

- IATF16949
- ISO9001
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- ISO50001

INDUSTRIES AND APPLICATIONS



## LFS-Treatment: Low Friction Surface Treatment

### BIW SILICONE -> lubricating -> not sticky -> clean = LFS Treatment

#### The challenge:

Many silicone components, because of their surface condition, tend toward stickiness and adhesion of dust. This disadvantage sharply limits their application and/or use. The sticky and adhesion-prone surfaces of the components need to be lower in friction and cleaner!

#### The solution to the problem: Low Friction Surface Treatment (LFS treatment)

A new surface treatment achieves a reduction in sliding friction. A specific modification of the silicone surface produces this tribological effect. The technical properties (mechanical and physical) of the silicone remain completely unaffected by the treatment. The surface modification is maintained over the useful life of the silicone product.

#### Result:

The silicone haptics are lastingly improved. Result: no more “stick-slip effect”. Undesired dirt particles can no longer adhere or remain stuck. This surface property is sustained 100% even after several hundred autoclave cycles.

### Fields of application for the BIW silicone surface treatment (LFS):

Problem to be addressed	Solution to the problem supplied by LFS effect
Difficult installation due to a sticky surface	Surfaces slide over each other better; easier installation
Creaking noises during sliding	Decreased static friction = reduced creaking noises
Component slides too poorly over its counterpart	Decreased sliding friction between silicone and friction counterpart. less slip-stick effect in the sliding movements
Small parts are difficult to separate before assembly and stick together. Problem in assembly results in machine downtimes and waste.	Parts are easy to separate and can be installed without a problem.
Many valves and seals stick when they are in the closed position if they have not been moved for a long time. It is then difficult to open/release them	Non-sticky surfaces: Valves open even after longer closed phases. seals release from their opposing surfaces without a problem.
Adhesion of dirt particles creates a problem with jewelry. with visible parts on highend devices. with cables. keyboards. etc.	No more unwanted adhesion of dirt particles. The effect is maintained even after cleaning and sterilisation. The parts have a more high-end appearance.

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**Treatment**

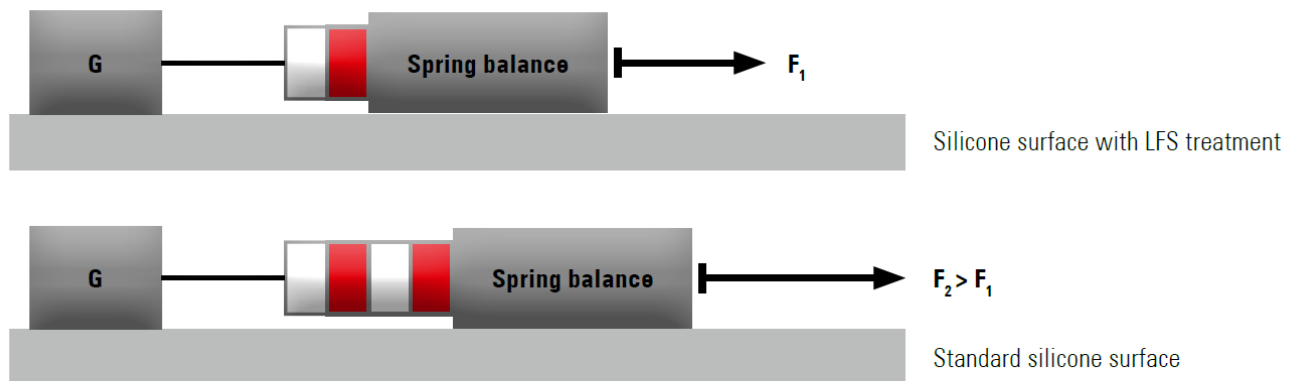
**LFS-Treatment: Low Friction Surface**

Problem to be addressed	Solution to the problem supplied by LFS effect
Inadequate sealing: seals get twisted during assembly because they are too sticky	Thanks to easy sliding of the seals. no more disarray and twisting. Reliable sealing

**Contact with food:**

Silicone components are often used in applications in which they have possible contact with food. Consequently, they must pass tests in accordance with the regulations of the FDA (21CFR§177.2600), EC 1935 (2004), BfR (German Institute for Risk Assessment) ecommendation XV and LFGB (Food and Commodities Act) §31. This also applies accordingly for parts with LFS treatment. In an external test of the TÜV Süd (Test Report no. 0003102248/70 AZ169750, Specimen no. 5004804-02-14), the tests were performed on a test specimen made of silicone rubber with LFS treatment according to the aforementioned directives. Specified in particular here are migrating or volatile components, certain contents, for example PAKs, and other interactions. The test requirements according to the aforementioned directives were met by the silicone rubber provided with LFS treatment.

**Comparison of the silicone surfaces**



**G** = weight dragged across the silicone surface

**F** = tensile force