

# **GALVOSURGE®** **DENTAL IMPLANT CLEANING SYSTEM**

Biofilm removal and implant surface  
decontamination in 2 minutes.



# THE POWER OF SWISS INNOVATION

In just 2 minutes, GalvoSurge® effectively removes biofilm from dental implants and creates optimal conditions for bone regeneration and re-osseointegration.<sup>1,2,3,4,5</sup>

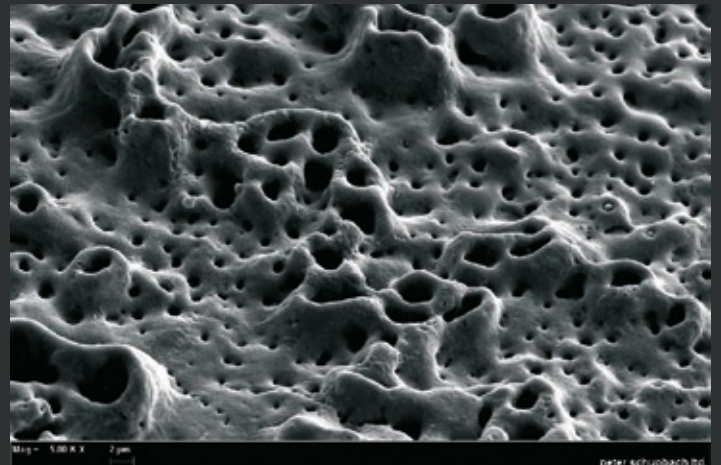
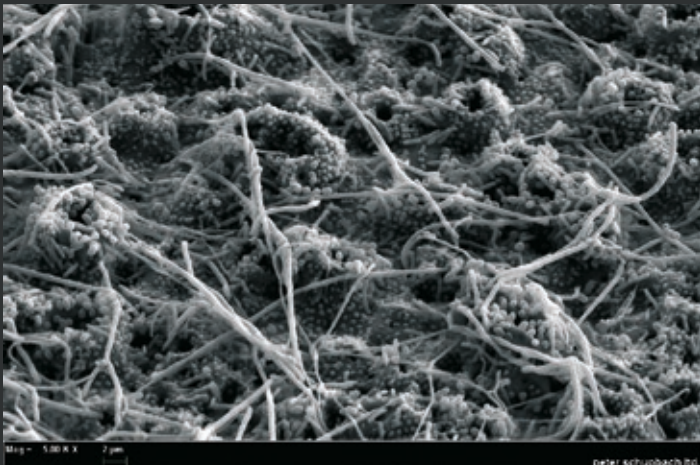
GalvoSurge® has revolutionized the treatment of peri-implantitis by the introduction of electrolysis to clean and decontaminate affected dental implants. The biofilm, one of the main causes of the inflammatory response in the peri-implant tissue, and all connected microorganisms are reliably removed in just one step. This is done by controlled application of low voltage to the metallic implant and simultaneous application of an electrolyte solution. The resulting reaction releases small hydrogen bubbles which completely detach the biofilm from the implant surface.

## DID YOU KNOW?

Dental biofilms resemble thriving cities with streets, alleyways, infrastructure, and a workforce. The bacterial cells in the biofilm are able to communicate and quickly adjust to changes due to mutualistic relationships and the flow of messages between interspecies through chemicals and metabolites. Primary colonizers, planktonic and free-floating bacteria with unique surface molecules (adhesins) that act as a molecular glue, lay the groundwork for dental biofilm.<sup>8,9</sup>

One of the strong advantages that the cohesion of the biofilm associated cells have is their resistance to antibiotics, chlorine and detergents. It is no wonder why several currently existing biofilm removal methods have not been able to achieve stable results over time.<sup>1,2,10</sup>

Microscopic image of (left) complex dental biofilm on the surface of an implant and (right) same implant after cleaning with GalvoSurge®



- Effectively removes biofilm<sup>2,3,6</sup>
- Decontaminates the exposed implant surface including threads, undercuts and microstructures<sup>1,3,6</sup>
- Does not harm the implant structure<sup>6</sup>
- Can be used on metallic implants<sup>2,12,14</sup>



### **FAST**

Cleaning takes only 2 minutes.



### **RELIABLE**

Clinically proven to reliably remove biofilm and prepare the implant for re-osseointegration.



### **SAFE**

Extra low voltage, gentle to soft and hard tissue.

# SURGICAL WORKFLOW

**Step 1:** Remove the prosthetic components.

**Step 2:** Administer local anesthesia to the patient.

**Step 3:** Conduct flap elevation and site management to remove any granulation tissue, cement residue, calculus or hard deposits.

**Step 4:** Inform the patient about the strong salty taste of the GalvoSurge® cleaning solution. Attach the GalvoSurge® spray head to the internal connection of the implant.

**Step 5:** Start the electrolytic cleaning with GalvoSurge®. The cleaning solution is passed through with a very low voltage.

**Note:** Should the patient feel pain, pause the procedure immediately and re-anaesthetize.

**Step 6:** During the 2-minute treatment time, hydrogen bubbles are formed and lift the biofilm from the implant surface. The implant is now clean and decontaminated.

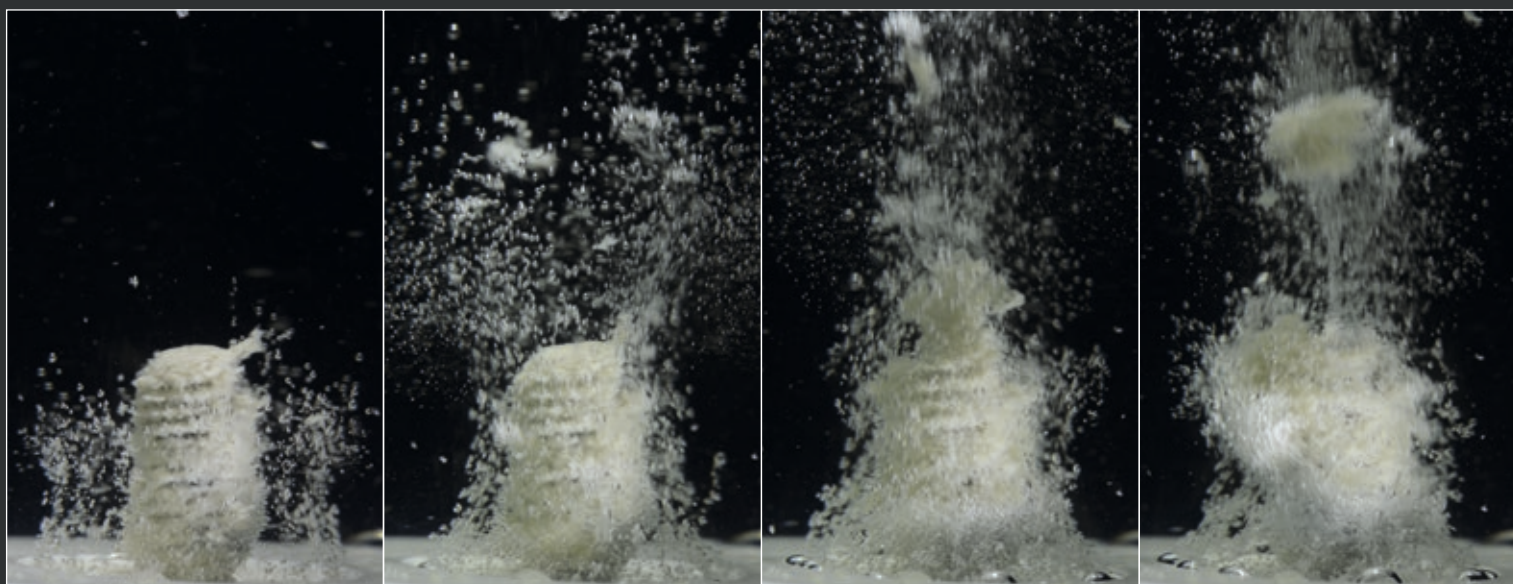
**Note:** Make sure the implant is sufficiently covered with the electrolyte solution. Avoid placing the suction tip too close to the treated area. Use non-metallic suction only.

**Step 7:** Remove any residual cleaning solution or coagulum.

**Step 8:** Place a sterile cover screw or healing abutment.

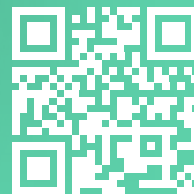
**Step 9:** Perform bone augmentation if required.

**Step 10:** Proceed with flap closure at the surgical site.

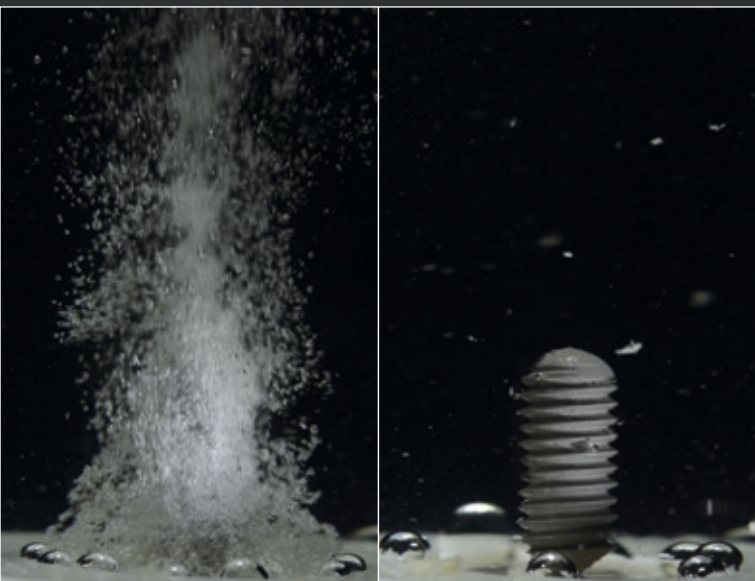




- 1 ELECTROLYTE CLEANING SOLUTION
- 2 GALVOSURGE® SPRAY HEAD
- 3 GALVOSURGE® CONTROL UNIT GS 1000
- 4 GALVOSURGE® TUBE



How to assemble GalvoSurge®



#### How does GalvoSurge® clean a dental implant?

The GalvoSurge® spray head loads the conducting implant with an additional low voltage while also spraying electrolyte onto it. The implant serves as the cathode while the spray head's anode is positively loaded. The water in the electrolyte separates into hydrogen cations and hydroxide anions as a result of the current flowing between the anode and the cathode.

Under the biofilm, hydrogen bubbles form, lifting the biofilm from the implant surface and preparing the implant for follow-up treatment and re-osseointegration.

# FAST. RELIABLE. SAFE.

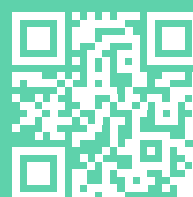
## GALVOSURGE® DENTAL IMPLANT CLEANING SYSTEM COMPONENTS:

Article No.	Product Name
GVS1002	GalvoSurge® Control Unit GS 1000
GVS1008	GalvoSurge® Dental Implant Cleaning Set*

\*GalvoSurge® Dental Implant Cleaning Set consists of 1 bottle of Cleaning Solution and 1 Tube Package. Each cleaning set can be used to clean up to two implants in the same patient.

Straumann® offers a comprehensive Biomaterials portfolio to master any challenge throughout your GBR procedures.





To learn more, contact your local Straumann® territory manager or customer service or scan the QR code

## REFERENCES

**1** Schlee M, Rathe F, Brodbeck U, et al. Treatment of Peri-implantitis-Electrolytic Cleaning Versus Mechanical and Electrolytic Cleaning-A Randomized Controlled Clinical Trial-Six-Month Results. *J Clin Med* 2019;8(11):1909

**2** Ratka C, Weigl P, Henrich D, et al. The Effect of In Vitro Electrolytic Cleaning on Biofilm-Contaminated Implant Surfaces. *J Clin Med* 2019;8(9):1397. **3** Bosshardt, D.D., Brodbeck, U.R., Rathe, F., Stumpf, T., Imber, J. C., Weigl, P., & Schlee, M. (2022). Evidence of re-osseointegration after electrolytic cleaning and regenerative therapy of peri-implantitis in humans: a case report with four implants. *Clinical oral investigations*, 26(4), 3735-3746. **4** Schlee, M., Wang, H. L., Stumpf, T., Brodbeck, U., Bosshardt, D., & Rathe, F. (2021). Treatment of periimplantitis with electrolytic cleaning versus mechanical and electrolytic cleaning: 18-month results from a randomized controlled clinical trial. *Journal of Clinical Medicine*, 10(16), 3475. **5** Data on file, GalvoSurge AG **6** Zipprich, H., Weigl, P., Di Gianfilippo, R., Steigmann, L., Henrich, D., Wang, H. L., & Ratka, C. (2022). Comparison of decontamination efficacy of two electrolyte cleaning methods to diode laser, plasma, and air-abrasive devices. *Clinical Oral Investigations*, 26(6), 4549-4558 **7** Gianfreda, F., Punzo, A., Pistilli, V., Bollero, P., Cervino, G., D'Amico, C., & Cicciù, M. (2022). Electrolytic cleaning and regenerative therapy of peri-implantitis in the esthetic area: a case report. *European Journal of Dentistry*, 16(04), 950-956. **8** Jakubovics, N.S. (2010). Talk of the town: interspecies communication in oral biofilms. *Molecular Oral Microbiology*, 25: 4-14. **9** Valderrama P, Wilson TG Jr. Detoxification of implant surfaces affected by peri- implant disease: an overview of surgical methods. *Int J Dent*. **10** Costerton J. W., Cheng K.-J., Geesey G. G., Ladd T. I., Nickel J. C., Dasgupta M., and Marrie T. J. Bacterial biofilms in nature and disease. *Annu. Rev. Microbiol.* 41:1987435-464 **11** Suarez F, Monje A, Galindo-Moreno P, et al. Implant Surface Detoxification: A Comprehensive Review, *Implant Dentistry: October 2013 - Volume 22 - Issue 5 - p 465-473* **12** Instructions for Use, GalvoSurge Dental Implant Cleaning System v3.6 **13** Schlee, M., Naili, L., Rathe, F., Brodbeck, U., & Zipprich, H. (2020). Is complete re-osseointegration of an infected dental implant possible? histologic results of a dog study: a short communication. *Journal of clinical medicine*, 9(1), 235. **14** Schneider, S., Rudolph, M., Bause, V., & Terfort, A. (2018). Electrochemical removal of biofilms from titanium dental implant surfaces. *Bioelectrochemistry*, 121, 84-94.



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