

# DUMMY GUIDELINES FOR FLESH REPLACEMENT

## Service Bulletin



August 2019

Proper storage and handling of ATD's and spare components can help protect valuable inventory from unnecessary wear and tear and prolong their useful lifespan, but the effects of aging and frequent use can be factors in determining when it's necessary to replace most flesh and skin components.

### Vinyl Flesh ATD Components

#### GENERAL

It's good practice to replace any crash test dummy component that sustains significant damage during the course of service. But frequent small repairs to flesh material can also compromise the integrity of the part when it's subjected to dynamic testing under the types of conditions seen during crash events.

Vinyl skin material and polyurethane foams are also affected by age. Shrinking is one of the most obvious results of this effect. Vinyl flesh parts like those used on the Hybrid III family of dummies can shrink over time, making them difficult to install and more prone to tearing during the installation process. The foam used to simulate the flesh contributes to the age related shrinkage and can separate internally from the surface of the vinyl skin. **There are no countermeasures once the shrinkage has set in, so it's necessary to monitor these flesh components and replace them as soon as a change in size and shape is observed.**

#### HEAD SKINS

Head skins like those used on the Hybrid III family are often solid vinyl components also affected by age related shrinkage. Over time they can become difficult to install on the skull, and since these are certified components, certification tests can be influenced. Minor cuts or abrasions can be repaired, but never in the performance areas of the skin, which are usually in the frontal or forehead region. **Replace any head skin damaged in the frontal or performance region.**

#### CHEST JACKETS

Chest jackets can also shrink over time and can become difficult to install onto a dummy. Many of the Hybrid III jackets are vinyl skin with foam and are zipped up in the back. Once they shrink, fitting them over the torso and zipping them up becomes tricky. **Consider replacing jackets that no longer fit as well as they once did.**

Seat belt placement during tests can also create areas of wear on the

jacket that result in tearing. Some minor abrasions can be repaired, but when damage spreads over a larger area, repairs may not last. **Consider replacing jackets with belt wear.**

#### PELVIS

Many of the molded pelvis components of dummies are vinyl skin with foam flesh. Hybrid III family dummies also have pelvis bones within the moulding. As with other vinyl and foam parts, there is always a shrinkage factor, but pelvis fleshes can also suffer from foam deterioration in the seated position, which affects sitting height measurements. **Always replace (or in some cases remold) pelvis fleshes exhibiting flattening in the seated position that changes your seated height measurements.**

Seat belt placement also produces wear and tear on the pelvis. As with the chest jacket, some minor tears can be repaired, but too much, too often can influence the performance and integrity of the part.

#### EXTREMITIES

Not all parts of arms and legs are always tested, but areas like the knees and feet can be performance certified and, as with all vinyl and foam components, must be monitored often for changes in shape and integrity. **Replace any flesh piece that exhibits shrinkage and becomes difficult to install or shows mating gaps between different regions.**



### Part Handling & Storage

#### VINYL CHEST FLESH

Humanetics recommends that all spare vinyl dummy jackets be removed from storage and fitted to an appropriate dummy on a quarterly basis. The jackets should be left on the dummy for at least twenty four hours and then returned to storage.

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### Part Handling & Storage

#### VINYL CHEST FLESH (CON'T)

This is to ensure that the jackets have not been subjected to any adverse shrinkage conditions. This practice will prolong the life of your products when in storage.

#### RUBBER PARTS

Humanetics recommends that all certified rubber parts, such as necks and knee sliders, be exercised regularly to keep them pliable and in peak working order. This is especially important for rubber parts that are kept in your spare part inventory. Due to the natural aging process of rubber, certified rubber parts should be stored in their original UV resistant packaging and then re-certified at least every three months to ensure that the parts remain compliant.

**! All vinyl and rubber parts should be stored at a temperature of 15°C to 32°C.**

### Summary

Even modern vinyls, foams, and polyurethanes used in the construction of Humanetics crash test dummies are subject to the effects of aging and the wear and tear of the rigorous tests that they are subjected to. Keeping the flesh components of your dummies like new will ensure consistent performance and handling, increase reliability, and create less stress over time.

For questions please contact your account manager or customer service representative.

