

Hot and Efficient: Environment and Health Friendly Cleaning for Repair and Maintenance

With low pressure hot cleaners, eliminate even challenging impurities

Particularly when the effectiveness of cleaning components in production or in maintenance is lacking it is worth your while to think about low pressure hot cleaning as an alternative.



Complex structures and heavy soilings are ideal applications for hot cleaning

Besides the effectiveness of a cleaning method increasingly the sustainability and the healthiness of such methods come to the fore. This concerns both the production as well as the repair and maintenance, and hence the cleaning of machines and parts. In practice a multitude of methods is used. Washstands in which cold cleaners are used as cleaning agents are widespread.

Cold but toxic

Cold cleaner washstands use little energy as no heating capacity is needed, however the cleaning agents are sometimes highly toxic. Therefore they are potentially health damaging for the users, and can cause severe allergic reactions. Furthermore they damage the environment due to volatile organic carbohydrates (VOC). According to ph-cleantec some 20 percent of the solvents based

upon volatile organic carbohydrates evaporate and directly reach the environment where they damage the ozone layer in particular. The remaining 80% must be disposed and refined in a complex procedure.

In this regard washstands with bacteria are much more environmentally friendly because an alcalic cleaning medium is applied which is regenerated continuously by the bacteria. Oils and fats which are introduced are broken down in a chemical-biological process by the bacteria. However, the bacteria have to be kept at a constant temperature of 38°C and therefore need a corresponding amount of energy. Yet overall they are one of the more environmentally friendly solutions on the market. Nonetheless, these devices are not mobile and the cleaning of areas which are difficult to access such as blind holes or thread ridges can really strain one's patience. Practitioners sometimes use pressurized air to improve the cleaning effectiveness and for drying components, and so distribute the cleaning agent throughout the entire factory hall.



Washstands with brushes hit their limits with rough soilings and difficult geometries.

High pressure cleaners are used when rough soilings such as sludge and earth or large surfaces need to be cleaned but are not suitable for small and/or fragile parts or for use inside the factory hall. Almost always they work without water recycling and require a substantial water throughput of 10-20 liters per minute – and a corresponding energy consumption. On top investment intensive oil separators are required by law.

For large throughputs of components automatic washing machines, for example so-called top-loaders, are used. These are applied if large volumes of small components need to be cleaned - or for surfaces with simple structures. Rough soilings, complex structures or the cleaning of inside geometries however can bring this method to its natural limits. On average, such top-loaders need between 100 and 500 liters of water per filling, which must be heated to 60°C or more and kept at this level during work hours. The addition of cleaning agents is proportional to the water usage and therefore lies in the upper tier compared to the other methods presented here.



Machine maintenance with the low pressure hot cleaning method is effective and gentle and avoids dispersing dirt throughout the hall.

Brake cleaner sprays are not only relatively expensive, also with respect to sustainability they occupy the last rank. Any soilings cleaned off simply drop to the floor and the cleaning agent is 100 percent blown into the atmosphere. Also the aerosols and the tins themselves are a burden to the environment.

Furthermore, these A-1-cleaners are highly flammable with a flashpoint at room temperature of 21°C. Yet these sprays are often seen as the sole possibility to conduct certain cleaning jobs – apart from the low pressure hot cleaning system.

Saving Time and Resources with Hot Cleaners

With low pressure hot cleaners the cleaning is effected through 95°C hot water combined with low pressures of 3 to 8 bar, maximum 14 bar. The devices are mobile and utilize power only if the device is actually working. With 0.8 – 2.8

liters per minute very little water is needed. This can even be reduced further by recycling the water. The consumption of chemical cleaning agents falls in proportion to the lower water consumption as generally this water based cleaning method requires minimal to zero chemical agents or toxic VOC agents.

All-in-all the low pressure hot cleaning system scores significant advantages compared to other methods with respect to the environment and employee health. It is also superior with respect to sustainability. Equally the fast and efficient cleaning without lengthy re-cleaning work in places which are difficult to reach the method brings considerable advantages in terms of time and resources.

„I know countless cases where previously it took 30 – 60 minutes to clean at a conventional cold cleaning washstand. The worker was totally surprised that with our low pressure hot cleaner he was done in 5 minutes“, reports Jesco Kistowski from ph-cleantec. „Apart from the workload reduction this naturally results in substantial cost reductions as well.“



The example of a conical filter: Parts cleaning with low pressure hot cleaner – before and after in a minimal time span

Low pressure hot cleaners are mobile and flexible and therefore the cleaning at, in or under an object or a machine that needs cleaning is possible without any problem. As such, from an application perspective, the system is a perfectly adequate substitute for brake cleaner sprays and washstands and can supplement high pressure cleaners and washing machines.

In summary not only health and environmental arguments speak in favour of the low pressure hot cleaning technique, but also economic benefits such as shorter cleaning times and lower consumption and investment costs.