



PART# 15 (015)
Protective Package For Medical Orthopedic Implants

COMPETITION WINNER OF: **Thermoforming Conference – Roll Fed Medical Gold**

SUBMITTED BY: **Barger Packaging**

PROCESSOR: **Barger Packaging**

DESIGNER: **Barger Packaging**

MOLDMAKER: **Barger Packaging**

Overview

Thin-gauge, vacuum formed TPU (Thermoplastic Polyurethane) offers rugged protection for medical orthopedic implants as well adding impact resistance to the containing PETG sterile blisters.

Features and Benefits

This particular thermoformed TPU set is used to protect round, femoral heads - one of several components that complete a medical hip implant assembly. Thermoformed TPU packaging components are a cost effective way of protecting sensitive orthopedic implants and have the advantage of being able to be custom designed to hold various implants within the same PETG, double-sterile barrier packaging system. The ability to use an existing pre-validated, sterile barrier system to hold multiple SKUs represents significant cost savings to customers and, in the end, consumers. These thermoformed TPUs are highly resistant to abrasion, which is of significant importance as many orthopedic implants have very coarse, textured surfaces that allow for bone growth into the implant. Traditional packing for orthopedic implants, such as closed-cell foam and vinyl, cannot stand up to these rough surfaces and tend to abrade, creating particulate within the medical package. This particular thermoformed TPU can withstand the most common forms of sterilization including Gamma radiation and ETO (Ethylene oxide).

Challenges incurred while thermoforming the TPU include:

1. De-molding of the formed part from the mold tool. Because of the flexible nature of the material as well as its tackiness, it has a tendency to turn inside out where complex geometry shapes are involved. A proprietary method to eject the part cleanly off the mold resolved said issue.
2. Material can shrink to varying degrees. Exhibited most often in the height of the part. This issue was resolved with various process controls.

