48 Hour Repack. Coca Cola Bottle Cap Solution

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We identified that the difficulty in removing the current Coca-Cola PET bottle cap affects some consumers, primarily those with age-related issues, disabilities, or varying levels of dexterity. These individuals may struggle to apply enough torque to break the tamper-evidence band or remove the cap. We want to retain the current on-torque, as the cap needs to withstand the internal pressure from carbon dioxide gas. Therefore, our solution involves helping consumers apply more torque through a specially designed cap.

Unlike other cap solutions on the market, our design is versatile and compatible with any size of cap, allowing us to maintain Coca-Cola's brand identity without changing the shape of the cap.

Here’s how the mechanism works:

The new cap consists of two layers: an inside layer and an outside layer. The inside layer serves as a standard cap with normal threads that fit the bottle neck to seal and hold gas pressure. This inner cap has a smooth outer surface but features two slits. The outside layer is another cap that includes extruded teeth on the inside and grooved pattern on the outside like normal cap. These two layers interlock through the slits and extruded teeth from both sides. When consumers grip the outer layer and apply torque, the torque is transferred to the interlocking mechanisms like a gear, providing additional leverage.

Evaluation of the Design:

- The appearance of the Coca-Cola bottle remains unchanged.

- The new cap effectively retains gas inside the bottle until consumption, thanks to the maintained inner cap and threads.

- The design allows for resealing the bottle easily.

- The new cap utilizes the same materials as the existing one, ensuring compatibility with current PET recycling streams.

- Despite having two layers, the inside layer can be made as thin as necessary for the threads, and the outside layer can also be kept thin for the grooved pattern. This design focus on interlock parts and minimizes material use.

- It is cost-effective: the inside and outside caps can be manufactured separately. The inside cap is applied to the bottle using the current manufacturing process, with only a minor modification needed to add an additional capper machine. This machine assembles the outside cap to the bottle, sealing the layers at the neck's bottom and creating the tamper-evidence band. This design makes the manufacturing process simple to implement.

- This innovative concept can be widely applied to any Coca-Cola product, not just one specific item. Essentially, it's a universal solution that requires only one mold, further saving on manufacturing costs. This idea holds the potential to be refined into a practical product.