



OFFICIAL PARTNER



traffic-lines duo twister® video





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duo twister[®]



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INNOVATIVE TRACTION

Optimised traction minimises delays to flight operations.

The **traffic-lines duo twister®** has an innovative high-pressure water blasting system which efficiently and cost-effectively removes rubber abrasion from airport aprons and runways. Powerful against rubber and gentle on surfaces, joints and markings.

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SAFETY FIRST

Rubber abrasion on airport aprons and runways – especially in the touchdown zones – needs to be removed regularly to ensure that flights can operate safely on a continuous basis.

Rubber abrasion can interfere with braking when aircraft is landing, particularly in wet conditions. It can also make it more difficult for water to drain away. The steering ability of the aircraft can be affected considerably by the water film.

UP TO 7 KG OF RUBBER ABRASION*

LESS TRACTION

HYDROPLANING

HIDDEN MARKINGS

HIGH-PRESSURE IS TOUGH ON RUBBER

The patented technology used in the **traffic-lines duo twister®** high-pressure water blasting system effectively removes rubber abrasion up to a rate of 50,760 PSI. Working width is over 3.10 m and also available in 4.20 m. Particularly effective, gentle on surfaces and makes an efficient use of resources.

The jet water and the particles of loosened rubber are sucked up in one single step. The runway can be operational immediately after the abrasion removal process has been completed.

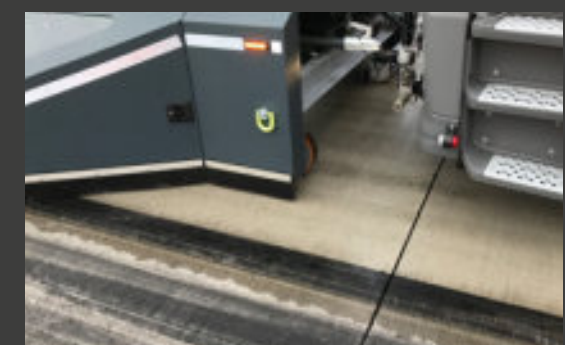
OTHER AREAS WHERE THE traffic-lines duo twister® CAN BE USED

Deep cleaning:

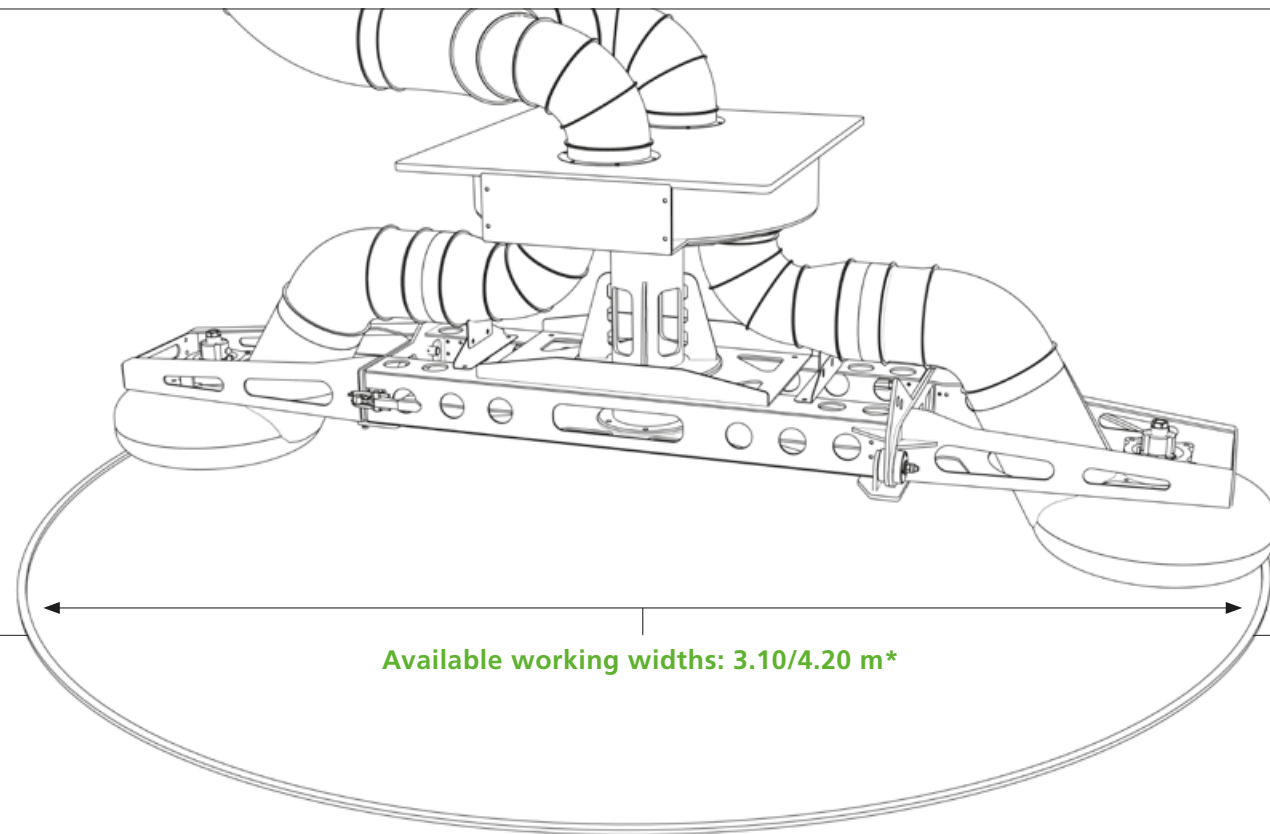
- porous asphalt surfaces
- concrete surfaces
- bituminous floor surfaces
- special asphalt and concrete surfaces
- noise-reducing surfaces
- anti-slip covering

Restore infiltration capability

Removes concrete sediment

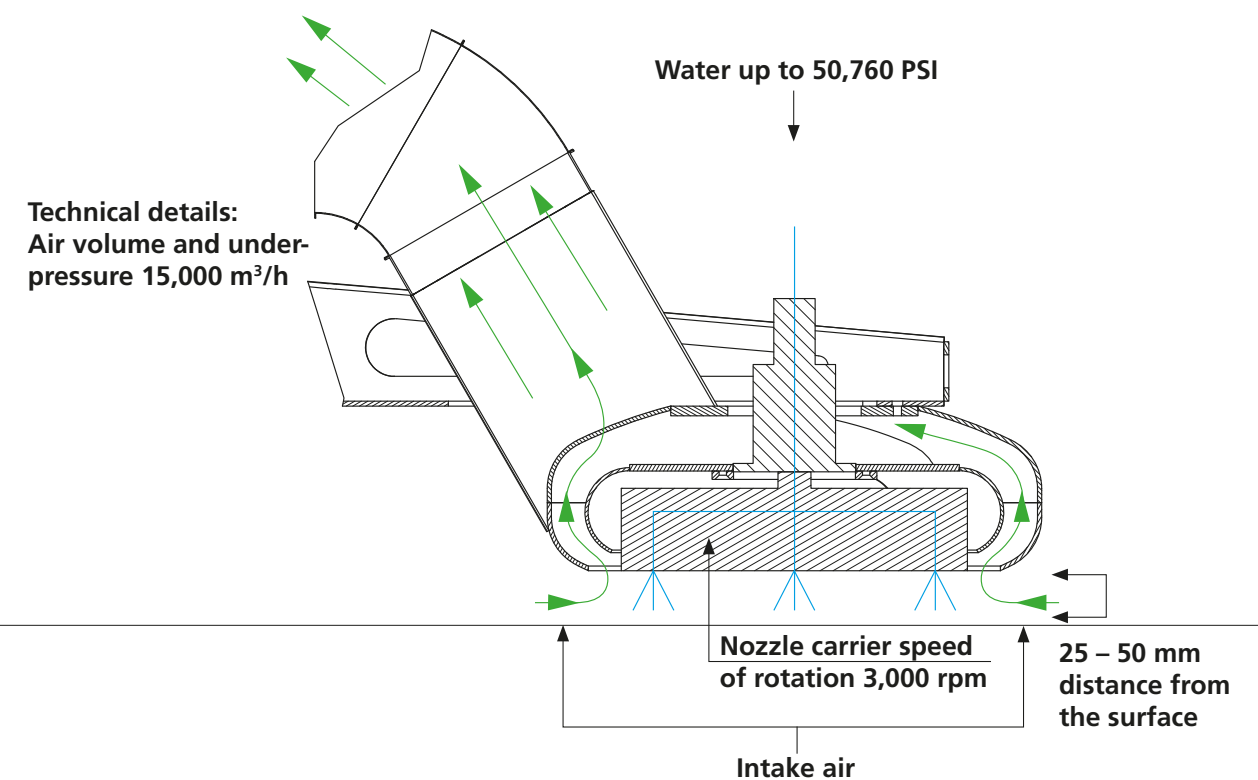


FORWARD-THINKING TECHNOLOGY



- The **traffic-lines duo twister®** is operated using two suction hoods with annular gap suction in which the nozzle carriers rotate at high speed.
- Both of the twister's suction hoods move in a circular motion enabling a working width of over 3 metres.

Transport air with water and transport to the waste water tank for removed material



- The distance between the surface and the suction area is 25 to 50 mm. Water, loosened rubber particles and basic types of surface contamination are transported directly to the waste water tank after they have been removed in a continuous suction process. Water does not accumulate in the suction hoods.
- The high-pressure water jet (up to 50,760 PSI) makes direct contact with the surface that needs to be cleaned. Cleaning performance is significantly higher than conventional high pressure water jets.
- Loose particles of dirt are already sucked away before the water jet is used. The annular gap suction reaches very high speeds at low negative pressure and with an extremely large volume of air (approx. 15,000 m³) – the flow rate that is generated enables a cooling process and even the smallest liquid particles to be vacuumed away.
- The surface is virtually dry straight after the cleaning process has been completed. This means the surface can be worked on or used again immediately.

PERFORMANCE IS EVERYTHING

EFFICIENT PERFORMANCE AVAILABLE IN NEW DIMENSIONS

One vehicle, two suction hoods with annular gap suction, 3.10 m or 4.20 m working width* – in terms of efficiency and performance over large areas, the **traffic-lines duo twister®** is setting new standards.

Cleaning times are substantially reduced which therefore reduces the amount of time that the runway cannot be used for flight operations.



The jets operate evenly thus ensuring that the whole surface is cleaned uniformly without any of the usual unsightly cleaning lines.

MAXIMUM CLEANING AND SUCTION PERFORMANCE

WORKING WIDTH 3.10 m / 4.20 m*

SURFACE PERFORMANCE PER UNIT

UP TO 4.980 m²/h

SURFACES ARE NEARLY DRY AFTER CLEANING



ADDITIONAL BENEFITS

EXTREMELY GENTLE ON SURFACES

- Cleaning is performed using high-pressure water without any chemical additives.
- A particularly gentle cleaning process using flat-jet nozzles which does not cause any damage to surfaces and joints.
- Surface markings remain in tact and damage to runway lighting and their numbering is avoided.

GENTLE ON SURFACES AND JOINTS

LOWER RUNNING COSTS

Up to 4,980 m²/h* using only one vehicle and one driver:
traffic-lines duo twister® has considerably lower running costs in comparison with conventional solutions.

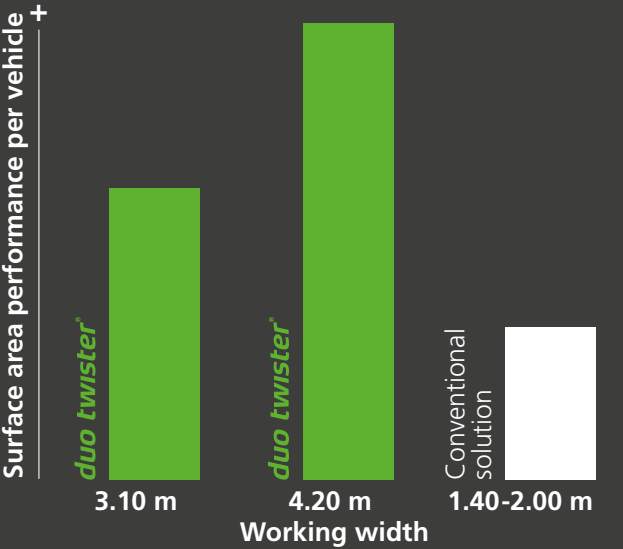
Additional cost savings can be made when using the optional water treatment unit **traffic-lines water loop** and an additional diesel tank. Cleaning times are significantly

reduced as the vehicle can be operated for longer periods as there is no need to constantly refill the tank with fresh water or to refuel. Continuous operation time under high pressure is at least 6 hrs 30 mins at pump performance 54l/min. The runway can be used again without delay.

OPERATION TIME AT LEAST 6 1/2 HOURS

CUTS DOWN ON CLEANING TIMES

CAN BE USED AUTONOMOUSLY



* at a working width of 4.20 m

MODULAR DESIGN

traffic-lines duo twister® comes in a modular design which offers a maximum degree of flexibility. The front cultivation, the water filtration **traffic-lines water loop** or an integrated diesel tank. Various add-on modules make it possible to configure the performance range and capacity of the equipment according to individual requirements. These modules can also be retrofitted at any time. This enables **traffic-lines duo twister®** to continuously remain at the forefront of modern technology.

Sweeper module

optional with side duct / channel brushes / roller brushes / rear suction or supplied by the customer

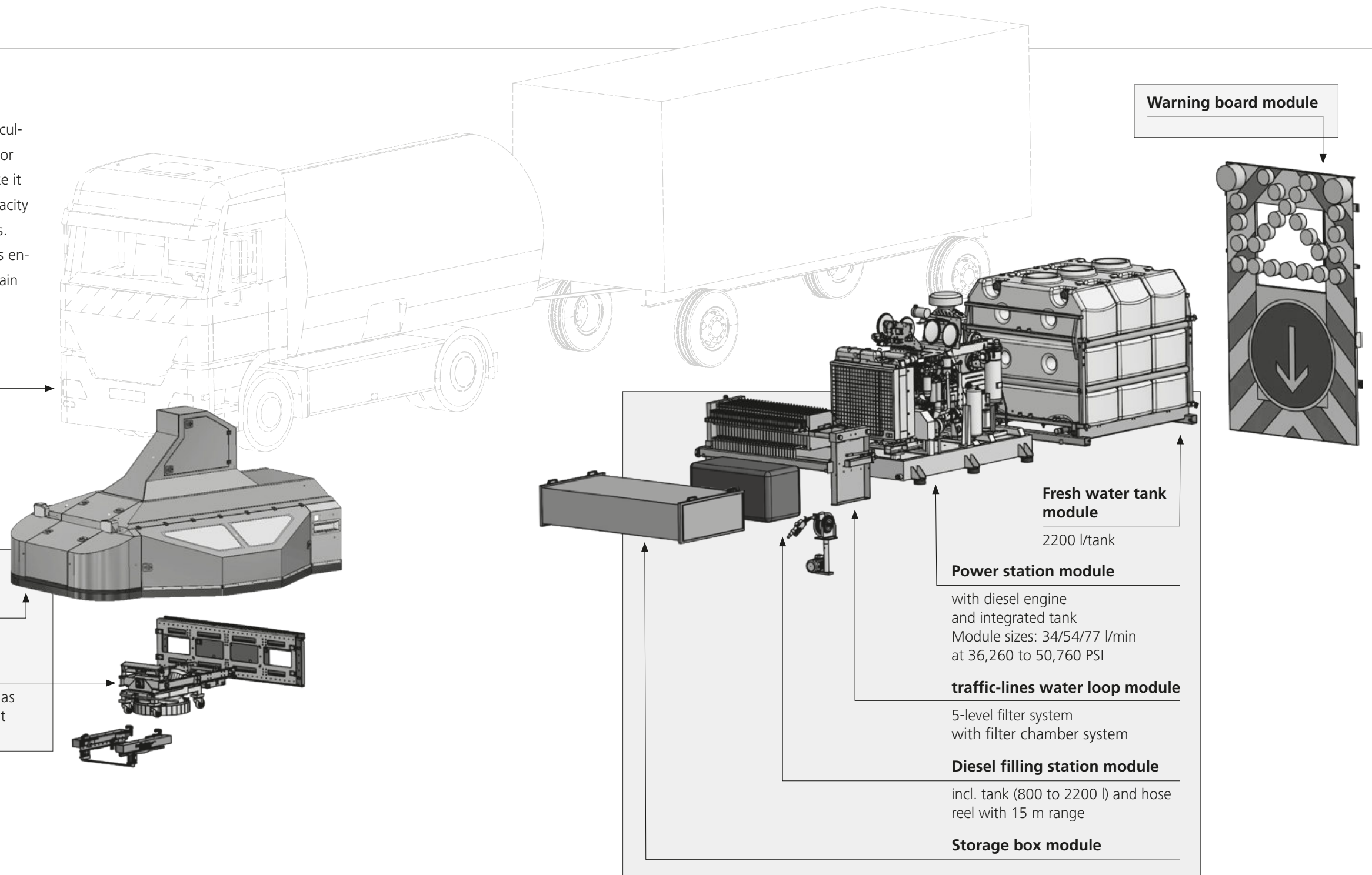
Front module

duo twister®

surface cleaning and removal of rubber abrasion

twister (adaptable)

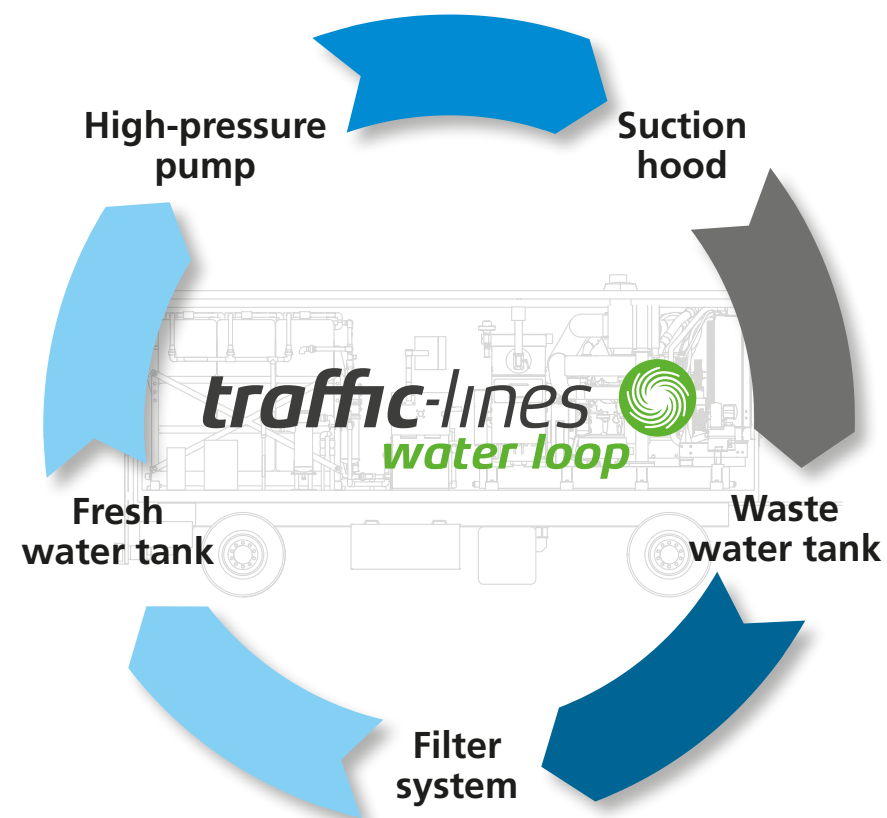
single head for removing markings as a front plate or as a semi-automatic arm – optional with automated joint cover / spray pattern cap



ECONOMICAL AND ECO FRIENDLY

The optional **traffic-lines water loop** water treatment unit saves time by avoiding the need to constantly refill fresh water and drain off waste water during the cleaning process.

The extremely powerful suction system fitted to the **traffic-lines duo twister®** ensures that almost every last drop of water is recycled back into the system.



Water filtration samples from the treatment process



Loosened particles of rubber and filterable solids are bound into filter cake.



**SIGNIFICANT REDUCTION
OF FRESH WATER CONSUMPTION**

CONTINUOUS OPERATION

**ADDITIONAL INCREASE IN
SURFACE PERFORMANCE**

SIGNIFICANT WASTE REDUCTION UP TO 80%

FUTURE NEEDS INNOVATION – YOU WILL FIND A STRONG PARTNER IN US



CORE COMPETENCIES

Working together with our network partners who operate across the globe, we develop fully integrated concepts and solutions to ensure that our customers achieve long-term success.



KNOWLEDGE TRANSFER

traffic-lines is a member of the German Research Association for Road Markings e.V. (DSGS) and is a certified member of the GATE Alliance.



Innovation through making connections and developing a vision. We live by this philosophy at **traffic-lines** and work alongside our customers as a **pioneer** and effective development partner to generate **solutions that meet customers' individual requirements**. From the first idea until it is ready to go into production. From prototyping through to market launch.

EXCELLENT SERVICE IS PART OF OUR DNA

We pride ourselves on providing excellent customer service. We are always on hand to serve our customers during every phase of the project, for example, we provide full support throughout the **commissioning process** and our **experienced machine operators provide new drivers with comprehensive training** under real conditions in the weeks before and after the **traffic-lines duo twister®** is handed over to the customer.

In line with this customer-focused approach, we are currently setting up our own **traffic-lines academy** which will serve as a forum for training, communication and networking.

