

## **CLEANING OF COMMERCIAL VEHICLES IN A WORKSHOP: TRUCKS, PUBLIC TRANSPORT BUSES, AGRICULTURAL MACHINERY**

### **REQUIREMENTS**

When repairing passenger cars, individual parts are increasingly being replaced instead of repaired. In commercial vehicles such as public transport buses, trucks and agricultural machinery, on the other hand, the engine, engine compartment, drum or disc brakes, clutch and gearbox, hydraulic parts, etc. are actually still repaired and therefore also cleaned. Given the sheer size of some parts, this is often no easy task.

In addition to road dirt on road vehicles and sludge and soil on agricultural machinery, abrasion, oil residues and used oils, lubricating grease and grease residues, often mixed with chips or dust from the respective use, have to be cleaned.

In view of the high personnel costs, there is only one really relevant requirement in practice: Cleaning has to be done in a minimum of time.

Nevertheless, the minimum legal requirements in terms of environmental protection and occupational safety must also be met.



Parts cleaning directly at the vehicle reduces expensive travel times

### **PREVIOUS TECHNIQUE**

Depending on the specific application, high-pressure cleaners (HDR), cold or bio-wash tables, or brake cleaner spray (A1 spray) are usually used. In most cases, the parts have to be disassembled and transported from the lifting platform to the bio or cold wash table or directly to a cleaning room for cleaning.

These methods are all problematic:

- A1 sprays release VOCs (volatile organic compounds) or aerosols, which ultimately enter the atmosphere unprotected and unfiltered. Although the dirt is dissolved quickly and efficiently, it ends up 1 to 1 on the workshop floor. And while a single can of A1 spray may well be inexpensive, the costs quickly add up when entire pallets are used in large workshops.

- Cold washbasins also release VOCs or aerosols, which not only enter the atmosphere, but are also inhaled by the staff working at the KWT - which is anything but healthy. Moreover, the cost of refilling or replacing the solvents every few months is much higher than one might think.
- Even bio-wash tables are ultimately chemical baths in which the bacteria are cultivated, with corresponding costs for procurement and disposal. In addition, there is a considerable consumption of electricity, as the nutrient solution has to be kept at 36°C day and night, 365 days a year.
- Finally, high-pressure cleaners require considerable amounts of water and/or chemicals, with corresponding disposal costs, as well as energy. In addition, expensive and capital-intensive washrooms are needed, and the employees have to work in special protective suits.

With the exception of A1 sprays, considerable removal and reinstallation times need to be added in all cases, as well as transport and travel times for transport to the washroom or washstand and back.

Ultimately, all methods remain labour-intensive, resource-intensive and consequently expensive.

In addition, they are harmful to the environment and entail considerable health risks for the employees and thus for the company.



Brake cleaning directly at the lifting platform -  
Bus for public transport

## OUR SOLUTION

In contrast to the methods described above, the hot cleaning devices from ph-cleantec consume very few resources. Parts such as engines and pistons, gearboxes, shafts and axles, brakes or hydraulic parts can often be cleaned directly on the lifting platform - and thus without expensive dismantling and in any case without expensive travel times. Above all, only a fraction of the time is needed that is needed with other methods - our customers regularly speak of 80-90% saved working time, in addition to the travelling and disassembly time saved.



Cylinder head (Smart) - left after a few seconds, right  
uncleaned.

With 7.5 or 14 bar and 95°C, small and large parts - from pistons to entire gears - can be cleaned quickly and efficiently.

Especially greasy and oily contaminations are immediately dissolved by the high temperatures, and the 7.5 or 14 bar are sufficient to remove the contaminations.



Cleaning the engine compartment of a public transport bus with the help of a low-pressure hot cleaning device above the pit - even without removal of the engine, cleaning is easy and, above all, quickly and efficiently. Dirt water can be collected in a 1000 KW collector and be recycled.

With the help of appropriate nozzles, every blind hole and every crevice, and with the help of our lances, every large part can be reached without any problems and cleaned quickly and efficiently.

With the units of our SR series, the contamination is collected in the parts cleaning level of the units, and the cleaning agent can be reused multiple times. Alternatively, process water can also be collected in our waste water collectors and then reused. This saves resources - water, waste water and electricity.

In addition, no or at most very few chemicals are needed: In the case of particularly stubborn contamination, small quantities of an alkaline cleaner - usually between 1 and 3% - can be added, which can then be reused multiple times because of the recycling process. If necessary, this cleaner can also contain a temporary corrosion protection.



Brake cleaning at the pit – truck with dirt water collector



All in all, only a fraction of the chemicals that would otherwise be required are needed. This not only protects the environment, but also the health of the employees, and thus increases occupational safety during operation.

Since the devices are mobile, work can be carried out directly on the vehicle - this eliminates the need for travel time and often even the removal of parts. At the same time, our collectors can be ideally adapted to any pit size.



Cleaning of sensitive parts - here cable harnesses on a harvester - or of hydraulic parts is often possible without dismantling.

## YOUR ADVANTAGES

- High temperature - up to 95°C - allows complete and thorough cleaning in a minimum of time, especially of oily and greasy parts.
- Low pressure - from 3 to 7.5 bar or from 3 to 14 bar - is completely sufficient to loosen impurities, but does not cause any damage.
- Significant time saving due to quick and easy cleaning; due to various lances and nozzles also in places that are otherwise difficult to access. Cleaning is often possible without dismantling the parts - this also saves time and money.
- Resource-saving: Considerably less water and chemicals than comparable methods; therefore lower procurement, storage and disposal costs, and no fire hazard.
- At the same time, method is environmentally friendly and protects health in accordance with the requirements of the (German) Employer's Liability Insurance Association (BGR 157).
- Optimum cleaning and collection of harmful brake dust, especially when cleaning brakes, and wet cleaning in accordance with regulations.
- Investments for hot cleaning equipment are usually significantly lower than those of competitors.
- Further advantages:
  - Universal application - also for cleaning other parts or components.
  - Low space requirement, no expensive installations
  - Mobile - hot cleaning device and hot water collectors are mobile, therefore no travelling time; hot water collectors can be adapted to any pit size.
- In summary: Significantly less working time, hardly any operating costs, low investment, more safety at work, and better environmental compatibility.