

# ARC-1000<sup>®</sup>

AIRPORT · RUNWAY · CLEANER

ENGLISH | 01-2013



## AVERAGE CLEANING RESULTS

Rubber removal

Ø 1,200 m<sup>2</sup>/h

(1,800 m<sup>2</sup>/h with the optionally available working width of 1,500 mm)

Increasing of friction coefficients on large areas

Ø 2,500 m<sup>2</sup>/h

Cleaning of asphalt drain surfaces

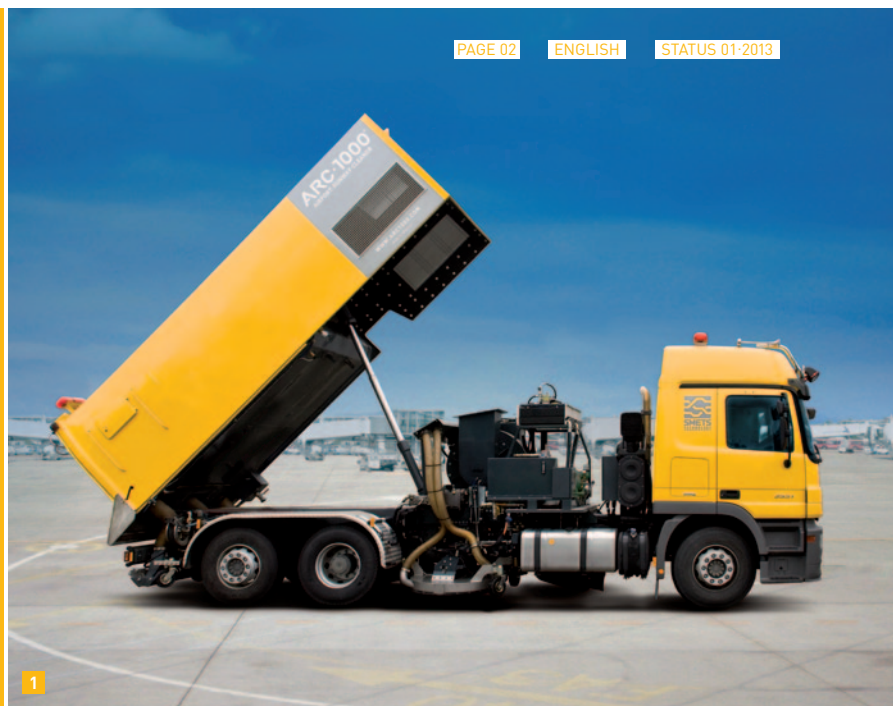
Ø 3,500 m<sup>2</sup>/h

**1** The tank and sound hood can be tilted hydraulically for maintenance purposes and for emptying the waste water tank. This allows easy access to all components – high pressure pump, boost pump, fan, cooler and extractor.

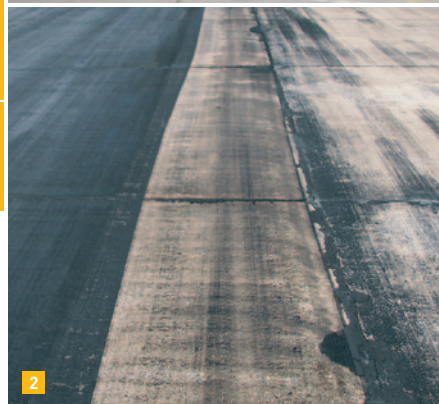
**2** Cleaning result on concrete runway. Hanoi, Vietnam

**3** Even the expansion joint material has not been destroyed.

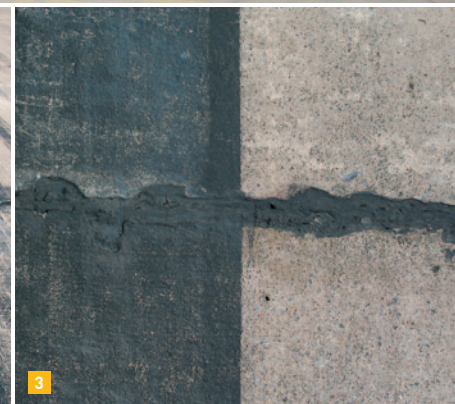
**4** Rubber removing truck in operation



**1**



**2**



**3**



**4**

# ARC-1000<sup>®</sup>

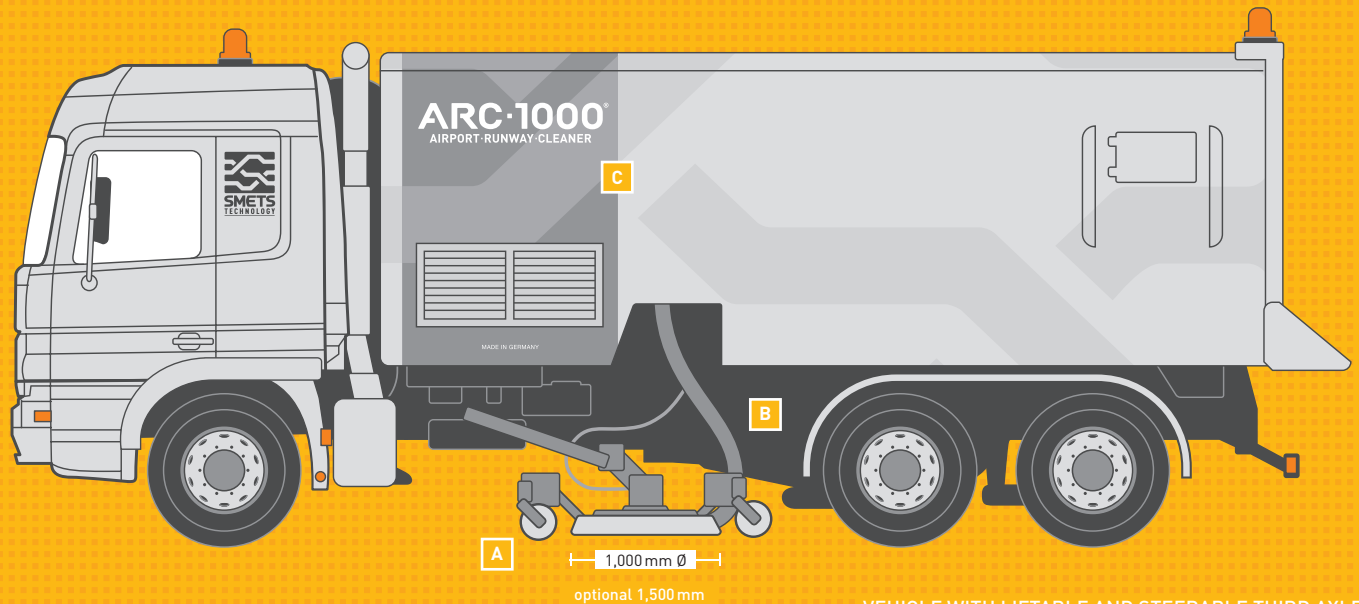
## AIRPORT-RUNWAY-CLEANER

The German company SMETS-Technology GmbH designed and built with partners this high performance vehicle for professional runway and surface cleaning.

The rubber deposits on the runway are removed and entirely withdrawn by suction. On the vehicle, all essential components are hydraulically driven. The required power is taken by two sources: First, via the direct auxiliary drive

system and second, via a gear, which is built into the drive shaft, with a hydrostatic drive.

The 1,000 mm Ø (optional 1,500 mm Ø) **surface cleaner**, which is located between the first and the second axle, can be lifted up and swivelled back into the chassis within three seconds. In case of an emergency, the vehicle can be driven off the runway within 10 seconds.



VEHICLE WITH LIFTABLE AND STEERABLE THIRD AXLE

# TECHNICAL DATA

## → CONTROLS AND SETTINGS FROM THE DRIVER'S CABIN

- Monitor for the two cameras mounted behind the surface cleaner and the rear side of the truck
- RPM counter for the rotating speed of the surface cleaner
- Pressure gauge for the working pressure
- Joystick for forward and reverse movement
- Potentiometer for setting the driving speed during operation
- Setting of the rotation of the surface cleaner (rpm)
- Setting of the suction operation (rpm of the blower)
- Setting of the working pressure (1,000 to 2,750 bar)

- A** HEAVY-DUTY WHEELS ENSURE THAT THE DISTANCE BETWEEN THE CLEANING NOZZLES AND SURFACE TO BE CLEANED REMAINS CONSTANT.
- B** FLOOD LIGHTS AND CAMERA FOR CONTROLLING THE WORK PROCESS
- C** PUMP AND SUCTION SYSTEM

### CHASSIS

wheelbase 4,500 + 1,350 | 6x2 | max. total weight 25 tons

### ENGINE PERFORMANCE

approx. 500 HP | 367.75 kW

### SPEED DURING OPERATION

0.12 to 4.80 km/h

### WORKING WIDTH

1,000 mm Ø (optional 1,500 mm Ø)

### HYDROSTAT AND PTO-DRIVE

booster pump | high pressure pump | suction pump (blower) | tilt mechanism | opening device for the back door | crawling speed (operation)

### WORKING PRESSURE

1,000 to 2,750 bar | stepless regulation

### FLOW RATE OF HP PUMP

15 to 30 l/min | stepless regulation

### TANK VOLUME

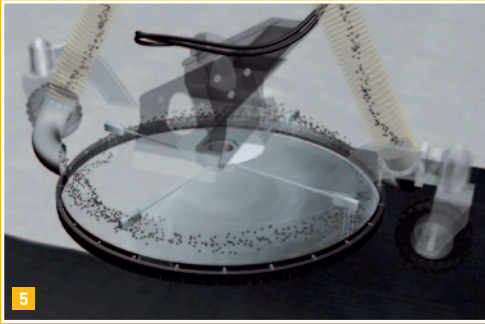
6,000 litres fresh water | 7,000 litres waste water

### SUCTION

max. 16,800 m³/h

### SPEED OF NOZZLE ARMS

stepless regulation



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# SAFETY & RELIABILITY

5 The nozzle configuration guarantees nozzle speeds of more than 450 km/h which is unique worldwide and grants the LOWEST stress for the surface.

6 The surface cleaner in working position

7 The driver is able to keep a constant control of the cleaning process – a camera which is mounted behind the surface cleaner transmits a perfect colour picture directly to a monitor in the driver's cabin.

8 User-friendly control board with touchscreen to control all aggregates and setting of all parameters (actual/theoretical)

9 The heart of the vehicle is a 155 kW high pressure pump with a performance of maximum 30 l/min at a working pressure up to 2,750 bar. Two water filters (100 and 25 µm) are assembled in line in the inlet to the water tank. In addition, there is a 6 µm filter fitted in the inlet side between the booster pump and the high pressure pump.

## → INNOVATIVE ENVIRONMENT-FRIENDLY ECONOMICAL

The water level in the fresh water tank is monitored continuously. If the level reaches the lower point the driver/operator is warned visually. If the level drops even further the system switches automatically to the pressureless mode avoiding dry running of the high pressure pump. To ensure that the surface being treated is not damaged, the high pressure system shuts off the moment the driver steps on the clutch or brake. The high pressure system can only



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8



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be activated when the vehicle is actually in motion. Even at the full load (2,750 bar and 30 l/min, at a vehicle speed of 4.8 km/h) the water and debris is entirely sucked off the surface and drawn off into the waste water tank.

The ARC-1000\* – a further example of our modern technology which more than meets today's demands for environment-friendly, innovative and economical products.

# ADDITIONAL OPTIONS

All additional systems can be retrofitted on several of our road sweepers and onto the Airport Runway Cleaner ARC-1000°.



## → MAGNET SYSTEM

The permanent magnet system will be installed under the front of the truck. The magnet bar can be lowered and raised by means of a pneumatic cylinder. The permanent magnet bar is covered by a aluminum housing which allows an easy removal of all collected metallic parts.

|                                 |  |
|---------------------------------|--|
| <b>WORKING WIDTH</b>            | 2.2m   |
| <b>FUNCTION</b>                 | Raised and lowered position<br>(operation from driver's cabin) |
| <b>INSTALLATION</b>             | Under the front of the truck; before the front axle            |
| <b>WORKING SPEED</b>            | approx. 15 – 20 km/h   |
| <b>HEIGHT IN UPPER POSITION</b> | approx. 280 mm   |
| <b>HEIGHT IN OPERATION</b>      | 50 mm above ground   |

Compared to the system of other manufacturers and competitors this system is fitted under the front of the vehicle and does not influence other activities and/or operations the truck does in any way. No assembling and disassembling works are needed.

## → REAR WASHING DEVICE

Rear grit suction unit inclusive additional high pressure pump installation.

The rear grit suction unit is used to clean large areas without the application of brushes, in conjunction with a separate, 80 kW HP pump (190 bar – 212 litres/minute).

For the installation of this device, the tank construction has to be changed completely, because the sucking connections have to be guided through the fresh water compartment.

This unit is driven via the NMV-PTO or the hydrostatic gearbox.

Cleans and dries the surface dust-free in one step. Contrary to the systems of other manufacturers this surface suction unit is fitted beneath the vehicle frame and does not influence other activities and/or operations the truck does in any way.

## ADDITIONAL OPTIONS



### → FC12 FILTER CONTAINER

**ARC-1000®** trucks dump and discharge the waste water into a filter container. The filter container, type FC12 was developed and designed to separate the debris from the water (filter mesh size 50 micron). Regarding German regulations the filtered water can be lead into the public sewer. This allows a clean and environmental-friendly disposal and reduces the dumping time considerably.



### → REAR SUCTION SYSTEM

The rear suction device shown on the pictures above can be installed optionally to every of our road & runway sweepers or the runway cleaning truck **ARC-1000®**.

Before starting the operation a manual gate has to be opened, the suction hose has to be moved out of the storage hooks and can then be moved by the pneumatically powered (up/down) suction arm. After finishing the workings the hose will be stored again into the hooks and the gate has to be closed. The suction device can be used for all dry materials like sand, dust and foliage.

### → SWEEPING DEVICE

This optional available device makes our system world-wide unique. On the opposite side (of the surface cleaner for rubber removal) a sweeping device can be installed (all components are driven hydraulically) which gives our clients the chance to use the truck for two applications:

- Sweeping (working width 2,800 mm)
- Rubber removal (working width 1,000 mm)

The sweeping device consists of one cylindrical brush (under the chassis) and two conical brushes. The sucking device, which is used for this application, is the same as the one for the rubber removal device. The efficiency (flow volume) of the sucking device will be raised by increasing the rotation (rpm) of the blower (fan).

## COMPANY PROFILE

The owners of the company SMETS -Technology GmbH are very experienced and have been in that field of business since 1975. SMETS-Technology has partnerships in order to build and deliver professional and multipurpose vehicles for a wide range of cleaning applications in municipalities, authorities and in the contracting business (industrial cleaning).

The company attaches great importance to customer support in initial aspects of application technology, right up to the design and layout of specific vehicles required for the job to be done. And of course the service does not end here: Once the vehicle is handed over to the customer he receives professional on-the-job training and can rely on a competent after-sales service.

Long-term customer relations stand as a proof of acceptance of the products and customer satisfaction.



## OUR RANGE OF PRODUCTS

- Sewer cleaning trucks (combined vehicles for cleaning and vacuuming, vacuum vehicles, cleaning vehicles)
- Sewer inspection systems and vehicles
- Accessories for sewer cleaning (maintenance and protection systems, hoses and cleaning pumps)
- Nozzles for sewer cleaning and high pressure cleaning
- Garbage trucks & industrial cleaning combination trucks
- Small high pressure cleaning units for sewer pipes with reduced dimensions
- Sweeping trucks
- Tipping container trucks
- Well cleaning and inspection trucks
- Runway cleaning trucks with high pressure water pumps (up to 2,500 bar) **ARC-1000®**
- Trucks for cleaning tanks or any other dangerous substances
- Road marking removal truck | MRT-300/2
- Friction testing unit | Mu-METER FT-256

### VARIOUS TYPES OF HIGH PRESSURE WATER CLEANING TRUCKS

- Direct drive via cardan shaft of vehicle transmission
- Drive via separate diesel engine
- Equipped with soundproof insulation, water tank, complete workshop



## PARTNER NETWORK

Algeria · Australia · Austria · Bahrain · Brazil · Egypt · England · France · Greece · Hungary  
India · Indonesia · Ireland · Japan · Jordan · Kenya · Kuwait · Lebanon · Libya · Malaysia  
Morocco · Oman · Pakistan · Philippines · Qatar · Romania · Saudi Arabia · Scotland · Serbia  
Singapore · Sri Lanka · South Africa · South Korea · Syria · Tanzania · Thailand · Tunisia  
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