



INDUSTRIAL CASE STUDY

BEVERAGE CANNING NECKER MACHINE





Before Meldin® Solution



After Meldin® Solution

MELDIN® POLYIMIDES

Beverage Canning Necker Machine

Prasad K.R June 2021

INDUSTRIAL MAINTENANCE LONGER LIFETIME

Environment

The worldwide beverage cans Industry is projected to reach \$32 Billion by 2026 at a CAGR of over 5.0% from 2021. Reasons for this demand are due to aluminum cans offering a full range of benefits: easy to form, resist corrosion, lightweight, stackable and strong. Aluminum is a sustainable packaging option due to its recyclability. Further, the aluminum body allows for different graphic designs to grab greater customer attention.

Aluminum can manufacturing is a high-speed process where approximately 2.0 Million cans are manufactured each day, per line and per plant. The manufacturing process starts with cutting a circular blank from a big aluminum roll that is drawn into a cup. This cup is then shifted to the body maker to redraw to the shape of the can and form the walls and bottom of the can. This redrawing process leaves the can wavy at the top; therefore, a trimming operation is done to remove the unevenness, creating a straight and level edge. After the trimming process, the cans go through washing, external decoration, drying and internal coating.

Before the can goes for inspection and packing, necking and flanging are performed on the can. In this process, the diameter of the can, which is still cylindrical, is reduced and a flange at the edge is created. This entire operation is done in 12 to 16 stations.



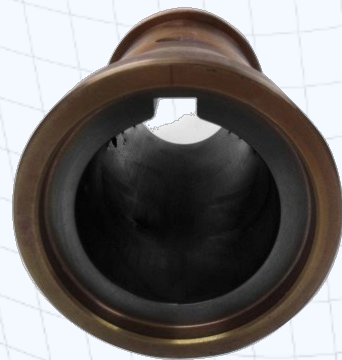
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Challenge

The necking machine is a critical bottleneck in a two-piece can line. Maintenance managers need the machine to run around the clock to keep up with the production targets of 2 Million cans per day. To ensure smooth operation, necker ram housings are continuously lubricated. In spite of all precautions, due to metal-on-metal movement, they can seize up if there is a problem with the lubrication feed. The result is either over lubrication, which is wasteful and messy, or a line crash due to shaft seizure if not lubricated enough. The OEM necker ram housing continues to wear, even with lubrication, and need to be replaced after 2 years. To replace the ram housing, the machine must be stopped, resulting in a downtime of 8 hours per station.

Solution

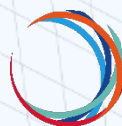
As part of your risk-based maintenance program, we provide retrofitted necker ram housings made from Meldin® 7500 polyimide material that do not need constant lubrication and have extended service life. We use advanced composite materials to make custom finished parts to print or are reverse engineered. Additionally, your maintenance risk is reduced because the reworked housings can run with or without continuous lubrication, eliminating shaft seizures and unscheduled downtime. If the continuous lubrication is cut off completely, we recommend manual lubrication once every 6 to 8 weeks. This improves the service life of Ram housing.



Lined housings last on average 4 times longer than the OEM housing. That's a service life of around 8 years and a major cost savings over time.

Benefits

- Higher Productivity
- Clean operations
- Low overall cost of ownership



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Design Expertise & Tailor-made Solutions for Your Critical Applications

Omniseal Solutions™ is a global engineering leader with over 65 years of historical legacy, relentlessly dedicated to the design and manufacture of precision sealing and material solutions that protect critical applications in the most demanding environments and passionately driven to push *Beyond the Boundaries of Possible*.



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