

GROUND SLUDGE REMOVER 2.0



For clean bodies of water.



1,000 m³/day

Time is valuable, and so is water. You want to rid your pond system of sludge as quickly and effectively as possible. With a capacity of approximately 40 – 120 m³ / h, which is equal to 1,000 m³ / day, an eccentric rotor pump sucks up the sludge-water mixture and conveys it through the tubing to its subsequent processing or disposal site.

GET RIGHT TO THE BOTTOM. THE KLAWA GROUND SLUDGE REMOVER.

The ground sludge remover from KLAWA is a success story which will continue in the future and which is setting new standards. For many years now, we have already been using our expertise for the development of optimal solutions in the field of purifying bodies of water.

The basic idea was to make the removal of sludge from pond systems more efficient and more environmentally friendly in the future. This idea resulted in a system that is easy to use and universally applicable. This meant implementing effective sludge removal that would negatively impact the ecological balance of bodies of water as little as possible.

This has resulted in a ground sludge remover which is versatile and which has unique features. The ground sludge remover from KLAWA. It is portable, it floats, it is remote controlled, it can be

automated if desired, it cleans gently and efficiently – it has many advantages that bring together economic and environmental benefits.

Sludge deposits have a negative effect on the water quality of your system. Sedimented and mineralised sludge deposits lead to a reduction of the capacity of your system. The ground sludge remover helps you to sustainably increase your water quality and system hygiene and to maintain the capacity of your system.

Use the ground sludge remover to remove deposited sludge from the bed of your pond or in concrete pools for process water. It provides you with new savings potential. It is no longer necessary to drain the water or to use numerous employees. Choose the ground sludge remover from KLAWA. The result of the removal will convince you.

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20,000 m³

The biological water treatment plant in Wabern cleans the wastewater of 9,000 citizens. That means: 20,000 cubic meters of wastewater have to be cleaned every day. So that the cleaning performance of the system is not compromised in any way, it needs efficient sludge removal. The solution: The ground sludge remover from KLAWA.



THORSTEN FUNKE

WASTE TECHNICIAN, WATER TREAT- MENT PLANT

We deal with water here every day. That's why we see it as our objective to rid the water sustainably of pollutants and contaminants. On more than 4,000 m² here in the community of Wabern, we operate a biological water treatment plant with a capacity of 16,000 m³. Our water treatment plant cleans the wastewater of 9,000 citizens. That's 20,000 cubic meters of wastewater per day. Over time, more and more sludge accumulates on the bed of our polishing pond. That in turn reduces the cleaning performance of the plant.

It was extremely important for us to find a solution that could meet all our requirements and could clean our plant of sludge quickly and thoroughly. That's why we decided on the ground sludge remover from KLAWA. The ground sludge remover also provides us with many other advantages, though. For example, we don't have to file any applications with the public authority. Sludge cleaning always used to be very complicated and costly. So we used to always need several employees or external compa-

nies to rid the pond system of sludge. Along with that, we always used to have to drain the water out. Thanks to the fact that the individual units work so gently, we can also use the ground sludge remover when our plant is in operation.

Today, we easily control the ground sludge remover by remote control from the shore across the entire water surface. Its manoeuvrability was particularly persuasive to us. The hydraulically driven removal device with the counter-rotating auger allows us to loosen the deposited sludge and to convey it via an eccentric rotor pump and a hose to the bank of the pond.

Due to its floating pontoon construction and gentle removal device, the use of the ground sludge remover is very hygienic and does not pose a risk of damage to our pond system. Through the calm operation of the removal device, no ground sludge is stirred up. As a result, we can be sure there will not be any pollution of the receiving waters or any other bodies of water.



THORSTEN FUNKE, GERMANY, WABERN

» It was extremely important for us to find a solution that could meet all our requirements and could clean our plant of sludge quickly and thoroughly. That's why we decided on the ground sludge remover from KLAWA. «



up to 7 m deep

The removal device can be lowered to the desired depth up to 7 m, as needed. With the lifting device, the immersion depth can be adjusted individually. The removal device that receives the sludge is highly efficient and makes high concentrations of sludge possible. The sludge-water mixture is transported to the bank of the pond via a rotary pump and a hose.

KARL-WILLI KRUG

WASTE TECHNICIAN, PAPER FACTORY

Clean water plays a very important role for us – especially during the manufacturing process. We particularly need a lot of water for our production.

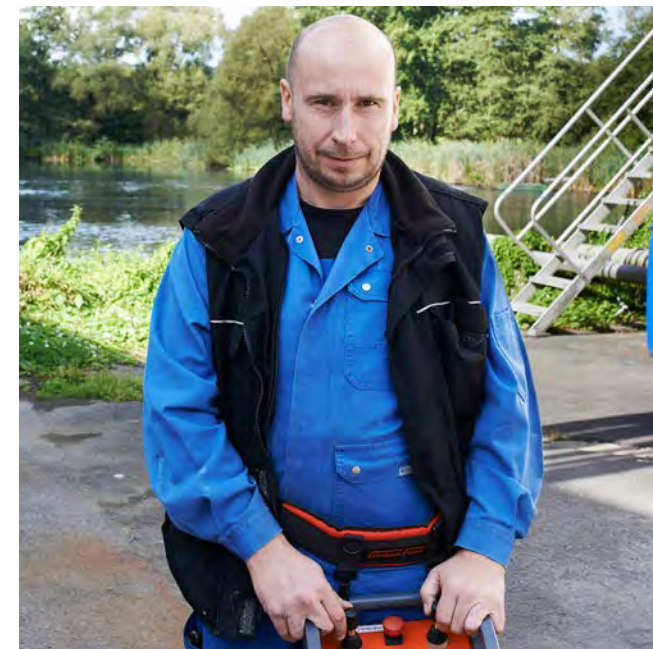
We mainly use return water – that protects the environment. After the production process, the resulting wastewater is excreted and forwarded to the sewage treatment plant. There, the solids are separated from the water by polymers. Then, we drain the water in our polishing pond. It gets recycled through a biological process and, after cleaning, it's supplied back to production. The problem: Sludge deposits continue to accumulate on the pond bottom over time. And this is when we put the ground sludge remover to use.

In order to be able to meet strict legal guidelines, we keep our systems up to date. The ground sludge remover fulfils all of the demands that we have for efficient sludge removal. As a result, we can also perform the removal during operation. Thanks to the remote control, the sludge removal can be performed by one person. For us, that means we save time and money.

With the ground sludge remover, the sludge removal is very effective and flexible. The modular design allows us to adapt the length of the delivery hose according to the removal situation. The transport hose is pulled along with the removal device. With the remote control, we can operate the four propeller-driven motors separately, so we easily manoeuvre the ground sludge remover over the entire pond surface.

With the auger, we even convey sedimented sludge. In doing so, we can lower the remover device to the required depth. With the lifting device, we can adjust the immersion depth individually. The removal device that receives the sludge is highly efficient and makes high concentrations of sludge possible. There is therefore less of the sludge-water mixture.

With its gentle removal device, the use of the ground sludge remover is very hygienic and does not pose a risk of damage to our pond system or its sealing system. Through the calm operation of the removal device, no ground sludge is stirred up. As a result, we can be sure there will not be any pollution of the receiving waters or any other bodies of water.



KARL-WILLI KRUG, GERMANY, ALTENKIRCHEN

» The ground sludge remover from KLAWA fulfils all of the demands that we have for efficient sludge removal. As a result, we can also perform the removal during operation. And the best part is: the water doesn't have to be drained. «

About the interview:
www.klawa-gmbh.de/en/our-business-areas/ground-sludge-remover

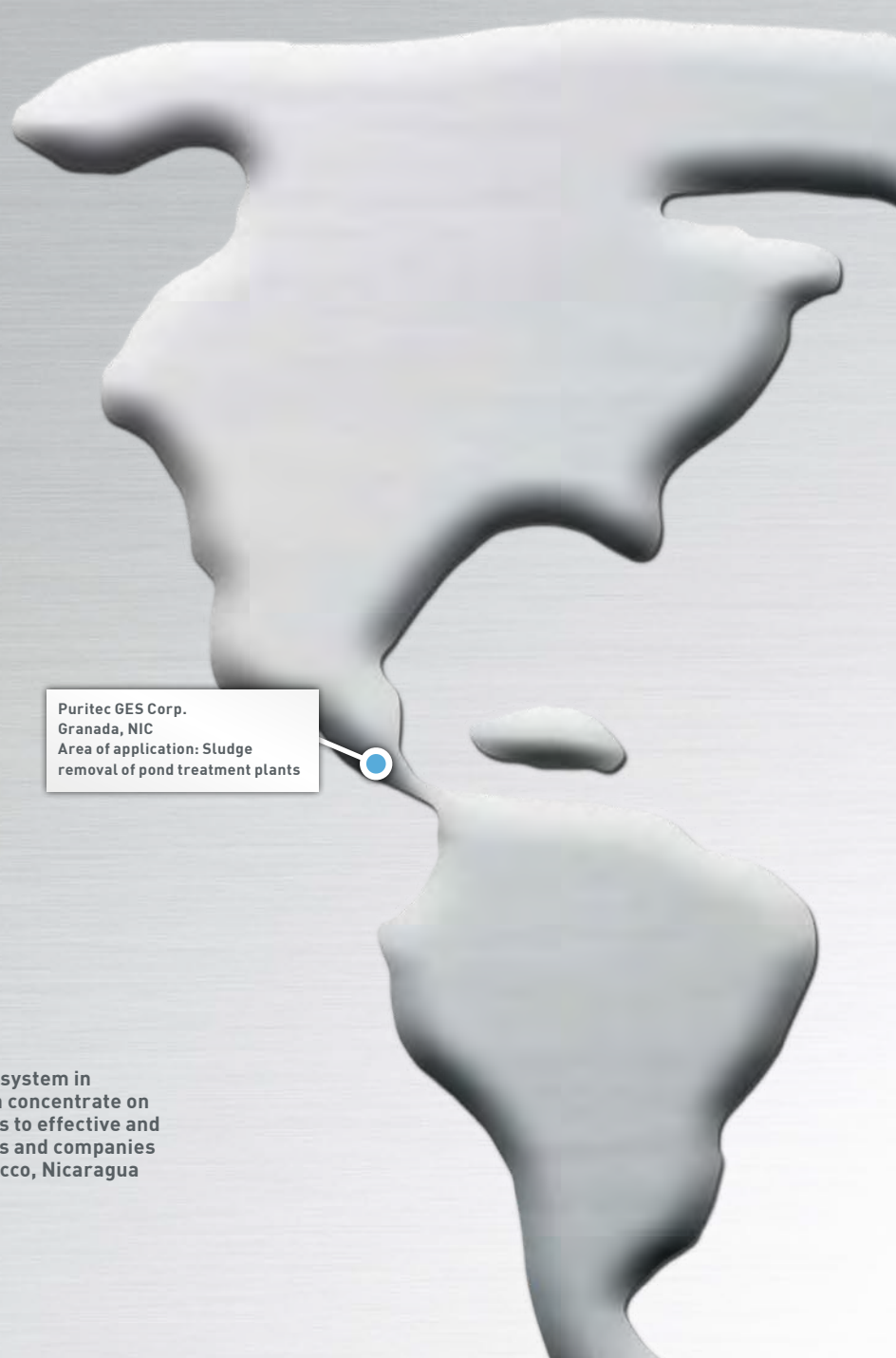


USABLE EVERYWHERE: IN YOUR POND AND THROUGHOUT THE WORLD.

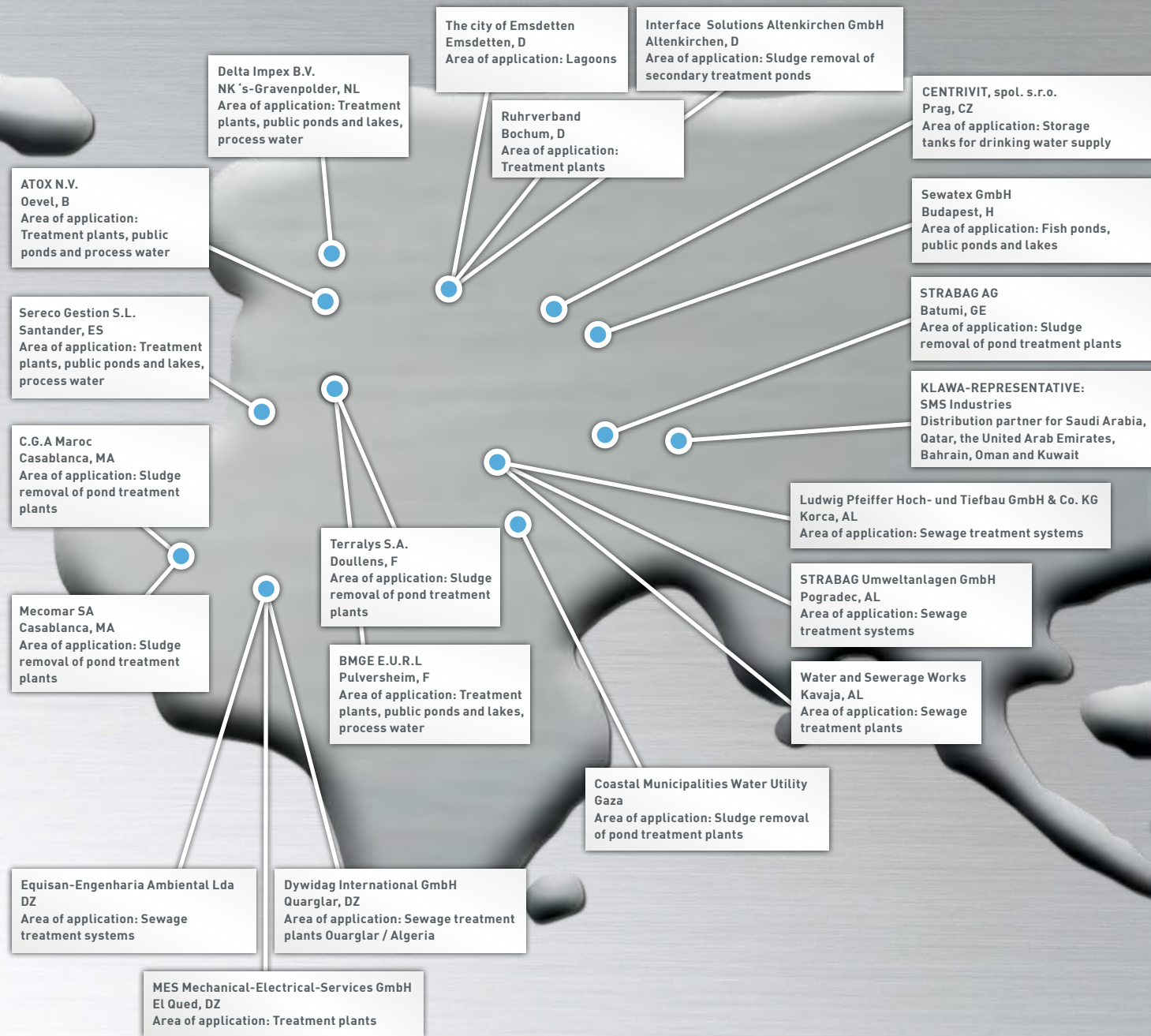
Usable for pond treatment plants, polishing ponds, rain-water retention basins, fish ponds, fire ponds, industrial plants as well as public ponds and lakes. Partners around the world benefit from our solution. Today, tomorrow and in the future.

13 Countries

Where would you like to use the ground sludge remover? For a pond system in Prague or Budapest? We'll organise the transport. That way, you can concentrate on the essentials. On your system and your water quality. When it comes to effective and efficient sludge removal, more and more municipalities, associations and companies are relying on the expertise of KLAWA. Whether in Germany or Morocco, Nicaragua or Algeria. The ground sludge remover is used all over the world.



Puritec GES Corp.
Granada, NIC
Area of application: Sludge
removal of pond treatment plants



SIMPLE TO USE. UNBEATABLE PERFORMANCE.

Easy to transport (1, 2, 3)

Do you want to use the ground sludge remover at different locations? Transporting it is easy. The suitable hoist offers you the ultimate in comfort and facilitates placement on the body of water to be cleaned.

Easy to operate (4)

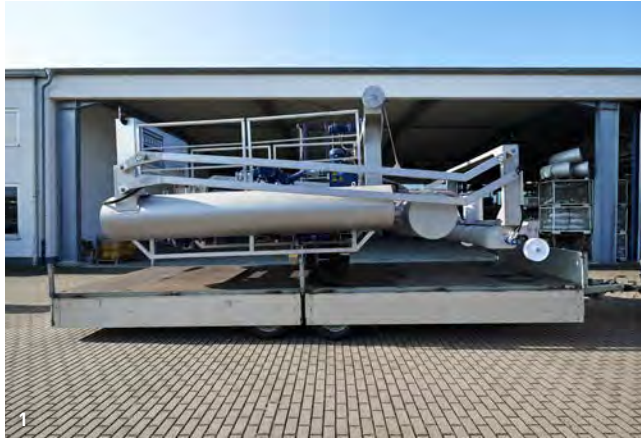
The ground sludge remover can be operated from shore via a remote control. The ground sludge remover is driven by four-propeller motors. These can be controlled separately, if necessary. This makes the system extremely agile and flexible. The buoyancy of the ground sludge remover is ensured by three floats. They lower the removal device to the desired depth – with the lifting mechanism, you can adjust the immersion depth according to your needs.

Easy to understand (5)

Our engineers configure the system directly at your site and in consultation with you, instruct your employees and ensure a smooth start-up. So you can quickly perform the sludge removal independently.

Easy to convey (6)

With a capacity of approximately 40 – 120 m³ / h, a rotary pump sucks up the sludge-water mixture and conveys it through the tubing to its subsequent processing or disposal site.

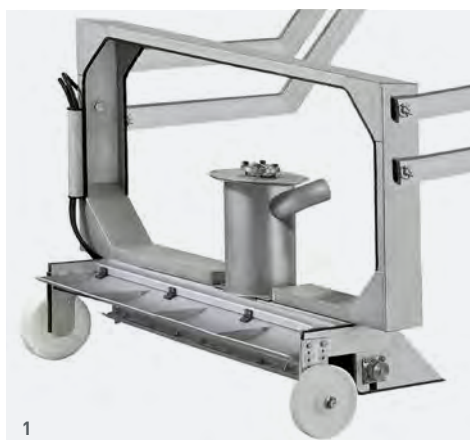


SUBMERGE CAREFULLY. ALSO AVAILABLE WITH A FISH- FRIENDLY DEVICE.

1 Particularly harmless to fish Vacuum with suction support

Do you operate a fish pond system and are you looking for a fish-friendly sludge removal method? In the future, thanks to the fish-friendly removal device, you will be able to rid your fish ponds of sludge without jeopardising your fish population.

The special attachment, consisting of a suction device and a vacuum, is not dangerous for fish. The vacuum features many different suction supports. The sludge is sucked through a hole via the vacuum by means of the eccentric rotor pump. The system is particularly suitable for fish ponds with high stock densities.



1

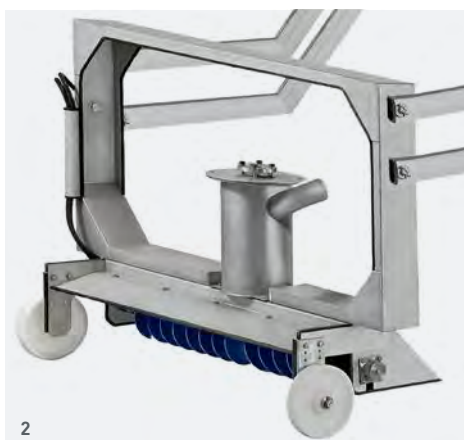


2 Spiral attachment

Convey loose sludge with the spiral. This attachment is used predominantly. With an eccentric rotor pump, the sludge-water mixture is conveyed through the hose system to the pond bank for further treatment or disposal.

3 Serrated auger

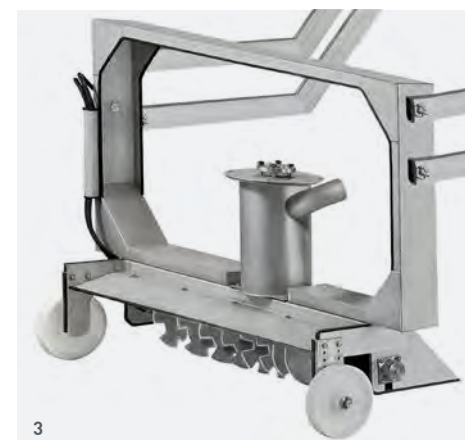
Do you want to loosen up sedimented sludge deposits? That's no problem with the serrated auger. The special attachment drills into the ground and loosens even the hardest sludge.



2

Modular use

For every need, we offer the perfect attachment. Thanks to the modular design, the respective attachment can be substituted easily and comfortably.

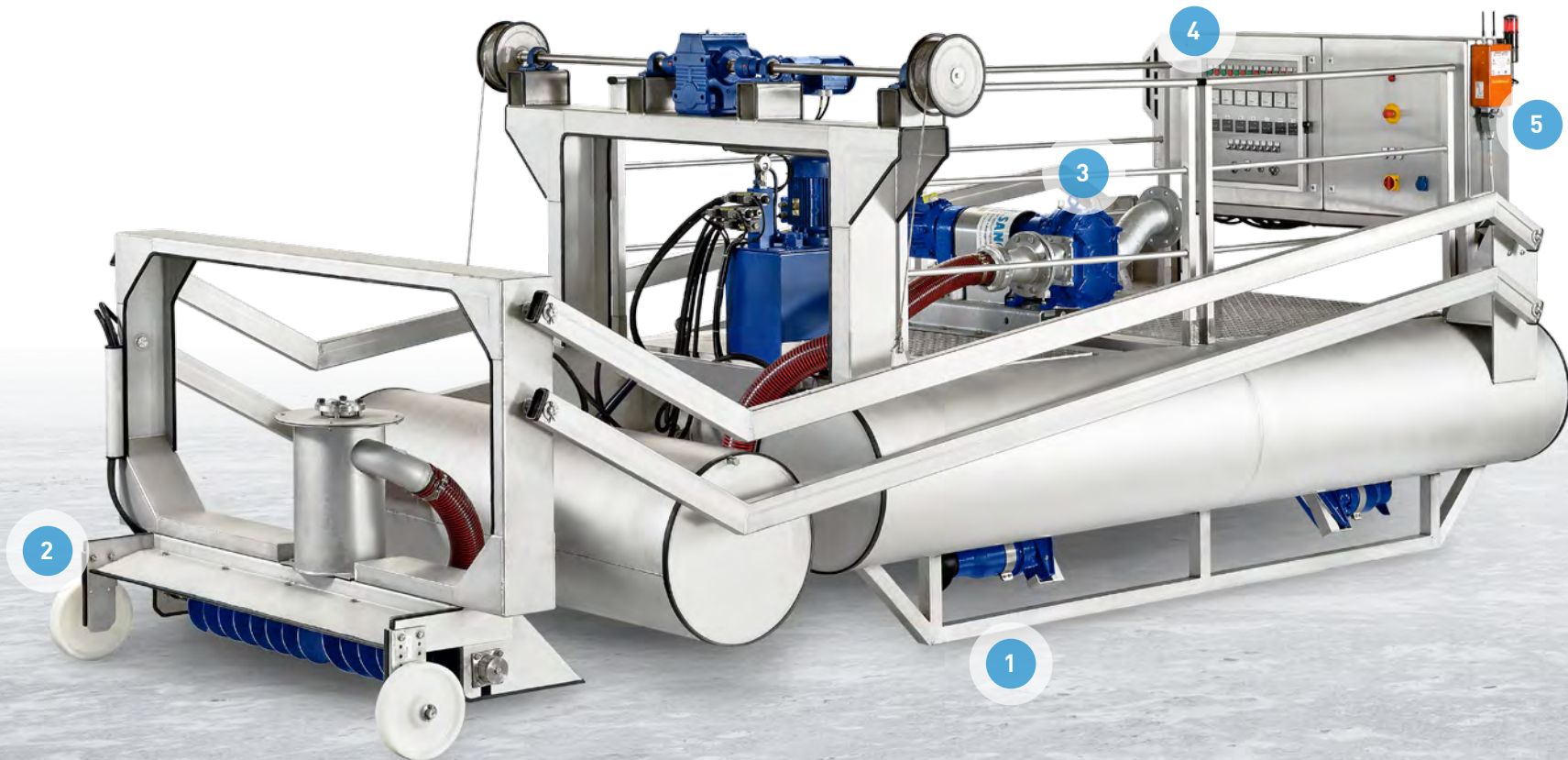


3

PERSUASIVE TECHNOLOGY . ABOVE AND UNDER WATER.

25,000 hours of operation

The ground sludge remover offers you the best solution, even over the long term; it has been designed to be used for more than 25,000 hours of operation.



Choose between the standard, a semi- or a fully-automatic version. The fully-automatic ground sludge remover has the characteristics of the semi-automatic model along with a satellite-based positioning system. With this system, basins can be completely or partially cleaned 100%-automatically via a previously defined cleaning pattern.

Version 2.0

The ground sludge remover is remote controlled and, in the standard version, is operated by one person from the shore. That means a small and safe workforce, which is reduced even further thanks to the semi- and fully-automatic equipment variations.

Version 2.0, semi-automatic removal

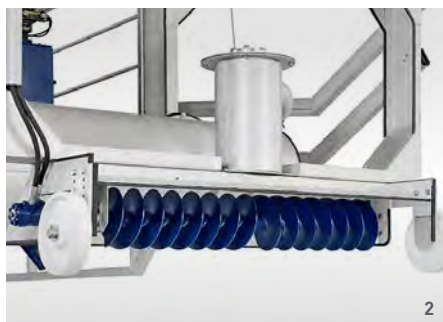
The sludge removal keeps the density of the extracted sludge largely constant and automatically adapts on a continuing basis to the optimal depth during the removal process. The spatial direction is also recognised. The selected direction is automatically maintained by a compass, and the removal occurs continuously in one direction. For basin lengths of 100 m and a conventional clearing speed of 1 - 2 metres per minute, the remover can be operated for 1.5 - 3 hours without interruption and without the involvement of personnel. Upon reaching the end of the basin or an obstacle, this is detected and the cleaning process is stopped. To continue the removal process, the remover has to be turned or driven around the obstacle with the remote control.

Version 2.0, fully-automatic removal

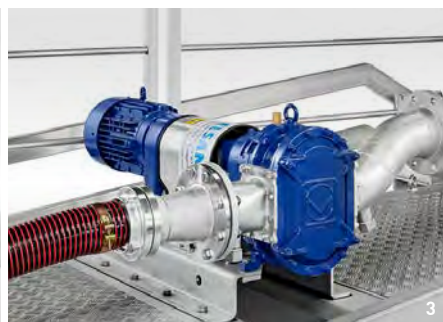
The fully-automatic ground sludge remover is similar in its construction to the semi-automatic version, but it has a special feature – the satellite-based positioning system. With this system, basins can be completely or partially cleaned 100%-automatically via a previously defined cleaning pattern. This GPS-supported version is only prepared for use in Germany.



1 The ground sludge remover is extremely easy to manoeuvre. You regulate the speed with the remote control.



2 Choose between the spiral, the auger and the vacuum. For every task, we offer the perfect attachment.



3 Depending on your requirements, KLAWA offers you various pumps with different powers. From 40 – 120 m³ per hour.



4 Thanks to an integrated cooling unit, the cabinet is designed even for the warmest ambient temperatures. In an emergency, the ground sludge remover can also be controlled directly via the explosion-proof switch unit.



5 Using the remote control, both the semi-automatic as well as the fully-automatic ground sludge remover are easy to operate.

TECHNICAL DATA

Model	Ground sludge remover Version 2.0	Ground sludge remover Version 2.0, semi-automatic	Ground sludge remover Version 2.0, fully-automatic
Drive / driving performance			
Drive	4 Motors each with 1.2 kW	4 Motors each with 1.2 kW	4 Motors each with 1.2 kW
Max. power	16 kW	16 kW	16 kW
Connection	32 A	32 A	32 A
Speed	1 – 2 m/min	1 – 2 m/min	1 – 2 m/min
Driving time	Battery 3 x 8 hours = 24 hours	Battery 3 x 8 hours = 24 hours	Battery 3 x 8 hours = 24 hours
Weight / volume			
Weight	starting at 2,600 kg **	starting at 2,700 kg **	starting at 2,800 kg **
Dimensions	Length: 6,020 mm ** Width: 2,415 mm	Length: 6,020 mm ** Width: 2,415 mm	Length: 6,020 mm ** Width: 2,415 mm
Cleaning depth	0.6 – 3.5 m ** 0.8 – 5.5 m ** 0.8 – 7.0 m **	0.6 – 3.5 m ** 0.8 – 5.5 m ** 0.8 – 7.0 m **	0.6 – 3.5 m ** 0.8 – 5.5 m ** 0.8 – 7.0 m **
Conveying volume	40 – 120 m³/h	40 – 120 m³/h	40 – 120 m³/h
Transport			
Trailer	Available upon request *	Available upon request *	Available upon request *
Auger	up to 300 m	up to 300 m	up to 300 m
Ex-protection	optional	included	included
Positioning via satellite	–	–	yes
Maintenance of specified direction	–	yes	yes
Automatic adjustment of the cleaning depth	–	yes	yes
Constant sludge density	–	yes	yes
Tilt sensor for automatic shutdown	yes	yes	yes

* according to configuration

** according to cleaning depth

AS INDIVIDUAL AS YOUR NEEDS.

Many components of the ground sludge remover can be changed upon customer request. Contact us directly. We will be happy to provide you with a ground sludge remover that is perfectly tailored to your needs and to make you an offer.

Do you want to see the ground sludge remover in action? In our video, we show the ground sludge remover in use. Our customers report about the experiences they have had with the ground sludge remover.

The configurator

What are your individual requirements for the ground sludge remover? Share them with us.

We will be glad to send you a customised offer.



Would you like to learn more about the ground sludge remover?

More information is available to you through the QR code.



Always near by: In the middle of Germany.

KLAWA. With our ideal location in the middle of Germany and a worldwide customer proximity, we meet the conditions for high customer satisfaction.

We offer you:

- personal and comprehensive instruction directly at your location or at our facilities in Gudensberg.
- a fast and uncomplicated delivery of spare parts.
- telephone support, around the clock.
- holistic on-site and in-house service.

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