

Bringing out the best.

Photovoltaic cleaning systems since 2010



Cleantecs
QUALITY. MADE IN GERMANY



“It might seem hard to believe,
but you can always make something
good even better.”

Anton Jäger, founder of Cleantecs GmbH

The do-it-better gene.

For over 30 years, we at Cleantecs have been developing and producing smart solutions for professional cleaning with high-pressure cleaning technology. With a focus on photovoltaic cleaning, slat cleaning and lichen removal. From day one, our motivation has been

not just to do things. But to do them better. Easier to use, more efficient in consumption, more sophisticated in terms of the technology and more robust in everyday use. Because over the years we've come to understand and internalise one thing above all else: professional cleaning requires well-thought-out solutions that deliver the best results.

That's why more than 40 employees at Cleantecs work day after day towards a common goal: to develop the optimal solution in the best possible quality. Ultimately, we want our customers to always be well advised and optimally equipped.



Day by day, we work with precision to achieve the highest quality. That is our commitment.



Flexibility for professionals. The SOLA-TECS C

The SOLA-TECS C is our professional solution for flexibly cleaning and maintaining solar and photovoltaic systems. For anyone who needs a particularly compact and mobile device that can be quickly deployed anywhere and is easy to operate. One of the reasons for this is the motorless technology: the brush rollers are set in rotation by a high-pressure cleaner.

This results in an extremely compact design and optimised contact weight. Guided by a practical telescopic lance, the SOLA-TECS C guarantees significantly faster and noticeably easier cleaning of all photovoltaic systems. But the SOLA-TECS C also offers a brilliantly clean solution for other applications – such as for cleaning glass and buildings or conservatories.



STC1000

Here's the solution. Where's the problem?

With the SOLA-TECS C, we at Cleantecs have developed an all-rounder for as many applications as possible. Effective and powerful thanks to the cleverly designed bristle arrangement and the 160-millimetre brush diameter. The brush roller consists of individual, 10-centimetre-wide units. This means

that the SOLA-TECS C can be easily converted into a larger or smaller professional tool as required. That's because users can easily adjust the brush roller to between 620- and 1,020-millimetre widths.



Highly effective cleaning and radiant clean surface.



Take one clever idea. And many well-thought-out details.

We've incorporated all of our experience and concentrated innovative strength into the SOLA-TECS C.

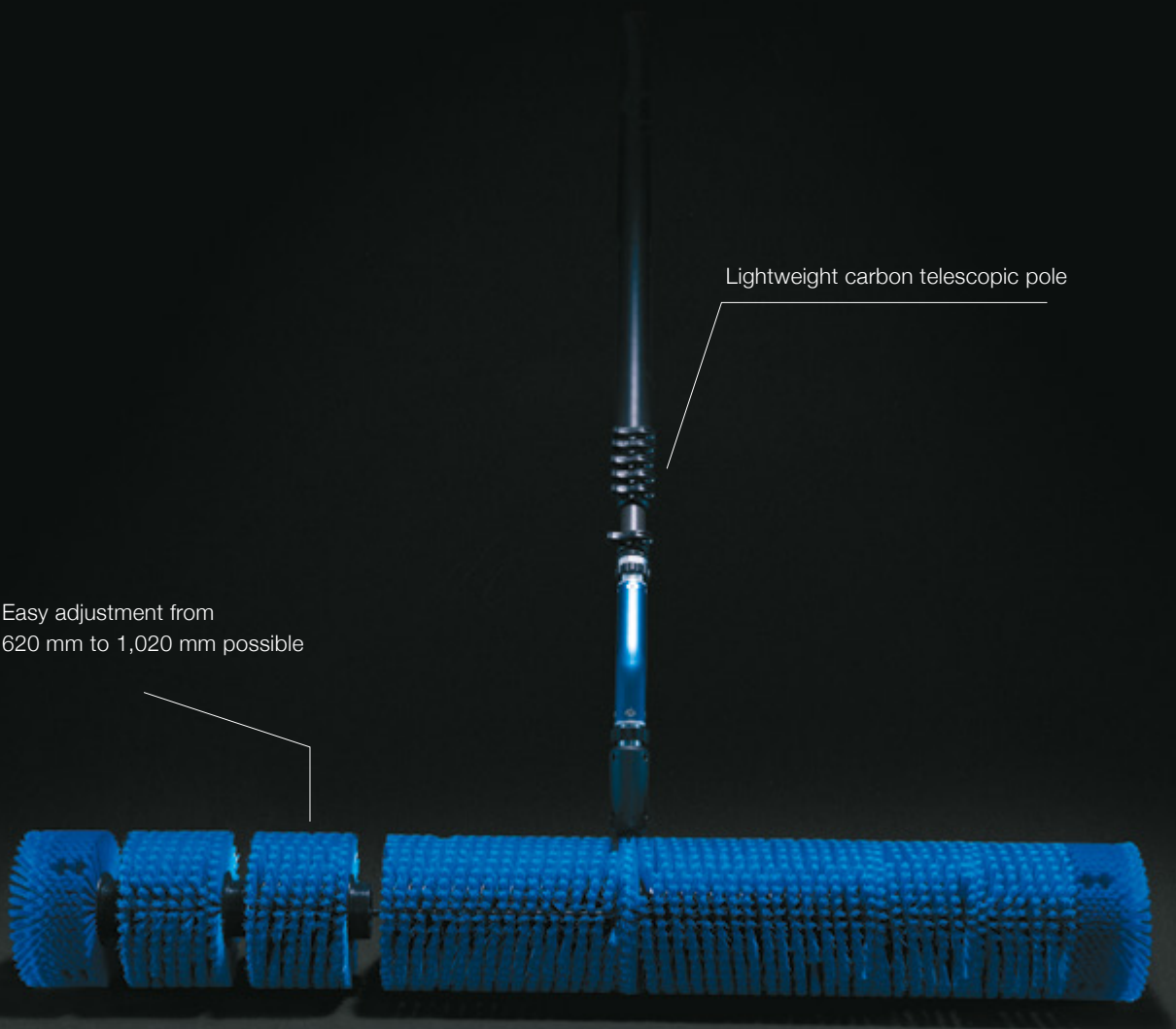
This is also evident in the many detailed solutions that make the hard day-to-day work of professional cleaning a little easier.

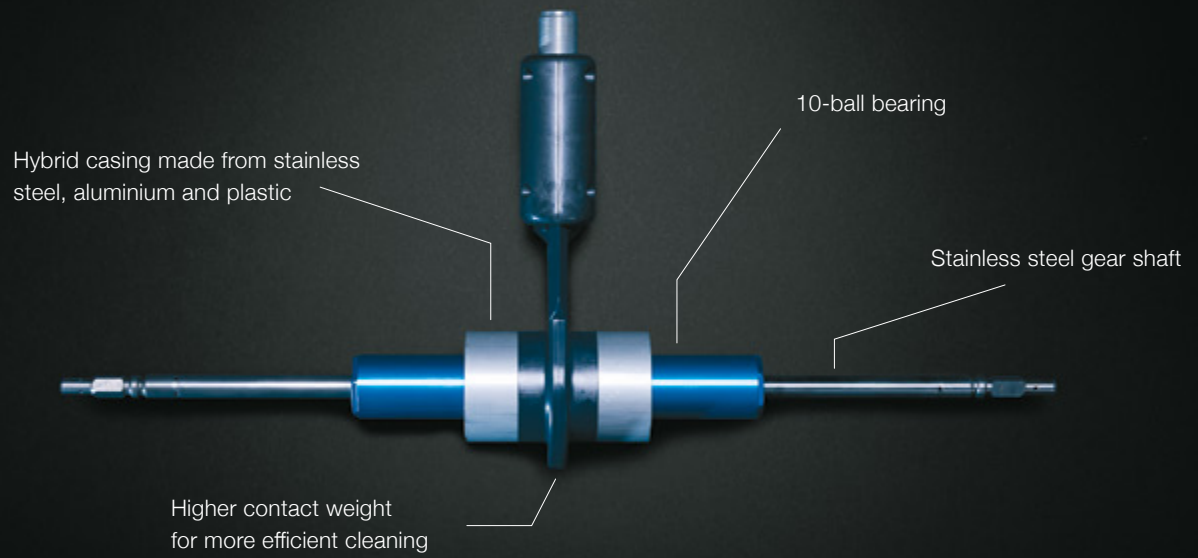
For instance, we've continuously increased the cleaning performance of the mobile, water-driven device while at the same time improving its quality. The latest SOLA-TECS C generation, for example, has a particularly robust hybrid casing that combines stainless steel, aluminium and plastic. The gear housing and the brush roller have also been

continuously improved in terms of their stability and quality. An optionally available nozzle can also reduce water consumption to as little as 5 l/min. This makes sense from an ecological point of view, and also opens up more possibilities for using water filters such as osmosis or DI resin filters.

Easy adjustment from
620 mm to 1,020 mm possible

Lightweight carbon telescopic pole







“That’s what we’re trying to do:
find the most effective way of
doing things.”

Genrich Trei, Head of Sales/Marketing Cleantecs GmbH

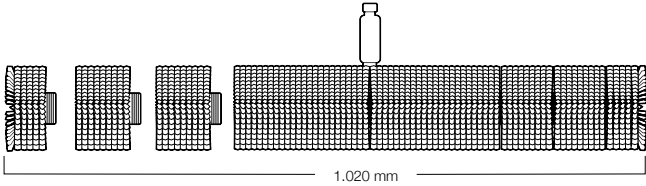
Everything that moves needs a drive.
Water to drive our devices – and passion
to drive us.
We’re a highly motivated team that
knows the industry and its unique
features.

We see ourselves less as a supplier and
more as a partner.
Because the best solutions are not crea-
ted in a workshop, but in collaboration.

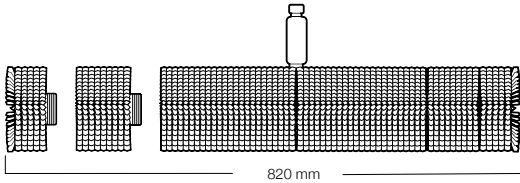
Technical data

SOLA-TECS C

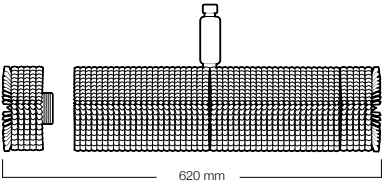
STC1000



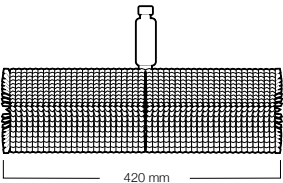
STC800



STC600



STC400



Product	Cleaning width	Area performance	Working pressure	Weight	Water consumption	Diameter	Item no.
STC1000	1,020 mm	350 m²/h	100 – 120 bar	4,954 g	5 –10 l/min	160 mm	0201821
STC800	820 mm	300 m²/h	100 – 120 bar	4,778 g	5 –10 l/min	160 mm	0201820
STC600	620 mm	250 m²/h	100 – 120 bar	3,960 g	5 –10 l/min	160 mm	0201819
STC400	420 mm	150 m²/h	100 – 120 bar	3,000 g	5 –10 l/min	160 mm	0201839



“Having less to worry about because the cleaning is done perfectly and gently – that’s an added benefit.”

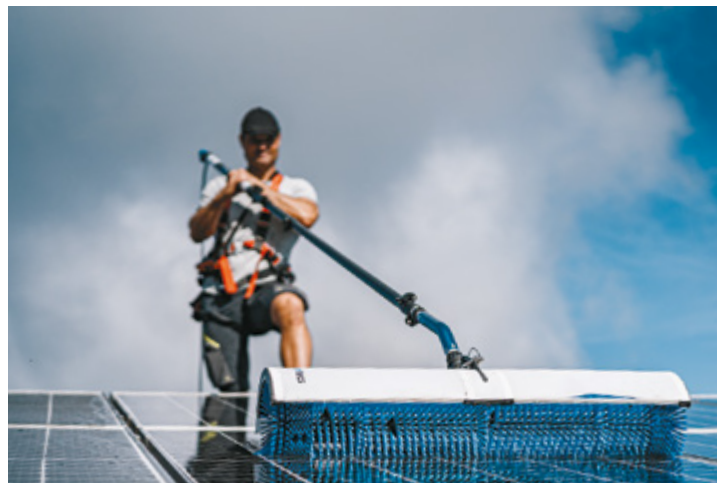
Wenzel Präger, Head of wpK, the competence centre for photovoltaic cleaning

It works best under high pressure.

If you ask professionals who have seen a lot and tried a lot, they often concur on two aspects. Firstly, that regular cleaning of solar and photovoltaic systems is not a cosmetic exercise, but a necessity; and secondly, that the best way to do this is to deploy high-pressure water technology, as Cleantecs does.

With two models for powerful, professional and environmentally friendly cleaning of large areas in the shortest possible time: SOLA-TECS C and SOLA-TECS W. Both are powered by a high-pressure water cleaner, without the need for a motor. Water, which is both the driving and cleaning medium, gently ensures that

the value and function of cost-intensive PV systems are maintained for as long as possible – and that their yield is increased.



Equipped with the best materials for every situation.

As stubborn as dirt: The SOLA-TECS W

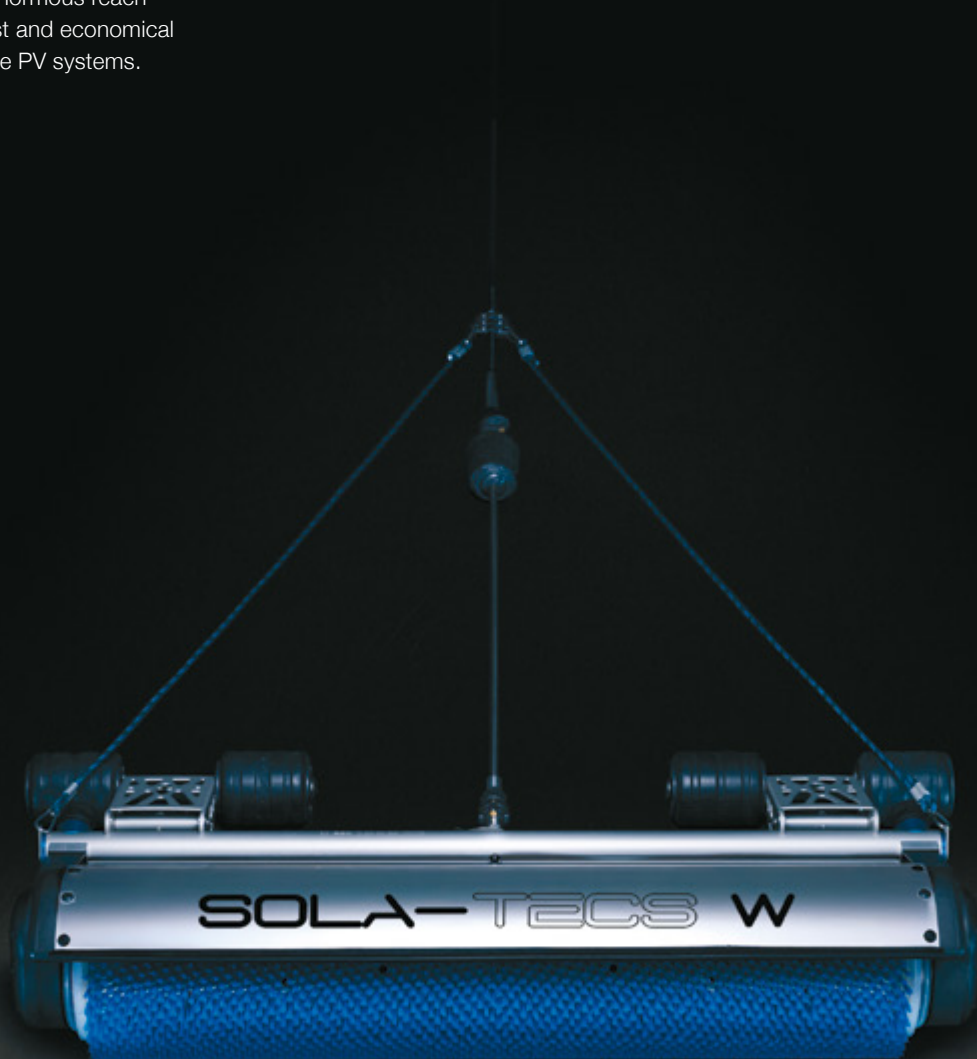
With the SOLA-TECS W, we've developed a model for cleaning large-scale solar power installations.

It requires safe access to the roof ridge and a roof pitch of at least 5°.

With this technology, the brush roller is lowered and raised from the roof ridge using a high-pressure hose.

This gives users an enormous reach – therefore enabling fast and economical cleaning of large-scale PV systems.

The SOLA-TECS W comes into its own wherever heavy soiling occurs: whether on private buildings, in trade and industry, or in agriculture. Wherever the dust from neighbouring fields and the exhaust air from stables leaves behind the most stubborn dirt, which severely limits the efficiency of PV systems.



STWP1000

Full power on the roof.

With 700 revolutions per minute, a brush roller with a 240-millimetre diameter and weighing 22 kilograms, the SOLA-TECS W delivers an impressive cleaning performance on roofs. It can easily cover 350 square metres per hour. It is also one of the most efficient systems on the market, with a maximum of 600

litres of water per hour of operation. Cleaning is achieved with mineral-free or demineralised water – no chemicals whatsoever. Like the C model, the SOLA-TECS W is driven by a high-pressure cleaner, which supplies the brush roller with water and ensures safe and gentle cleaning of the PV system.

Innovative guide rollers protect the solar modules and the system itself and ensure optimum brush guidance – up to and beyond the edge of the modules. This means that even the bottom edge of each module is cleaned in a single pass.



When it comes to efficiency, there is nothing better!



SOLA-TECS W – Made for large surfaces

The SOLA-TECS W is the ideal solution for the efficient cleaning of large photovoltaic systems. With its large brush diameter, powerful water pressure drive, and robust construction, it ensures maximum surface coverage with minimal effort – sustainably, thoroughly, and fast.



Stability, protection and safety come as standard.

Stable steering

The ingenious guying system, which forms a trapezoidal connection between the high-pressure hose and the SOLA-TECS W, makes the brush roller even more stable to control.

Stabilised high-pressure hose

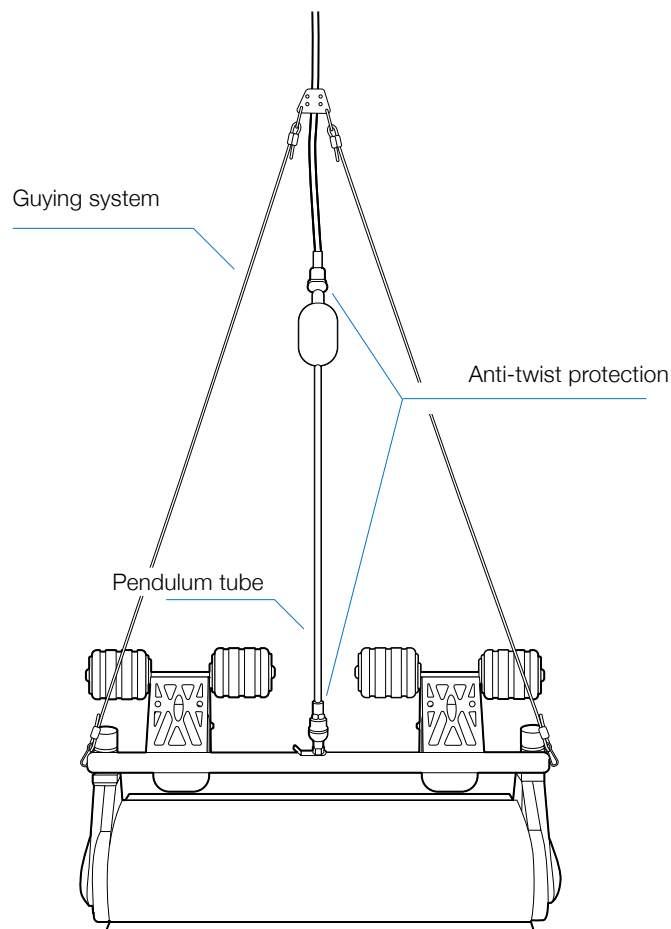
The pendant tube reduces oscillations transmitted from the SOLA-TECS W via the high-pressure hose. This improves controllability and at the same time ensures fatigue-free working.

Reliable quick-action screws

The quick-action screws on the pendant tube and the high-pressure hose are secured against uncontrolled loosening of the union nut by an anti-twist protector.

Secure transport

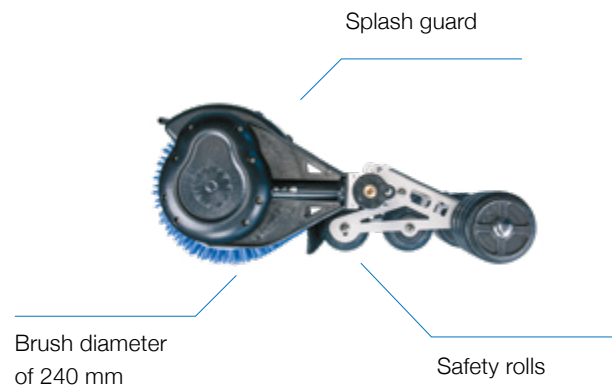
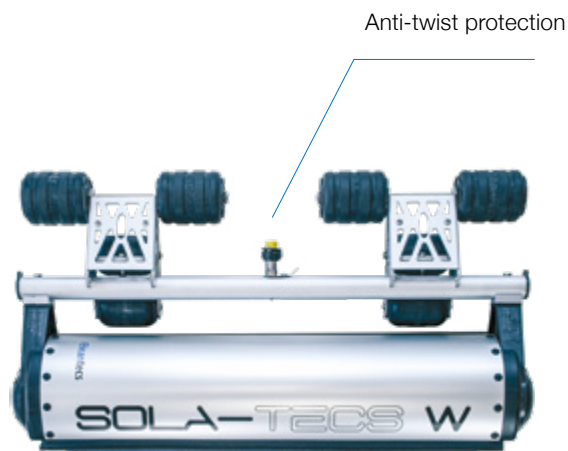
To get the SOLA-TECS W from A to B well protected and without complications, a specially developed transport box safely stores and transports the device.



SOLA-TECS W

Our best-selling model has been continuously improved since its market launch in 2010. That has further increased the quality and made maintenance even easier for customers.

The current generation features a splash guard, innovative safety rollers and a guying system. A robust gearbox and high-quality, high-end ball bearings ensure a long service life.



STW800



SOLA-TECS W Pro

The Pro model allows you to change the brush direction of rotation.

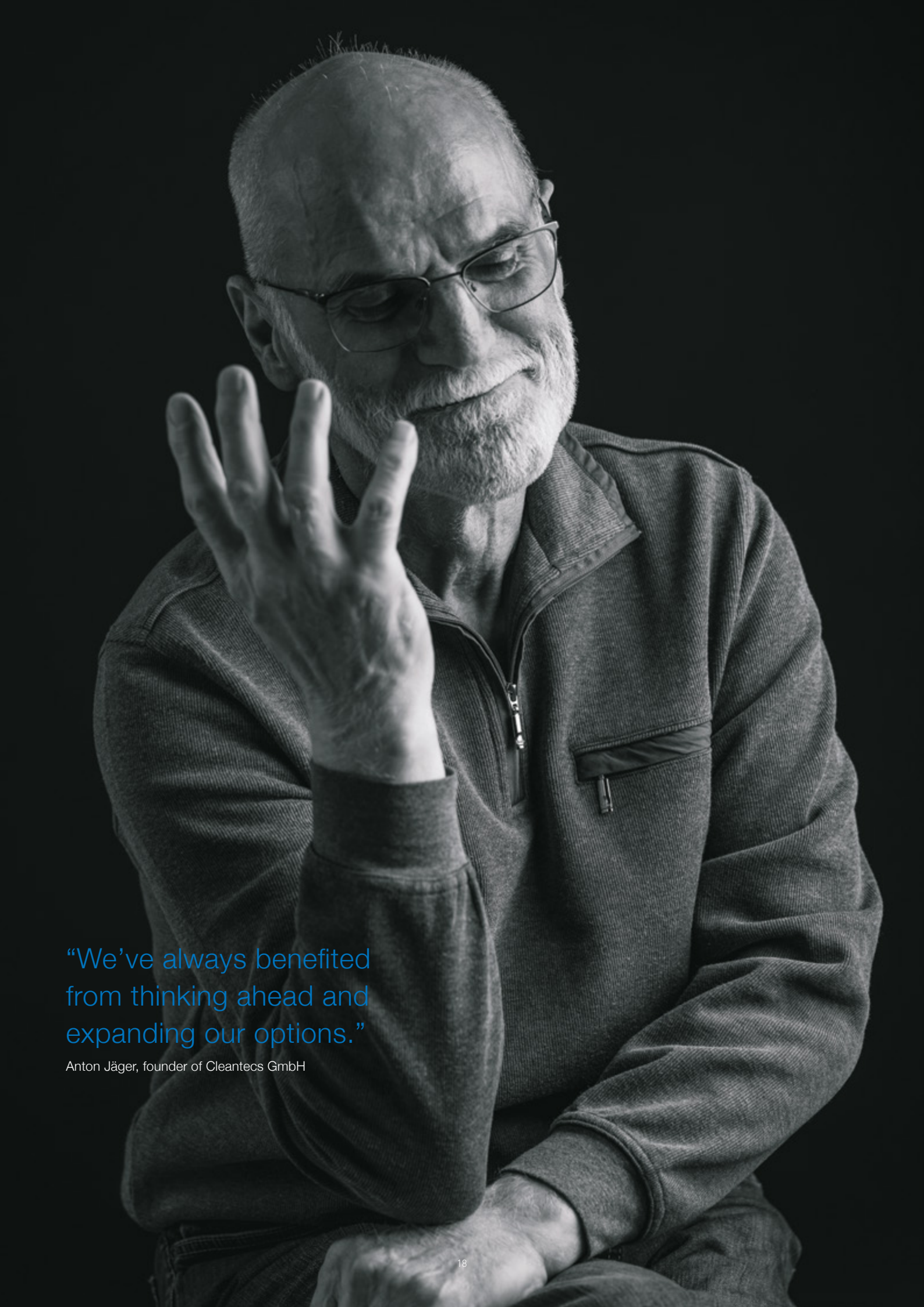
This is particularly advantageous on steep roofs. For instance, it makes it easier to clean the bottom edge of the module frames.

At the same time, the tractive force is reduced – which translates into less tiring work. A roof pitch of at least 20° is required to change the direction of rotation.



STWP800



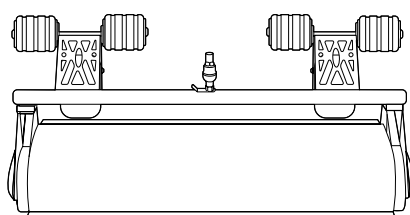
A black and white portrait of an elderly man with a beard and glasses, wearing a zip-up jacket. He is gesturing with his right hand, palm facing forward, with fingers slightly spread. The background is dark.

“We’ve always benefited
from thinking ahead and
expanding our options.”

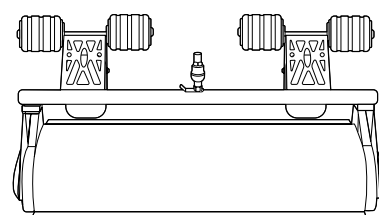
Anton Jäger, founder of Cleantecs GmbH

Technical data

SOLA-TECS W

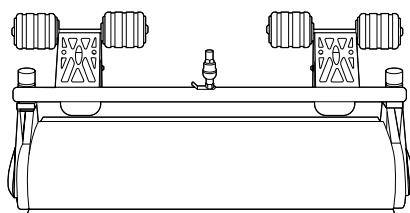


STW1000

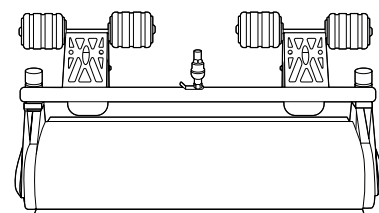


STW800

Product	Cleaning width	Area performance	Working pressure	Weight	Water consumption	Diameter	Item no.
STW1000	1,000 mm	350 m²/h	100 – 120 bar	24 kg	10 l/min	240 mm	0201017
STW800	800 mm	300 m²/h	100 – 120 bar	22 kg	10 l/min	240 mm	0201015

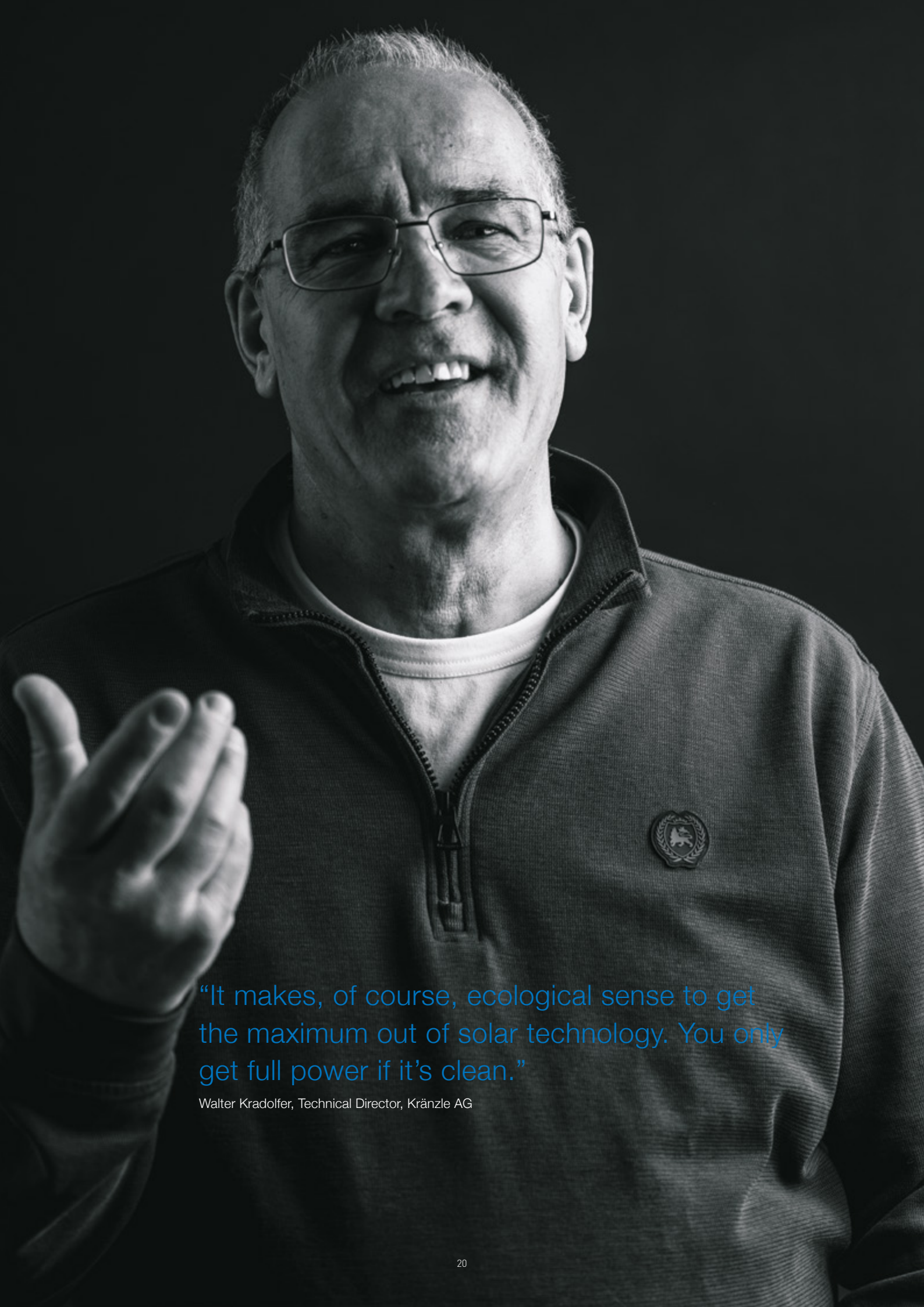


STWP1000



STWP800

Product	Cleaning width	Area performance	Working pressure	Weight	Water consumption	Diameter	Item no.
STWP1000	1,000 mm	350 m²/h	100 – 120 bar	24 kg	10 l/min	240 mm	0200702
STWP800	800 mm	300 m²/h	100 – 120 bar	22 kg	10 l/min	240 mm	0201034



“It makes, of course, ecological sense to get the maximum out of solar technology. You only get full power if it’s clean.”

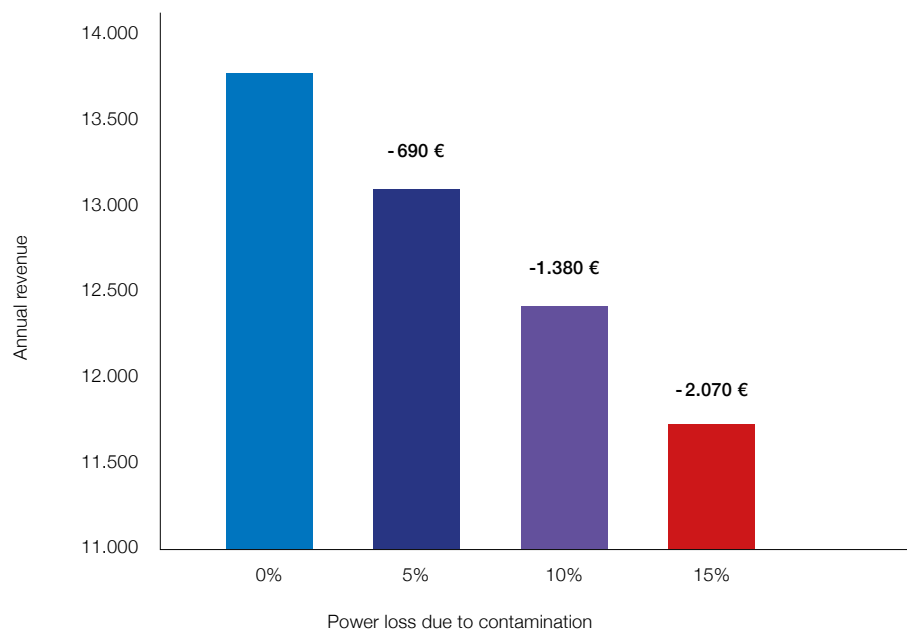
Walter Kradolfer, Technical Director, Kränzle AG

When does cleaning pay off? Always.

To clean or not to clean? – We at Cleantecs have never really had to ask ourselves this question. And after more than 30 years in the industry, everyone knows that a regularly cleaned solar power or photovoltaic system is not a luxury, but a crucial factor for maximum efficiency.

After a professional clean, the additional yield gained by a photovoltaic system can range between 3 and 30 per cent, depending on the degree of soiling. Conversely, a heavily soiled installation can lose up to a third of its output. This applies in particular to solar power systems on agricultural land, but also on industrial sites and installations alongside roads with heavy traffic.

Dirty systems produce less electricity and thus generate less feed-in remuneration. The good news: this is not a permanent condition. A cleaned system can once again produce the full yield.



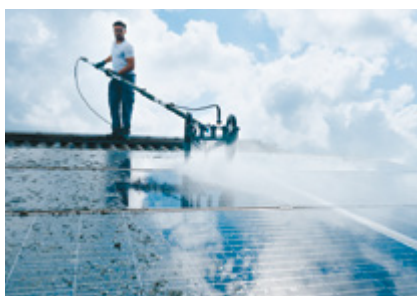
Cost-benefit calculation for a 30-kWp solar power system.

Our sample calculation is based on a 30,000-kWh solar power system and a remuneration of 0.46 cents/kWh (approx. €13,800 annually).

Fast, easy and chemical-free.
The SOLA-TECS **F**



STF400



Lichens are always a huge problem for solar systems.



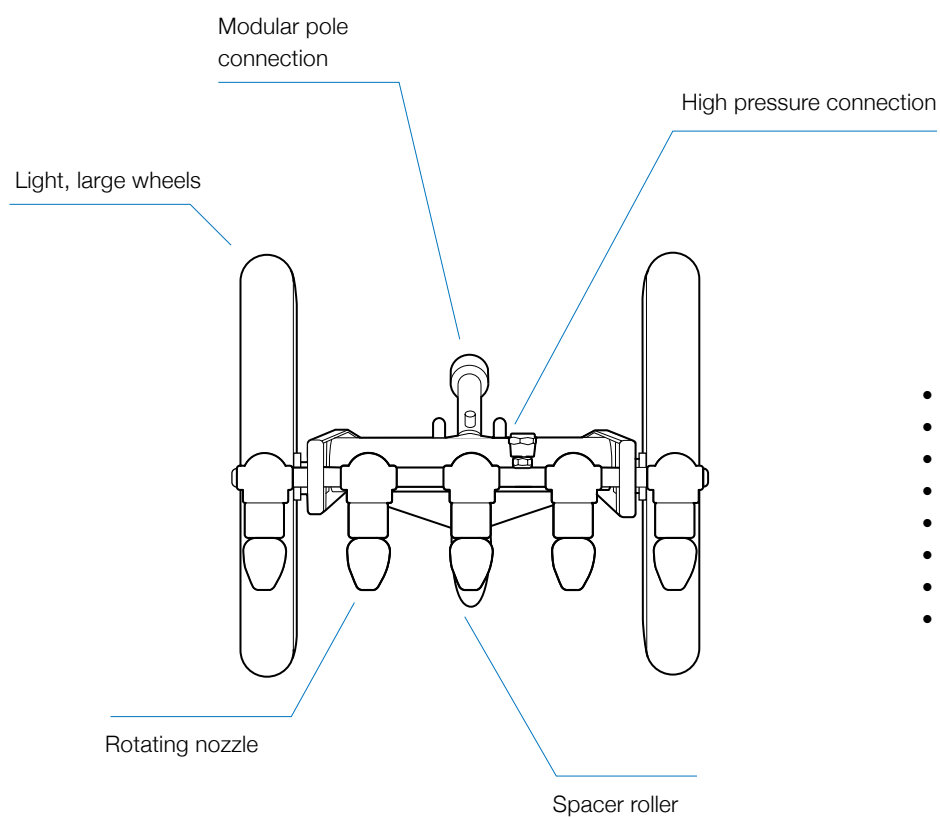
Another of our specialisms: Removing lichens from PV modules.

Removing lichens from PV modules can be laborious. Or it can be quick and easy. The lichen remover from Cleantecs has 5 rotating steel nozzles. These produce needle-fine, high-precision water jets that easily remove lichens from the PV module without the need for additional tools or chemicals.

With the help of our modular pole system, the lichen cleaner can be flexibly controlled in terms of the cleaning distance and direction of travel. Thanks to the mechanical height control, the distance between the nozzles and the PV module is always the same – and thus the cleaning result as well.

Technische Daten

SOLA-TECS F



- Easy to control with the modular pole
- Rotating jet
- Flow rate 10 l/min
- Cleaning width 400 mm
- Flexible steering
- Adjustable cleaning distance
- Easy to pass over obstacles
- Constant cleaning distance

Product	Cleaning width	Working pressure	Weight	Water consumption	Temperature max.	Item no.
STF400	400 mm	100 – 120 bar	5,6 kg	10 l/min	40 °C	0201830



The solution for lichen removal without chemicals.



Tested by the Fraunhofer Institute.

Two of our models, the SOLA-TECS W and our lichen cleaner, have been tested by the Fraunhofer Institute for Solar Energy Systems (ISE) to see if they could damage solar modules. They came to the following conclusion:

2 modules were each cleaned in 50 cycles, which corresponds to a field life of 25 years with twice-yearly cleaning.

A lichen remover and the SOLA-TECS W system from Cleantecs were used for cleaning.

Cleaning the modules

- did not result in any change in module performance
- did not result in any change in the insulation properties
- did not result in any cell breakage
- did not result in any visible damage to the module edge

In microscope images, isolated scratches in the anti-reflective coating of the glass could be seen in the area cleaned with the SOLA-TECS W system. These are not visible to the naked eye and do not affect the performance of the modules. No glass damage could be detected under the microscope in the areas where the lichen remover was used.

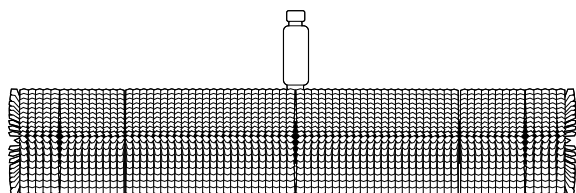
The system concept thought through to the end.

With the SOLA-TECS system, Cleantecs offers a professional complete solution – and at the same time a clever modular system.

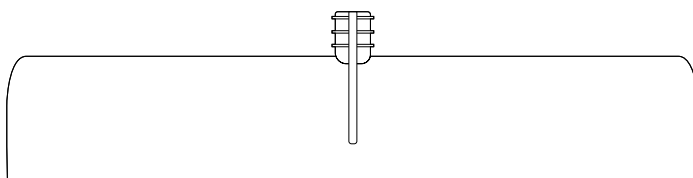
For example, existing high-pressure cleaners or water filter systems can be integrated into the system. Because we know that investment costs are just as important a factor for good

business as highly professional equipment. Depending on their requirements, customers therefore get their own individual solution, made by Cleantecs.

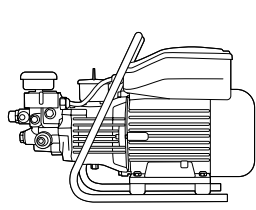
STC // 1000 / 800 / 600 / 400



Solar cleaner SOLA-TECS C



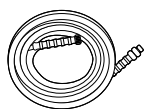
Splash guard



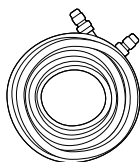
High pressure pump



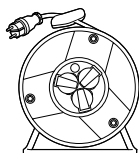
Remote control



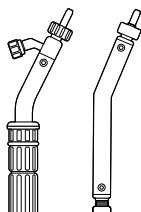
High pressure hose



Low pressure hose



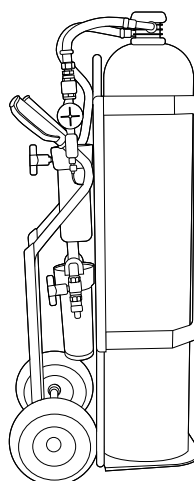
Cable drum



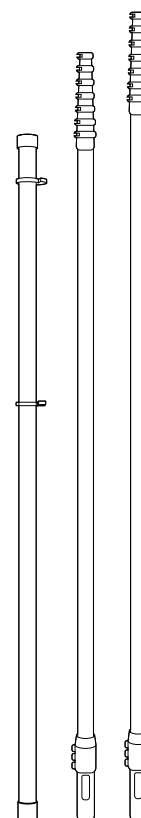
Gooseneck



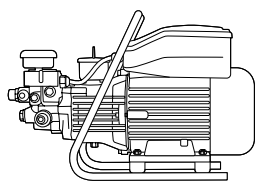
swivel joint



Water filter system



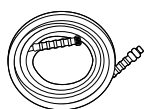
Poles for guiding



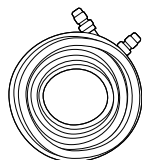
High pressure pump



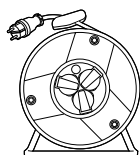
Remote control



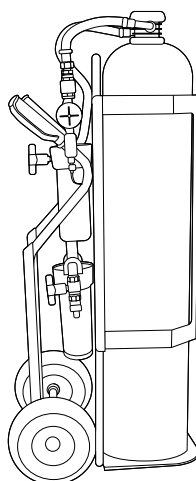
High pressure hose



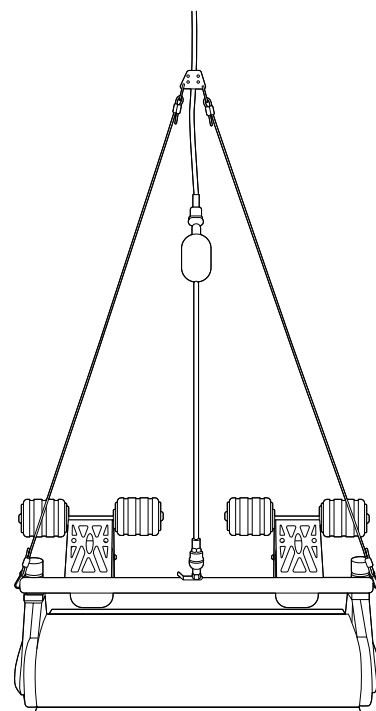
Low pressure hose



Cable drum

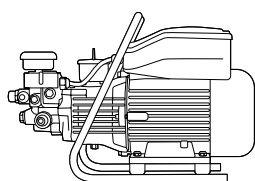


Water filter system



Solar cleaner SOLA-TECS W

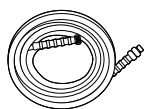
STF400



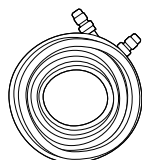
High pressure pump



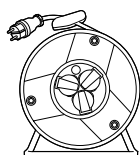
Remote control



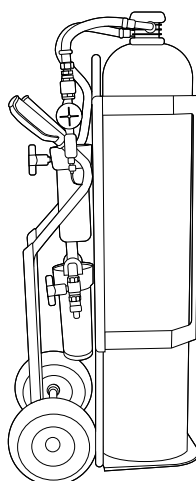
High pressure hose



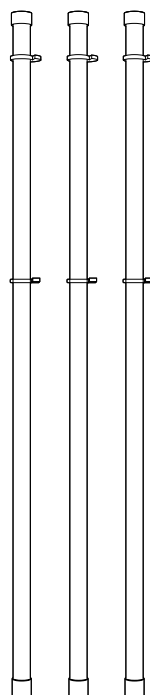
Low pressure hose



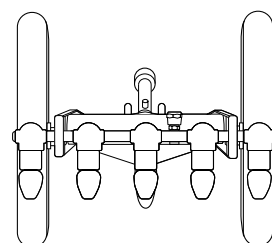
Cable drum



Water filter system



Poles for guiding



Lichen remover SOLA-TECS F

Photography:
Bernhard Kahrman, Stuttgart
Product photography:
Michael Joos, Stuttgart

Design:
75a, Büro für Gestaltung, Stuttgart
www.75a.de

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Cleantecs GmbH
Grundweg 10 | 89250 Senden
+49 7307 92650 | info@cleantecs.com
Further information at: www.cleantecs.com

