

**AUTOMATIC PARTS CLEANING**

# **SYSTEM CLEANING WITH A HEAD START**



Bio-Circle Surface Technology GmbH · Automatische Teilereinigung – EN - AL01 / 2024



[bio-circle.com](http://bio-circle.com)

# VISION

WE FOR YOU



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Order around the clock



**More info in our shop!**



## THINK HOLISTICALLY. ACT SUSTAINABLY.

Bio-Circle Surface Technology GmbH – your reliable partner for industrial products for **cleaning, welding, protecting, and lubricating.**

Environmentally friendly and user-friendly. For manual and automatic parts cleaning. With almost 40 years of know-how and experience in research, product development, process optimization, sales, and service.

With a global network and with production sites and partners. With around 190 employees, the Gütersloh site is the Bio-Circle headquarters. All products are developed and manufactured here for Germany, Europe and beyond. Made in Germany.



## SUSTAINABILITY AND QUALITY

Aware of our responsibility for the environment, we introduced an environmental management system **as early as 1996**, which has been **continuously certified by LRQA** in accordance with the requirements of the **globally valid DIN ISO 14.001 standard**. **Since 2020**, we have also participated in ecovadis – the independent sustainability ranking for companies – and have had ourselves evaluated.

With our activities in the field of sustainability, labour and human rights, ethics, and sustainable procurement, we were **once again** able to achieve the **ecovadis Bronze Ranking in 2023**.

**As a sustainably-minded company, we not only attach great importance to the best product performance, but also to the best environmental compatibility.**



# SET HIGH STANDARDS!

The way the company works is reflected in the six building blocks of the circle. They are constantly reviewed and optimized. Transparency and sustainability are the basis of all these building blocks that interlock like cogwheels. Bio-Circle products cannot save the world, but they can contribute to the conscious treatment of the environment and our fellow human beings.

**A clean world with you at the centre** – this vision has shaped the company's thoughts and actions for almost 40 years. Especially nowadays there is a lot of talk about sustainability. But the only thing that counts is to act sustainably.



## Sustainable raw materials

As a manufacturer of industrial cleaners and cleaning systems, Bio-Circle has a great responsibility. After all, these products have a high value in the maintenance of machines, plants, and components. They are an important part of the production chain in every industry. We take a close look and use sustainable raw materials to produce **environmentally friendly and user-friendly industrial cleaners**.



## Innovative products

Bio-Circle has always been committed to sustainability in an industry where the harmful effects of solvents on the environment, humans and animals are still being glossed over. Our innovative products for the cleaning sector stand for **safe application** in manual and automatic parts cleaning.

**We are pioneers**, we do things differently and we walk a straight path. We formulate and produce industrial cleaners that are non-labelled and low-labelled. In our own laboratory and in our own production facilities.



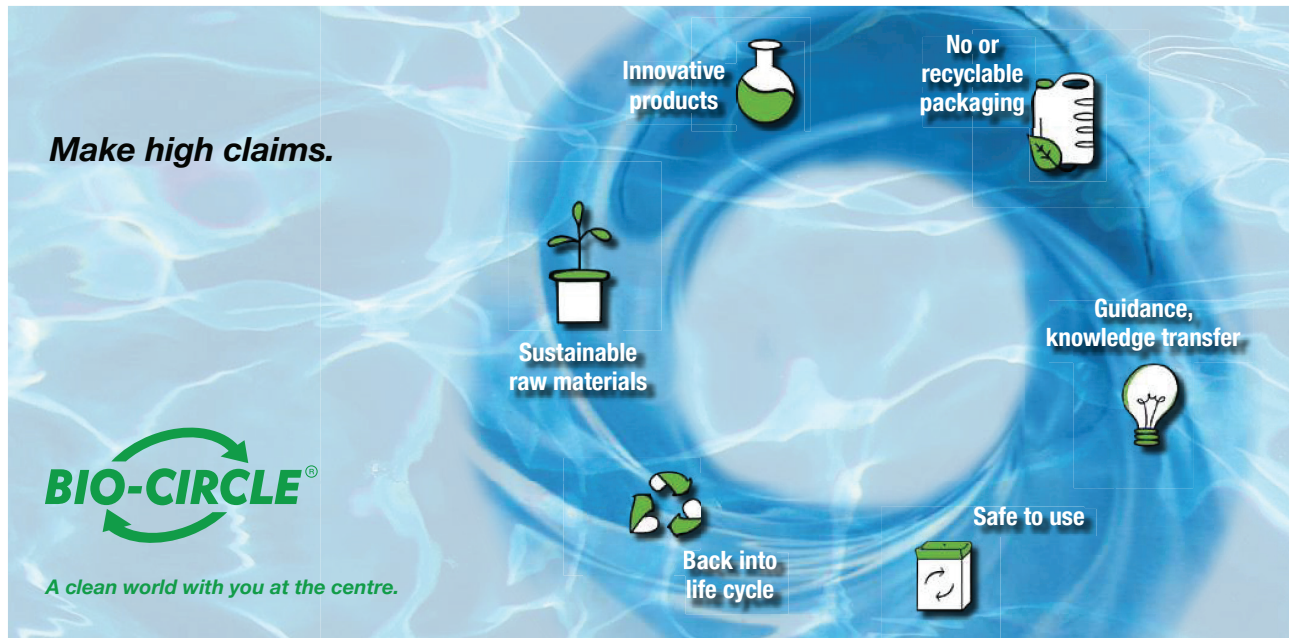
## No or recyclable packaging

The piles of rubbish are getting higher and higher, the plastic vortexes in the oceans are getting bigger and bigger. These are just two problems – we all know that. When it comes to packaging, Bio-Circle is constantly moving forward and developing.

The best bottle is no bottle, because refillable application systems are the solution – they make bottles dispensable! And if there's no other way, we have recyclable 500 ml PET bottles made from **100% recycled material**.

To make your work easier, cleaners in IBCs and 200-litre drums can be transferred into 20-litre jerrycans with hand pumps. Of course, the IBCs, drums and jerrycans are made of the **easily recyclable** plastic HDPE.

In **shipping**, only **recycled and recyclable paper** that has been awarded the 'Blue Angel' eco-label is used as filling material. In addition, we ship **CO<sub>2</sub>-neutral** through our parcel service provider and our freight forwarder.



## Sound advice and knowledge transfer

We share our experience and know-how with you so that you can clean easily, quickly, safely, cost-efficiently and in an environmentally friendly way.

**You have questions, we provide answers.** If you are satisfied with the cleaning performance and with your work, if we have been able to optimise your work processes – then we are satisfied too.



## Safe to use

Working with non-labelled and low-labelled industrial cleaners and recirculating cleaning equipment can trigger a domino effect:

For the company, the longer service lives, the reduced health and safety measures and the increased productivity are just a few reasons to be happy about savings because **costs are reduced**.

The user, who has **more fun and motivation at work**, feels fitter because they are exposed to far fewer pollutants and toxic fumes, and they are happy about a better quality of life. For both sides, there is also the **time saving**. Not only thanks to the effectively cleaning industrial cleaners, but also because of the energy-saving, recirculating parts washers.



## Back into the life cycle

At Bio-Circle, we live and breathe life cycle thinking. **We place great emphasis on sustainability in production and application.** Longer service lives and VOC-free or VOC-reduced cleaners reduce your disposal effort and make it safer.

**MAKING GREEN WORK.**



### **Nature Boost –**

optimal performance, employee protection and reduction of environmental impacts. Successful cleaning in the industry with the power of Nature. Nature Boost cleaners are based on renewable raw materials. They stand out for their excellent dissolving powers, especially with strong greases, oils, adhesives as well as paint and inks. What makes Nature Boost even more impressive is that it stands for non-combustible, VOC-free, and non-labelled products.



### **VOC-free, VOC-reduced**

The European VOC Solvents Directive (1999/13/EC) aims to considerably reduce the use of solvents and VOC emissions into the environment, thus protecting human health. In the development and manufacturing of our products we pay close attention to developing and manufacturing VOC-free or VOC-reduced products. In plenty of applications, the water-based Bio-Circle products can replace solvents completely.



### **Non-labelled**

With the aid of efficient systems and non-labelled products we succeed in optimizing the processes at our customers'. The cleaning quality is maintained although the cleaning is done without labelled products. The laborious handling of hazardous substances is obsolete. HAZMAT storages, HAZMAT trainings, and the preparation of operating instructions are a thing of the past. The employees' health and the environment are protected. Even trainees and apprentices are allowed to handle the products.



### **NSF – Cleaning in the foodstuffs industry**

The NSF-certified water-based Bio-Circle cleaners are completely miscible with water, and because of their residue-free rinsability they are suitable for applications in the foodstuffs industry according to sec. 31 LFGB (German Food, Consumer Goods and Feed Code).



### **Water-miscible**

Many of our cleaners are concentrates. They are easy to mix with water and hence very economical. Please make sure the mixing ratio corresponds to the application and the contamination.



### **Clean Blue – for low-temperature cleaning only**

The Bio-Circle low-temperature cleaners – Clean Blue – have been developed for mechanical and manual use. They save energy and efficiently remove strong contaminations already at ambient temperature.



### **Ready to use**

These cleaners are applied ready for use. Depending on the cleaner, their application is manual or mechanical. The user is relieved of one work step, as calculating the mixing ratio is no longer necessary.

# WE GIVE YOU MORE

To make you happy

## More optimal cleaning processes

Your process optimization is important to us! We take you and your cleaning problem seriously and offer you individual solutions. We come to you, or you come to us in Gütersloh for cleaning trials.

## More occupational safety

Reduce VOCs and hazardous substances in your cleaners! Protect your employees and the environment. We show you new possibilities in the world of cleaning.

## More profitability

Identify your savings potential in your cleaning processes. Lower storage- and disposal costs due to long service lives and non-labelled cleaners speak for themselves.

# THE PIONEER

Continuous improvement of existing products. Development of new, alternative cleaning agents.

- ▶ **Essential:** the product performance
- ▶ **Elementary:** the reduction of volatile organic compounds = solvents (VOC)
- ▶ **Topical:** the reduction of hazardous substances
- ▶ **Crucial:** environmental compatibility
- ▶ **Vital:** occupational safety
- ▶ **Comprehensive:** the certifications (NSF, ISO 14001, Ecovadis)
- ▶ **Intelligent:** the new BIO-CIRCLE-i technology for our parts washer



## Any questions?

We are already looking forward to providing you with help and advice.

[bio-circle.com](https://bio-circle.com)





# AUTOMATIC CLEANING SYSTEMS

## Sustainable cleaning in the industry

Cleaning work is almost indispensable in most industries. Whether in areas such as maintenance, the plastic injection moulding industry, the food industry, transport, traffic, logistics, automotive, CNC, skilled crafts and trades, the energy industry, agricultural technology or forestry, soiling is an issue everywhere.

As a manufacturer, we always strive to meet the growing demands and find the best cleaning method for our customers. **Our cleaning products help every industrial company to save time and maintain quality or to make the process within the value chain easier and more cost-optimized.**

More than 80 % of our cleaner volume is non-labelled according to the CLP regulation. The cleaning performance is enormously strong, and the cleaners are versatile. They are advocates for topics such as occupational safety, environmentally friendly and user-friendly application, and the reduction of hazardous substances in the company.







A photograph of a woman in a factory setting. She is wearing a yellow hard hat, clear safety glasses, a red and blue plaid shirt, and blue denim overalls. She has her arms crossed and is holding a silver folder or clipboard under her left arm. The background shows industrial machinery and a factory floor.

**“SAFE CLEANING? YOU BET!”**

*(Bio-Circle Surface Technology GmbH member of staff)*

# AT A GLANCE

Your page references

AUTOMATIC		
 <p><b>BIO-CIRCLE Turbo</b> 2 in 1 – automatic and manual cleaning p. 10</p>	 <p><b>HTW</b> Robust, fully automatic hot water parts washers p. 12</p>	 <p><b>RWR KST / RWR</b> Cleaning system for pipes, heat exchangers and temperature control units p. 24</p>
 <p><b>US – Elmasonic Select and Multifrequency Devices</b> Effective and gentle ultrasonic cleaning p. 28</p>	 <p><b>PPT</b> Parallel Plate Separator p. 32</p>	

	pH value* – Values from MSDS	VOC content in %	Flashpoint in °C	Parts washer	Ultrasonic	RWR	Steel/Stainless steel	Aluminium	Non-ferrous metals	Plastics	Painted surfaces	Zinc-coated surface	Hazardous substance symbol	VOC-free	VOC-reduced	NSF	Label-free	Page
ALUSTAR 100	9,6	0	-										-		-			18
ALUSTAR 200	12,7	0	-												-	-	-	18
ALUSTAR 300	13 – 14	0	-												-	-	-	18
ALUSTAR 400	6 – 7	0	-										-		-	-		19
ALUSTAR 500	7,3	0	-												-	-	-	19
BIO-CIRCLE L Evo	8	<1	-										-		-			11
FOR CLEAN F	9	0	-										-		-			21
Forma Shine 100	11.1	0	-										-		-	-		22
Master Mould 100	13.4	0	-												-	-	-	29
Power Cleaner 400	<1	2,6	-											-			-	27
Power Cleaner DB	<1	2,6	-											-			-	27
Power Cleaner KST 2.0	<1	<1	-											-		-	-	27
PROLAQ L US	7	10	-											-		-	-	31
Smoke Resin Remover DB	14	0	-												-	-	-	20
STAR 100	10.5	0	-												-	-	-	16
STAR 200	13.5	0	-												-	-	-	16
STAR 300	14	0	-												-	-	-	16
STAR US 1	1.5	2.2	-											-		-	-	30
STAR US 2	13,5	5	-											-		-	-	30
STAR US 3	12	0	-												-	-	-	30
STAR US 4	13 – 14	0	-												-	-	-	31
STAR US 5	14	0	-												-	-	-	31
STAR US 6	11	0	-										-		-	-		31
Defoamer HT	10,6	0	-												-	-	-	22
Defoamer RT	-	0	105												-	-	-	22
Corrosion Protection 100	8.6	-	-										-		-	-		23
Corrosion Protection 200	9.5	-	>100												-	-	-	23
Accessories / Chemical Products																		33

recommended    limited use    not usable

# BIO-CIRCLE TURBO

## 2 in 1 – automatic and manual cleaning

The perfect combination of the precision of manual cleaning and the efficiency of an automatic parts washer.

In manual cleaning mode, the flow brush can be used to clean part geometries that are difficult to reach.

In automatic mode, the system cleans fully automatically.

RECOMMENDED CLEANERS		Page
<b>BIO-CIRCLE L Evo</b>	Low-foaming cleaner with microorganisms, for manual and automatic cleaning, ideal cleaning temperature: 45 °C	11

## BIO-CIRCLE Turbo

800, 1000, 1200, 1500

- ▶ 2 in 1 – combination of manual and automatic cleaning
- ▶ With access for manual cleaning when the lid is closed
- ▶ Precise manual cleaning with flow brush or nozzle
- ▶ 2.5 bar compressed air gun in cleaning chamber
- ▶ Automatic cleaning pressure: 4 bar
- ▶ Insulation of the entire housing
- ▶ Long service life of the cleaner due to microorganisms: integrated oxygen supply via compressor/oxygen pump

**Optional equipment: high-pressure module**  
The module includes a high-pressure gun with hoses, up to 80 bar max.



ROSTFREI  
Edelstahl

BIO-CIRCLE Turbo 800

	BC Turbo 800	BC Turbo 1000	BC Turbo 1200	BC Turbo 1500
Overall width x overall depth (mm)	1170 x 1075	1320 x 1240	1563 x 1510	1965 x 1885
Height with lid closed/open with angled exhaust duct (mm)	1585/2035	1580/2200	1734/2380	1730/2780
Inner diameter of rack, approx. (mm)	775	975	1175	1495
Useful height max. (mm)	400	450	620	650
Payload max. (kg)	350	350	350	350
Washing tank capacity (L)	160	275	380	570
Total weight of the cleaning device (kg) excl. tank filling, payload and supplementary equipment	350	370	420	590
Connected value total (kW) excl. supplementary equipment approx.	7.5	9	9	21
Power supply – 3-phase current (V)/ frequency (Hz)	400/50	400/50	400/50	400/50
Compressed-air hose Ø 10 mm (bar)	6 max.	6 max.	6 max.	4 max.
Pump – automatic cleaning: flow rate (m <sup>3</sup> /h / delivery head m H <sub>2</sub> O)	12.0/38	12.0/38	12.0/38	14.4/45
Pump – manual cleaning: flow rate (m <sup>3</sup> /h / delivery head m H <sub>2</sub> O)	4.8/27	4.8/27	4.8/27	4.8/27
Electric heating in the washing tank (kW)	4.5	6	6	9
Treatment temperature (guide value) (°C)	45	45	45	45
Order number	<b>G40027</b>	<b>G42027</b>	<b>G43027</b>	<b>G45027</b>

# BIO-CIRCLE L EVO

## With microorganisms



**High-level cleaning: simple – fast – safe.**

The water-based, alkaline BIO-CIRCLE L Evo is solvent- and label-free while offering great cleaning performance. User-friendly and environmentally friendly, it is an alternative to solvents. Its application stands for more work safety and lower operating costs, win-win for users and entrepreneurs alike.

The microorganisms\* contained break down the removed oil and ensure consistent cleaning performance and a long service life.

## BIO-CIRCLE L Evo



**A02093** 20 L jerrycan

**A20093** 200 L drum

**A10093** 1000 L IBC

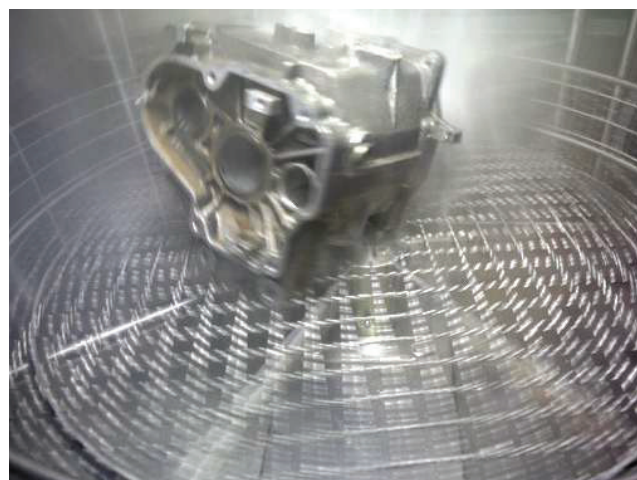
- ▶ **For moderate to heavy soiling**
- ▶ **Environmentally friendly and safe**
- ▶ **For manual and automatic use:**  
in **BIO-CIRCLE parts washers, parts washing systems and high-pressure parts washers**
- ▶ **VOC- and label-free according to the CLP Regulation**
- ▶ **Cleans virtually all materials: aluminium, zinc-coated surfaces, and non-ferrous metals as well as steel/stainless steel and plastic**

**BIO-CIRCLE L Evo cleans a wide variety of soiling**, depending on the requirements and cleaning system: heavy grease and oil, separating agents, smoke residues, soot, wear particles and swarf. In certain cases also: burnt-in organic soiling, rust, oxidation and heat tinting, bitumen, and anti-corrosion waxes.

**Material:** stainless steel, steel, plastic, painted and zinc-coated surfaces, aluminium, non-ferrous metal.

**FIELD OF USE:** maintenance of components, workpieces, and engines. Across industries: automotive, food, metalworking/CNC, rail transport, skilled crafts and trades.

*Manual and automatic cleaning in the BIO-CIRCLE Turbo*



\*The microorganisms used are non-pathogenic bacteria of risk group 1 (classified according to BioStoffV 2000/54/EC, TRBA 466).  
Risk group 1: Substances that are unlikely to cause disease in humans.

# HTW-II BIO

## Hot-water parts washers

Whether HTW-II Bio, the standard version HTW-II or the individual HTW machine packages: They are all robust and fully automatic and ideal for single-stage cleaning and degreasing.

The **HTW-II Bio** stands out from all hot-water parts washers because it is a real all-round talent. It is operated with the BIO-CIRCLE L Evo cleaner, which is perfectly matched to the HTW-II Bio. This means not only safe working and a long service life, but also the cleaning of medium to heavy soiling from materials such as steel, stainless steel, plastic, aluminium, zinc-coated surfaces, and non-ferrous metals.

RECOMMENDED CLEANERS FOR HTW-II BIO	Page
<b>BIO-CIRCLE L Evo</b> Removes even the strongest incrustations and carbonizations. Low-foaming machine cleaner for automatic parts cleaning machines, ideal cleaning temperature: 45 °C	11

**The conversion existing plants to HTW Bio is possible. Please contact us.**



HTW-II Bio 800

## HTW-II Bio

800, 1000, 1200, 1500

With aeration\* that allows the microorganisms\*\* to work.

- ▶ 350 kg payload, already with HTW-II Bio 800
- ▶ Degradation of grease and oil by microorganisms
- ▶ Long cleaner service life due to recirculation
- ▶ Less cleaner storage capacity required
- ▶ Less waste disposal
- ▶ Insulation of the entire housing
- ▶ HTW-II Bio 800: 2.5 bar operating pressure  
HTW-II Bio 1000, 1200, 1500: 5 bar operating pressure

Oxygen membrane compressor



	HTW-II Bio 800	HTW-II Bio 1000	HTW-II Bio 1200	HTW-II Bio 1500
Overall width x overall depth (mm)	1250 x 1165	1405 x 1280	1620 x 1505	2080 x 1720
Height with lid closed/open with angled exhaust duct (mm)	1380/1800	1540/2040	1600/2320	1840/2740
Inner diameter of rack, approx. (mm)	775	975	1175	1475
Useful height max. (mm)	400	450	650	700
Payload max. (kg)	350	350	350	350
Washing tank capacity (L)	150	300	485	770
Total weight of the cleaning device (kg) excl. tank filling, payload and supplementary equipment	280	370	500	800
Connected value total (kW) excl. supplementary equipment approx.	6	8.5	11.5	21.5
Power supply – 3-phase current (V) / frequency (Hz)	400/50	400/50	400/50	400/50
Pump – automatic cleaning: flow rate (m³/h / bar)	4.8/3.8	12.0/3.8	12.0/3.8	14.5/4.5
Electric heating in the washing tank (kW)	4.5	6	9	2 x 9
Treatment temperature (guide value) (°C)	45	45	45	45
Oxygen membrane compressor	yes	yes	yes	yes
Order number	<b>G12630B-BIO</b>	<b>G12640B-BIO</b>	<b>G12650B-BIO</b>	<b>G12660B-BIO</b>

\*\*The microorganisms used are non-pathogenic bacteria of risk group 1 (classified according to BioStoffV 2000/54/EC, TRBA 466).

Risk group 1: Substances that are unlikely to cause disease in humans.

# HTW-II

## The standard version

Powerful, simple, and safe to operate: the hot-water parts washers are robust and ideal for single-stage cleaning and degreasing. Due to the driven rotating basket and the spraying pressure, the Bio-Circle cleaners in the hot water parts washer have an optimum effect on the items to be cleaned.

**FIELD OF USE:** maintenance of components, workpieces, and motors.

Across industries: automotive, metalworking/CNC, suitable as a workstation system for production and maintenance.

### HTW-II

800, 1000, 1200, 1500

- ▶ 350 kg payload, already with HTW-II 800
- ▶ Compact design
- ▶ Easy handling
- ▶ High cleaning power
- ▶ Powerful stainless-steel pump
- ▶ Economical to use
- ▶ Point-jet nozzles
- ▶ PPT connection prepared (Parallel Plate Separator)
- ▶ HTW-II 800: 2.5 bar operating pressure  
HTW-II 1000, 1200, 1500: 5 bar operating pressure

**Customised configuration of the HTW is no problem. (e.g. increasing the load capacity, etc.). Please contact us.**



HTW-II Basic 800

	HTW-II 800	HTW-II 1000	HTW-II 1200	HTW-II 1500
Overall width x overall depth (mm)	1180 x 1145	1370 x 1210	1580 x 1505	2080 x 1681
Height with lid closed/open with angled exhaust duct (mm)	1361/1790	1524/2005	1580/2200	1840/2700
Inner diameter of rack, approx. (mm)	775	975	1175	1500
Useful height max. (mm)	350	400	600	700
Payload max. (kg)	350	1000	1000	1000
Washing tank capacity (L)	150	300	485	770
Total weight of the cleaning device (kg) excl. tank filling, payload and supplementary equipment	240	350	350	550
Connected value total (kW) excl. supplementary equipment approx.	6	8.5	11.5	21.5
Power supply – 3-phase current (V)/ frequency (Hz)	400/50	400/50	400/50	400/50
Pump – automatic cleaning: flow rate (m <sup>3</sup> /h / bar)	4.8/3.8	12.0/3.8	12.0/3.8	14.5/4.5
Electric heating in the washing tank (kW)	4.5	6	9	2 x 9
Treatment temperature (guide value) (°C)	85 max.	85 max.	85 max.	85 max.
Order number	<b>G12630B</b>	<b>G12640B</b>	<b>G12650B</b>	<b>G12660B</b>

# HTW DEVICE PACKAGES

## Technological optimization

- ▶ HTW packages: perfectly matched equipment
- ▶ For your individual application
- ▶ 350 kg load capacity, in ALL HTW-II 800 models
- ▶ Compact, high-quality stainless-steel design
- ▶ Easy handling
- ▶ Maintenance-friendly
- ▶ PPT connection prepared (Parallel Plate Separator)



HTW-II Flex

### HTW-II Basic

800, 1000, 1200, 1500

For the cleaning of standard parts.

- ▶ Fan nozzles
- ▶ Digital temperature control
- ▶ HTW-II Basic 800:  
2.5 bar operating pressure
- ▶ HTW-II Basic 1000, 1200, 1500:  
5 bar operating pressure

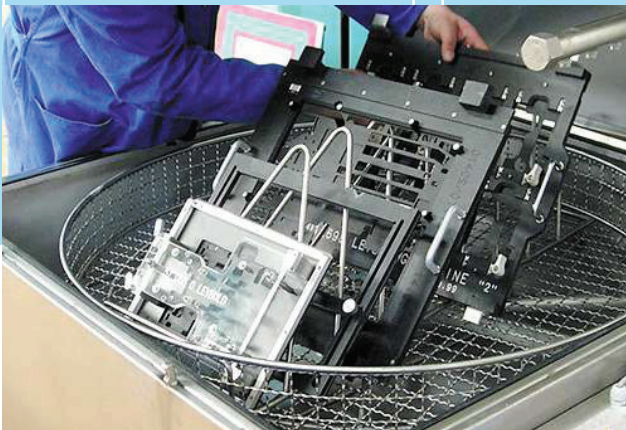
### HTW-II Basic Eco

800, 1000, 1200, 1500

For the cleaning of standard parts at higher temperatures; energy savings and noise reduction.

- ▶ (Eco) insulation of the entire device body
- ▶ Fan nozzles
- ▶ Digital temperature control
- ▶ HTW-II Basic Eco 800:  
2.5 bar operating pressure
- ▶ HTW-II Basic Eco 1000, 1200, 1500:  
5 bar operating pressure

Cleaning with STAR 100 – plastic parts



Cleaning with STAR 500 – machine parts





HTW-II Max Eco – Height-adjustable nozzle holder for cleaning and air shower



HTW-II – Vapour extraction incl. condensate recovery (BC Turbo and HTW Max Eco)

## HTW-II Flex Eco

800, 1000, 1200, 1500

For the cleaning of parts of different sizes and shapes at different temperatures; energy savings and noise reduction

- ▶ (Eco) insulation of the entire device body
- ▶ Fan nozzles
- ▶ Height-adjustable nozzle holder
- ▶ Digital temperature control
- ▶ Pressure control 2.5 – 4 bar (all sizes)
- ▶ Vapour extraction
- ▶ Lid opening angle 80° (800, 1000 via gas spring, and 1200, 1500 via pneumatic cylinder)
- ▶ Rotary nozzle spray arm

## HTW-II Max Eco

800, 1000, 1200, 1500

For the cleaning of heavy and heavily contaminated parts with blind holes at different temperatures; energy savings and noise reduction

- ▶ (Eco) insulation of the entire device body
- ▶ Fan nozzles
- ▶ Air shower
- ▶ Height-adjustable nozzle holder for cleaning and air shower
- ▶ Digital temperature control
- ▶ Pressure control 2.5 – 4 bar (all sizes)
- ▶ Vapour extraction
- ▶ Lid opening angle 80° (800, 1000 via gas spring, and 1200, 1500 via pneumatic cylinder)
- ▶ HTW-II Max Eco 1000, 1200, 1500: payload 1000 kg

RECOMMENDED CLEANERS FOR HTW	Page
STAR Range	16
ALUSTAR Range	18
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Power Cleaner DB	20
FOR CLEAN F	21
Corrosion Protection	23
Defoamer	22

# THE STAR RANGE

## A brilliant appearance

The water-based, alkaline STARs live up to their name, for they are low-foaming, **VOC-free machine cleaners that dissolve persistent contaminations.**

They are water-miscible, feature a fabulous cleaning activity already at ambient temperature, and can be heated up to 60°C. All three cleaners provide temporary corrosion protection; they are demulsifying and hence recyclable with a long service life.

### STAR 100

- ▶ Low residue
- ▶ Salt-free
- ▶ Silicate-free
- ▶ Ideal for cleaning before and after hardening processes



**A02095** 20 L jerrycan

**A20095** 200 L plastic drum

**A10095** 1000 L IBC

Hazard notice: Eye Irrit. 2, Skin Irrit. 2

### STAR 200

- ▶ Effective, universal, high yield
- ▶ Low-temperature cleaner
- ▶ Ideal for pre- and intermediate cleaning



**A02078** 20 L jerrycan

**A20078** 200 L plastic drum

**A10078** 1000 L IBC

Hazard notice: Eye Dam. 1, Skin Corr. 1A

### STAR 300

- ▶ Removes very strong contaminations, oil incrustations and resin formations



**A02079** 20 L jerrycan

**A20079** 200 L plastic drum

**A10079** 1000 L IBC

Hazard notice: Eye Dam. 1, Skin Corr. 1A,

Met. Corr. 1

Cleaning machine parts with STAR 100





Mechanical cleaning in the HTW

Cleaning agent	Miscibility with water	Mixing ratios for parts washers	
		HTW Hot-water parts washer	BIO-CIRCLE Turbo
STAR 100	yes	2.5 % – 7 %	2.5 % – 7 %
STAR 200	yes	2.5 % – 7 %	2.5 % – 7 %
STAR 300	yes	2.5 % – 7 %	2.5 % – 7 %

STAR cleaning	Aluminium	Zinc-coated surfaces	Non-ferrous metals	Brass, high-gloss polished	High-gloss polished surfaces	Steel/stainless steel	Plastics	Alkali-resistant surfaces	Spray cleaning	Immersion cleaning	Low-temperature cleaning
	STAR 100	-	-	-	-	-	X	X	X	X	X
STAR 200	-	-	-	-	-	X	X	X	X	X	X
STAR 300	-	-	-	-	-	X	X	X	X	X	-

**The STARS remove:** grease, oil, separating agents, nicotine, smoke residues, soot, wear particles and swarf. Also, in certain cases: foodstuffs and burnt-in organic contaminations.

**From:** stainless steel, steel, tiles, plastics et al.

**FIELD OF USE:** metalworking, automotive, railways, foodstuffs, plastics processing. In immersion baths and automatic parts washers.



# THE ALUSTAR RANGE

## Past the finish line with VOC-free cleaners

The ALUSTARs make aluminium shine again. **For each contamination the right aluminium cleaner, and a VOC-free one at that.**

The water-based, alkaline ALUSTARs are low-residue and low-foaming machine cleaners that **protect aluminium and other sensitive surfaces from heat tinting with their special aluminium formula.** Moreover, they are perfect for low-temperature cleaning and provide temporary corrosion protection.

### ALUSTAR 100

- ▶ For light contaminations
- ▶ Silicate-free



**A02077** 20 L jerrycan

**A20077** 200 L plastic drum

**A10077** 1000 L IBC

### ALUSTAR 200

- ▶ For strong contaminations
- ▶ Can be used at low temperatures



**A02084** 20 L jerrycan

**A20084** 200 L plastic drum

**A10084** 1000 L IBC

Hazard notice: Eye Irrit. 2, Skin Irrit. 2

### ALUSTAR 300

- ▶ For extremely persistent contaminations
- ▶ Water-based, low-foaming, phosphate-free surfactant cleaner
- ▶ For mechanical cleaning in spray-, immersion- and ultrasonic cleaning devices
- ▶ Cleans and degreases heavily contaminated parts of a wide range of materials
- ▶ Compatible with oil separators
- ▶ Can be used at low temperatures



**A02029** 20 L jerrycan

**A20029** 200 L plastic drum

**A10029** 1000 L IBC

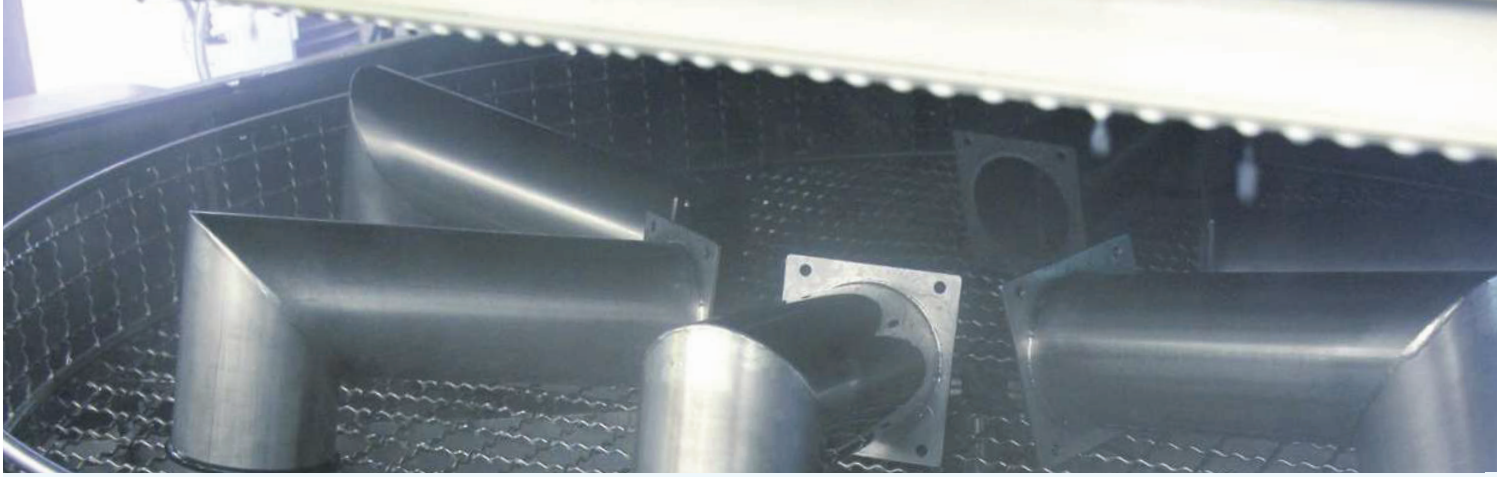
Hazard notice: Eye Dam. 1, Skin Corr. 1B

Cleaning machine parts with ALUSTAR 100 in the HTW



Grease, oil, separating agents, smoke residues, soot, wear particles and swarf are removed from stainless steel, steel, aluminium, plastics, and in certain cases also from non-ferrous metals, varnished and zinc-coated surfaces, etc.

**FIELD OF USE:** automotive, metal processing, plastics processing, railways; machine maintenance, can be used in immersion baths, in automatic parts washers, in ultrasonic cleaning devices et al.



Cleaning machine parts with ALUSTAR 500 in the HTW

## Uncompromisingly good – gentle on the material

### ALUSTAR 400

The **ready-to-use machine cleaner** for extreme oil and grease encrustations on aluminium, brass, and copper!



**A02030** 20 L jerrycan

**A20030** 200 L plastic drum

**A10030** 1000 L IBC

### ALUSTAR 500

Do you despair of cleaning burnt-on grease and caked-on oils on sensitive materials? You can't get your components clean after deep drawing? The water-based machine cleaner ALUSTAR 500 does what classic alkaline cleaners cannot: it removes burnt-in oil and grease residues from aluminium, brass, and copper!



**A02021** 20 L jerrycan

**A20021** 200 L plastic drum

**A10021** 1000 L IBC

Hazard notice:

Skin Irrit. 2, Eye Dam. 1, Aquatic Chronic 3

- ▶ **Remove high-grade contamination, burnt-in oils and greases, rubbed-off material, contamination after deep-drawing, etc.**
- ▶ **Excellent material compatibility**
- ▶ **VOC-free, silicate-free, free from alkalis**
- ▶ **pH neutral and low residue**
- ▶ **Nature Boost: with the power of sustainable raw materials, such as vegetable ester, coconut-oil-based surfactants, and natural fatty acids of plant origin**

**Cleans** all common metals, also sensitive metals such as aluminium, brass, and copper.

**FIELD OF USE:** machine cleaner for hot-water parts washers and high-pressure parts washers; can also be used in immersion baths and ultrasonic cleaning devices. For maintenance/cleaning of machines and components.

Industries: steel industry, automotive, metal/CNC, rail transport

Cleaning agent	Miscibility		Mixing ratios for parts washers		
	with water	in manual applications	HTW	BIO-CIRCLE Turbo	BIO-CIRCLE HP
ALUSTAR 100	yes	only in the system	2.5 % – 7 %	2.5 % – 7 %	2.5 % – 7 %
ALUSTAR 200	yes	only in the system	2.5 % – 7 %	2.5 % – 7 %	2.5 % – 7 %
ALUSTAR 300	yes	only in the system	2.5 % – 7 %	2.5 % – 7 %	2.5 % – 7 %
ALUSTAR 400	no	only in the system	undiluted	undiluted	undiluted
ALUSTAR 500	yes	only in the system	10 % – 100 %	10% – 100 %	10 % – 100 %

# MORE HTW CLEANERS

The right product for every type of soiling

## Smoke Resin Remover DB



The cleaner is solvent-free, the surfactants are biodegradable. The smoke resin specialist effortlessly removes burnt-in soiling. It is water-based, alkaline and water-miscible.

- ▶ Intensive cleaner for mechanical application
- ▶ Water-miscible
- ▶ Approved by Deutsche Bahn AG

<b>A01058</b> 10 L jerrycan
<b>A02058</b> 20 L jerrycan
<b>A20058</b> 200 L plastic drum
<b>A10058</b> 1000 L IBC
Hazard notice: Acute Tox. 4, Eye Dam. 1, Skin Corr. 1A, Met. Corr. 1

**Please Note:**  
Do not apply the cleaner in concentrated form on aluminium and zinc coatings!

The toughest soiling, resinous and burnt-in residues are a thing of the past with the use of the Smoke Resin Remover. It effortlessly removes burnt-in organic soiling, grease, oil, separating agents, resin, tar, rubber residues, food, smoke residues, soot, wear particles and swarf from stainless steel, steel, and plastics.

**UNIVERSAL MECHANICAL APPLICATION:** in hot-water parts washers (single- and multi-chamber spray cleaning systems), ultrasonic cleaning devices and in RWR cleaning systems for pipes and heat exchangers.

## Power Cleaner DB



Limescale does not have to be a problem, neither aesthetically nor hygienically, neither in pipes nor on surfaces. **Power Cleaner DB is free of phosphates and hydrofluoric acid, and it is also VOC-reduced.** The water-based, acidic cleaner brings shine to your surfaces.

- ▶ Especially for mechanical use in the RWR (cleaning and flushing of pipelines) and in the HTW
- ▶ REMOVES extremely stubborn soiling such as limescale, mineral deposits and, in certain cases, rust, oxidation, and heat tinting
- ▶ CLEANS stainless steel, steel, aluminium, plastic and, in certain cases, non-ferrous metal etc.

<b>A01028</b> 10 L jerrycan
<b>A02028</b> 20 L jerrycan
<b>A20028</b> 200 L plastic drum
<b>A10028</b> 1000 L IBC
Hazard notice: Eye Dam. 1, Skin Corr. 1B, Met. Corr. 1

**FIELD OF USE:** food industry, plastics processing (cleaning of cooling ducts of plastic injection moulds), cleaning of vacuum toilets, flushing of pipelines and circulation systems.

**BASIC CLEANING OF THE HTW** of residues such as lime scale, salts and silicates recommended 1x per year: free nozzles and a clean device.

**MECHANICAL APPLICATION:** HTW (hot-water parts washers), RWR (pipe and heat exchanger cleaning systems), ultrasonic cleaning devices.

## FOR CLEAN F



FOR CLEAN F is what safety officers, purchasers, and users want:

**A02013** 20 L jerrycan

**A20013** 200 L plastic drum

**A10013** 1000 L IBC

- ▶ **Safe** → label-free
- ▶ **Cost-efficient** → miscible with water
- ▶ **Sustainable** → with 100 % easily biodegradable ingredients
- ▶ **Low foaming**
- ▶ **Low residue:** subsequent processes such as bonding, welding and varnishing are possible
- ▶ **REMOVES** soiling such as grease, oil, separating agents, food residues, smoke residues, soot, wear particles, swarf, rubber residues, etc.
- ▶ **CLEANS** stainless steel, steel, plastics, and varnished surfaces; in certain cases also non-ferrous metal, zinc-coated surfaces, etc.

Cleaning agent	Miscibility		Mixing ratios for parts washers	
	with water	in manual applications	HTW Hot-water parts washer	BIO-CIRCLE Turbo
FOR CLEAN F	yes	5 % – 100 %	2.5 % – 7 %	2.5 % – 7 %

**FIELD OF USE:** maintenance of machines, universal cleaner for every industry

*Cleaning ball bearings in the HTW*



# ADDITIONAL DOSING FOR MACHINE CLEANERS

## Less foam

### Defoamer HT

- ▶ Fast and permanent foam destruction
- ▶ Contains only easily biodegradable substances
- ▶ To be used in hot-water parts washers, etc.



**A00187** 1000 ml plastic bottle

**A01087** 10 L jerrycan

Hazard notice: Acute Tox. 4

### Defoamer RT

- ▶ Fast and permanent foam destruction even at room temperature
- ▶ To be used in hot-water parts washers, etc.
- ▶ Can also be used in strongly alkaline and strongly acidic areas



**A00187-02** 1000 ml plastic bottle

**A01087-02** 10 L jerrycan

Hazard notice: Eye Irrit. 2

#### FIELD OF USE:

ideally suited for the STAR-, ALUSTAR- and STAR US products

#### Important:

Mix with 2 L of process fluid and add to the system.

See label for mixing ratio.



## Protection from darkening

### Forma Shine 100

- ▶ Additive to Bio-Circle cleaning products in use
- ▶ Special anti-blackening agent: Prevents darkening of steels
- ▶ Environmentally and employee-friendly:
  - Label-free and VOC-free
- ▶ Improvement of the cleaning effect:
  - Especially for scales and brake dusts
- ▶ Suitable for all standard materials



**B00126** 1 L plastic bottle

**B02026** 20 L jerrycan

**B20026** 200 L plastic drum

**FIELD OF USE:** The label-free and VOC-free additive gives neutral and alkaline cleaning solutions an **additional rust-removing effect and counteracts darkening of steels.**

Recommended concentration: up to 2 %;

Rust-removing effect only against flash rust.

Particularly in the case of stubborn soiling such as cracking and brake dusts, **Forma Shine 100** provides increased cleaning performance. As an **additive** to cleaning products already in use cleaning products from Bio-Circle, it is easy to handle.



Without Forma Shine 100



With Forma Shine 100



Cleaning ball bearings in the HTW

## More protection for steel parts, iron parts, and castings

### Corrosion Protection 100

For water-based systems

- ▶ Light corrosion protection (not visible or noticeable) that does not necessarily have to be removed before subsequent processes
- ▶ Easy to wash off
- ▶ Label-free, VOC-free in accordance with CLP regulation
- ▶ Free from nitrite, secondary amines, and phosphorus compounds
- ▶ FAD-free, boron-free
- ▶ Amine-based

#### FIELD OF USE:

in all neutral and alkaline BIO-CIRCLE cleaners, as well as in many parts washers, RWRs and baths.



<b>A00111</b>	1000 ml plastic bottle
	PU: 12 x 1000 ml (1 box)
<b>A01011</b>	10 L jerrycan
<b>A02011</b>	20 L jerrycan

#### Important:

Mix with water or cleaner, stirring thoroughly, and add to the system.



### Corrosion Protection 200

For water-based systems

- ▶ Extended corrosion protection → storage (in-house) possible for at least 2 weeks
- ▶ Tangible, non-sticky protective film on surfaces and parts
- ▶ Easier to wash off than pastes and waxes
- ▶ Fast and powerful → electrolyte- and temperature-stable emulsion
- ▶ Low labelling, VOC-free in accordance with CLP regulation
- ▶ Free from nitrite, secondary amines, and phosphorus compounds
- ▶ FAD-free, boron-free
- ▶ Based on mineral oil

**FIELD OF USE:** In the cleaning system it is compatible with any standard cleaning agent (neutral and alkaline) from Bio-Circle. Primary application: manually, in passivation baths and in immersion baths.

Can also be used in the **BIO-CIRCLE** parts washer, from 50°C in **BIO-CIRCLE** high-pressure parts washers.



<b>A00153</b>	1000 ml plastic bottle
	PU: 12 x 1000 ml (1 box)
<b>A02053</b>	20 L jerrycan
<b>A20053</b>	200 L drum
	Hazard notice: Eye Irrit. 2



Cleaning agent	Miscibility		Mixing ratios for parts washers				
	with water	in manual applications	HTW	BIO-CIRCLE Turbo	BIO-CIRCLE HP	HP VIGO	RWR
Corrosion Protection 100	yes	0.5 % – 2.5 %	0.5 % – 2.5 %	0.5 % – 2.5 %	0.5 % – 2.5 %	0.5 % – 2.5 %	0.5 % – 2.5 %
Corrosion Protection 200	yes	0.5 % – 10 %	0.5 % – 5 %	0.5 % – 5 %	0.5 % – 5 %	0.5 % – 5 %	0.5 % – 5 %

# RWR KST

## Cleaning of plastic injection moulds

Contaminations in the cooling ducts of the tools reduce the efficiency of the cooling.

The **RWR KST cleaning system** has been developed for the cleaning and flushing of these cooling ducts. It operates on the principle of recirculation flushing. This saves time and money because there is no complex and time-consuming mounting and dismounting to be done. The tool to be cleaned just needs to be equipped with a supply- and a return pipe. **The Power Cleaner KST 2.0 is pumped through the tool.**

**FIELD OF USE:** maintenance of plastic injection moulds, across all industries

### RWR-80 L KST Dual Automatic, RWR-80 L KST Fully Automatic PLC

- ▶ **Stainless-steel 80 L fluid vessel with integrated drain and stainless-steel heating with adjustable thermostat – factory-set at an optimal 60°C**
- ▶ **Dry-run protection for pump and heating**
- ▶ **Stainless-steel filter to protect the pump from solids**
- ▶ **Hose holder for compact and space-saving hose storage, integrated in a drip pan with drain**
- ▶ **Mobile system – mounted on a stainless-steel trolley with rubber-clad castors**
- ▶ **Delivery includes acid-resistant hoses**
- ▶ **All models feature an integrated flushing device for corrosion protection**
  
- ▶ **RWR 80 L KST Fully Automatic PLC: easy to operate due to the PLC ("Programmable Logic Controller") system that secures the automatic process**

	<b>RWR-80 L KST Dual Automatic</b>	<b>RWR-80 L KST Fully Automatic PLC</b>
Total width x total depth x total height (mm)	1515 x 780 x 990	1275 x 820 x 1285
Machine footprint (W x D x H) (mm)	1515 x 780 x 990	1275 x 820 x 1285
Cleaning liquid tank – capacity (L)	80	80
Useful volume (L)	60	60
Total weight of the cleaning system excl. tank filling and additional equipment approx. (kg)	150	180
Connected load (kW)	5.1	4.5
Power supply (V)/frequency (Hz)	400/50	400/50
Ball valve for draining the cleaning liquid tank (inch ")	1 1/2"	1 1/2"
Electric heating in the washing tank	1 x 4.5	1 x 4.5
Treatment temperature (factory set to optimum 60 °C)	60	60
Pump:		
Max. flow rate (L/min / m <sup>3</sup> /h)	80/4.8	80/4.8
Max. head (MLC / bar)	31/3.1	31/3.1
Pump motor (kW)	0.55	0.55
Order number	<b>G29024</b>	<b>G2980-SPS</b>



Plastic injection mould

<b>RECOMMENDED CLEANERS:</b>		Page
<b>Power Cleaner KST 2.0</b>	Water-based acidic cleaner, ready for use, especially for mechanical applications in the RWR KST, for the removal of limescale and corrosion.	27
<b>Corrosion Protection for water-based systems</b>		
	Low-foaming, amine-based, optimal for steel-, iron-, and casting materials.	23
Application AFTER the cleaning process: Mix Corrosion Protection with water and flush the device.		



RWR-80 L KST Fully Automatic PLC Display



Liquid tank with sieve



RWR-80 L KST Fully Automatic PLC

<b>RWR-80 L KST Dual Automatic</b>	<b>RWR-80 L KST Fully Automatic PLC</b>
<ul style="list-style-type: none"> <li>- Digital flow meter under constant pressure (centrifugal pump)</li> <li>- Compressed air bypass</li> <li>- Automatic change of flow direction</li> <li>- Integrated flushing device for corrosion protection</li> </ul>	<ul style="list-style-type: none"> <li>- PLC system</li> <li>- Readable via PLC display: temperature, flow measurement, cleaning time</li> <li>- Operating hours counter</li> <li>- Automatic change of flow direction</li> <li>- Integrated flushing device for corrosion protection</li> <li>- STB (safety temperature limiter of the heating)</li> <li>- Overall cladding of the system for sound level reduction/tank insulation</li> <li>- Constant compressed-air supply</li> <li>- Compressed-air diaphragm pump for all process cycles</li> </ul>

# RWR

## Cleaning system for pipes, heat exchangers and temperature control units

Over time, limescale, corrosion and other contaminations form deposits and then incrustations on the inside of pipes, heat exchangers, cooling units, and temperature control units. The RWR has been specifically developed for these cleaning tasks so that your systems remain clean and thus function effectively.

**FIELD OF USE:** plant maintenance, across all industries

RECOMMENDED CLEANERS:	
<b>Power Cleaner DB</b>	P..
Especially for mechanical applications in the RWR, removes contaminations such as urine scale, limescale, and corrosion, with simultaneous antibacterial effect	27
<b>Smoke Resin Remover DB</b>	
Ready-to-use intensive cleaner for mechanical applications, especially for pipe- and heat exchanger cleaning devices, removes greases, oils, and oil carbon.	20

# RWR

80, 300, 500

- ▶ **Stainless-steel fluid vessel with integrated drain**
- ▶ **Stainless-steel heating with adjustable thermostat (up to 90°C), factory-set at an optimal 60°C**
- ▶ **Stainless-steel float switch for filling level monitoring, prevents pump and heating from running dry**
- ▶ **Stainless steel filter to protect the pump from solids**
- ▶ **Hose holder for compact and space-saving hose storage, integrated in a drip pan with drain**
- ▶ **Delivered ready for connection with acid-and alkali-resistant hoses**
- ▶ **Mobile system – mounted on a stainless-steel trolley with rubber-clad castors**
- ▶ **Easy handling, no dismantling of components required**



ROSTFREI  
Edelstahl

RWR-80 L

	RWR-80 L	RWR-300 L	RWR-500 L
Total width x total depth x total height (mm)	1200 x 770 x 990	1500 x 800 x 1100	2530 x 1200 x 1385
Machine footprint (W x D x H) (mm)	1200 x 770 x 990	1500 x 800 x 1100	2530 x 1200 x 1385
Cleaning liquid tank – capacity (L)	80	300	700
Useful volume (L)	60	200	500
Total weight of the cleaning system excl. tank filling and additional equipment approx. (kg)	130	170	450
Connected load (kW)	4,6	15	18,5
Power supply (V)/frequency (Hz)	400/50	400/50	400/50
Ball valve for draining the cleaning liquid tank (inch ")	1 1/2"	1 1/2"	1 1/2"
Electric heating in the washing tank	1 x 4,5 kW	2 x 6 kW	2 x 7,5 kW
Treatment temperature (factory set to optimum 60°C)	60	60	60
Pump:			
Max. flow rate m <sup>3</sup> /h)	4,8	12,6	12,6
Max. head (m)	16,5	49	49
Pump motor (kW)	0,55	3	3
Order number	<b>G29000</b>	<b>G29200</b>	<b>G29400</b>

# THE POWER CLEANER RANGE

## Limescale (dis)solved

Limescale doesn't have to pose a problem, neither aesthetically nor hygienically, neither in pipes nor on surfaces. **The Power Cleaners are free from phosphates and hydrofluoric acid. In addition, they are VOC-free or -reduced.** The water-based acidic cleaners make your surfaces shine and are water-miscible.

The cleaners of the Power Cleaner range make short work of **extremely persistent contaminations such as limescale, mineral deposits, and, in certain cases, also rust, oxidation, and heat tinting.** Stainless steel, steel, tiles, aluminium, plastics, and, in certain cases, also non-ferrous metals etc. will shine in new splendour.

### Power Cleaner 400

- ▶ Material-friendly, suited for non-ferrous metals
- ▶ For manual and mechanical applications



<b>A02094</b> 20 L jerrycan
<b>A20094</b> 200 L plastic drum
Hazard notice: Eye Dam. 1, Skin Corr. 1B, Met. Corr. 1

### Power Cleaner DB

- ▶ Especially for mechanical applications in the RWR (cleaning and flushing of pipelines) and in the HTW



<b>A01028</b> 10 L jerrycan
<b>A02028</b> 20 L jerrycan
<b>A20028</b> 200 L plastic drum
<b>A10028</b> 1000 L IBC
Hazard notice: Eye Dam. 1, Skin Corr. 1B, Met. Corr. 1

### Power Cleaner KST 2.0

- ▶ Ready for use
- ▶ Especially for mechanical applications in the RWR KST



<b>A02009</b> 20 L jerrycan
<b>A20009</b> 200 L plastic drum
Hazard notice: Eye Irrit. 2, Skin Corr. 1B

**FIELD OF USE:** food industry, plastics processing (cleaning of cooling ducts of plastic injection moulds), railways

**MECHANICAL APPLICATIONS:** pipe- and heat exchanger cleaning devices, cleaning- and flushing systems for the cooling ducts of plastic injection moulds, hot-water parts washers, and ultrasonic cleaning devices.

Cleaning agent	Miscibility		Mixing ratios for parts washers		
	with water	in manual applications	HTW	BIO-CIRCLE Turbo	RWR
Power Cleaner 150	yes	5 % – 100 %	5 % – 30 %	5 % – 30 %	–
Power Cleaner 200	yes	5 % – 100 %	–	–	–
Power Cleaner 300	yes	2.5 % – 100 %	–	–	–
Power Cleaner 400	yes	5 % – 100 %	5 % – 30 %	5 % – 30 %	10 % – 30 %
Power Cleaner DB	yes	5 % – 100 %	5 % – 30 %	5 % – 30 %	20 % – 60 %
Power Cleaner KST 2.0	no	undiluted	undiluted	undiluted	undiluted

# ULTRASONIC CLEANING DEVICES

## Riding the waves

**Parts with complex geometries** are cleaned effectively with ultrasonic waves. Even tough cases, i.e. extremely persistent contaminations such as dried-on oils and greases, paints and varnishes or rust, will be dissolved with the aid of the appropriate cleaner – even from the tiniest of bores, material pores, and orifices.

### FIELD OF USE:

across all industries; maintenance of carburetors, filters, shafts, valves, pumps, motors, and components of any kind; small-part paint stripping and rust removal



## Ultrasonic Cleaning Devices 37 kHz Elmasonic Select

Available in 8 different device sizes (Capacities from 2.75 L to 90 L).

- ▶ 37 kHz ultrasonic power
- ▶ Kit: device, lid, basket
- ▶ 49.7 L and 89 L incl. soundproof lid
- ▶ For all common applications
- ▶ Digital display with four memory locations for cleaning programs

	Steel / Stainless steel	Aluminium	Non-ferrous metals	Plastics	Varnished surfaces	Zinc-coated surfaces
Master Mould 100	✓	✓	✓	✓	✓	✓
STAR US 1	✓	✓	✓	✓	✓	✓
STAR US 2	✓	✓	✓	✓	✓	✓
STAR US 3	✓	✓	✓	✓	✓	✓
STAR US 4	✓	✓	✓	✓	✓	✓
STAR US 5	✓	-	-	✓	-	-
STAR US 6	✓	✓	✓	✓	✓	✓
PROLAQ L US	✓	✓	✓	✓	✓	✓

## Multifrequency Devices BC-Sonic 25/45

Available in 7 different device sizes (22 L to 215 L) and equipped with different frequencies:

- ▶ 25 kHz ultrasonic power – for rough pre-cleaning
- ▶ 45 kHz ultrasonic power – for gentle final cleaning
- ▶ Dynamic function – by switching phase shift and additional pulse on and off, cleaning times are shortened and very persistent contaminations are dissolved
- ▶ Hinged lid for noise insulation and evaporation reduction as an optional extra

RECOMMENDED CLEANERS:	Page
<b>PROLAQ L US</b> Paint stripper for the cleaning of complex geometries, thermally stable up to 80 °C	31
<b>STAR US range</b>	30

Ultrasonic Cleaning Devices BC Sonic 37							incl. soundproof lid	
Capacity (L)	2,75	5,75	9,5	12,75	18	28	45	90
External dimensions of device W/D/H (mm)	305/170/230	370/210/275	380/300/280	380/300/330	405/360/330	575/360/330	770/510/975	870/640/1145
Internal dimensions of basin W/D/H (mm)	220/120/95	275/125/145	280/220/145	300/215/195	300/270/195	475/270/195	500/330/290	600/500/285
Internal dimensions of rack W/D/H (mm)	195/105/50	255/115/75	255/200/70	250/190/110	280/250/115	455/250/110	460/300/195	545/460/190
Power consumption (W)	320	550	550	1000	1000	1500	2140	2960
Order number	<b>G13915-S</b>	<b>G13925-S</b>	<b>G13935-S</b>	<b>G13945-S</b>	<b>G13910-S</b>	<b>G13920-S</b>	<b>G13930-S</b>	<b>G13940-S</b>

Multifrequency Devices BC Sonic 25/45							
Capacity (L)	22	42	45	70	97	133	215
External dimensions of device W/D/H (mm)	500/550/936	500/550/936	670/580/936	670/580/936	885/850/936	885/850/936	1035/900/936
Internal dimensions of rack W/D/H (mm)	255/230/170	255/230/370	400/255/220	400/255/370	490/525/210	480/525/300	630/575/370
Power consumption (W)	1400	1400	1400	4200	5000	7500	7500
Order number	<b>G24022</b>	<b>G24042</b>	<b>G24045</b>	<b>G24070</b>	<b>G24097</b>	<b>G24133</b>	<b>G24215</b>

# FOR USE IN ULTRASONIC CLEANING DEVICE

Flawless cleaning for the finest details

## Master Mould 100

Developed for use in **Ultrasonic Cleaning Devices**, the cleaner is effective against plastic outgassing, plastic residues, grease, corrosion protection agents and flash rust with light corrosion.

The cleaner is dilutable, foaming and VOC-free.

In addition, it is compatible with steels, stainless steels, aluminium, and non-ferrous metals and contains a special anti-blackening agent to prevent darkening when cleaning steels.

**Master Mould 100** cleans even the **smallest filigree nooks and crannies** in mould inserts, ensuring perfect shaping of your products.

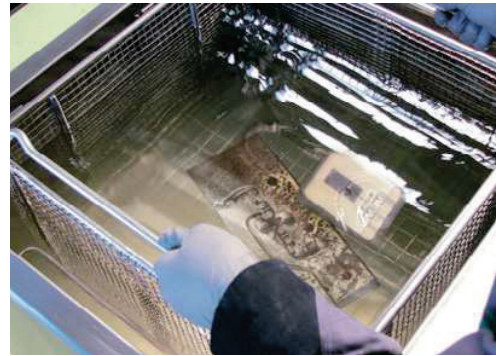
- ▶ For use in the Ultrasonic Cleaning Device
- ▶ Removes plastic outgassing, plastic residues, grease, corrosion protection agents and flash rust with light corrosion
- ▶ Cleans steel, stainless steel, aluminium and non-ferrous metals
- ▶ Cleaning of filigree plastic injection moulding tools, etc.
- ▶ Gentle cleaning because VOC-free
- ▶ With anti-darkening formula



**A020910** 20 l jerrycan

**A200910** 200 L plastic drum

**A100910** 1000 L IBC



**FIELD OF USE:** In Ultrasonic Cleaning Devices

For use in the plastic injection moulding industry for cleaning mould inserts

Cleaner can also be used in oil separators such as the Plate Separator

**APPLICATION:**

Add 20–50 % of the cleaner to the ultrasonic bath and dilute with water. Heat to 60 °C.

Cleaning time: approx. 15–30 minutes, depending on the degree of soiling.

**ADDITIVES:**

**Corrosion Protection 100** against corrosion.

Can be added in the range of 0.5 to 3 %.



# THE STAR US RANGE

## US as in ultrasound

The STAR US cleaners are ideal for use in ultrasonic cleaning devices. **They are VOC-free or -reduced, demulsifying and hence recyclable with a long service life.** The cleaners can already be used at room temperature. Recommended cleaning temperature is 40–60 °C.

They are environmentally friendly and safe: VOC-free or -reduced. Their demulsifying properties ensure a long service life. Moreover, the water-based alkaline cleaners are water-miscible.

### STAR US 1

- ▶ The dark horse of the range, because this STAR US cleaner is acidic
- ▶ Removes limescale, mineral deposits, rust, oxidation and heat tinting



**A00553-1** 5 L jerrycan

**A02053-1** 20 L jerrycan

Hazard notice: Eye Irrit. 2, Skin Irrit. 2

### STAR US 2

- ▶ Universally applicable
- ▶ Effective already at ambient temperature



**A00553-2** 5 L jerrycan

**A02053-2** 20 L jerrycan

Hazard notice: Eye Dam. 1, Skin Irrit. 2

### STAR US 3

- ▶ Alternative to solvents
- ▶ Removes the heaviest soiling, especially oil incrustations



**A00553-3** 5 L jerrycan

**A02053-3** 20 L jerrycan

Hazard notice: Eye Dam. 1, Skin

Corr. 1B, STOT SE 3



Cleaning a machine part in an ultrasonic bath





Cleaning with STAR US 6 in the ultrasonic cleaning device

## STAR US 4

- ▶ Especially for the cleaning of aluminium
- ▶ Special aluminium formula for heat-tinting protection



**A00553-4** 5 L jerrycan

**A02053-4** 20 L jerrycan

Hazard notice: Eye Dam. 1, Skin Corr. 1B

## STAR US 5

- ▶ Removes extremely persistent incrustations, carbonizations and resinifications



**A00553-5** 5 L jerrycan

**A02053-5** 20 L jerrycan

Hazard notice: Eye Dam. 1, Skin

Corr. 1A, Met. Corr. 1

## STAR US 6

- ▶ Emulsifying all-rounder of the range
- ▶ The component comes out clean, the removed oil disperses in the cleaning bath
- ▶ Silicate- and barium-free



**A00553-6** 5 L jerrycan

**A02053-6** 20 L jerrycan

## PROLAQ L US

- ▶ Paint remover for cured varnishes and paints
- ▶ Fast and safe paint stripping of steel, stainless steel, non-ferrous metal, and aluminium



**A00566** 5 L jerrycan

**A02066** 20 L jerrycan

**A20066** 200 L plastic drum

**A10066** 1000 L IBC

Hazard notice: Eye Irrit. 2

**The STAR US cleaners remove extremely persistent soiling:** heavy oils and greases, separating agents, smoke residues, soot, wear particles and swarf; in certain cases also burnt-in organic soiling, resin, tar, and rubber residues.

**Material:** stainless steel, steel, plastics. In certain cases also aluminium and non-ferrous metals.

**FIELD OF USE:** metalworking/CNC, plastics processing, automotive, railway, etc.

# PARALLEL PLATE SEPARATOR

## Cost-efficient work

The Parallel Plate Separator (PPT) is a high-performance, cost-efficient device for extending the lifetimes of water-based process baths. **The Parallel Plate Separator (PPT) removes oil, sludge, suspended solids, and sediments from the moving and warm process baths in a highly effective and automatic way while the plant is in operation.**

The PPT operates based on the combined effect of gravitation and coalescence (segregation of components), without use of chemical additives. Thanks to this combined effect, very low secondary-phase residual concentrations can be achieved at the drain without any further secondary treatment. Simultaneously, the gravitational effect in the PPT guides solids to the bottom of the device.

- ▶ Recirculation- and resource-friendly
- ▶ High separation efficiency
- ▶ Minimization of disposal costs

**FIELD OF USE:** universally applicable in cold and warm process baths and in pH ranges from 1 to 14 .



### Extraction devices



Thuringia design



Hilti design



Trade fair design



HTW design

	PPT Mini	PPT Kompakt	PPT 001	PPT 002	PPT 003
Overall dimensions L x W x H (mm)	295 x 125 x 275	495 x 145 x 400	745 x 245 x 445	1100 x 450 x 550	1400 x 450 x 550
Flow rate (L/h)	100	200	800	1500	2500
Capacity (m <sup>3</sup> /h)	up to 2.5 m <sup>3</sup> /h	up to 2.5 m <sup>3</sup> /h	up to 2.5 m <sup>3</sup> /h	up to 2.5 m <sup>3</sup> /h	up to 2.5 m <sup>3</sup> /h
Operating temperature	up to 90 °C	up to 90 °C	up to 90 °C	up to 90 °C	up to 90 °C
Operating pressure	any desired	any desired	any desired	any desired	any desired
Material	stainless steel 1.4301	stainless steel 1.4301	stainless steel 1.4301	stainless steel 1.4301	stainless steel 1.4301
Order number	<b>G11900</b>	<b>G11940</b>	<b>G11910</b>	<b>G11920</b>	<b>G11930</b>

## PRODUCT ACCESSORIES:

Work made easy:  
your practical helpers for  
opening containers and  
transferring fluids.



### Tap

**H00003** for 5 L and 10 L jerrycans

**H00004** for 20 L and 30 L jerrycans

**H00015** for 200 L plastic drum, ¾" incl. adapter



### Stainless steel hand-operated pump

**H00006** for 200 L plastic drum

(discharge 0.3 L hoist) 2" standard drum thread

incl. thread adapter and 1 m hose



### Plastic hand-operated pump

**H00007** for 200 L plastic drum

(discharge 0.3 L hoist)

2" standard drum thread

incl. thread adapter

and 1 m hose



### Jerry can cap spanner/ bung wrench

**H00016** Jerry can cap spanner

for both DIN 51 and DIN 61,

plastic, colour: green

**H00030** Bung wrench, metal,

for 200 L drums



#### Our delivery service (Germany)

**Delivery time:** approx. 2–3 days.

#### Delivery:

Free domicile incl. packaging for order values of € 600.00 or higher.

For order values (OV) under € 600.00, we invoice the following service charges (SC):

<b>Service charge:</b> OV up to € 100.00	SC of € 16.50
OV up to € 200.00	SC of € 19.50
OV up to € 600.00	SC of € 22.50

#### Collection by the customer:

You are welcome to pick up your products Monday thru Thursday between **8:00 a.m. and 4:30 p.m.** and Friday between **8:00 a.m. and 3:00 p.m.** directly from our production facilities in Gütersloh. Please call ahead on **+49 (0) 5241 9443 0**, so that we can prepare your order for pick-up.

#### Payment terms:

Our invoices are payable within 8 days with a 2 % discount, or within 30 days net without deduction. Upon request, we will debit the invoice amount from your account within 8 days. In that case you will receive a 3 % discount. For this, we require a direct debit authorization from you.

#### Reservation of title:

All items delivered by us shall remain our property until all present and future claims arising from the business relationship with the customer have been settled in full.

All prices are subject to VAT at the applicable rate.



**AS FLEXIBLE  
AS OUR  
APPLICATIONS**



## AS FLEXIBLE AS WE ARE

We are committed to ensuring that you have your soiling under control and that your work processes run smoothly with clean machines, moulds, pipes, hoses, etc.:

- ▶ Through our research and development department
- ▶ Through our expert staff in the office and in the field
- ▶ Through our service technicians, who cover the entire German territory and come to your company. They maintain your equipment, depending on the service package, and are there for you on site after making an appointment.

Oils, greases, rust, limescale, resins, varnish ... the list of **contaminants** is long.

Stainless steel, steel, plastic, aluminium, non-ferrous metals ... the **surfaces** also pose special requirements.

The **areas of application** are just as varied: in parts cleaning, maintenance, pipes, heat exchangers, plastic injection moulds, painting tools and spray guns, CNC machines and more.

The same applies to the industries: metal processing, automotive, plastics processing, transport, traffic, agricultural technology, forestry, food technology, skilled crafts and trades, etc.



# A STRONG GLOBAL PARTNER:



- ▶ CLEANING
- ▶ PROTECTING
- ▶ LUBRICATING
- ▶ WELDING

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## **Present around the globe**

Our products are sold and used in 63 countries.

We have a global network of own subsidiaries, production sites, and trade partners.



[bio-circle.com](http://bio-circle.com)