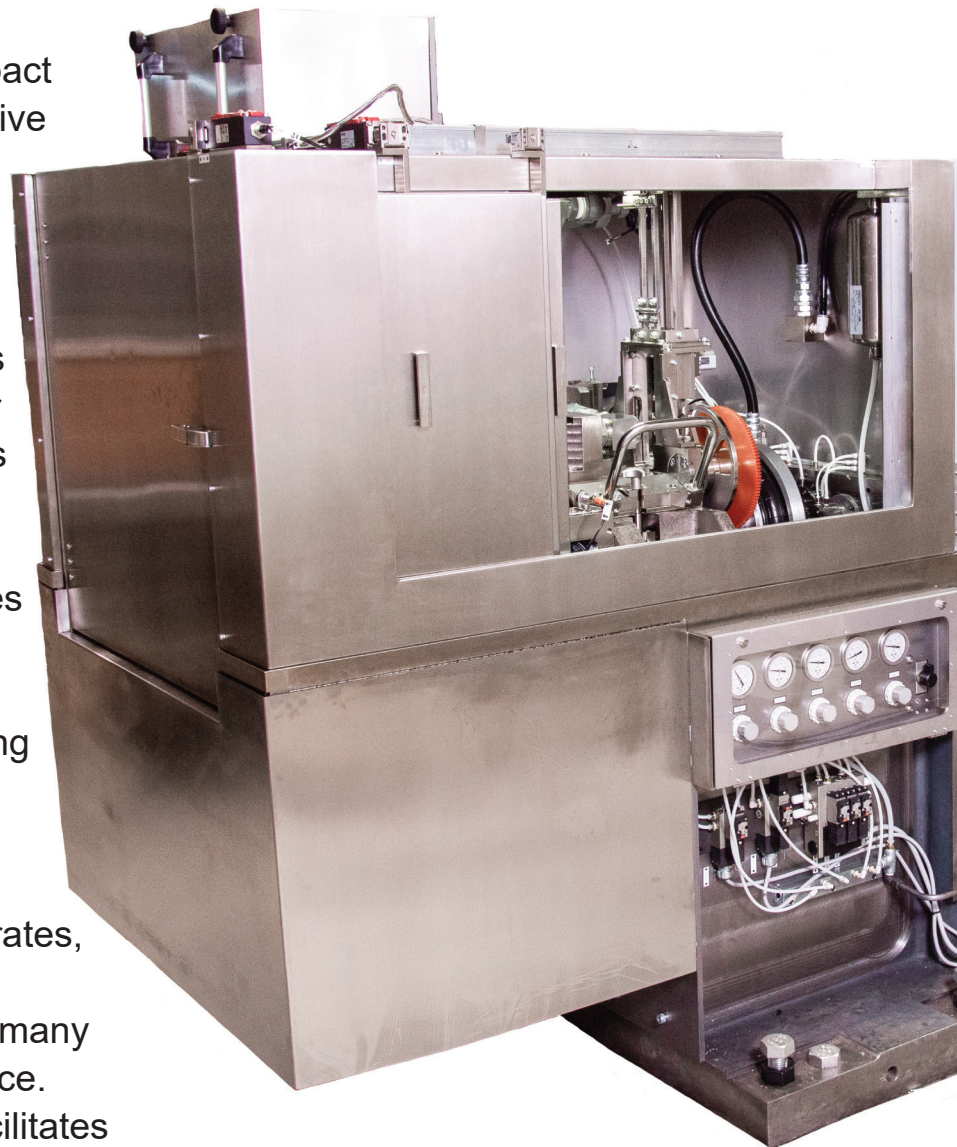
THE BELVAC BODYMAKER

Utilizing a Hypocycloid Main Drive the Belvac Bodymaker Produces Superior Can Quality with Low Tear-off Rates.

The Belvac Bodymaker is a compact design, utilizing hypocycloid main drive which features no vertical movements and low ram deviation, continuously operating up to 400 cpm. Quality, reliability, and accuracy are the foundation for this state of the art design. Unlike other models, the Belvac Bodymaker has low vibration resulting in no foundation requirements.

The hypocycloid main drive utilizes symmetrical acceleration patterns, which balances the machine both statically and dynamically generating an exact straight line motion. The largest benefit being low ram deviation which results in superior can quality marked by low tear-off rates, and accurate body wall thickness.

The Bodymaker is equipped with many features to facilitate low maintenance. Innovative sealpack design that facilitates reduced oil consumption.



Reduced contamination of the coolant requires the change out frequency to be significantly reduced, saving downtime. Increased ironing die life is another feature which adds value and reduces replacement related maintenance costs and downtime.

The stainless steel CE rated guarding is resistant to die coolant corrosion, making it resilient and meeting all

required CE codes. The two sliding doors on the tool pack side, and large viewing window on the ram drive side, give high visibility and facilitate easier access for maintenance.

The BM24 model has a standard diameter range of 200 (50.8 mm) to 211 (66.2 mm) and the BM30 model ranges from 204.5 (57.9 mm) to 305 (84.1 mm).



SCAN ME



TWO MODELS

- BM24: Diameter Range of 200 (50.8mm) to 211 (66.2mm) Rated up to 400 CPM
- BM30: Diameter Range of 204 (57.9mm) to 307 (84.1mm) Rated up to 350 CPM

HYPOCYCLOID DESIGN

- Low Ram Deviation
- Superior Can Quality
- Low Tear-off Rates
- Accurate Bodywall Thickness
- Exact Straight Line of Motion

LOW MAINTENANCE

- Reduced Oil Consumption
- Reduced Contamination of Coolant Resulting in Less Changeovers
- Increased Ironing Die Life
- Stainless Steel CE Rated Guarding

BODYMAKER TECHNICAL DATA

MACHINE DIMENSIONS

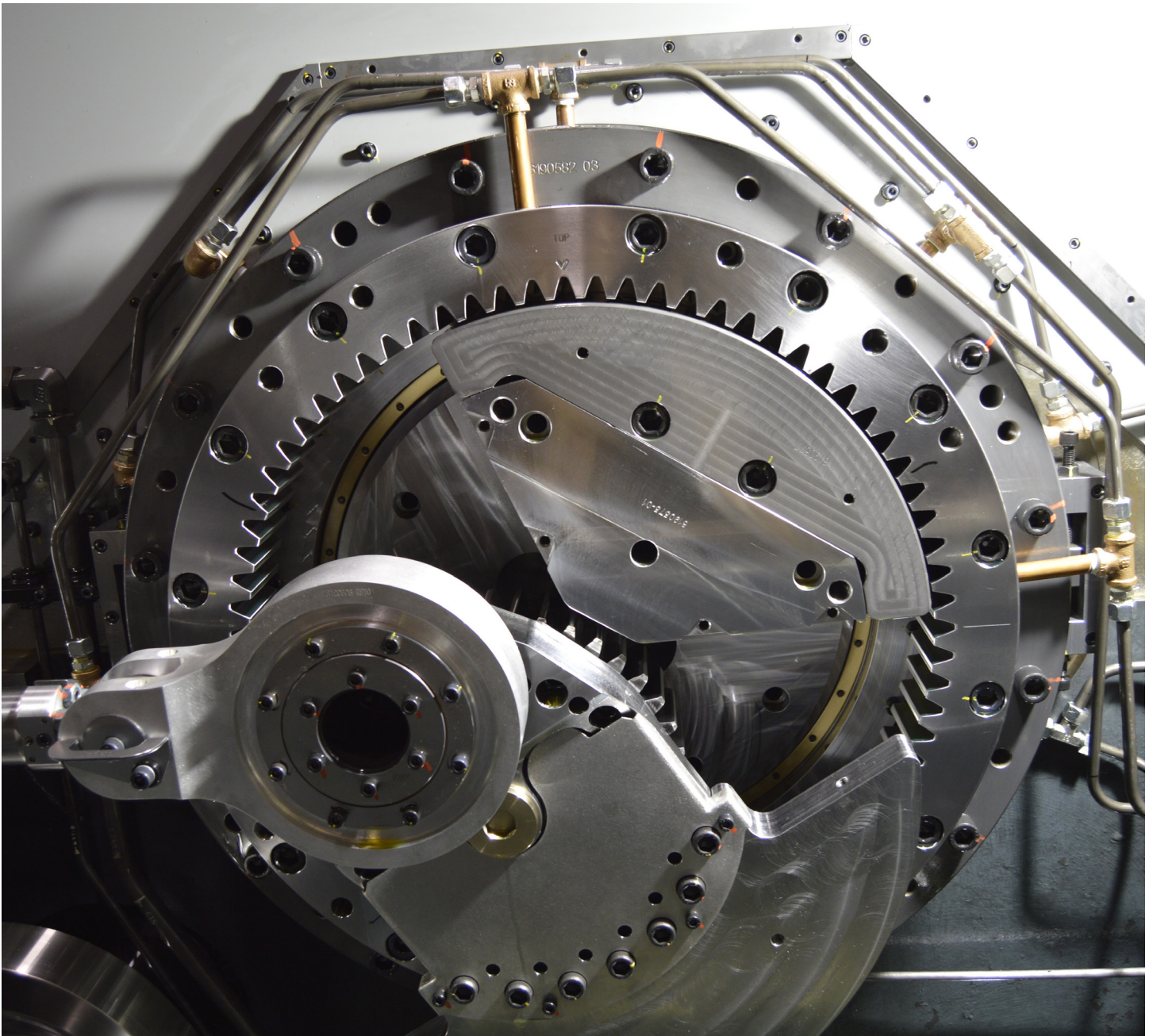
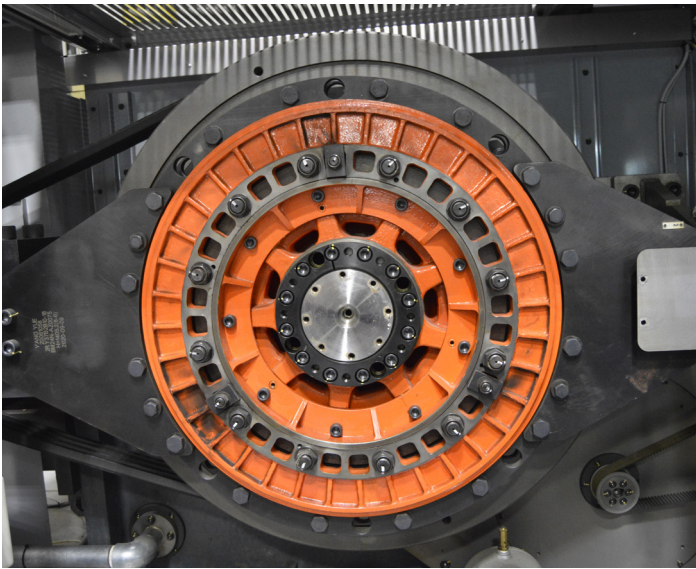
	BM24		BM30	
Length	167	in	190	in
	4242	mm	4826	mm
Width	85	in	88	in
	2157	mm	2229	mm
Height	80	in	80	in
	2040	mm	2040	mm
Weight	16,000	kg	20,000	kg
Foundation	No Requirements			

CONTAINER SPECIFICATIONS

	BM24				BM30			
Can Diameter Range	200	diameter	211	diameter	204.5	diameter	305	diameter
	50.8	mm	66.2	mm	57.9	mm	84.1	mm
Rated Speed	400		CPM		350		CPM	
Stroke	23.9		in		30.2		in	
	608		mm		768		mm	
Main Motor	75		Kw		90		Kw	
	100		HP		120		HP	
Applicable Materials	Aluminum, Steel							

ASSEMBLY SPECIFICATIONS

Drive Mechanism	Hypocycloid Gear Drive
Ram Bearing	Hydro-dynamic (Standard)
Control System	PLC
Guarding	Integrated Stainless Steel Guarding



BODYMAKER FEATURES

TWO MODELS

- BM24: Diameter Range of 200 to 211
Rated up to 400 CPM
- BM30: Diameter Range of 204 to 307
Rated up to 350 CPM

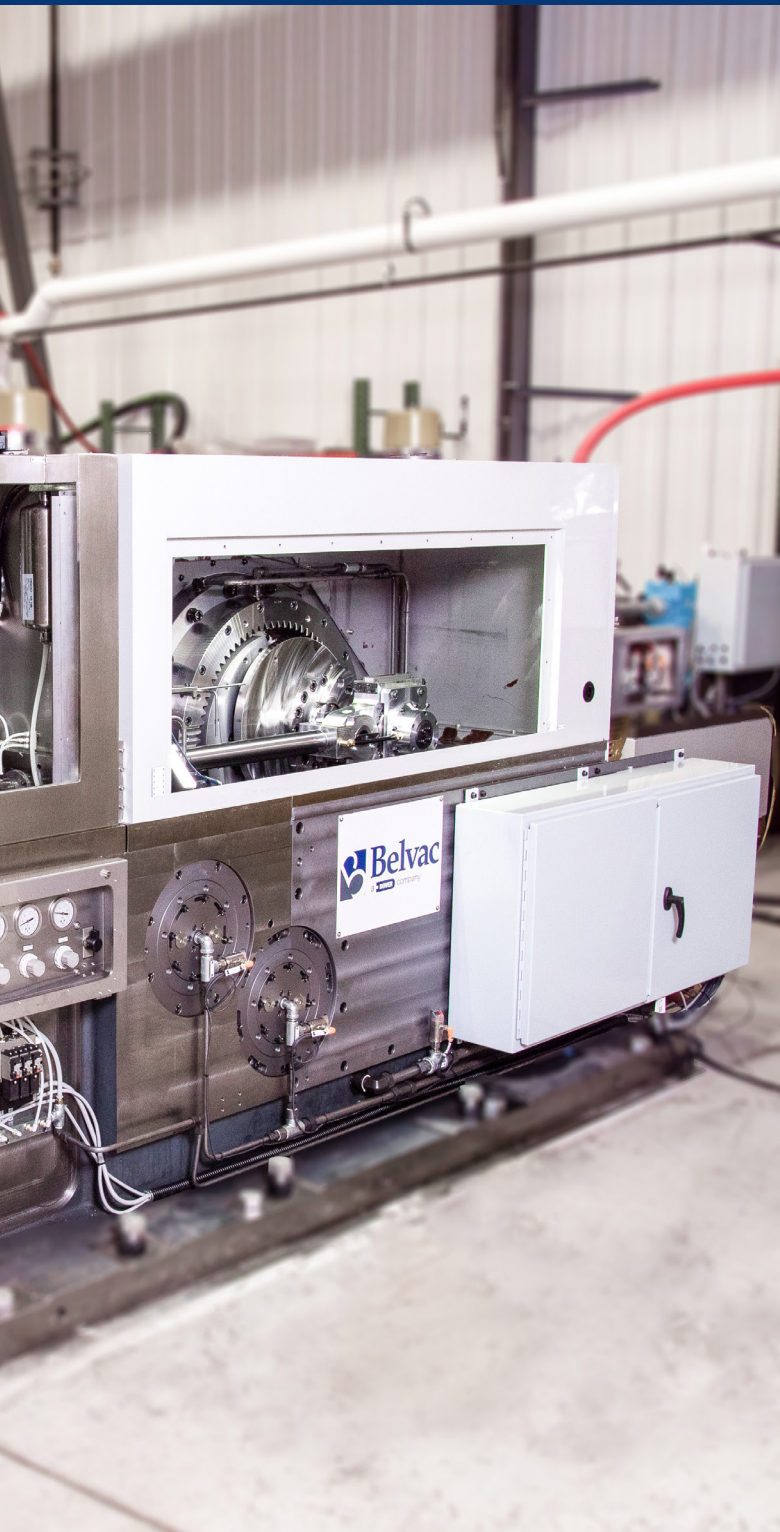
HYPOCYCLOID DRIVE

- Exact Straight Line of Motion
- Low Ram Deviation
- Superior Can Quality
- Low Tear-off Rates
- Accurate Bodywall Thickness
- Lower Maintenance Requirements
- Increased Safety Factor Due to the Gear and Crank Design
- Dynamically Balanced
- No Foundation Requirements

ADVANCED BRAKE

- Excellent Stopping Performance
- Easy Maintenance and Replacement of Wear Pads
- Dynamic Brake Performance Assements for Repeatable Stopping Position





RAM BEARINGS

- Repeatable Precision Installation During Size Changes
- Integrated Seal Pack to the Ram Bearings Which Decreases Change Over Time Requirements

SERVO INFEEED

- Independent Infeed Control for Start up and Dry Stroke Control
- Independent Stopping Ability Eliminates Inertia from the Brake Stopping Requirement
- Quick and Simple Re-syncing
- Quick Height and Diameter Change
- Increased Cup Infeed Precision and Minimized Damage

CAN AIR EJECT

- Dual Air Pressure Can Eject
- Fast and Reliable
- Low Pressure Keeps Out Fluid and Maintains Pressure in the Ram

Front End

THE BELVAC TRIMMER

*Belvac Rotary Trimmers Reduce
Downtime & Ensure Burr-Free,
Sliver-Free, Step-Free Trimming*

The Belvac Trimmer, designed for longevity and reliability, with burr-free, sliver-free, step-free trimming, an industry staple for over 60 years. Designed to precisely trim the raw edge that occurs from the drawing and ironing process within the Bodymaker machine. The sliding base feature facilitates ease of integration with the Bodymaker by allowing for quick adjustments of the infeed track location. The Belvac Trimmer is available in two series, the CC93 and CC95, continuously operating at speeds up to 400 CPM and 500 CPM respectively.

The CC93 Trimmer series features two models, the CL and RML, which repositions the discharge location in respect to the infeed. This accommodates customer's trackwork requirements while still utilizing the same base structure and major turret components. The Crossflow Long (CL) style is designed with the infeed and discharge on opposite sides of the machine, which is ideal when space is a limiting factor. While the Regular Medium Long (RML) style is designed so the preformed cans enter and exit on the same side of the Trimmer.

The CC93 Trimmer series utilizes a can stack that is regulated by a constant velocity starwheel, a design feature



of the Soft Touch Infeed (STI) assembly. This feature provides a smoother turret transition without sacrificing high speed performance. Quick-change and non-quick-change options are available to fit your plant's needs, the full tower change-over time on non-quick-change models is significantly reduced.

The CC95 Trimmer series is only available in the Crossflow Long (CL) style and non-quick change, with the infeed and discharge being located on opposite sides of the Trimmer.

This model reaches speeds up to 500 CPM, achieved by the addition of two more cartridges, ideal for operations with minimal changeovers.

All Belvac Trimmers are equipped with many improved features to decrease

downtime and maximize efficiencies. The Easy Maintenance Cartridges (EMC) reduces rebuild time significantly by maintaining factory set cutting depths. The Face Seal Manifold (FSM) allows for more adjustment of the air flow and timing. This delivers higher precision cutting; as well as more accurate loading and unloading which results in decreased can spoilage. The vacuum grease trap facilitates easier cleanup and decreased maintenance related downtime.



SCAN ME



HIGH SPEED OPERATIONS

- CC93 Continuously Operating up to 400 CPM
- CC95 Continuously Operating up to 500 CPM
- Soft Touch Infeed for Superior Can Handling

LOW MAINTENANCE

- Easy Maintenance Cartridges (EMC)
- Automatic Lubrication
- Sliding Base Guarding
- Vacuum Grease Trap Facilitates Easier Cleanup

FLEXIBLE FEATURES

- Two Can Flow Configurations, CL and RML to Suite Different Operational Needs
- Face Seal Manifold Allowing for Adjustments of Air Flow and Timing
- Constant Velocity Infeed

TRIMMER TECHNICAL DATA

MACHINE DIMENSIONS

	CC93		CC95	
Length	28	in	33	in
	711	mm	838	mm
Width	52	in	57	in
	1321	mm	1448	mm
Height	71	in	71	in
	1803	mm	1803	mm
Weight	3500	kg	3800	kg

PRODUCTION SPEED

	CC93		CC95	
Rated Speed	202 to 211	300 to 307	202 to 211	300 to 307
	400 CPM	300 CPM	500 CPM	400 CPM

CONTAINER SPECIFICATIONS

Can Diameter Range	202	diameter	307	diameter
	52	mm	84	mm
Can Height Range	3.3	in	8.3	in
	83.8	mm	211.1	mm
Scrap Length Range	0.2	in	0.9	in
	4.8	mm	22.3	mm
Maximum Gauge Material	0.1		in	
	0.3		mm	
Applicable Materials	Aluminum, Steel			

UTILITY REQUIREMENTS

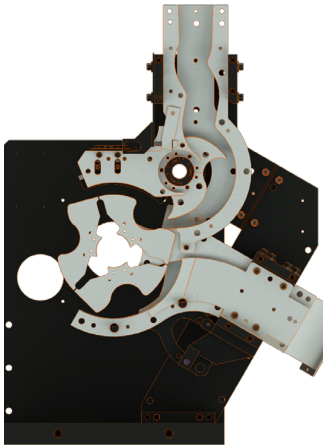
Vacuum	25 inHG at 15 SCFM (635 mmHG at 7.1 L/s)			
Air	80 psig at 2 SCFM (551.6 kPa at 0.944 L/s)			
Drive	3 HP (2.24 kW) 3.5 KVA			



KITS & UPGRADES

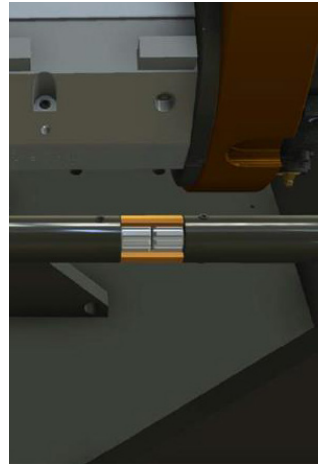
Designed for Belvac Trimmers

MAXIMIZE YOUR TRIMMING OPERATIONS



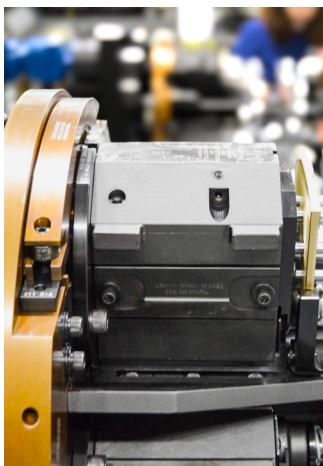
SOFT TOUCH INFEEED

The Soft Touch Infeed design was a response to the growing need for industry light weight and increased line speeds. The addition of the new Constant Velocity (CV) starwheel provides a gentler transition into the main turret starwheel resulting in decreased spoilage. The incorporation of the CV starwheel facilitates a smooth, consistent flow of cans, with a 93% reduction of scuffs, scratches and dents. A hybrid STI design for height quick-change abilities is also available.



SPLIT INFEEED SHAFT

The Split Infeed Shaft features a coupling design that divides the shaft to facilitate quick decoupling for diameter and height change overs. Combining the split infeed shaft design and the infeed spacer maximizes flexibility and efficiency during changeovers. The quick-change infeed spacer can be installed without disassembling the infeed shaft on the drive side of the Trimmer.



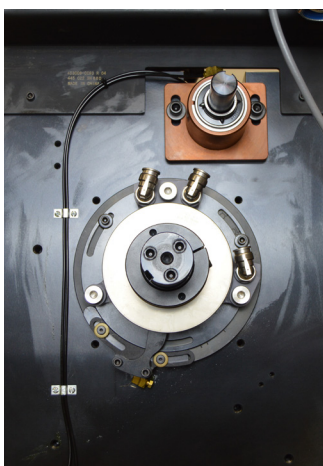
EMC

The Easy Maintenance Cartridge (EMC) focuses on reducing rebuild time and decreasing the number of adjustments in comparison to other cartridge designs. Maintaining the factory set cutting depths is one of the key features of the EMC that eliminates the need for continuous adjustment. Another highlighted feature is the external screw which adjusts the shaft height (knife gap). This external adjustment allows for quick access when knife adjustments need to be made.



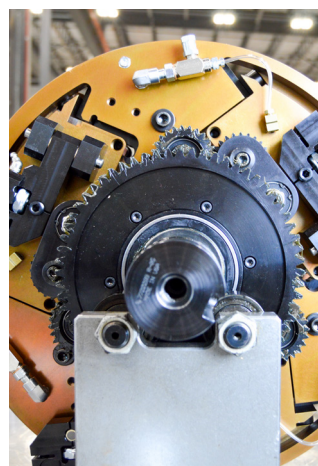
GUARDING UPDATE

The Stainless Steel Sliding Guarding Upgrade focuses on reducing rebuild time and decreasing the number of adjustments in comparison to other cartridge designs. Maintaining the factory set cutting depths is one of the key features of the EMC that eliminates the need for continuous adjustment. Another highlighted feature is the external screw which adjusts the shaft height (knife gap). This external adjustment allows for quick access when knife adjustments need to be made.



FACE SEAL MANIFOLD

The Face Seal Manifold (FSM) replaces the existing vacuum manifold designs. The FSM has direct contact with the vacuum distribution rotor, reducing vacuum air leakage and consumption. Independent timing adjustment of loading and unloading cans allows for better process control with more precise vacuum timing. The installation process is greatly simplified since concentricity to the trimmer shaft is not as critical as the radial-seal vacuum system.

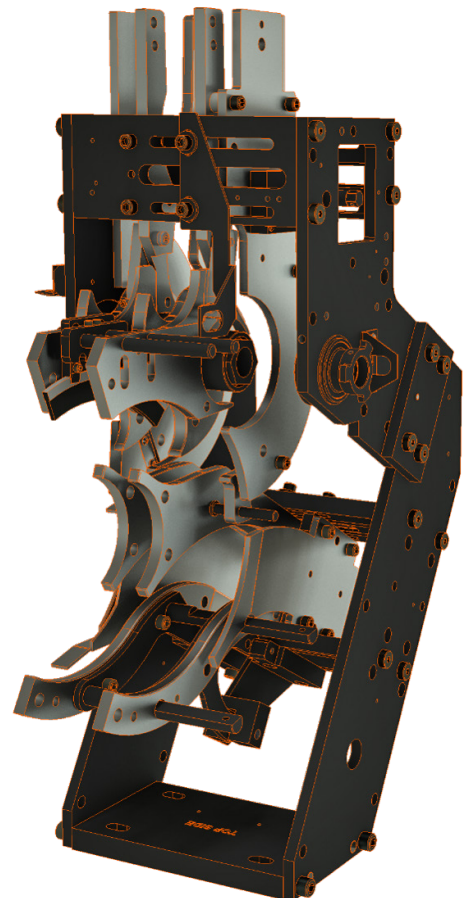
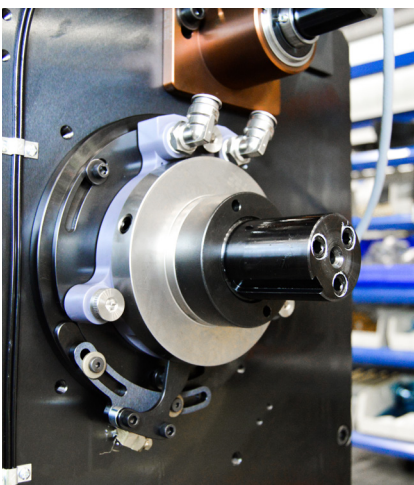
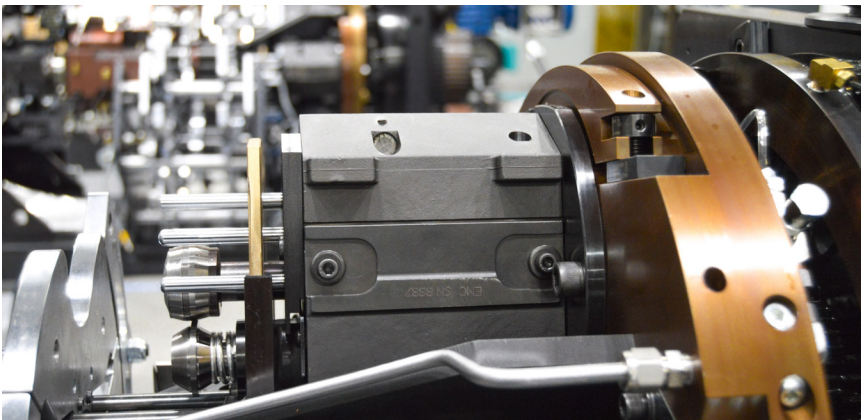


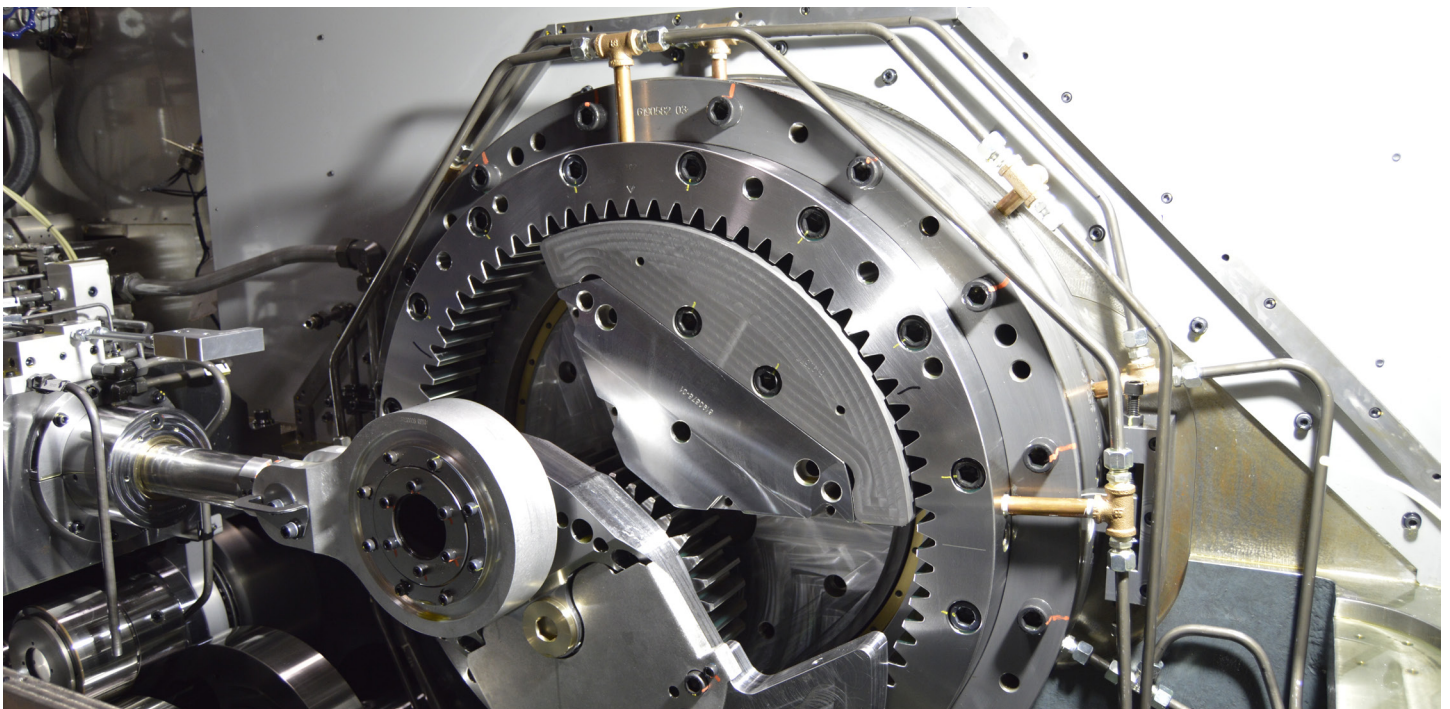
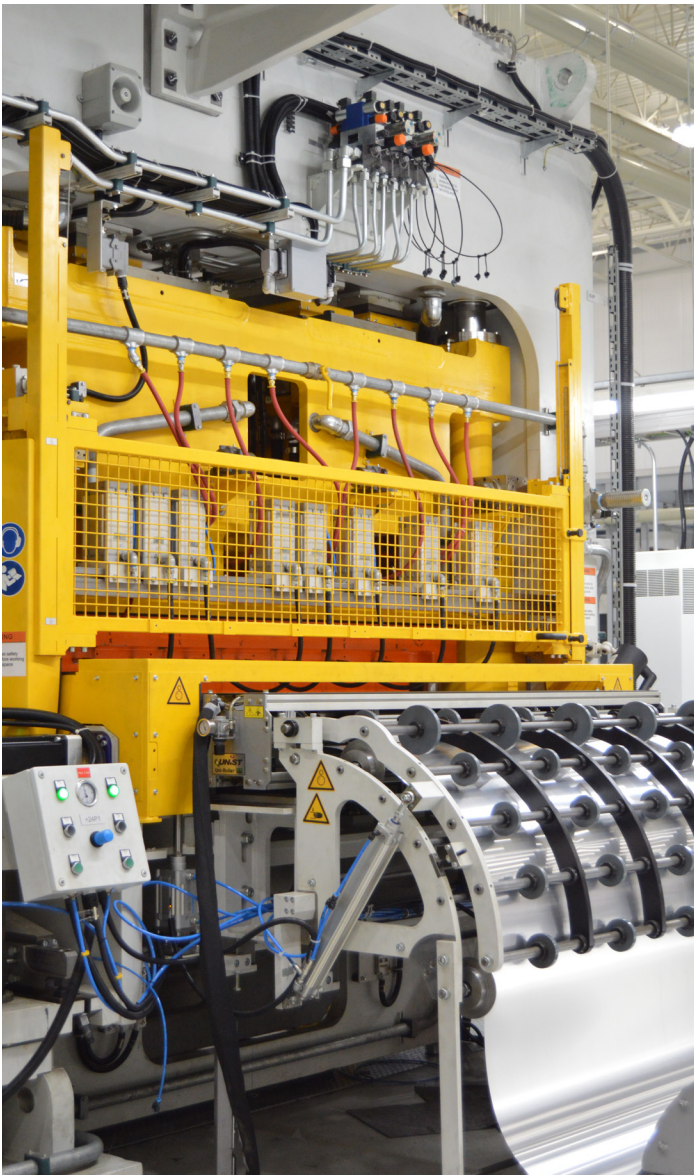
AUTOLUBRICATION

The Autolubrication upgrade, for all CC92 and CC93 Trimmers, eliminates most manual lubrication points saving significant downtime for maintenance. Additionally it offers consistent lubrication for critical assemblies which helps extend the life of wear parts. Can quality directly related to over worn parts is also improved.

KITS & UPGRADES

	CC92	CC93 C	CC93 CL	CC93 R	CC93 RML	CC93 DL	CC95
STI	✓	✓	✓	✓	✓		
SPLIT INFEED SHAFT	✓	✓	✓	✓	✓		
EMC	✓	✓	✓	✓	✓	✓	✓
GUARDING UPGRADE	✓	✓	✓	✓	✓		
FSM		✓	✓	✓	✓	✓	
AUTOLUBRICATION	✓	✓	✓	✓	✓	✓	
CAN CONVERSIONS	✓	✓	✓	✓	✓	✓	✓
SPEED UPGRADES	✓						





Service Support Available Globally

Belvac supports customers worldwide with a comprehensive range of services designed to maintain uninterrupted and efficient Front End 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

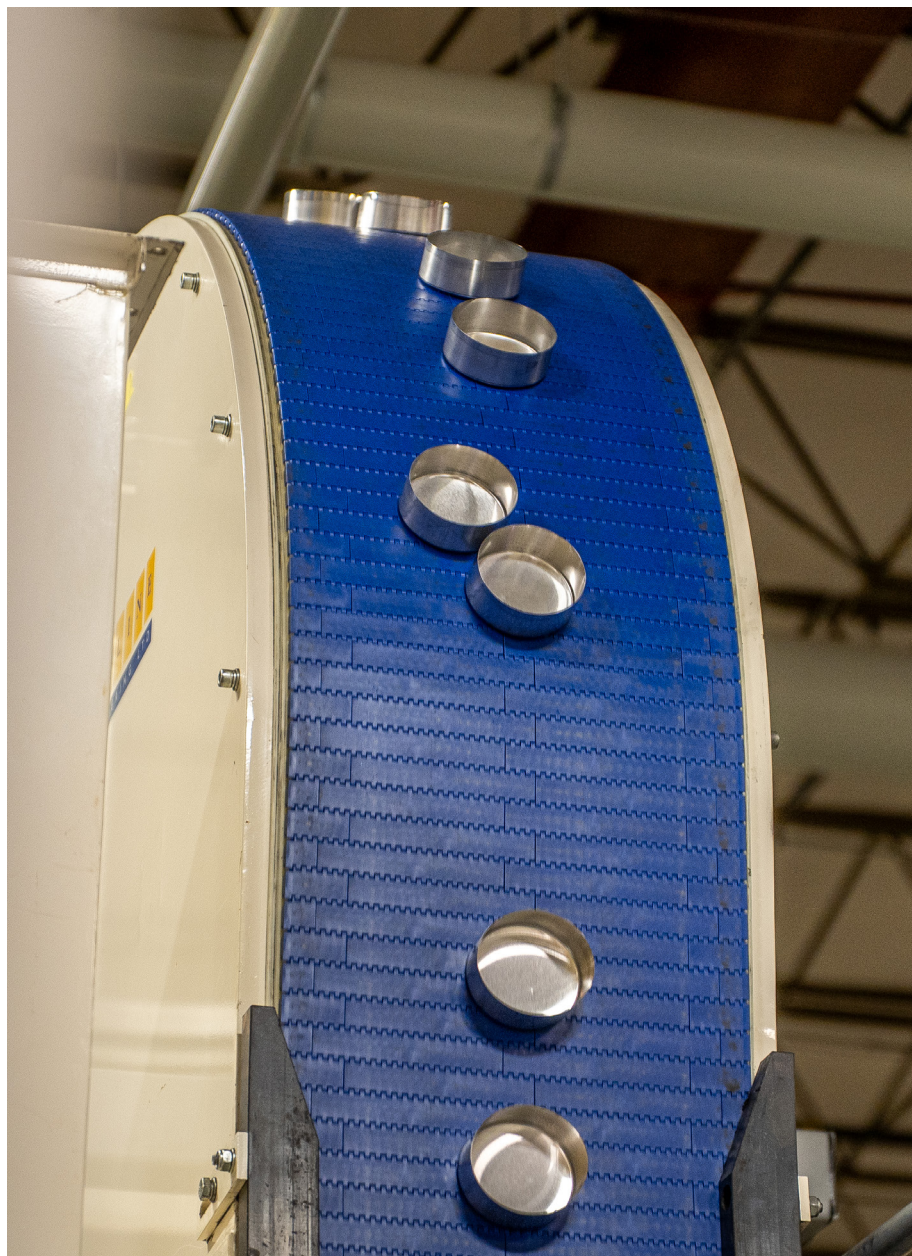
- **Detailed Evaluation by Qualified Technicians:** Belvac's technicians identify maintenance deficits, wear, or potential damage early.
- **Early Detection of Maintenance Deficits:** Prevent unplanned downtime and extend equipment lifespan by addressing issues early.
- **Regular Maintenance:** Regular 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 machine or an assembly, 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 Front End Equipment?

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

