Product Qualification & Cost Savings

Customer Analysis:

**Belvac 595K Necker Bearings**

Reduction of customer’s high monthly maintenance costs and machine down-time while increasing performance.

**INDUSTRY:** Can Manufacturing  
**APPLICATION:** 42 Necker Stations  
**RBC PRODUCT:** BCF1-5/8 14CT Cam Followers

**TOTAL PLANT COST SAVINGS:** $402,150

Application Overview

- 3 necker lines, 14 necker stations per line, 2800 CPM
- Pusher rams move the cans into position and tooling rams conduct can necking in each station
- The cam follower OD runs against the necker cam at approximately 2350 RPM
- Traditionally, roller cam followers and rams are automatically lubricated (see Before image)
- BCF1-5/8 14CT Cam followers mounted on the necker tooling and pusher rams do not require re-lubrication (see After image)
- Accurate setting of the cam followers and the condition of the cam are critical for achieving uniform can wall thickness

Features, Benefits & Results

- Longer cam follower bearing life - estimated 2.5X improvement
- Precision Lubed-for-Life Ball Bearings
  - Engineered polymer tire - eliminates steel-on-steel cam wear, extending cam life and reducing wear on the cam follower OD
  - Hex head for easy installation
  - Drop-in upgrade for needle roller cam follower (Belvac 2700693 and McGill® CF-2965-2A)
- Use of polymer tire reduces bearing heat generation and extends bearing and grease life
- BCF1-5/8 14CT bearing seals prevent the ingress of wash down liquids and metallic particles from the necking operation into the ball bearings
- Eliminates the need to lubricate the bearings
  - No lube lines to necker cam followers
  - Reduces grease usage in the system
  - Reduces clean-up when changing rams or bearings
  - Reduces the risk of can contamination

Cost Reduction Overview (Est.)

<table>
<thead>
<tr>
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<th>OEM Bearing Replacement Cost</th>
<th>RBC Bearing Replacement Cost</th>
<th>Reduction in Bearing/Cam Replacement and Grease Costs</th>
<th>Total Plant Cost Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per Station/Mo.</td>
<td>$420</td>
<td>$251</td>
<td>$9,575</td>
<td>$402,150</td>
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<td>Per Station</td>
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<td>$9,575 x 14 Stations/Line x 3 Lines</td>
<td>$402,150</td>
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**Conclusion**

The new **BCF1-5/8 14CT** cam follower bearing **significantly reduces maintenance costs** over the original OEM design by eliminating bearing lubrication and wear of the cams. This success has been duplicated at can plants all over the world.
RBC Bearings® has been producing bearings in the USA since 1919. In addition to unique custom bearings, RBC Bearings® offers a full line of industrial parts for the canning industry, including:

- **Necker Cam Followers**
  - For Can Neckers
  - RBC Roller® Cam Followers with two rows of cylindrical rollers offer superior life to Needle Roller Cam Followers.

- **Necker Yoke Rollers**
  - For ANC Can Neckers
  - RBC Roller® Yoke Rollers with two rows of cylindrical rollers offer superior life to Standard Needle Roller Yoke Rollers.

- **Spindle Disk Cam Followers**
  - For Rutherford Can Decorators
  - Precision Dual-Race, Roller Cam Followers for improved life.

- **Spindle Disk Cam Followers**
  - For Concord Can Decorators
  - Precision Dual-Race, Roller Cam Followers for improved life. Available in versions for rotary and interposer trip systems.

- **Special Bearings**
  - For Ragsdale Body Makers
  - Special Combination Roller and Spherical Plain Bearings and Cam Followers for Ragsdale Body Makers.

- **Special Connecting Rod Bearings**
  - For Standun Body Makers
  - Special Spherical Plain Bearings with extended inner rings eliminate the need for spacers and simplify installation and removal.

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RBC Maintenance Free Solutions for Trimmers eliminates the need for relubrication and protects the cam from wear. New, improved sealing prevents coolant and washdown fluids from damaging the bearings. RBC Maintenance Free Ball Bearing Followers BCF1-1/2 10 CT and BCF1-3/4 10 CT are upgrades for OEM C20043 (McGill® CCF11/2SB) and C20044 (McGill® CCF13/4SB).

Climax Metal Products offers a keyless locking assembly that directly replaces the single nut bushing used to mount gears in the driveline of the necker. The screws on the Climax C192 Series KLD are easily tightened with a standard torque of 150 in-lbs. Compare this with the massive wrench and 409 ft-lbs. of torque required to tighten the single nut bushing supplied by the OEM and you will immediately understand the improved safety and ease-of-use this locking device provides to can makers.

Concord, Ragsdale, Rutherford, and Standun are brands of Stolle Machinery.