

# **BELVAC MODEL TRIMMERS**

## **PRODUCT UPGRADE & CONVERSIONS**

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## **TRIMMER AUTOMATIC LUBRICATION SYSTEM UPGRADE**

***P/N 12443-CC92      CC92 models, includes new cutting head retainer plate***

***P/N 12440-CC93      CC93 models, includes new cutting head retainer plate***

### **Qualifying Trimmers:**

All CC92 and CC93 model Trimmers

### **Objectives and Benefits:**

- Eliminates most manual lubrication points saving maintenance time (*points that will still need manual lubrication after conversion are: main cams and associated cam followers; spindle drive bearing; and cartridge drive bearing*)
- Offers consistent lubrication for critical assemblies extended life of wear parts.
- Reduces overall spare parts required
- Increases can quality directly related to over worn parts
- Part numbers listed above include a cutting head retainer plate, and rework drawings to modify existing smaller components.

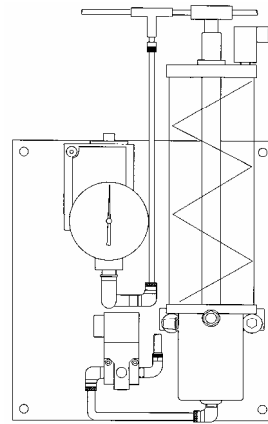
### **Installation:**

A Belvac Service Engineer is recommended to perform this conversion. It requires 1.5 to 2 days per trimmer to complete.

### **To order:**

Choose the appropriate part number above and fill out the information page at the end of Section 4 for Trimmer Maintenance Quality Upgrades and forward to Belvac with purchase order.

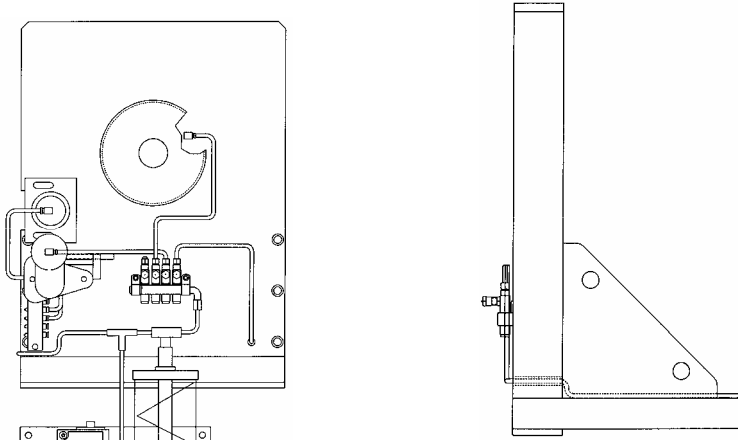
### ***General Arrangement of Autolube System:***



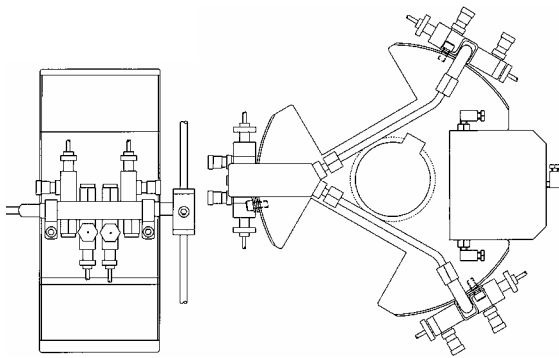
Pump Assembly (Mounts to Operator's Side End Frame)

**General Arrangement of Autolube System Continued:**

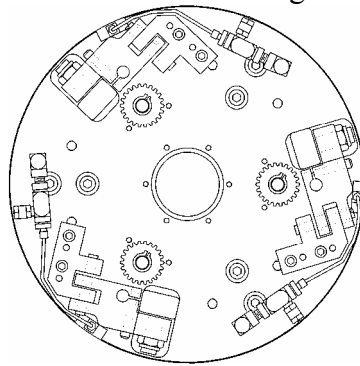
Operator's Side End View:



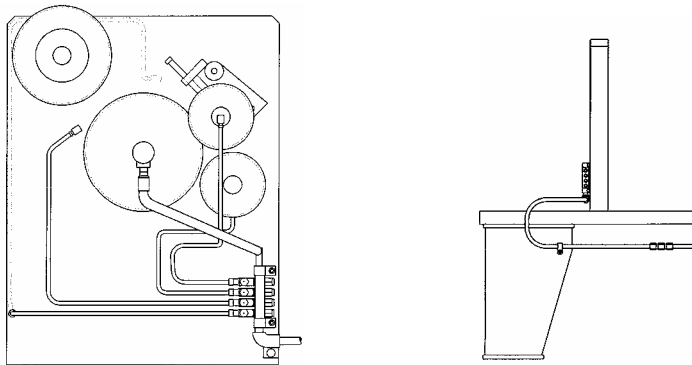
Spindle Frame



Cartridge Disc



Drive Side End View:



# STAINLESS STEEL SLIDING GUARDS UPGRADE

*Part Number assigned when order is placed*

## **Qualifying Trimmers:**

Any "R" style CC92 and CC93 Model Trimmer, with painted 4 or 5-door guard designs.

## **Benefits:**

- Allows improved accessibility to machine components for maintenance, setup and size changes conversions, reduces downtime
- Eliminates need for periodic painting.

## **Drive Configurations for Stainless Steel Guards (see diagram below):**

Parallel drive configurations will require a new gearbox for proper guard fit. Trimmers with front drive configurations will require 180 degrees gearbox rotation, or a Compact Drive Upgrade.

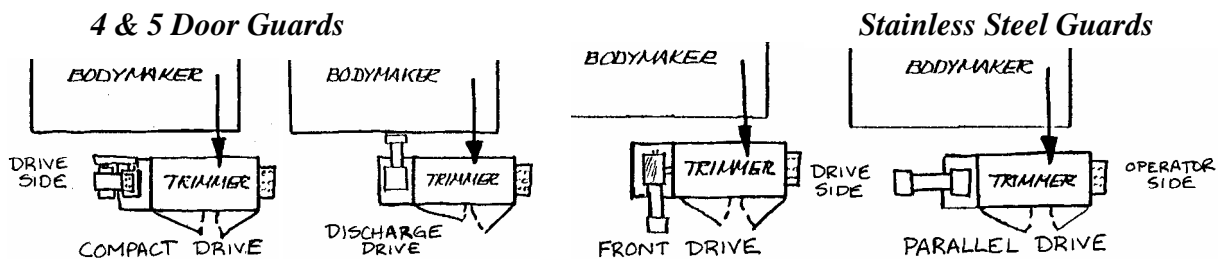
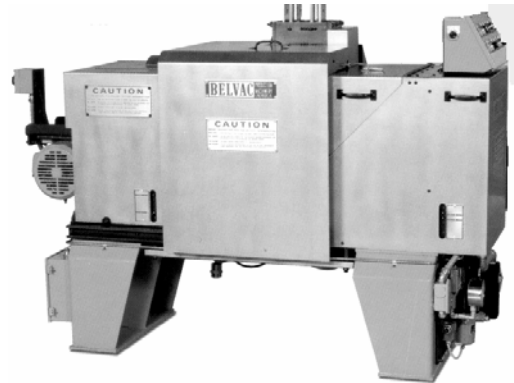
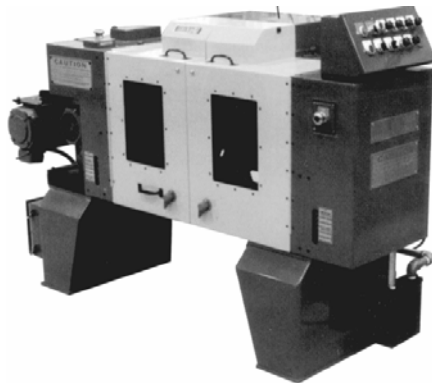
Compact and Discharge drive configurations will not have to change for proper guard fit.

## **Installation:**

Requires approximately 1 full day for installation. Customer must ensure installation of all electrical safety switches.

## **To order:**

Please fill out the information page at the end of Section 4 for Trimmer Maintenance Quality Upgrades and forward to Belvac with purchase order.



# **PIVOTING LOWER DISCHARGE RAIL RETROFIT KIT**

*P/N 15506-CC93 + Change Parts*

## **Qualifying Trimmers:**

All CC92 and CC93 R/RML model Trimmers.

*Note: Pivoting discharge rails are common on all C/CL model Trimmers and is now a standard feature on all new R/RML trimmers since 7/91.*

## **Objective and Benefits:**

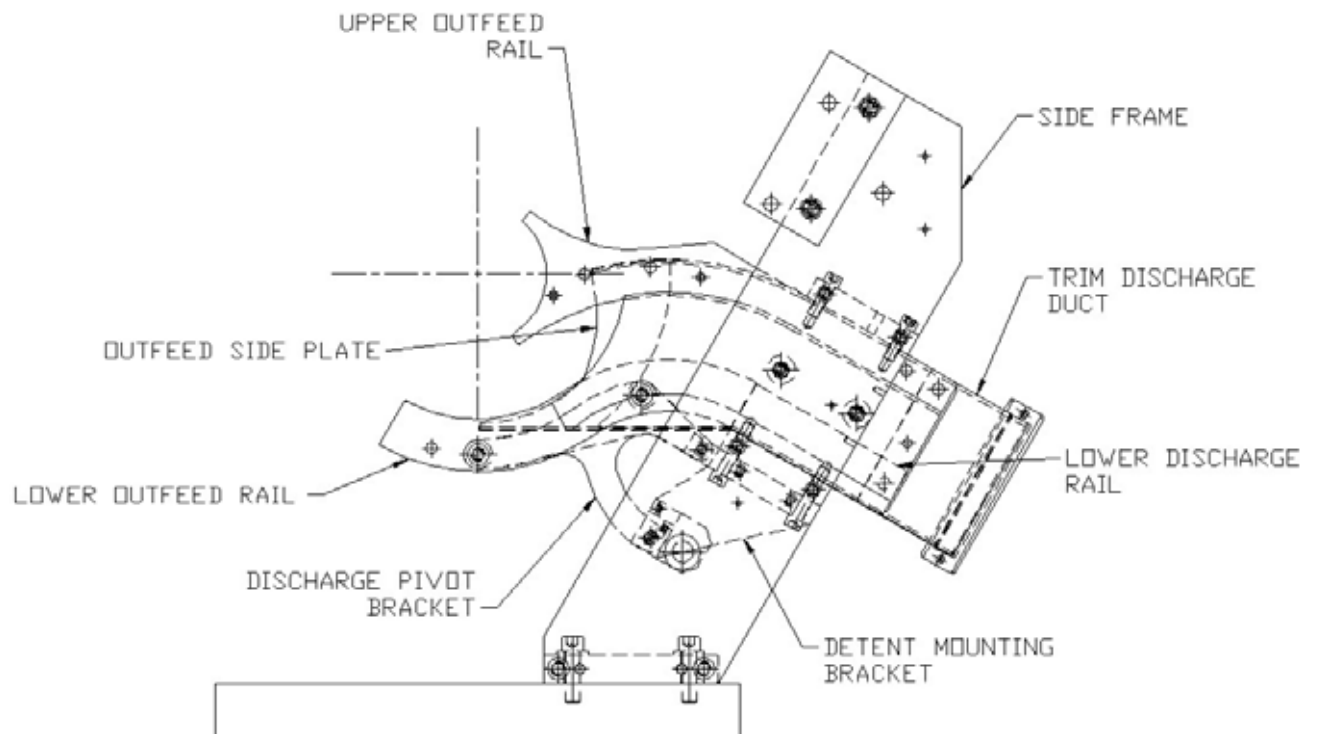
- Greatly decreases amount of time removing damaged or jammed cans in Discharge trackwork.
- Ease to use.
- Kit comes complete with installation drawing and retrofit to existing trackwork.

## **Installation:**

Requires only approximately 1-2 hours for installation

## **To order:**

Please fill out the information page at the end of Section 4 for Trimmer Maintenance Quality Upgrades and forward to Belvac with purchase order.



# **DIRECT INFEEED CONVERSION**

*Part Number assigned when order is placed*

## **Qualifying Trimmers:**

All CC92 and CC93 R/RML model Trimmers.

Direct Infeed Conversion removes main turret starwheels, infeed starwheels and can stop mechanism, feeding cans directly onto a new CV main turret style starwheel.

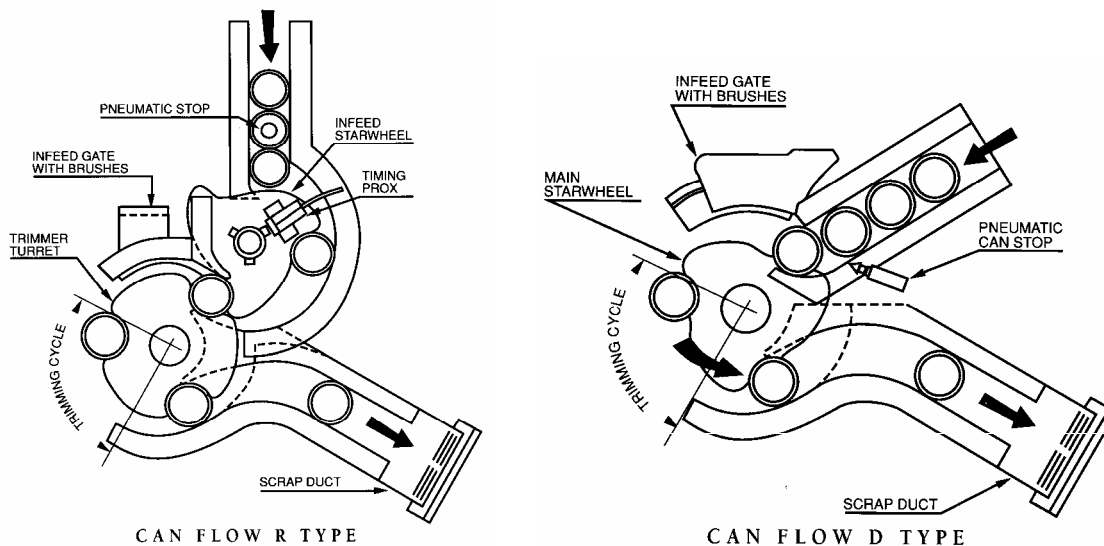
*Note: This conversion reduces maximum trimmer speed to 300 CPM.*

## **Objective and Benefits:**

- Reduces changeover time on lines that have frequent can diameter changes.
- Replaces existing cam drop or CV Infeed and eliminated the infeed starwheels.
- Cans feed directly onto the main turret starwheel
- Some customers have elected to purchase complete towers, for each can size diameter they run, reducing changeover time even more. Each tower is equipped with pin can stop, height and diameter change parts.

## **To order:**

Please fill out the information page at the end of Section 4 and forward to Belvac with purchase order.



**HEAVY DUTY JACK SHAFT (CARTRIDGE DRIVE) UPGRADE**  
**P/N 10317-CC93**

**Qualifying Trimmers:**

All CC series Trimmers manufactured prior to mid 1987.  
(This feature is standard on all CC series Trimmers except QC Trimmers)

**Objective and Benefits:**

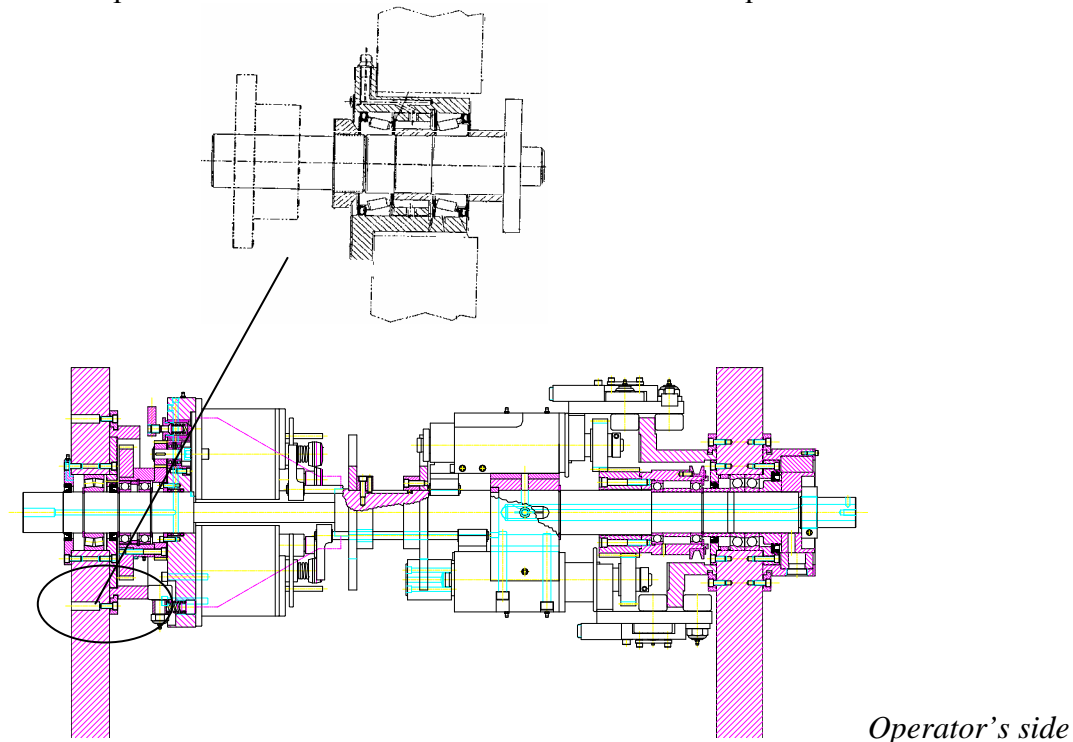
- Eliminates premature breakage and bearing failure due to excessive side loading.
- Tapered roller bearings replace the cartridge type bearings used previously.
- The increased spread between these bearings and their inherently greater capacity to handle the side load of the main drive belt, along with a positive pre-load set during assembly, ensure a longer service life of this assembly.
- A single split clamp nut replaces the original shaft nut and lock washer design. (*Refer to Technical Bulletin Issue 24, Vol. 1 for more information*)

**Installation:**

This unit is shipped assembled and directly replaces the existing assembly.

**To order:**

Use the part number above. No additional information required.



*Trimmer Shaft, Side View*

*Note: Jack Shaft Assembly not shown on shaft view, area circled to clarify its actual location*

# **CT500 TRIM STATION RESTORATION KITS**

*P/N 7503663 for 211 diameter, Standard Trim*

*P/N 7503664 for 300 diameter, Standard Trim*

*P/N 7503665 for 202 diameter, Standard Trim*

*P/N 7503666 for 211 diameter, Break Trim Style*

*Other diameters available upon request*

## **Qualifying Trimmers:**

All CT500 Trimmers

## **Objective and Benefits:**

- Provides all parts necessary for the customer to restore a Trim Station. (See diagram below)

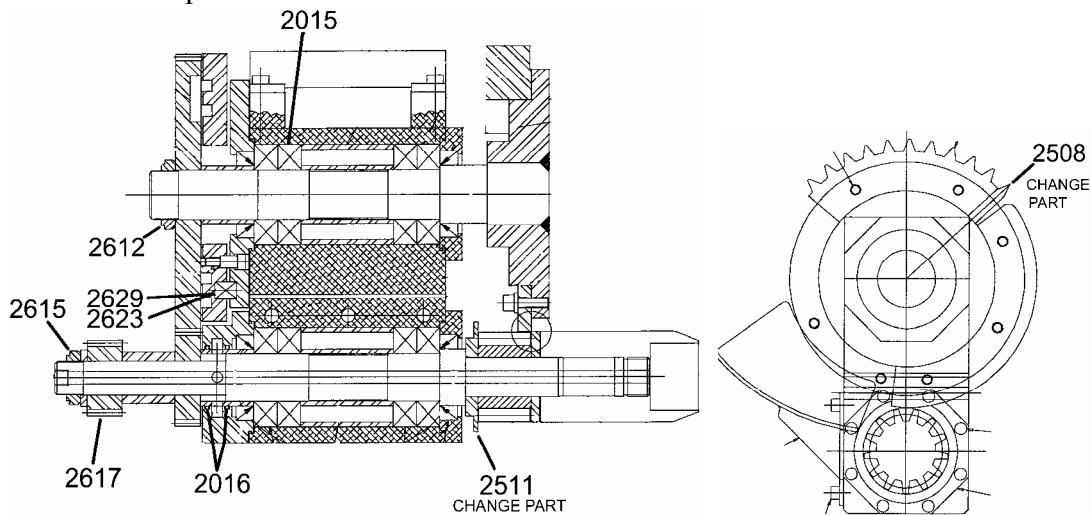
**Note:** *Gears, manifold, and knives are not included because they should be inspected as part of a regular maintenance program, and only replaced as needed. These items may be reground or replaced with new.*

- Customer only needs to order and stock (1) part number instead of eleven parts.

## **Installation:**

Restoration of each Trim Station requires 2-4 hours.

**To order:** Use the part number above with the corresponding can diameter. No additional information required.



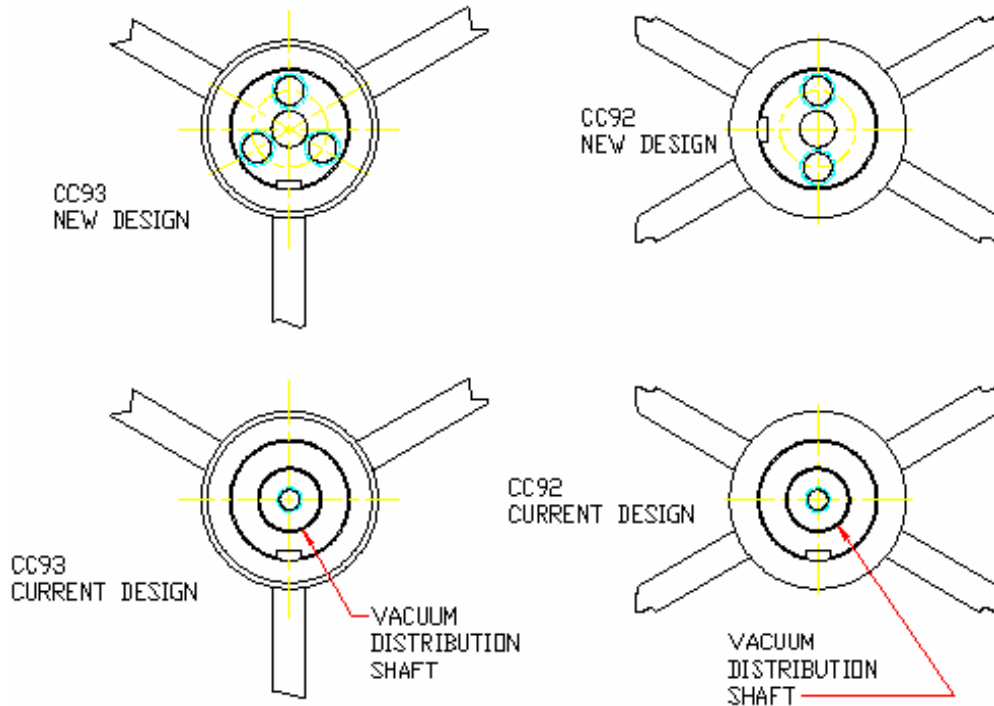
**CT500 TRIM STATION, Side View**

**Front View**



## CC92 & CC93 VACUUM DISTRIBUTION SHAFT ELIMINATION

Belvac has designed and introduced an individual vacuum port design, which takes the place of the current vacuum distribution shaft. This design incorporates 0.44 diameter vacuum ports, replacing the grooved distribution shaft.



Customer's replacing original shafts for their CC92 & CC93 should also order the following parts for port maintenance:

**Brush - C21359**  
**Brush Handle - C21360**

Reference: Technical Bulletin Issue 12 Volume 8 March 2000.

## **EASY MAINTANENCE “EMC” CARTRIDGE**

Belvac has designed the patented, **Easy Maintenance “EMC” Cartridge** to replace the Standard Duty and Heavy Duty Trimmer Cartridges. Today’s limited workforce does not always have the luxury of providing technical personnel to focus specifically on cartridges. Belvac has designed the EMC cartridge assembly to accommodate a workforce with wider, less specialized skills.

This design offers the same functionality, and process precision of the Heavy Duty cartridge, with the following design attributes:



- Average Maintainer Skill Level is Sufficient for Assembly
- Typical cartridge rebuild time has been reduced from 4-hours to 1.5 hours.
- High precision angular contact bearings assure run out specification is readily attained and maintained.
- Shaft height (knife gap) is obtained via a micrometer style adjustment screw external to the cartridge.
- Depth of cut is factory preset.
- Inside and Outside Burr Specific
- Directly Retrofittable to Existing Trimmers.

### **Installation:**

This unit is shipped assembled and directly replaces the existing assembly.

### **To order:**

Please provide burr type, can diameter, can material and knife material.

### **EMC Cartridge Accessories, Part Number & Description:**

**9310113**

#### ***Trimmer Handle Kit***

This kit consists of Qty (3) handles and (3) mounting bolts, a full complement for a 3-head trimmer.

**9310099**

#### ***Transport Fixture***

This spring loaded fixture allows positive grip capability during transport.

**9310120**

#### ***Knife Closure Fixture Assembly***

Fixture provides a secure method to close knives for measurement. One required per plant.

**9310121**

#### ***Knife Height Setup Fixture***

Fixture holds an indicator, which attaches to the unit and is utilized to accurately measure knife gap. One required per plant.

# EMC CARTRIDGE PART NUMBERS

Select Part Number below by burr type, can diameter, can material and knife material.

## PART NUMBER

## DESCRIPTION

### Outside Burr:

9310000-OB202AL-CA	Outside Burr, 202 Diameter, Aluminum Can, Carbide Knife
9310000-OB202AL-M2	Outside Burr, 202 Diameter, Aluminum Can, M2 Knife
9310000-OB202AL-D2	Outside Burr, 202 Diameter, Aluminum Can, D2 Knife
9310000-OB211AL-CA	Outside Burr, 211 Diameter, Aluminum Can, Carbide Knife
9310000-OB211AL-M2	Outside Burr, 211 Diameter, Aluminum Can, M2 Knife
9310000-OB211AL-D2	Outside Burr, 211 Diameter, Aluminum Can, D2 Knife
9310000-OB211ST-CA	Outside Burr, 211 Diameter, Steel Can, Carbide Knife
9310000-OB211ST-M2	Outside Burr, 211 Diameter, Steel Can, M2 Knife
9310000-OB211ST-D2	Outside Burr, 211 Diameter, Steel Can, D2 Knife
9310000-OB300-CA Knife	Outside Burr, 300 Diameter, Aluminum or Steel Can, Carbide
9310000-OB300-M2 Knife	Outside Burr, 300 Diameter, Aluminum or Steel Can, M2
9310000-OB300-D2	Outside Burr, 300 Diameter, Aluminum or Steel Can, D2 Knife

### Inside Burr:

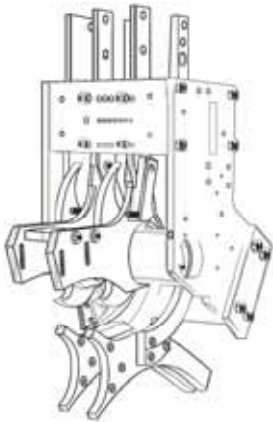
9310090-IB202AL-CA	Inside Burr, 202 Diameter, Aluminum Can, Carbide Knife
9310090-IB202AL-M2	Inside Burr, 202 Diameter, Aluminum Can, M2 Knife
9310090-IB202AL-D2	Inside Burr, 202 Diameter, Aluminum Can, D2 Knife
9310090-IB211AL-CA	Inside Burr, 211 Diameter, Aluminum Can, Carbide Knife
9310090-IB211AL-M2	Inside Burr, 211 Diameter, Aluminum Can, M2 Knife
9310090-IB211AL-D2	Inside Burr, 211 Diameter, Aluminum Can, D2 Knife
9310090-IB211ST-CA	Inside Burr, 211 Diameter, Steel Can, Carbide Knife
9310090-IB211ST-M2	Inside Burr, 211 Diameter, Steel Can, M2 Knife
9310090-IB211ST-D2	Inside Burr, 211 Diameter, Steel Can, D2 Knife
9310090-IB300-CA Knife	Inside Burr, 300 Diameter, Aluminum or Steel Can, Carbide
9310090-IB300-M2	Inside Burr, 300 Diameter, Aluminum or Steel Can, M2 Knife
9310090-IB300-D2	Inside Burr, 300 Diameter, Aluminum or Steel Can, D2 Knife

## **SOFT TOUCH INFEED (STI)–ALL CC93 MODEL TRIMMERS**

The *STI* is now standard on all Belvac CC93 Trimmers.

Belvac has introduced a quality improved infeed design “*Soft Touch Infeed*” (*STI*) for all CC93 model trimmers to virtually eliminate scuffing and scratches. This advanced technology was designed in response to changes in the industry’s metal thickness and increased line speeds, offering significantly greater can control throughout the infeed path, and a gentler transition into the main turret of the CC93.

*Refer to the following diagram for the Half Tower Retrofit:*



### ***Other features and benefits for the STI are:***

- Maintained existing drive & pulley ratios.
- Non-adjusting rails eliminate operator guesswork
- Economically viable - CC93 half tower retrofits available
- Utilizes the existing lower rails, scrap duct, jam detection, guarding, and side plate spacers
- Field-tested resulted in over 90% reduction of “scuffing” and “scratching”.
- Field-testing with aluminum and steel cans at speeds of 350-400 CPM.

Retrofit kits for all existing CC93 Model Trimmers are now available. Please contact Belvac Technical Sales Representatives with Trimmer serial numbers, for STI retrofit quotations or additional information. (Note: CC93 Trimmers shipping prior to 1982 will require additional parts to complete retrofit)

### **Note:**

Existing infeed height change parts will not be acceptable with the STI design. Additionally, older era CC93 Trimmers will require upgrades to the latest technology, e.g. pin stop mechanism.

### **Installation:**

This unit requires approximately 6 hours to install. It can be purchased as a complete half tower.

### **To Receive A Quotation:**

Please fill out the information page at the end of Section 4 for Trimmer Maintenance Upgrades and forward to Belvac Sales.

## **CC92 TO CC93 CONVERSION**

*Part Number assigned when order is placed*

### **Qualifying Trimmers:**

Available for all CC92 (2-head) model Trimmers.

### **Objective & Benefits:**

- Increase production by 50% at same RPM's
- Increase speed capacity limit to 400 CPM (if speed change parts are purchased)
- Efficient use of existing equipment
- Provides opportunity to replace major parts on older, well-worn machines.

### **Parts Included:**

Complete cartridge assembly

Complete spindle assembly

Main shaft (drilled prior to shipment)

Main spindle frame for 3-spindles

3-pocket Cutting head retainer plate

M/T Starwheels

Infeed Starwheels

Stripper housing assembly

Main Shaft Bearings & Seals Kit

Vacuum selector ring

Cut drive assembly

Can chuck

All necessary hardware to complete conversion

**Note:** Speed change parts optional. Belvac recommends a 3 HP motor for speeds over 300 cpm.

### **To Order:**

Fill out the Trimmer Model Type Conversion Specification sheet at the end of Section 5 and forward to Belvac when placing an order.

## **CC92/CC93 TO CC95 TRIMMER CONVERSION**

*Part Number assigned when order is placed*

### **Qualifying Trimmers:**

All CC92 and CC93 model Trimmers.

### **Objective & Benefits:**

- Increased speed capability (up to 500 CPM)
- Efficient use of reusable CC92 and CC93 components
- Minimal Downtime required for conversion
- Common parts and maintenance programs
- No retraining of plant personnel required
- Factory trained service Engineer installs and sets up machine

### **Hardware that may be reusable from existing CC92/CC93 trimmers:**

- Cartridge assemblies
- Spindle assemblies w/main follower assemblies (*Replace starwheel segment and gear; Optional anti-rotation assembly can be added.*)
- Main follower assembly cartridge
- Cartridge jackshaft assemblies
- Spindle jackshaft assemblies
- Pushbutton assemblies
- Cut drive assemblies (Replace gear)
- Autolube panel assembly
- Air input panel assembly

*Note: Existing usable parts will vary by model, machine set-up, and condition.*

### **Conversion Includes:**

- Skeleton CC95 model Trimmer complete with legs, SS sliding guards, and all piping and electrics
- Factory trained service engineer to audit machine, install kit and qualify machine (one day per kit)
- 12 month warranty on replaced parts and labor

### **Conversion does not include:**

- Worn parts identified during audit
- Travel and living expenses of service engineer
- Freight and/or import duties

### **To order:**

Contact a Belvac Sales Representative with existing Trimmer serial numbers to coordinate identification of available parts and new parts required for this conversion. (It would be helpful to fill out the Trimmer Conversion Specification sheet at the end of Section 5 for quotation.)

## **C TO CL AND R TO RML MODEL CONVERSIONS**

*Part Number assigned when order is placed*

### **Qualifying Trimmers:**

CC92 and CC93 model “R” and “C” trimmers.

### **Objective & Benefits:**

- Increase the maximum can height of the trimmer from 605 (160mm) to 805 (211mm)
- Provides a new main shaft which is 2 in. (50.8 mm) longer

### **Installation:**

Requires approximately 2-days to install (*Note: An alignment fixture is required to set the end frames. Customers must order P/N 705297 - CC93 SWEEPING FIXTURE, returning it for credit*)

### **Parts Included:**

Main follower assemblies, spacers, infeed starwheel hub, infeed drive shaft, stripper pull rods, spindle drive gears, main shaft, main spindle frame, drip pan, main base plate, all M/T seals and bearings and necessary hardware for conversion.

### **To order:**

Provide information on the Trimmer Conversion Specification sheet at the end of Section 5 when ordering.

## **TRIMMER SPEED CONVERSIONS**

*Part Number assigned when order is placed*

### **Qualifying Trimmers:**

Available for all CC92, CC93, CC95, CC96, and CT500 trimmers that have drive setups for less than the trimmer’s maximum rated speed.

### **Objective & Benefits:**

- Upgrade a machine’s speed and drive parts to utilize the machine’s maximum rated speed.
- Factory engineered speed-up conversion for assurance of quality drive setup

### **To Order:**

Provide the information as requested on the Trimmer Conversion Specification sheet at the end of Section 5 when ordering.

## **CAN HEIGHT AND/OR DIAMETER CHANGE PART KITS**

*Part Number assigned when order is placed*

### **Qualifying Trimmers:**

All model Trimmers are capable of running a minimum and maximum can height and diameter range. Consult Belvac (or Belvac brochures) for the range capability of each machine. Each kit is engineered specifically for the customer's machines. Please allow 12 weeks for delivery.

### **For Quotation:**

Contact Belvac with the machine serial numbers, current and proposed can sizes for size change part quotation. Providing Trim Can Heights (TCH) as well allows for a more accurate quotation.

### **Delivery:**

Please allow 12 weeks for delivery of change parts from receipt of specifications and purchase order.

### **Installation:**

Height Changes approximately 1-½ hour per Trimmer. Height and Diameter changes require approximately 6 hour per Trimmer. Diameter changes require approximately 6 hour per Trimmer. Note: add at least ½ hour to times above for CT500 Trimmers.

### **To Order:**

Provide the information as requested on the Trimmer Conversion Specification sheet at the end of Section 5 when ordering.



## **CV INFEED CONVERSION**

*Part Number assigned when order is placed*

### **Qualifying Trimmers:**

All CC92 and CC93 model Trimmers.

### **Objective and Benefits:**

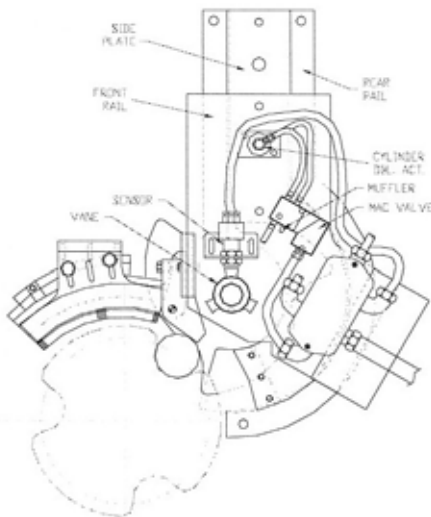
- Constant Velocity (CV) infeed system provides a smooth, continuous and uninterrupted flow of cans into the main turret starwheel.
- Downtime replacement parts or adjustment to the infeed mechanism is greatly reduced because most of the moving parts associated with the cam drop infeed are eliminated.
- Includes pin stop conversion, which utilizes an air cylinder and rubber stop that is actuated against the dome end of the can.
- *(Note: Option to purchase CV Infeed conversion without Pin Stop is available)*
- Eliminates can sidewall damage when can flow is stopped increasing the operating latitude.
- Side plates are diameter specific.
- Modification drawings are supplied when a customer wants to modify existing infeed side plate and side frame. Additional side plates must be purchased for each can size.

### **Installation:**

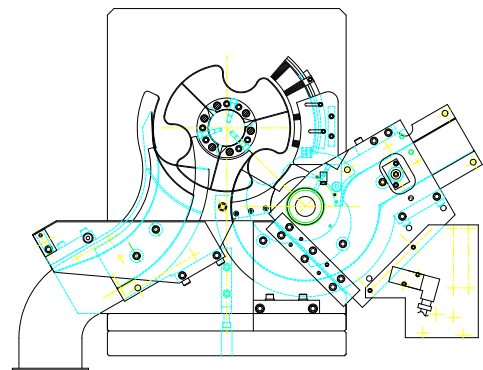
Requires approximately 4-6 hours per machine.

### **To Order:**

Please fill out the data spec sheet and forward to Belvac with purchase order.



CV Infeed (shown with Pin Stop)  
R/RML Models



CV Infeed (shown with Pin Stop)  
C/CV Models

## **211Ø CAN INFEED PIN STOP**

*P/N 17511-CC93 + 211Ø Ch/Pts; R/RML non-CV models, complete kit*

*P/N 17512-CC93 + 211Ø Ch/Pts; R/RML CV models, complete kit*

*P/N 455005-CC93 + 211Ø Ch/Pts; C/CL models, complete kit*

## **211Ø CAN INFEED PIN STOP w/MODIFICATION DWGS**

*P/N 455006-CC93 + 211Ø Ch/Pts; C/CL models, customer modification dwgs*

*P/N 17514-CC93 + 211Ø Ch/Pts; R/RML CV models, customer modification dwgs*

*P/N 17513-CC93 + 211Ø Ch/Pts; R/RML non-CV models, customer modification dwgs*

### **Additional sizes are available upon request.**

*Note: The Pin Stop requires a CV style Infeed and a pneumatic air panel. Trimmers with a non-CV infeeds must be converted to CV infeed and purchase an air panel to operate the Pin Stop.*

*Note: Dome Side Infeed plates require modification for pin stop, making them diameter dependent part. Additional side plates must be ordered for each can size.*

### **Qualifying Trimmers:**

All CC92 and CC93 model Trimmers.

### **Objective and Benefits:**

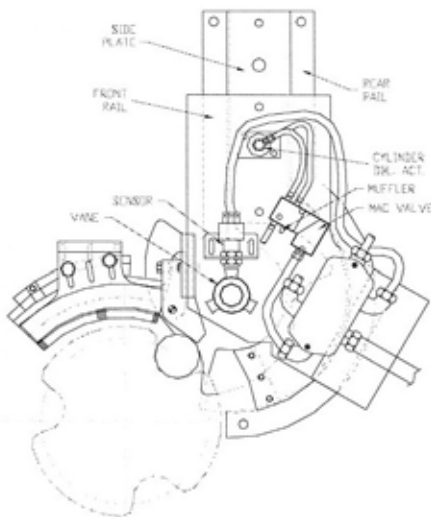
- Decreases damage to can sidewall when can flow is stopped
- Less adjustment and maintenance which decreases downtime
- Pin Stop bumper positioned in the dome of the can stops the flow of cans when the infeed level falls below the stack proximity sensor.
- The Pin Stop utilizes an air cylinder with a rubber stop contacting the dome of the can.
- Option to purchase complete kit or with customer modification drawings for any customer who will modify existing sideframe and sideplate.

### **Installation:**

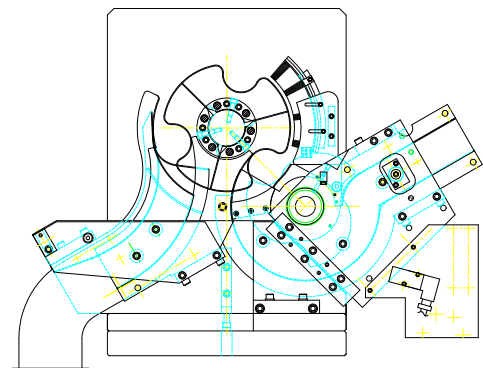
Requires approximately 4-6 hours to install per machine.

### **To Order:**

Please fill out the data spec sheet and forward to Belvac with purchase order.



R/RML Models



C/CL Models

## **SPINDLE OVERRUN SPRING ASSEMBLY (with upgrade)**

**P/N 122404-CC93**

### **Qualifying Trimmers:**

All CC92 and CC93 Trimmers manufactured prior to 1991. This upgrade is standard on machines manufactured after 1991.

### **Objective and Benefits:**

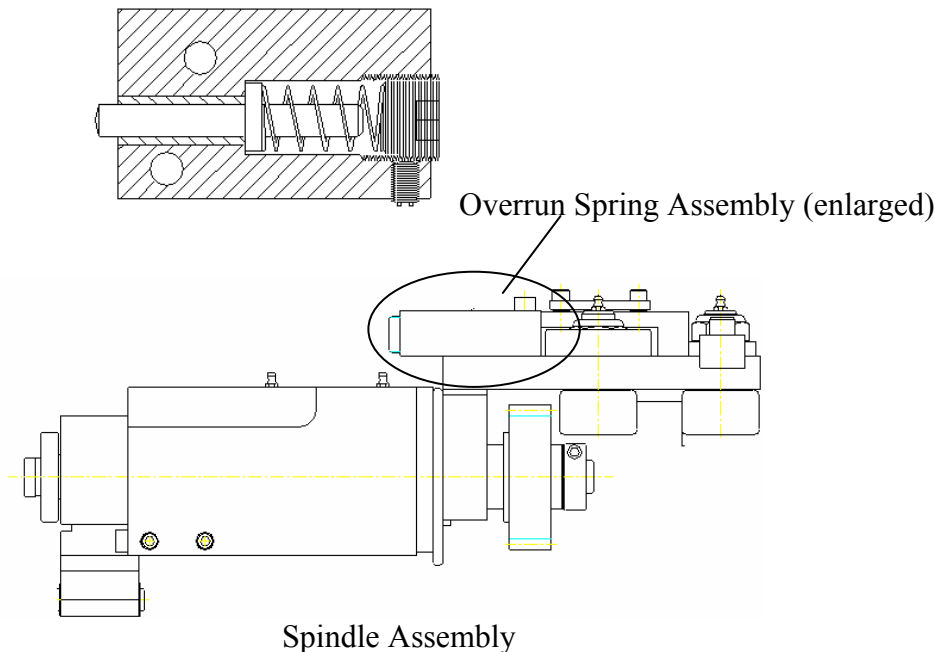
- Controls homing ring and spindle overrun assembly when trimmer rotates to the on cam position.
- Utilizes a heavy-duty die spring in place of original cut and ground spring eliminating premature spring breakage.
- Positive spring load on homing ring ensures zero movement in spindle sleeve during the trim cycle. This prevents steps, slivers, and trim edge variation on the can.
- Features nylon set screw to lock adjustment in place once it is set.
- The spring and pushrod can be replaced without removing assembly reducing downtime.
- Rework drawing 122410-CC93, included in assembly above to modify the follower pivot bracket.
- Mating Pivot Arm, P/N 12222-CC93, incorporates a carbide insert (C21300 sold separately).
- Override drill Template (704255 available upon request) offers easier and faster hole placement for first time installation.

### **Installation:**

Requires approximately 3 hours to install.

### **To order:**

Use the part numbers above to order. No additional information is required.



## **ALTERNATE THRUST BEARING ASSEMBLY**

***P/N 58334-CC93***

### **Qualifying Trimmers:**

All CC92 and CC93 model Trimmers manufactured prior to 1983 and is standard feature on all new trimmers since that time.

### **Objective and Benefits:**

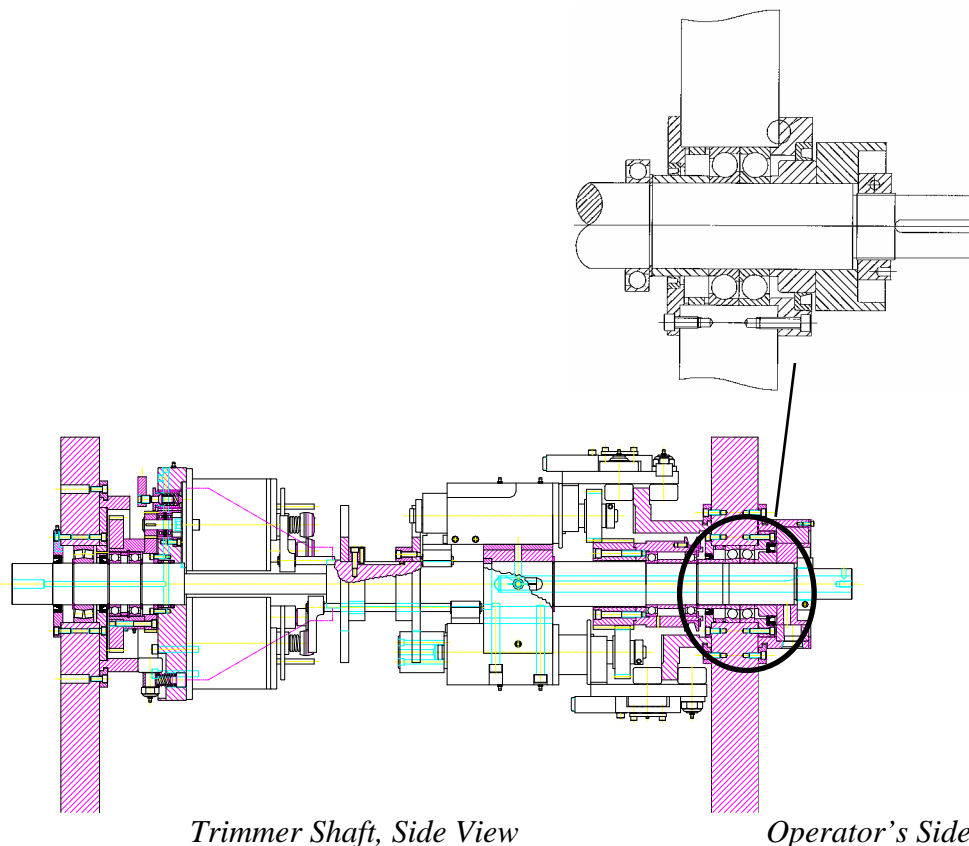
- Reduce excessive pre-load and main shaft damage.
- Prolong the bearing life.
- Bearings have ground pre-load set at .003" at the time of assembly. This pre-load is independent of the main shaft-locking device.
- Pre-load will not change when the shaft nut is removed while cleaning vacuum systems on the main shaft, or when performing general maintenance.
- Pre-load can be adjusted to .003" when new bearings are installed in the trimmer by means of regrinding the grease seal housing.

### **Installation:**

Requires approximately 6-8 hours to install.

### **To Order:**

Use the part number above to order. No further information is required.



*Trimmer Shaft, Side View*

*Operator's Side*

**STANDARD & HEAVY DUTY CARTRIDGE ASSEMBLY CONVERSIONS**

<i>P/N 014002-CC62</i>	<i>Standard Duty Inside Burr to Heavy Duty Inside Burr</i>
<i>P/N 014002-CC52</i>	<i>Standard Duty Outside Burr to Heavy Duty Outside Burr</i>
<i>P/N 014003-CC52</i>	<i>Heavy Duty Inside Burr to Heavy Duty Outside Burr</i>
<i>P/N 014003-CC62</i>	<i>Heavy Duty Outside Burr to Heavy Duty Inside Burr</i>
<i>P/N 014007-CC52</i>	<i>Standard Duty Inside Burr to Heavy Duty Outside Burr</i>

**Qualifying Trimmers:**

All CC92, CC93, and CC95 Model Trimmer Cartridge Assemblies.

**About the Cartridges:**

- Type of burr and inside burr “IB” or outside burr “OB” are the only options available.
- Heavy Duty is considered the preference choice over Standard Duty.
- Standard Duty to Heavy Duty is considered an upgrade.
- Belvac does not recommend converting cartridges in the field.

**Benefits of the Standard (SD) to Heavy Duty (HD) Cartridge Upgrade:**

- Upper & Lower knives are common, so existing knives may still be used if in good condition
- Standard Duty dowel pins are replaced with keyways in the Heavy Duty to locate the gears
- Drive gears reference are supported on flanges rather than snap rings
- External grease fittings offer easier maintenance/lubrication (SD duty is a sealed unit)
- Conversion available for all standard duty cartridges
- Cartridges will be reworked to “like-new” condition during conversion

**To Order:**

- Call Belvac Sales for a Return Authorization prior to shipping any cartridges to Belvac.
- Please fill out the data spec sheet and forward to Belvac with purchase order. Provide can size, knife material (carbide, D-2, or M-2), and can material (aluminum or steel).
- We encourage customers to send the knives and stripper-housing assemblies with the cartridges for a more beneficial rebuild. The knives and pins are inspected and replaced only if they are out of specification and if customer approves replacement.

*See Cartridge diagrams next page*

## **CARTRIDGE BUTTON OVERRIDE ASSEMBLY UPGRADE**

*P/N 122364-CC93*

### **Qualifying Trimmers:**

All CC92 and CC93 Model Trimmers manufactured prior to the end of 1990

### **Objective and Benefits:**

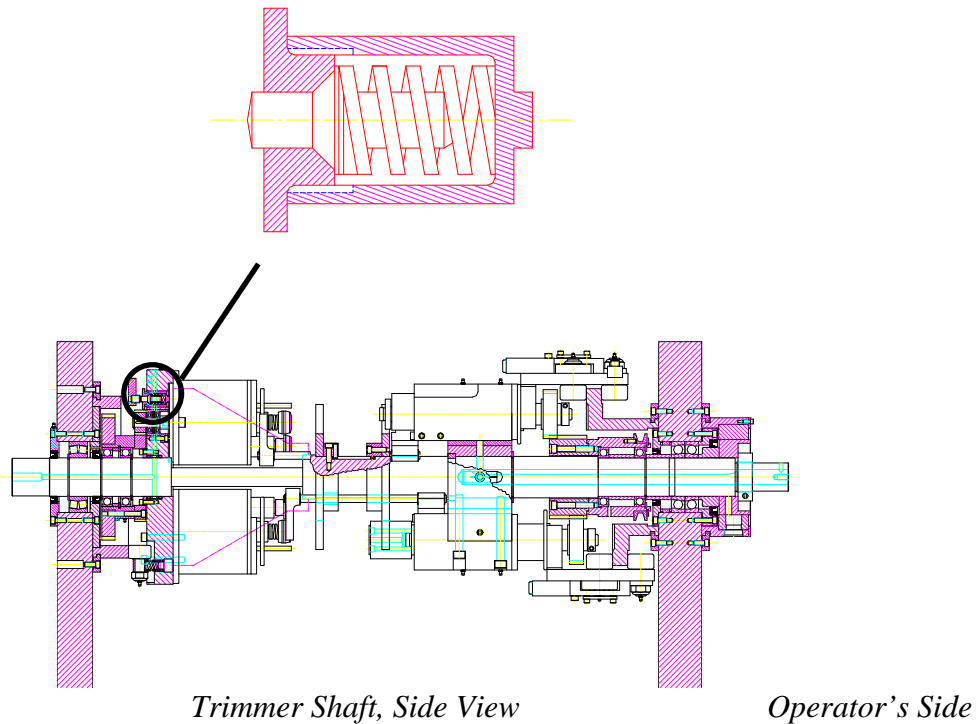
- Standard on all Trimmers after 1990
- Controls the override of cartridge knives
- Utilizes a heavy-duty die spring, which decreasing spring breakage.
- Increased spring life will reduce troubleshooting and maintenance downtime, resulting in increased production.
- Offers positive spring load on lower arm assembly throughout the trim cycle.
- Carbide insert on button housing eliminates wear on contact points.

### **Installation:**

Installs without modification to existing machine. Requires approximately 1 hour per machine.

### **To Order:**

Use the part number above when ordering. No additional information required.



## **DISCHARGE BRUSH DESIGN TO CONTROL TRIM RINGS**

*P/N 15477-CC93 CC92/93 R & RL Models*

*P/N 453044-CC93 CC92/93 C & CL Models*

### **Qualifying Trimmers:**

All CC92 and CC93 Trimmers manufactured prior to January 1996.

Refer to Technical Bulletin Issue 17, Vol. 1 for additional information.

### **Objective and Benefits:**

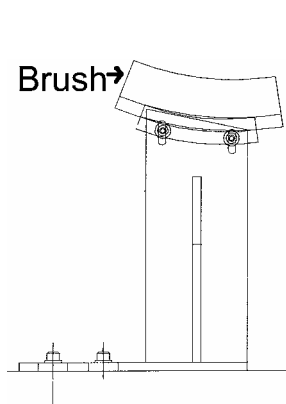
- Standard on all Trimmers after that date.
- Holding the trim ring with the brush reduces the occasional trim rings entering the can
- Brush Assembly designed to accept a shorter bristle brush (1.50", 38.1 mm), and locates the brush such that the bristles barely brush the striper housing pins after the trim cycle.
- Mounts easily to trimmer base and fully adjustable for all can sizes

### **Installation:**

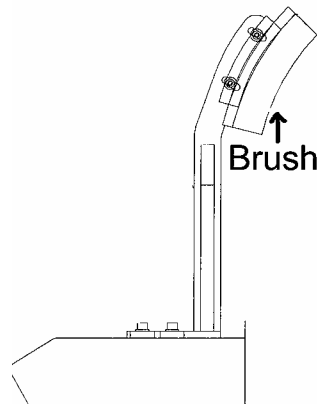
Drill Template drawing provided with order. Requires approximately 2 hours per machine to install.

### **To order:**

Use part numbers above for the appropriate model Trimmer. No additional information is required.



R/RML Brush Assembly



C/CL Brush Assembly

## **SPINDLE ANTI-ROTATION ASSEMBLY UPGRADE**

12357-CC93	KIT, SPINDLE ANTI-ROT 202	123192-CC93	KIT SPINDLE ANTI ROTATION 209
123194-CC93	KIT SPINDLE ANTI ROTATION 206	12390-CC93	KIT, SPINDLE ANTI-ROT 211BUMPER
123191-CC93	KIT SPINDLE ANTI ROTATION 207.5	123193-CC93	KIT SPINDLE ANTI ROTATION 300
123197-CC93	KIT SPINDLE ANTI ROTATION 303		

*Note: Kits for other can diameters are available upon request.*

### **Qualifying Trimmers:**

All CC92 and CC93 Trimmer Spindle Assemblies manufactured prior to January 1997.

The close tolerance sliding feature of the two Bronze Spindle Twist Retainer Plates and the mating Spindle Wear Block is responsible for proper alignment of the can to the cartridge: maintaining sliver-free cans. By the sliding nature of the design, wear is common.

### **Objective and Benefits:**

- The rolling cam follower action between mating parts reduce friction and wear
- Dual dowel alignment on follower plate insures proper alignment to spindle sleeve
- Hardened tool steel roller plates provide long life
- Maintains easy diameter conversion capability
- Direct interchangeability between all CC92 & CC93 trimmers
- Utilizes existing stripper pull rods
- Ease of assembly and maintenance
- No modifications required to existing spindle or spindle housing

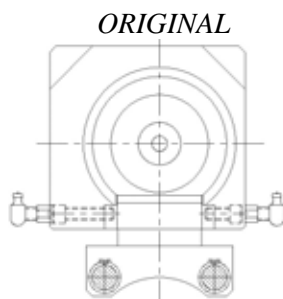
### **Installation:**

Installation requires approximately 1 hour per spindle assembly and includes appropriate drawings.

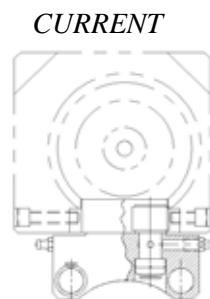
### **To Order:**

Use corresponding part numbers listed above for specific can diameters. No additional information is required.

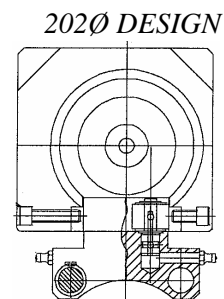
### *Spindle Assembly cross-section views*



Wear Block Design

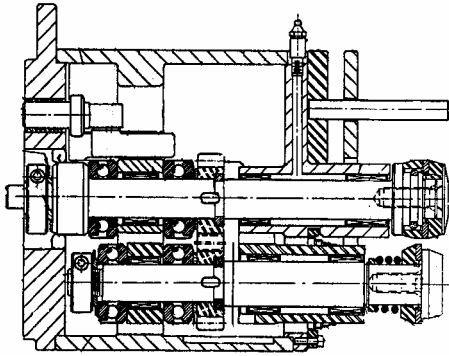


211 Dia. Anti-Rotation  
(Bumper Design) 2003

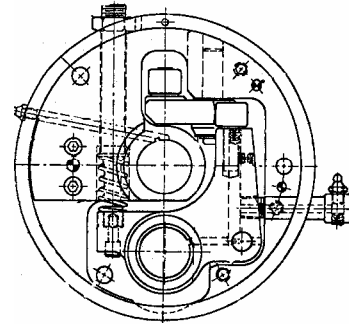


Non 211 Anti-Rotation Design

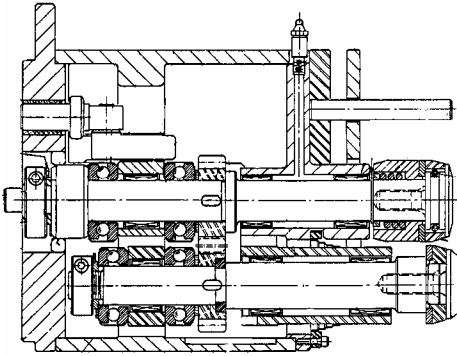




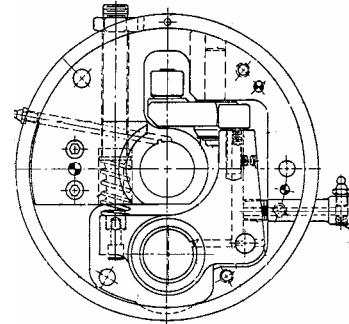
014001-CC62 HD- IB, Side View



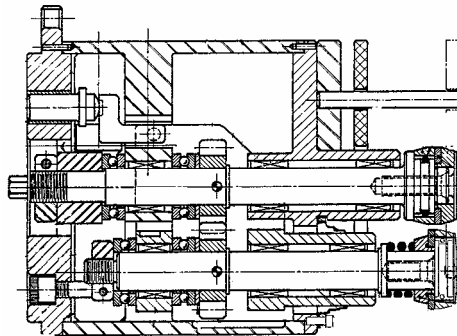
HD- IB, Top View



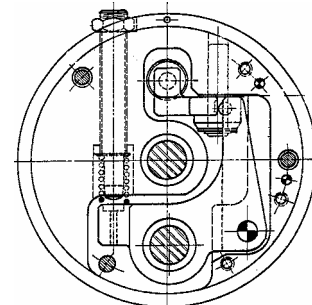
014001-CC52 HD- OB, Side View



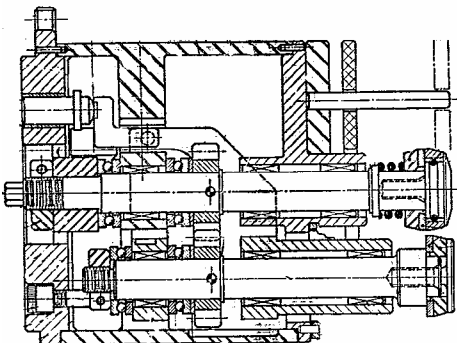
HD-OB, Top View



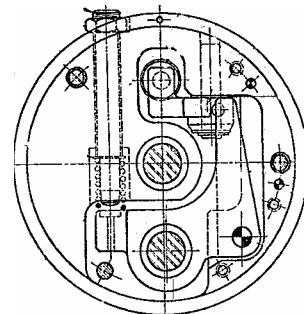
11401-CC61 SD-IB, Side View



SD-IB, Top View



11401-CC51 SD-OB, Side View



SD-OB, Top View

## **CT500 BREAK TRIM UPGRADE**

***P/N 7501267: 211Ø CT500 Break Trim Conversion Kit***

***(Other diameters available upon request)***

### **Qualifying Trimmers:**

All CT500 model Trimmers

### **Objective and Benefits:**

- Offers a burr-free, trimmed edge on a steel or aluminum beverage container
- Burr is maintained on the scrap improving the trim edge quality
- Considerably increasing tool life
- Design is similar to the old style "D" knife, the exception being that a radius is used on the cut edge of the knife instead of the more common sharp edge.
- Downtime is minimized due to the simplicity of knife changes.

### **Operation:**

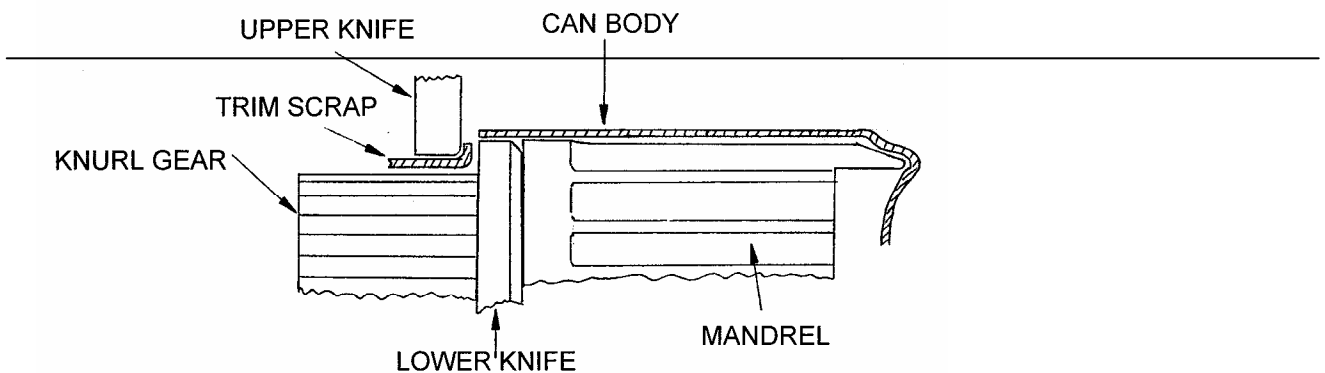
The operation with the new "D" knife style consists of the open end of an untrimmed container, minimum 0.125" (3.175mm) hanging over the sharp edge of a tool-steel or carbide lower knife. As the container rotates with the lower knife, a "D" shaped upper knife on the upper shaft penetrates the container with its radiused edge breaking the excess stock over the sharp edge of the lower knife. Refer to Technical Bulletin Issue 13, Vol. 1 for more details.

### **Installation:**

Requires approximately 3 hours per Trim Station

### **To Order:**

Use the part number above for all 211-diameter applications. Contact Belvac if other diameter is required. No other information required.



## **“CL” DETENT TRANSFER BRUSH ASSEMBLY UPGRADE**

<b><i>P/N 455027-CC93</i></b>	<b><i>211 Diameter Complete Kit</i></b>
<b><i>P/N 455025-CC93</i></b>	<b><i>211 Diameter Kit W/ Rework Drawings</i></b>
<b><i>P/N 455026-CC93</i></b>	<b><i>300 Diameter Kit W/ Rework Drawings</i></b>
<b><i>P/N 455028-CC93</i></b>	<b><i>300 Diameter Complete Kit</i></b>
	<b><i>Other diameters available upon request</i></b>

### **Qualifying Trimmers:**

All CC92 and CC93 Crossflow (C/CL) model Trimmers. (Refer Technical Bulletin Issue 12, Vol. 2 for additional information)

### **Objective and Benefits:**

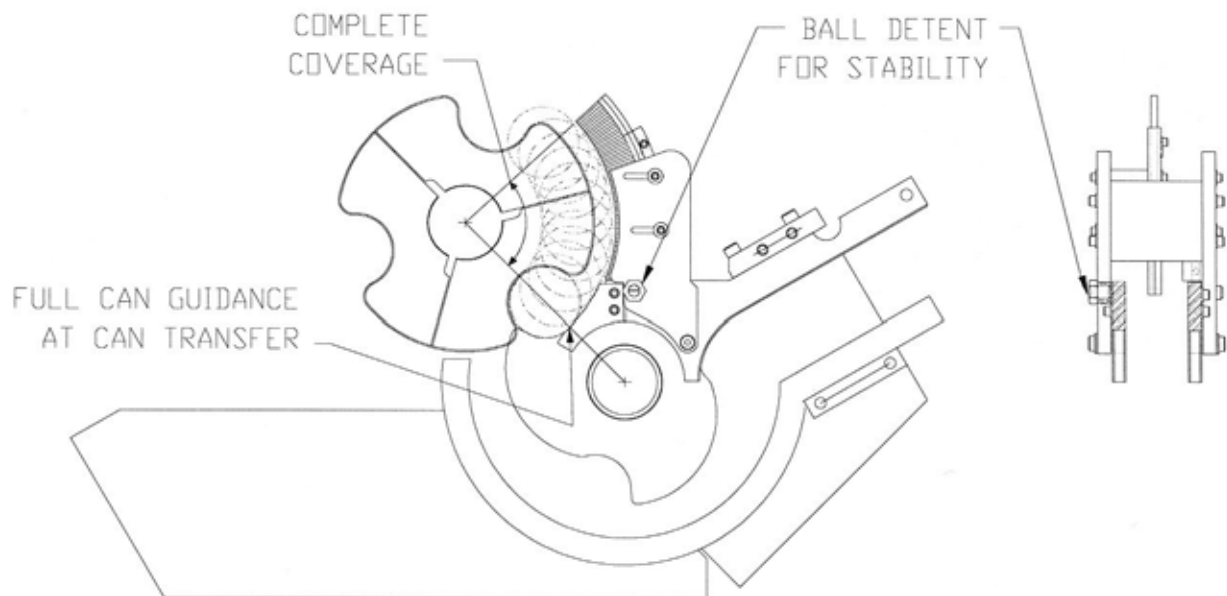
- Ideal for customers involved in lightweighting projects
- Greatly improves can transfer for steel and aluminum cans into the main turret starwheel at speeds above 200 cpm
- Designed to control the can throughout the transfer process
- Extends high speed production runs
- Easily retrofits to existing machines
- Customer may order a complete kit with new upper Infeed rails and side gates, or a kit including rework drawings so the customer can modify existing upper rails and side gates

### **Installation:**

Requires approximately 1-2 hours per machine (additional time required when modifying existing parts).

### **To Order:**

Use the part number above to order. Please contact Belvac for other diameters.



# “R/RML” DETENT TRANSFER BRUSH ASSEMBLY UPGRADE

P/N 173214-CC93 211 Diameter Pre-Assembled Kits:  
P/N 173212-CC93 202 Diameter Pre-Assembled Kits:  
P/N 173229-CC93 211 Diameter Rework Kit:  
P/N 173230-CC93 202 Diameter Rework Kit:

*Other diameters available upon request*

*Note: Customers must have crossover rails. Customers with stub nose rails must purchase complete kit. Crossover rails were made standard around 1991.*

## **Qualifying Trimmers:**

All CC92 and CC93 (R/RML) model Trimmers. (*Reference Technical Bulletin Issue 4, Vol. 3*)

## **Objective and Benefits:**

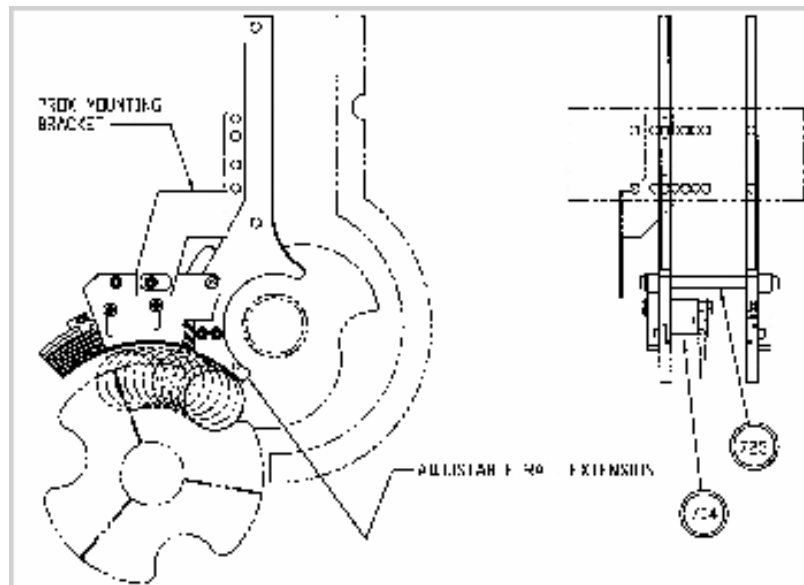
- Ideal for customers involved in lightweighting projects
- Greatly improves can transfer for steel and aluminum cans at the transfer point into the main turret starwheel at speeds above 200 cpm
- Reduces Scuffing and denting caused by High Speed Transfer
- Designed to control the can throughout the transfer process with an adjustable rail
- Extends high speed production runs
- Easily retrofits to existing machines
- Customer may order a complete kit with new upper Infeed rails and side gates, or a kit including rework drawings so the customer can modify existing upper rails and side gates

## **Installation:**

Requires approximately 1-2 hours per machine (additional time required when modifying existing parts).

## **To Order:**

Use the part number above to order. Please contact Belvac for other diameters.



## **INFEED CAN SEPARATOR STARWHEEL UPGRADE**

*P/N 173208-CC93 211 Diameter Specific R/RML*

*P/N 173209-CC93 211 Diameter Specific C/CL*

*P/N 173253-CC93 300 Diameter Specific R/RML*

*P/N 173255-CC93 300 Diameter Specific C/CL*

*Other diameters available upon request*

### **Qualifying Trimmers:**

All CC92 and CC93 (C/CL & R/RML) model Trimmers.

### **Objective and Benefits:**

- Ideal for customers involved in light weighting projects
- Reduces head pressure onto the Infeed starwheel
- Reduces dents caused by track load on light weighted products
- Separator starwheel is adjustable to customer's needs for specific resistance
- Kit includes a modification drawing for existing front rail.

### **Installation:**

Requires approximately 2-4 hours per machine.

### **To Order:**

Use the part number above to order for 211 diameter. Please contact Belvac if a different diameter is required.

