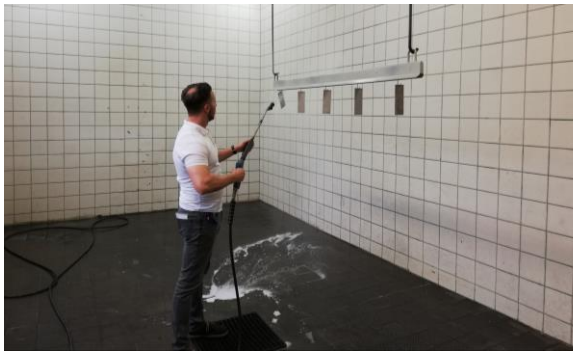
## Degreasing Made Easy

### Thanks to the unique method of ph-cleantec significant savings on work hours and costs are possible – while maintaining the same quality levels

The most important process steps when preparing surfaces for wet or for powder coating are degreasing, phosphating, and drying. These jobs seem simple enough, yet have to meet very high standards to achieve a perfect result in the subsequent wet or powder coating.



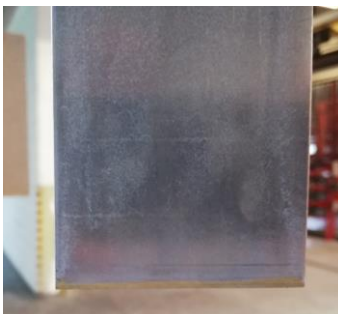
**Cleaning a test series with high pressue device**

For companies working with relatively small series, and where parts do not fit into existing cleaning devices because of size or geometry, a true automatisation is hardly possible: The process is automated to a large extent, yet the individual steps require cost and time intensive manual intervention. Often there are special cleaning rooms equipped with high pressure cleaners, drains, and corresponding collector systems for waste water and chemistry. Since the high pressure cleaners employed do not as such degrease, degreasing is essentially accomplished by specific alcaline solvents. Given the high water throughput of high pressure cleaners this implies a substantial water consumption and – even with strong dilution – also a considerable consumption of alcaline solvents, with corresponding costs for purchasing and disposal.

**Test result with runs – foaming cleaner**

By contrast, using the ph-cleantec method substantial time and cost savings are possible. Depending upon the specific device, ph-cleantec works with low pressures of up to 7,5 or up to 14 bar – so that alos samll parts can be cleaned easily - combined with high temperatures of up to 95°C. The cleaning effect is mostly accomplished through the heat, which obviously makes the cleaning off of fats and oils particularly efficient. This process is enhanced by using appropriate alcaline solvents. The low pressure on the other hand is perfectly sufficient to carry off oils and fats effortlessly, and implies a substantially lower consumption of water and hence of solvents. To put this in numbers: While a high pressure cleaner normally uses some 20 liters per minute, ph-cleantec uses up to 1,8 (at 7,5 bar) resp. 2,8 (at 14 bar) liters per minute, that is roughly a seventh to a tenth. That translates into a reduction of costs for water, solvents, and disposal by 70-90%.

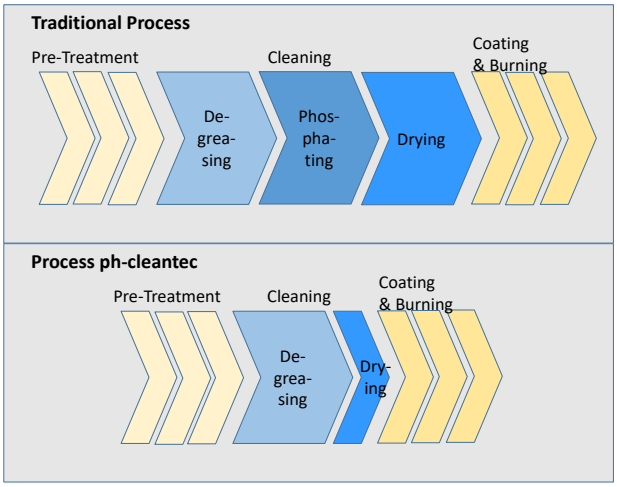
**Residual moisture at the lower rim**



On top of that, real-life experience shows that in many cases phosphating can be omitted completely, and drying can be reduced to a minimum. This works because of the high temperature combined with the appropriate (salt-free and mildly alcaline) non-foaming solvents: The high temperature heats up the treated surfaces so that large parts of the surface dry immediately. Only on the lower rims some residual moisture remains, which can easily be eliminated with compressed air.

Therefore, in practice three process steps can be reduced to one and a half at most – to the delight of both the employees and the CFO.

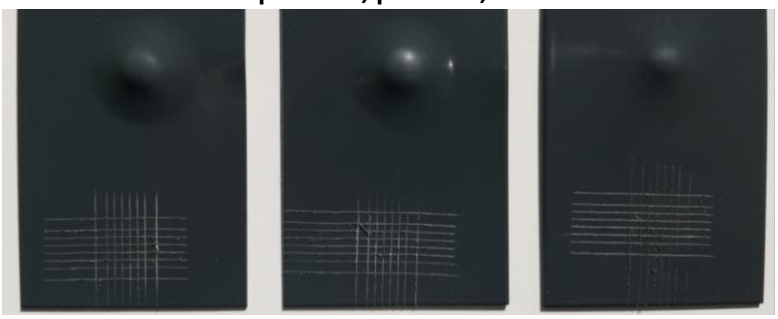
**Process model classic vs ph-cleantec**




If for some reason phosphating is still required this can be achieved with products which both degrease and phosphate, applied in a stainless-steel machine from ph-cleantec. Like this, both degreasing and phosphating can be accomplished in one work step only.

The method works for all metals such as steel, stainless steel and aluminium, both polished and unpolished. For materials where there is a risk of corrosion from cleaning with watery solutions, a solvent with a temporary corrosion protection may be added. Also in this case the pieces can be wet painted or powder coated directly – no residues will remain. Even for highly demanding coatings such as high gloss polished black perfect results were achieved.

**Cross cutting test:**
**f.l.t.r.: Aluminium unpolished, polished, and steel**



As such the ph-cleantec method, in combination with the subsequent coating, fulfils even highest require-ments: In all cases the method passed all tests without any problems, such as the fall test and the cross cutting test. With a little twinkle in the eye it may be added that the method also passed the ultimate test with flying colours: Whenever two work pieces were submitted to Mr. Quality Control or to “the boss”, one degreased and powder coated using the traditional method and one using the method ph-cleantec, in no instance could they find a difference.

**Test result: Front method ph-cleantec, back previous method**

It should be added that working with low pressure is also much more comfortable for the employees than working with high pressure as there is no spray-back and no protective suits are needed. Because of the low resource consumption the method ph-cleantec is also significantly more environmentally friendly than other methods.