

Semi Automatic Venting Closure for Plastic Beer Barrels (Keg Closure with Venting Mechanism) – *Practice as research*

This commissioned (Petainer Holdings – Czech Republic) design research explores the potential for the development and manufacture of a semi automatic venting closure for the plastic beer barrel (non-returnable) industry, making for the 'safe' venting of these barrels when they become empty, 'opening up' the potential to access Eastern European markets. This is a highly original innovation which until this body of work had not been possible.

It applies rigorous, iterative design innovation and implementation methodologies, in which the investigator is a leading authority, to develop, prototype, evaluate and test design and manufacturing options, determining the most functionally effective and commercially viable solution. In particular this involved the use of comprehensive design development utilising three dimensional computer aided design and analysis, rapid prototyping and soft tool injection moulding techniques to determine the most appropriate design solutions and to test and validate the core innovation which is the validity of manufacturing an internal aperture on the main closure component into which an elastomeric valve can be fitted coupled with an externally mounted, one use only, valve opening feature.

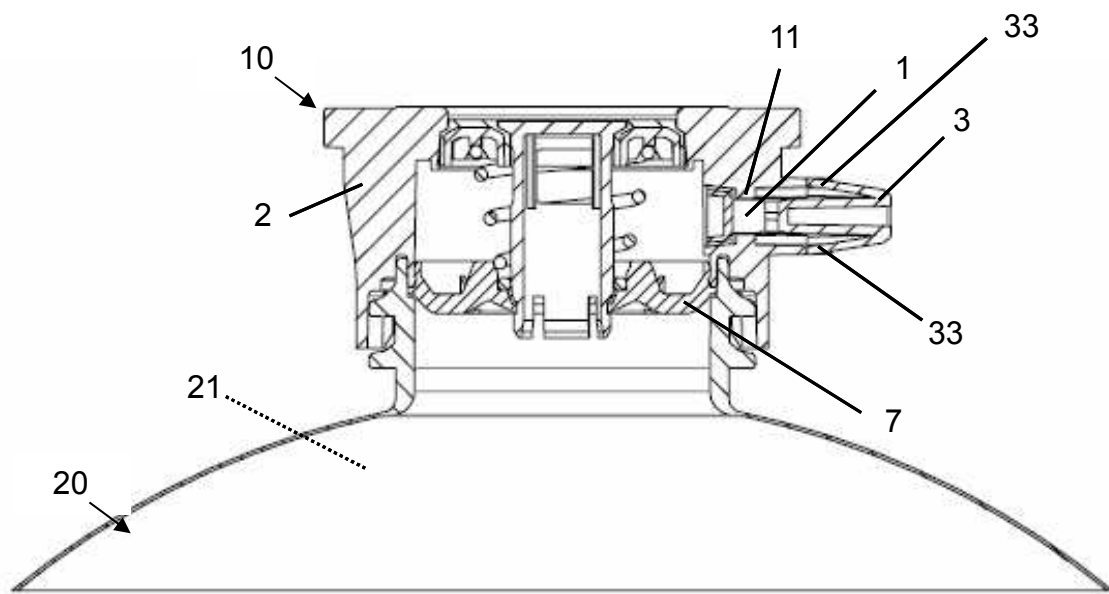
This product opens up the potential for a fundamental paradigm shift in the way the beer industry can transport and dispense its product and as such has made it possible for the market to take advantage of beer being shipped in single use, recyclable, plastic beer barrels, with concomitant impacts on the both the environment, the economy and health and safety (reduced shipping weight - new sales - safe venting).

The product is under patent application (patent GB1221141.3), research findings have resulted in a product launch at the Brau Fair in Nuremberg, November 2012. Sales are expected to exceed 4 million a year in the Russian market alone.

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Existing Petainer Plastic Beer Kegs



SECTION A-A

Figure 1

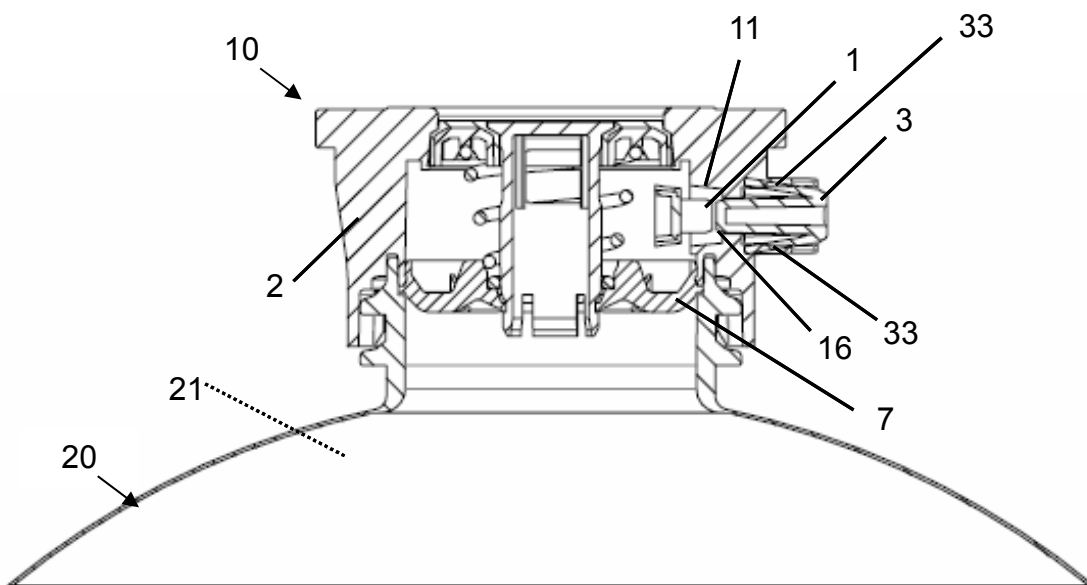
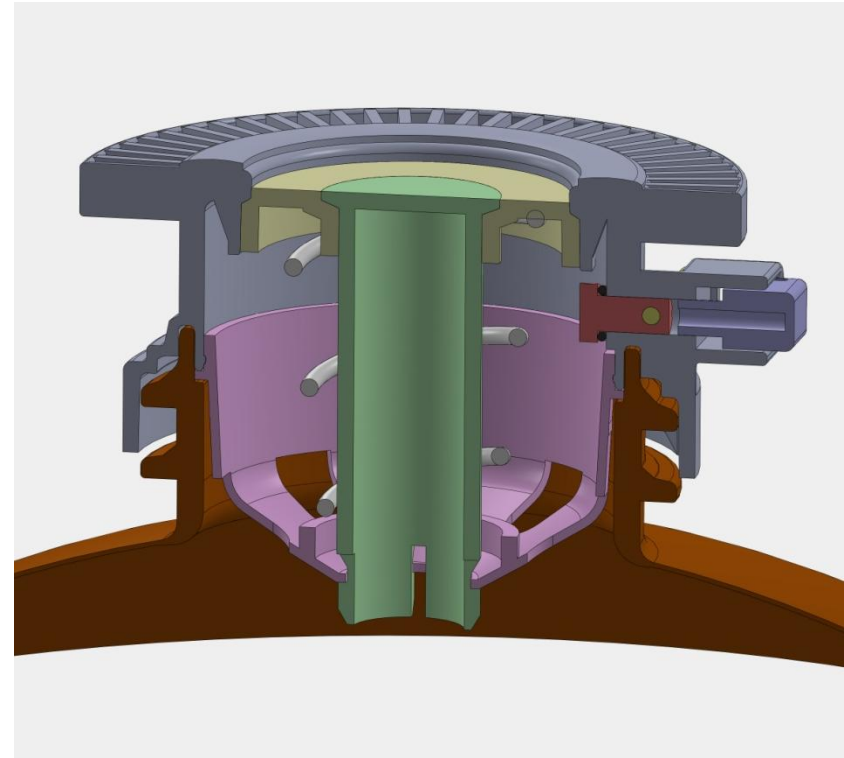
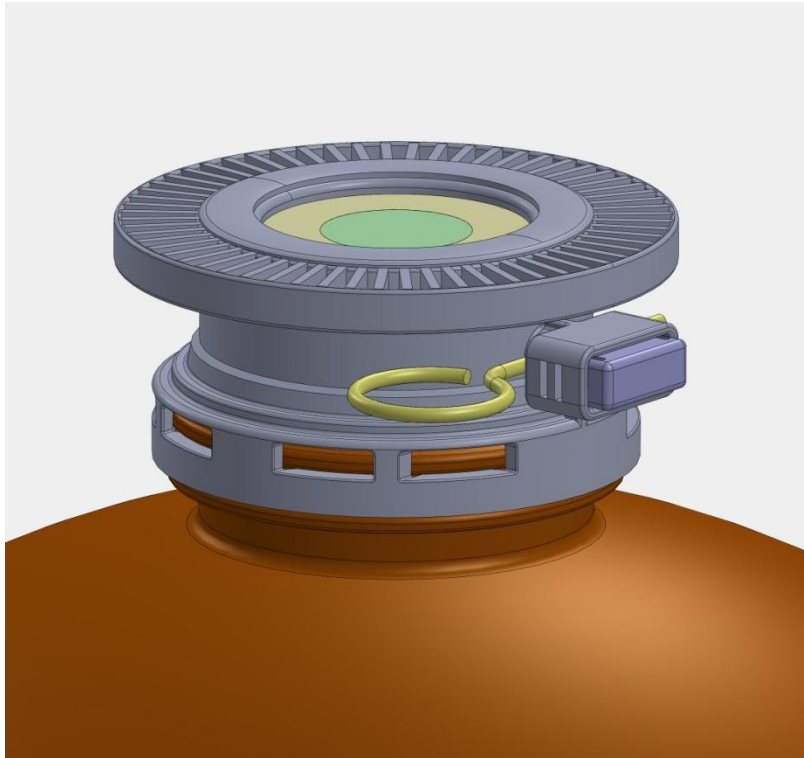


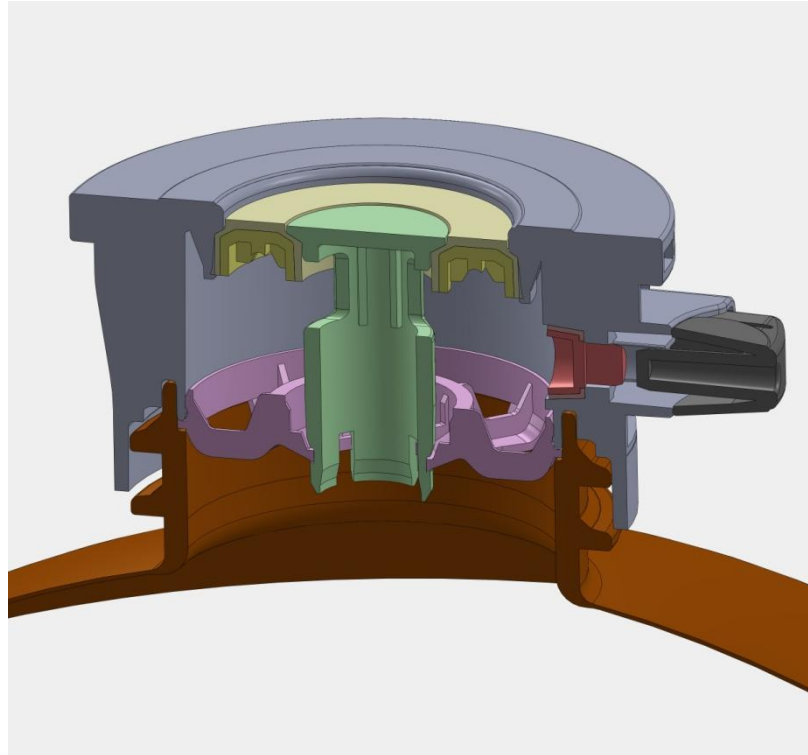
Figure 2

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Early CAD Concepts

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Refined Concept

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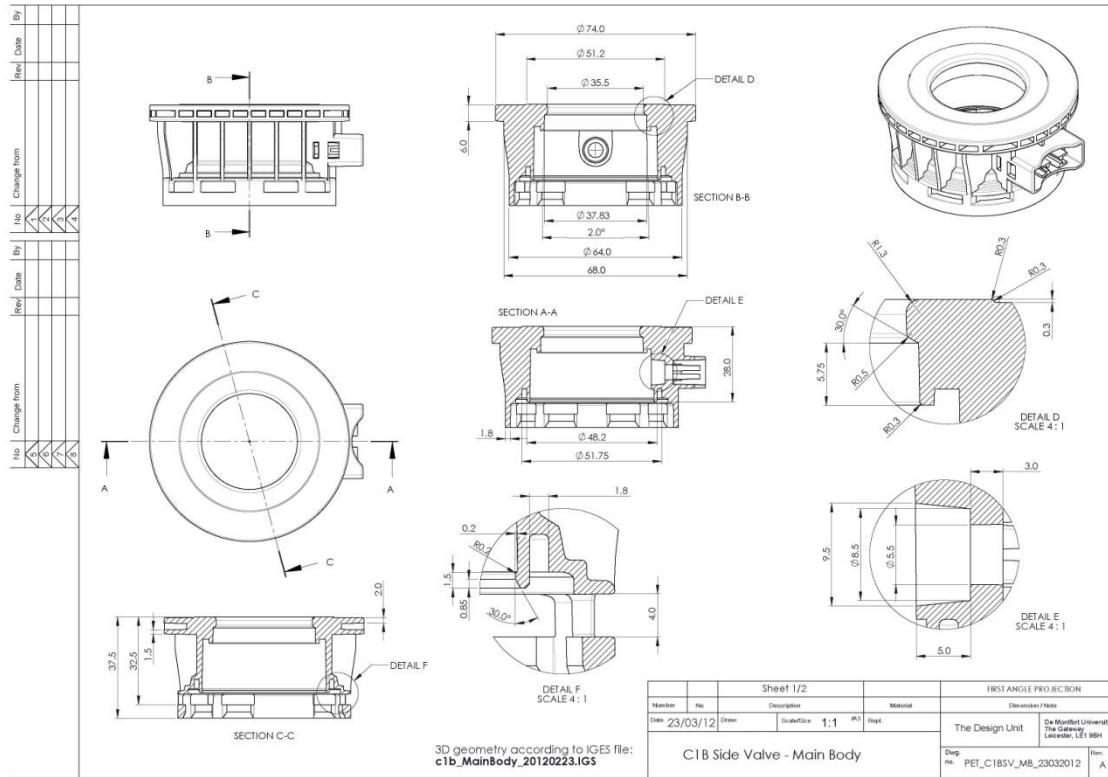


SLS (Selective Laser Sintering) Mock - Up



Soft Tooled Prototype

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Technical Definition

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Product Launch at Brau Fair Nuremberg, November 2012