

# CASE-STUDY

## KGR 65 CLIMBING HOLD CLEANING

Case-Study

DAV Climbing Centre Ingolstadt



## ULTRASOUND/TURBULENT FLOW COMBI-SYSTEMS

# KGR 20 e KGR 65

## CLIMBING HOLDS CLEANER

FAST | CLEAN | SAFE | ECONOMICAL

You know the problem: Your climbing walls look great and welcome a growing number of climbers. Clean holds are not just important for the visual impression of your walls – a perfect grip of the holds also has a big positive impact on your image.

To maintain this positive impression and quality on a continuing basis, a periodical cleaning of the holds is required. But how can this be done economically and efficiently? Cleaning the holds using intens leaches, high-pressure water jets or dishwashers is definitely not an ideal solution.

*The better alternative is our fast, efficient and economical **ultrasonic/turbulent flow KGR cleaning system**, which we developed especially for cleaning climbing holds. After extensive tests with different hold materials regarding the ideal calibration and matching of frequency, amplitude, cleaning liquid, interval and temperature we can offer a solution, helping you to clean your holds in a cost- and time efficient way. The System ist based on a combined **Ultrasonic/Turbulent Flow technology**.*

### **PUMP AND MATERIAL SAVING CHEMISTRY**

*Our dedicated developed chemistry does **not crystallize** and therefore does not damage any pumps or piping – a very important cost saving factor in cleaning process.*

### **THE CLEANING PROCESS**

The system is designed to clean multiple holds simultaneously. The holds are placed into a metal basket which is hooked into the system. The combined **Ultrasonic/Turbulent Flow** system is controlled by an electronic interval program: the ultrasonic sequence loosens the dirt particles; the Turbulent Flow sequence dissolves the particles and washes them off. **Depending on the degree of pollution, the required cleaning takes just a few minutes.** After cleaning the holds solely need to be shortly flushed with clean water.

*The following pages show the practical usage of a KGR 65 System in the DAV Climbing Centre Ingolstadt in germany*

## Griffe waschen 2013



The photos were taken by Mr. Klaus Kuhfeld from the DAV Kletterzentrum Ingolstadt in South Germany, who bought a **KGR-65 system** to clean the holds in their climbing centre.

We thank Klaus very much for allowing us to use his photos in this PDF presentation



Because of the large number of holds, the DAV Climbing centre decided to buy a KGR-65 system with a capacity of 65 litres. The system comes with three baskets.

Two baskets with holds are in the basin while the third basket is used to be filled with dirty holds.



The left photo shows the whole cleaning station. The orange tank is filled with clean water used to wash off the cleaning liquid from cleaned holds.



Two baskets are in the basin while the third basket is filled with dirty holds.



20 to 30 holds can be placed in a basket.



Then the basket is placed into the basin. A grid prevents the basket to touch the bottom of the basin (important to prevent damage to the ultrasonic swinger elements).

The grid also allows to place bigger holds directly into the bath.



The holds are cleaned in an 1-minute interval of ultrasonic sound and turbulent flow. The ultrasonic sound loosens the dirt particles – the Turbulent Flow washes them off.



After approximately 10 minutes the basket can be taken out...



... and placed in the water basin to wash off the cleaning liquid.

Washing off the cleaning liquid is easy and fast.



Some samples of cleaned holds....



Some more samples

BEFORE CLEANING



AFTER CLEANING



AFTER CLEANING



AFTER CLEANING



AFTER CLEANING



AFTER CLEANING



AFTER CLEANING



AFTER CLEANING



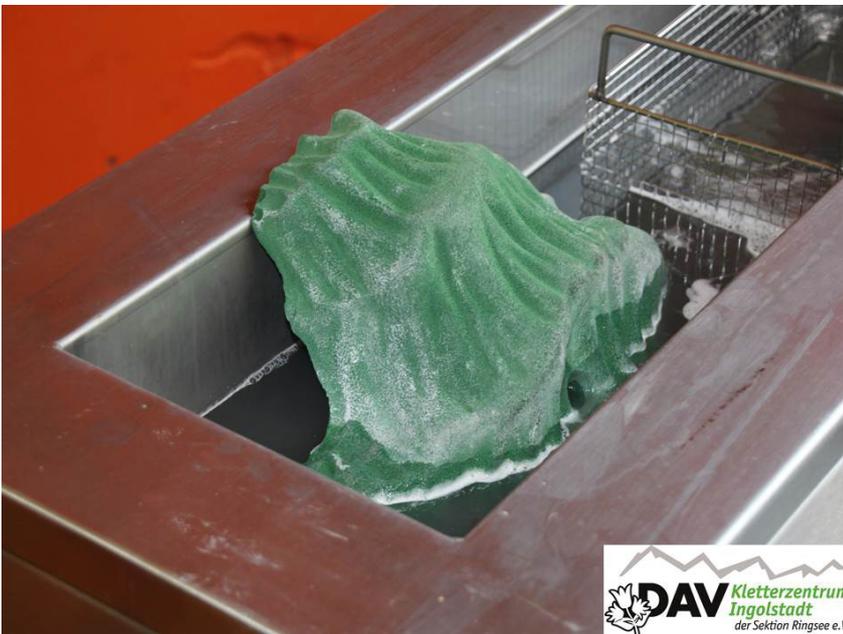
AFTER CLEANING



AFTER CLEANING



Oversized holds can be placed directly into the basin (a grid at the bottom prevents the hold to touch the bottom of the basin).



Depending on the size of the big holds it might be necessary to turn them after one side has been cleaned.



Also oversized holds must be rinsed



The result is convincing !



## TECHNICAL DATA

	KGR 20	KGR 65
Cleaning Basin	Welded heat insulated Cleaning Basin consisting of 2mm stainless steel with 6 flush openings at the rear wall. Including pump and heating system. The KGR 20 system comes with handles at the left and right side. The KGR 65 system is equipped with rolls.	
Materialien	The KGR systems have proven themselves in practical tests for being ideally suited to clean different kinds of climbing holds.	
Cleaning solution	<b>SUT-Clean 3:</b> Pump-protecting alkaline liquid concentrate to be mixed with water in a 1:10 ratio (10%, see separate spec sheet/security information).	
Dimensions L x W x H	450 x 350 x 620 mm	1100 x 470 x 1050 mm
Basin L x W x H	350 x 250 x 270 mm	900 x 250 x 300 mm
Basket L x B x H	appr. 340 x 240 x 260 mm	3 x approx. 420 x 200 x 200 mm
Cubic Capacity	20 litres	65 Liter
Ultrasonic Devices	6 devices, directly cemented	18 devices, directly cemented
drain connection	3/4 inch	1 Zoll
Heating	1 x 900 W (30°C - 85°C)	3 x 900 W (30°C - 85°C)
Electrical Supply	220 V   approx. 1,4 kW   50/60 Hz	380 V   ca. 3,2 kW   50/60 Hz
Weight	approx. 37 kg	approx. 60 kg

# ADDITIONAL SOLUTIONS FOR THE SPORTS AND LEISURE INDUSTRY

CLEANSTATION

## ULTRASONIC CLEANING SYSTEM FOR BOWLING PINS, BALLS & MACHINE PARTS

FAST | CLEAN | SAFE | SEALED | ECONOMICALLY

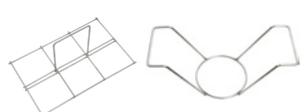
The machines are filled with new pins, a set has been settled at the lanes end and you view an attractive bowling alley. It is a good feeling to see 10 clean white pins at the end of each lane. Players enjoy playing on a lane which is optically attractive and not just good to play.



To permanently maintain this positive optical impression a regular cleaning of the pins is inevitable. But how can this be achieved fast and economically? A manual cleaning of each individual pin is definitely not the ideal solution.

The far better alternative is a fast, efficient and economical cleaning of your pins in our Cleanstation system. After extensive tests with different pin types regarding the optimum correlation between frequency, amplitude, cleaning liquid and temperature we can offer systems helping you to keep your bowling equipment in an optically attractive and clean condition. The system can also be used to clean machine parts from dirt and grease.

The systems come with standard supplies – a grid holder for 6 pins and a lid for holding down the pins in the liquid. A holder for cleaning bowling balls is available as an option.

**MORE THAN 50 INSTALLED SYSTEMS IN GERMANY**

Meanwhile there are more than 50 installations of 6-Pin CLEANSTATION systems in Germany. The customer profile cover alleys from 8 to 52 lanes.

**THE CLEANING PROCEDURE**

Our CLEANSTATION Ultrasound system is designed to clean up to 6 pins simultaneously. The downholding of the pins during the cleaning is carried out by a solid plastic block. The cleaning time takes approx. 2 to 5 minutes. After cleaning, the pins are dried using a rough textured cloth and shortly dipped into an optional sealing bath to apply a shiny surface, which also results in an optimum machine slipping behaviour and protection.



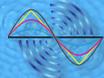
SCHMITT  
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### BASIC PRINCIPLE OF ULTRASONIC CLEANING

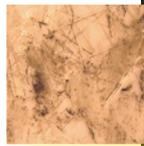
Ultrasonic stands for oscillations with frequencies above 16 kHz. A highly energetic ultrasonic checking stimulates liquids to oscillate. The continuous compression and decompression results in intense pressure variation (up to 1.000 bar), which leads to strong currents in the micro level and therefore to a brush-effect, which removes particles from the surfaces of the objects to be cleaned.

Our ultrasonic based systems for cleaning bowling objects utilise frequencies and amplitude modulations which we specially adjusted to the characteristics of these objects. Once these frequencies are applied to a cleaning liquid they produce millions of small continuously imploding bubbles. This process is known as cavitation. The cavitation (electronic brushing) allows to dissolve grease and dirt even in areas, which are difficult to access.



#### PIN-CLEANING

BEFORE



AFTER



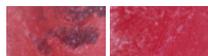
The partly micro-fine greases, residues and dust dirt even settles in the smallest capillary grooves and cannot be removed efficiently using standard cleaning tools like brushes or sponges.

The Ultrasound Cleaning system loosens even the finest dirt particles from the pin within a few minutes – preserving the material!

As 6 pins can be cleaned simultaneously you can easily calculate the time needed to clean your whole pin inventory.

#### BALL-CLEANING

Also Bowling balls can be cleaned from lane oil and dirt. Left you see a microscopic magnification of a ball surface – before and after an ultrasonic cleaning. Your visitors and guests will value this service and be happy to come back to your facility.



TECHNICAL DATA	CLEANSTATION 35 ULTRASONIC CLEANING SYSTEM
Cleaning System	Welded, heat insulated Cleaning Basin consisting of 2mm stainless steel
Cleaning solution	SUT-Clean 4: Alkaline liquid concentrate to be mixed with water in a 1:20   5% ratio
Outer dimensions L x B x H	500 x 360 x 900 mm
Basin L x B x H	400 x 250 x 460 mm
Cubic dimension (Volume)	35 Liter
Ultrasonic devices	6 devices, directly cemented   Ultrasound generator: TIG 254
Drain connection	3/4 inch ball valve
Electrical supply	230 V   approx. 1.2 kW   50/60 Hz
Weight	approx. 37 kg

April 2018 EPOE – Specifications and details subject to change without notice

## ABOUT THE MANUFACTURER

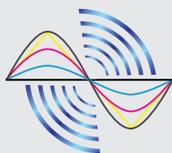
Schmitt Ultraschalltechnik GmbH serves several industry markets with special solutions for ultrasonic cleaning of miscellaneous materials and products. Besides the industrial cleaning solutions Schmitt also offers solutions for the leisure and sports markets (specialised on cleaning plastic products – see web site for further information).

## CUSTOMISED MANUFACTURING

We offer to manufacture our systems to your specific needs. Tell us the required size and performance and we will send you a corresponding quotation. We can also help you to dimension the required system.

Interested? Please don't hesitate to contact us:

www.schmitt-ultrasound.com



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