



Thorough and selective.

**Ultrasonic-Assisted Wound Debridement (UAW).**



## → For chronic and acute wounds: **disrupting of biofilms and effective removal of non-viable tissue**

UAW is a recognized procedure for wound debridement and the cleansing of wounds. The targeted use of ultrasonic effects enables debridement that, while convincingly effective, does not damage healthy tissue. This effect makes its use particularly attractive, for instance, for wound areas that are difficult to reach. If fibrin tissue or biofilms form

anew in chronic wounds, these can be regularly and completely removed with UAW during the course of periodic wound cleansing. Thorough biofilm detachment makes the procedure highly attractive for use in various medical fields, i.a. for the treatment of infected wounds or the preparation of split-skin grafts.

### **UAW convinces through:**

- *quick and safe handling*
- *disrupting of biofilms<sup>1</sup> and changing bacterial biofilm building capacity<sup>2,3</sup>*
- *significant reduction of bacterial load<sup>4</sup>*
- *removal of devitalized tissue<sup>4,5,6</sup>*
- *preservation of healthy tissue<sup>4,5,6</sup>*
- *creation of a clean, viable wound bed<sup>2,3,4,5,6</sup>*
- *ease of use: can be used by both, doctors and nurses*
- *cost-effectiveness due to completely reprocessible instruments*

### **Indicated for a large number of wounds, such as:**

chronic wounds

- *leg ulcers*
- *diabetic foot ulcers*
- *pressure ulcers*

acute wounds

- *infected wounds*
- *trauma wounds*
- *burns*
- *post-operative wounds*

### **Case example:**



Wound prior to UAW<sup>7</sup>



Wound after UAW<sup>7</sup>

### **UAW – impressive in its application:**

***“In our clinic, Ultrasonic-Assisted Wound Debridement is a standardized debridement procedure that we have used successfully for many years. We achieve excellent results, especially on patients with slow-healing, stagnating wounds.”***

Anke Bültemann, wound expert at AK Hamburg, Germany

# Precise, reliable technology from Söring: for wound debridement

## SONOCA 185: **practical and compact**

- compact generator specifically designed for wound debridement
- integrated irrigation system for fluid control
- simple, safe operation
- presetting of power parameters
- 25 kHz working frequency



## UAW instruments: **versatility for a range of wounds**

- ergonomic design for precise control and reduced practitioner hand fatigue
- durable and easily-reprocessed
- available in different tip configurations



**Double-ball sonotrode:**  
debridement of wound pockets



**Hoof sonotrode:**  
ideal for superficial wounds



**Spatula sonotrode:**  
for difficult-to-reach intermediate spaces, such as between the toes

## Product overview (brief information)

Instruments	Article no.	Accessories	Article no.
UAW instrument, double-ball	97-102	SI cart	700K0097
UAW instrument, hoof	97-103	Instrument cable	240K0094
UAW instrument, spatula	97-104	Foot switch, single	770S0013
UAW instrument, double-ball, long	97-112	Disposable tube set, single packed	700S0309
		Disposable tube set, double packed	700S0310
<b>Generator</b>		UAW ClearShield, 10 pcs, single-use	200N0104-10
SONOCA 185	S185-000	UAW ClearShield connection set	615S0056

For detailed ordering information, please contact your account manager.

**“We only started using UAW a few months ago in Australia. We were amazed at how quickly the wounds are cleansed. The tremendous results are immediately apparent. We would not want to miss UAW during our daily work.”**

Gillian Butcher, representative for the team of nurses and podiatrists at Monash Health, Australia

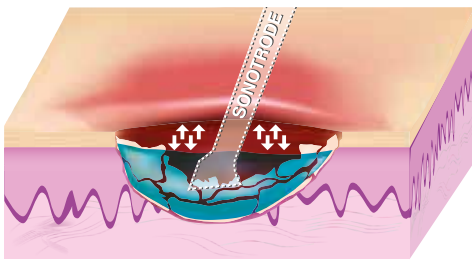
# Ultrasonic-Assisted Wound Debridement – use of the cavitation effect for debridement and the cleansing of wounds

Ultrasonic-Assisted Wound Debridement (UAW) uses the effects of cavitation to selectively debride wounds. Cavitation is caused by the vibrations of the UAW instrument at an ultrasonic frequency of 25 kHz in an irrigation solution (see figure). The vibrations of the UAW instrument are generated by the use of an ultrasonic generator and piezo electronics in the UAW instrument. The required irrigation is incorporated into the UAW instrument. Cavitation effects occur beneath the sonotrode of

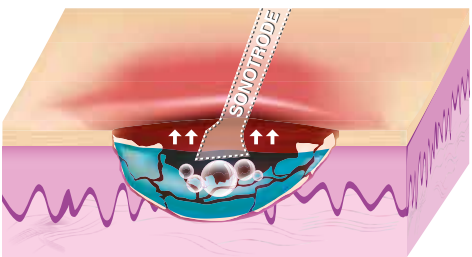
the UAW instrument. Devitalized tissue and foreign bodies are removed from the wound bed and biofilms disrupted, while trauma to the surrounding vital tissue is minimized.

These effects make ultrasonic debridement highly beneficial in cleansing of wounds in preparation for adjunct therapies, like the utilization of negative pressure wound therapy, or in the preparation of skin graft recipient sites.

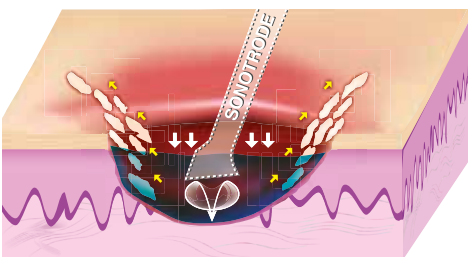
## Quick, effective, thorough – UAW, in simple terms:



During UAW, the sonotrode vibrates back and forth 25,000 times a second.



When the sonotrode moves back, pressure bubbles arise in the irrigation solution (cavitation bubbles).



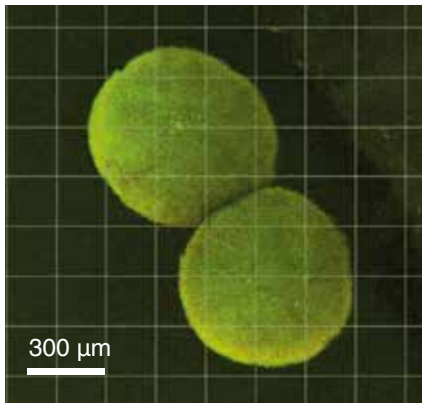
When the sonotrode moves forward again, the bubbles implode and generate sonic waves which removes devitalized tissue and biofilms from the wound bed.

***“Wound cleansing with UAW prior to split-skin grafting brings significant advantages in my opinion: The time period up to grafting is shortened and, in many cases, I am able to observe strong stimulation of the granulation tissue formation, which has resulted in the faster and better growing of mesh grafts.”*** Dr. med. Nils Haustedt, Schön Clinic Hamburg Eilbek, Germany

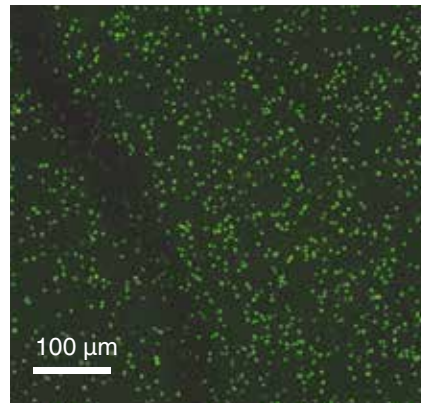
# Effective disrupting of biofilms: using **Ultrasonic-Assisted Wound Debridement**

Ultrasonic-Assisted Wound Debridement breaks up the EPS matrix of biofilms<sup>1</sup>. The bacteria previously protected in the biofilm become vulnerable, which

helps to increase the effectiveness of antimicrobial therapies<sup>8</sup> and immune system response.



48 hours old biofilm  
(*Staphylococcus aureus*)



Disrupted biofilm after 10 seconds UAW  
with 10% ultrasound intensity, 25 kHz

Source: Biofilm Test Facility,  
University of Copenhagen, Denmark

For more details, see publication in journal of Wound Care:



<sup>1</sup> Ref: Geisler Crone, S., Garde, C., Bjarnsholt, T., Alhede, M.: A novel in vitro wound biofilm model used to evaluate low-frequency ultrasonic-assisted wound debridement. *Journal of Wound Care* 2015; 24:2, 64-72.

<sup>2</sup> Ref: Yarets Y, Rubanov L, Shervchenko N. The biofilm-forming capacity of staphylococcus aureus from chronic wounds can be used for determining Wound-Bed Preparation methods. *EWMA Journal* 2013; 13(1):7-13

<sup>3</sup> Ref: Yarets Y. Clinical experiences with Ultrasonic-Assisted Wound Debridement (UAW) used for wound bed preparation before skin grafting. Abstract for oral presentation at free paper session: Infection and Antimicrobials, EWMA conference, May 13-15, 2015; London, UK

<sup>4</sup> Lázaro-Martínez JL, Álvaro-Afonso FJ, García-Álvarez Y, Molines-Barroso RJ, García-Morales E, Sevillano-Fernández D: Ultrasound-assisted debridement of neuroischaemic diabetic foot ulcers, clinical and microbiological effects: a case series. *Journal of Wound Care* 2018; 27(5): 278-286.

<sup>5</sup> Ref: Herberger K, Franzke N, Blome C, Kirsten N, Augustin M.: Efficacy, tolerability and patient benefit of ultrasound-assisted wound treatment versus surgical debridement: a randomized clinical study, *Dermatology*. 2011; 222(3):244-9.

<sup>6</sup> Ref: Lázaro-Martínez JL et al. Preliminary case series results evaluating Ultrasonic-Assisted Wound Debridement (UAW) for treatment of complicated diabetic foot ulcers (DFU). Poster presentation, ISDF conference, May 20-23, 2015; The Hague, Netherland

<sup>7</sup> Source: Südharz Klinikum Nordhausen, Nordhausen, Germany

<sup>8</sup> Testet with a PHMB-concentration of 0,04% (cf. with Ref. 1)

**“We found that UAW has a good effect in disrupting biofilms and promoted the antibacterial effect of PHMB. These results may add a further beneficial effect of wound debridement with UAW.”**

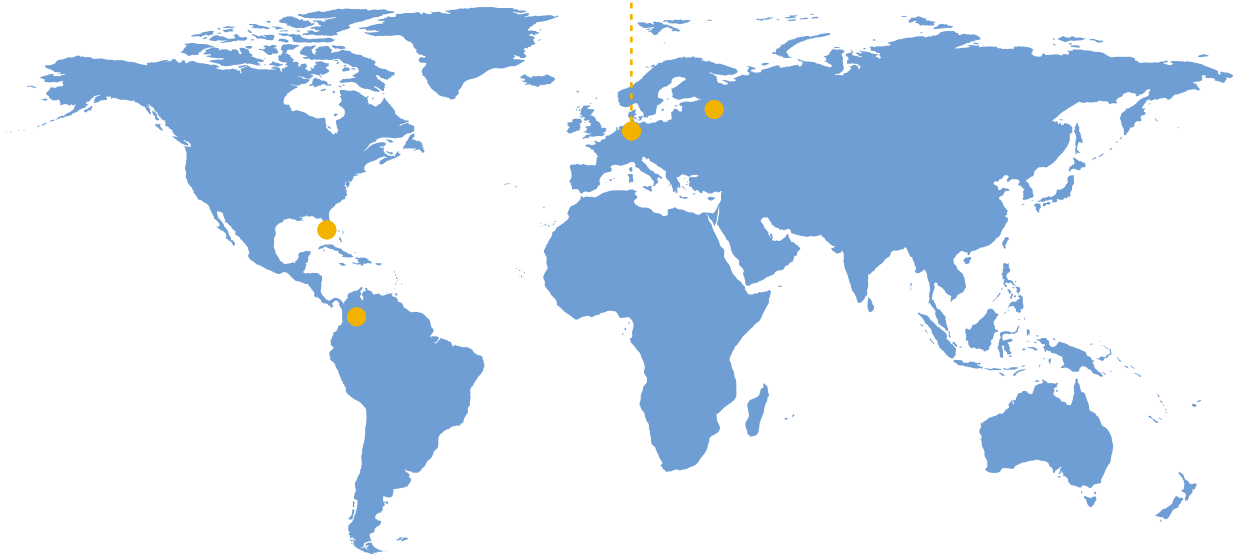
Morton Alhede, Head of Biofilm test facility, University of Copenhagen, Denmark

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