

LUBFREE®

Lubricant free surgical instruments



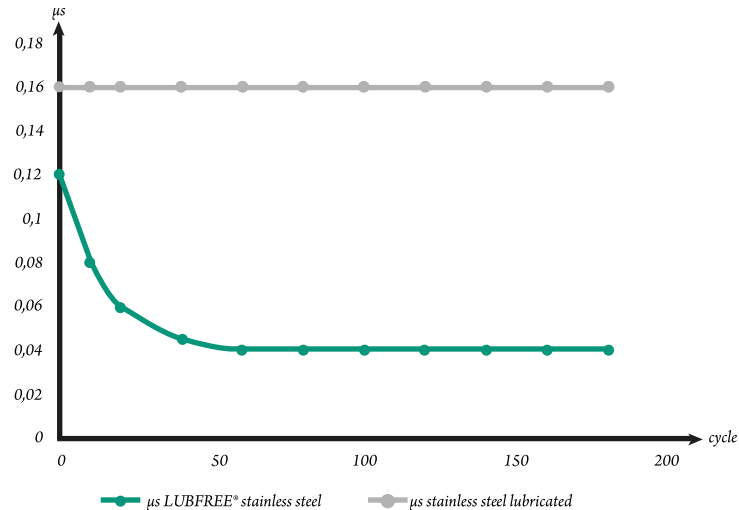
FEATURING HIGH PRECISION SMOOTH & ROBUST SURFACES

The LUBFREE® high precision stainless steel surfaces do not need any lubrication – and yet have friction coefficients below 0.05 in hinges, pivots, locks and threads, lasting for a minimum 16,000 cycles. Consisting of a diamond like hard coated side and a high precision passivated stainless-steel side, the self-lapping system eliminates galling, friction induced wear and corrosion in the long run. There is no reaction with plastic implants as no lubricants are on site for the first time.

LUBFREE[®] *Lubricant free surgical instruments*

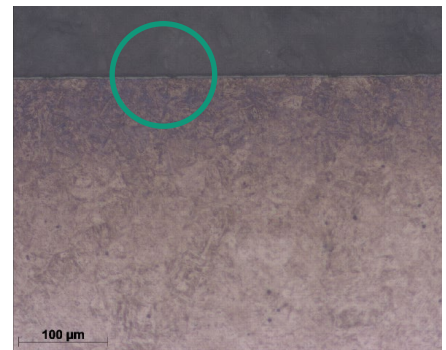
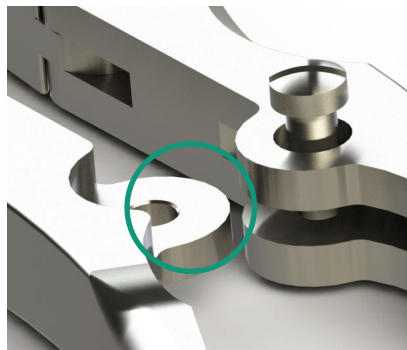
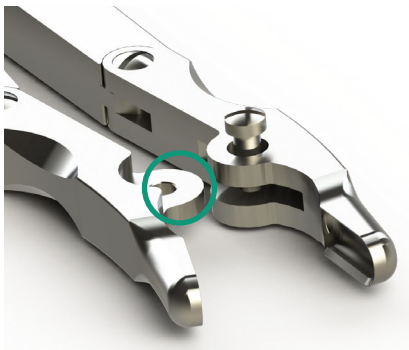
LESS FRICTION & WEAR THAN CONVENTIONAL SURFACES

Life-cycle tests over 16.000 cycles showed a LUBFREE[®] friction coefficient stable at 0.04 after the self-lapping phase. LUBFREE[®] reduces stainless steel wear to a minimum which enhances product precision over the life-span.



HIGH PRECISION, SMOOTH & ROBUST SURFACES

Self-lapped 0.05μm surface roughness at both friction sides.



COMPREHENSIVE BIOCOMPATIBILITY DATA

The diamond-like-carbon coating (a-C:H), is a well-known implant and surgical instruments coating and for almost 20 years in use^{1,2}. In addition, ISO 10993-1 part 3, 4, 5, 6, 10 and 11 tests were successfully conducted by accredited laboratories³.

ABOUT HIPPI & SON

Since 1920, Hipp & Son manufactures high precision surgical instruments for multinational OEM partners. Besides a comprehensive quality management system and process validations, Hipp & Son develops new technologies supporting patient safety, ease of use and enhancing product precision over life-span.

¹Hee Ay Ching, Dipankar Choudhury, Md Julker Nine & Noor Azuan Abu Osman. Effects of surface coating on reducing friction and wear of orthopaedic implants. Science and Technology of Advanced Materials. 5:1, 014402, DOI: 10.1088/1468-6996/15/1/014402, 2015.

²Scott R. Hummel, Benjamin Partlow. Threshold galling load and frictional behavior of stainless steel couples in line contact. Department of Mechanical Engineering, Lafayette College, Easton, USA. PA 18042, 2003.

³RD-P0320-OQ:A1-A23 Hipp&Son, 2020