



KGR 20 & KGR 65

ULTRASONIC SOUND/TURBULENT FLOW COMBINED SYSTEM

# CLEANING OF CLIMBING HOLDS

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**.

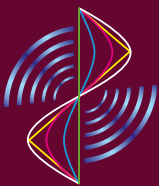
### PUMP AND MATERIAL SAVING CHEMISTRY

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.

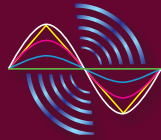
### THE CLEANING PROCESS

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.

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A PDF CASE STUDY PRESENTATION – AVAILABLE FROM OUR WEB SITE – SHOWS HOW THE DAV CLIMBING CENTRE IN INGOLSTADT/GERMANY USES THE SYSTEM



## BASIC PRINCIPLE OF ULTRASONIC CLEANING

Ultrasonic sound stands for oscillations with frequencies above 16 kHz. A highly energetic ultrasonic cleaning 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 the dirt particles from the holds.

Our ultrasonic based systems for cleaning climbing holds utilise frequencies and amplitude modulations which we specially developed for the removal of dirt, fat, sweat and magnesia particles. 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 dirt parts even in areas, which are difficult to access without damaging the hold material.

Our **Turbulent Flow /Ultrasonic Sound based** systems outperform conventional manual cleaning methods regarding efficiency and speed.

## 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 ca. 420 x 200 x 200 mm
Cubic Capacity	20 litres	65 litres
Ultrasonic Devices	6 pcs, directly cemented	18 pcs, directly cemented
drain connection	3/4 inch	1 inch
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	ca. 37 kg	ca. 60 kg

### HOLDS CLEANING BEFORE CLEANING

*The partly microfine fat-, magnesia-, rubber- and other dirt settles even in the smallest hold pores and cannot be removed efficiently using standard cleaning methods like brushing or just high pressure water jets.*



### AFTER CLEANING

*The Ultrasonic/Turbulent Flow cleaning system dissolves even smallest dirt particles extremely fast from the hold pores. As multiple holds can be cleaned simultaneously, the expenditure of cleaning time is very short.*

### ABOUT THE MANUFACTURER

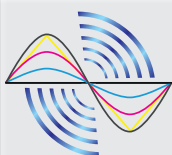
**Schmitt Ultraschalltechnik GmbH** serves several industry markets with special solutions for ultrasonic cleaning of miscellaneous materials and products. Besides the industrial cleaning solutions Schmitt also offers solutions for the leisure and sports markets (*specialised on cleaning plastic products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

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