



- Modified alcohol
- Chlorinated solvents



A Worldwide Experienced Team  
Generating  
World Class  
EXCELLENT TECHNOLOGY



*it's clean!*



*Sand it!*



*Automation!*



## Modified alcohol washing plants

Our hermetic circuit solvent washing systems are able to carry out the washing and drying treatment completely under vacuum. We use solvents of alcohol derivative (modified alcohols or better alchopropanol), which have a degreasing power, similar to chlorinated solvents, which are specifically used when the demand calls for a strong degreasing phase, certainly superior to hydrocarbons (similar in chemical-physical characteristics but different in their management). Basically they offer low toxicity and eco-toxicity, they evaporate completely without leaving residues on the pieces. They are non-corrosive and are able to remove water from metal surfaces, which is very important compared to chlorinated solvents, they do not require the use of stabilizers.



## Chlorinated solvent washing system

Our hermetic circuit solvent washing systems are able to carry out the washing and drying treatment completely under vacuum. Chlorinated solvent washing systems have a completely hermetic circuit operation and work with super-stabilized perchlorethylene which has a high solvent power and very stable. Perchlorethylene is compatible with most metals, particularly those that are easily oxidized such as aluminum, stainless steel, magnesium, zinc and alloys such as brass, etc.



## Our standard

The construction with high thickness AISI 304 stainless steel (DIN AISI 1.403) (not like the off-line of laundry machines) allows us to reach high vacuum rates to avoid stressing the solvent and also allows the pieces to dry very quickly.

The whole plant cycle; spray stage, immersion with or without ultrasound, solvent vapors and drying, takes place under vacuum, this guarantees the hermetic seal of the plant. Each washing stage is carried out with a clean solvent, in fact, each system is equipped with a double distiller that guarantees solvent is always ready and clean, even for short cycle times. This turns into a continuous washing process and a high consistent washing quality. Vacuum drying prevents airborne particles from contaminating the cleaned parts inside the process chamber in a hermetically sealed environment, therefore extremely clean, since the chamber is also "washed" with each work cycle. The operator will not come into contact with the solvent even during maintenance. All the operations of loading and unloading of the solvent, of drainage take place automatically and the cleaning of the filters takes place with the preventive deodorization. Our construction method is different from our competition in the market because the construction of our work chamber is integrated in the system body (we do not have many tanks and pipes that dissipate heat and in the long run do not guarantee sealing under vacuum conditions). Through our integrated module construction, we use the solvent vapors generated by the distiller to equip the chamber with thermal energy, so we have a continuous distillation and never interrupted, thus reducing the thermal energy used to restore the necessary distillation regime, reducing consumption electrical and always obtaining a greater quantity of vapors for the final phase of the process and for their condensation. The relocation at the customer's plant after the pre-acceptance tests in our factory, ensure that what is found in pre-testing is actually what is expected and required in the final testing phase and put into production. The system is independent and extremely flexible, since the installation is of the "plug-in" type, being equipped with independent heating and cooling systems therefore does not require further connections for heat sources or cooling water.





## What we remove

Total removal of all types of pollutants from treated (metallic and non-metallic) parts, simple or morphologically complex, equipped with blind and threaded holes, tapped or rolled, planar or with recesses or cavities, up to the micro-structure of the sintered material components. We remove organic and non organic, polar and non-polar contaminants and impurities such as: oil (whole and emulsions), lapping oils, polishing pastes, waxes, shavings, powders and particulates, greases, footprints, earth and foundry sands, salts, etc...

## What material can be wash

Depending on the type of solvent used and the proposed cycle, our systems can optimally clean: AVP, AVZ, Steel, Stainless Steel, Cast Iron, Aluminum, Brass, Copper, Ergal, Plastic materials.



Machine Model	N° of load baskets	Basket dimension (mm)	Load dimension (mm)	Load (Kg)	Cycles/hours
WAVE 450 - 1	1	300 x 450 x 200 H	300 x 450 x 200 H	75	6 - 8
WAVE 450 - 2	2	300 x 450 x 200 H	450 x 600 x 200 H	150	6 - 8
WAVE 450 - 3	3	300 x 450 x 200 H	450 x 900 x 200 H	225	5 - 7
WAVE 450 - 4	4	300 x 450 x 200 H	450 x 1200 x 200 H	300	4 - 6
WAVE 600 - 1	1	470 x 620 x 400 H	470 x 620 x 400 H	250	4 - 6
WAVE 600 - 2	2	470 x 620 x 400 H	470 x 1240 x 400 H	400	3 - 4
WAVE 900 - 1	1	600 x 900 x 600 H	600 x 900 x 600 H	600	3 - 4

## How the baskets move

The baskets, once introduced into the treatment chamber, either manually via the operator or in automatic mode via a device positioned in front of the working chamber, can be moved or be static based on the type of program inserted. It also takes into consideration the conformation or the delicacy of the pieces themselves:

- The basket, or in the case of systems with multiple baskets, in the working room can be placed:
- in rotation on the basket axis
- in tilting with controlled inclination
- made static, no movement.



## What we offer - as a standard

- Completely stainless steel construction
- Vacuum operation of each part of the system
- Continuous solvent distillation
- Sludge stripping distiller
- Ultrasonic transducers for cavitation in immersion
- Double washing liquid storage tank
- Integrated spray pumps
- Vacuum pumps to create the required vacuum regime
- Total solvent filtration at each cycle
- Chip drying and deodorizing before emptying by the operator
- Chip drying and deodorizing before opening/ cleaning by the operator
- Hermetic washing / liquid loading / unloading system
- Continuous water separation, with the possibility of continuous automatic discharge
- Oil separation from the solvent, with the possibility of continuous automatic discharge
- Cryogenic abatement system
- Vacuum drying
- Siemens PLC for managing all the operating parameters of the plant cycle
- Siemens HMI with continuous indication of system status;
- Remote connection for ethernet remote assistance
- Complete integration possibilities within Industry 4.0



**Spray washing systems**

## **What we produce**

Our products includes modified alcohol plants, water based plants, alcohol-water mixed plants and plants with chlorinated solvents. Therefore, we have the ability to recommend the correct solution and the system suitable for the real needs and to satisfy the customer's production request and feel forced to push a single type of product, i.e. water or solvent. We have a wide range of industrial washing systems (not laundry machines), advising each individual customer not only the most appropriate washing cycle, but the correct process for the best expected result. Each customer, has a type of component to be decontaminated, that needs an ad-hoc solution, and this is why we associate the correct process, be it alcohol, water or solvent, with the type of pollutant to be removed. All our systems have always been able to satisfy the most complicated needs and the most stringent washing requirements. All our systems meet the most current standards: national and international, to protect operators and protect the environment, a responsibility that depends on us all.



**Turbine shot blasting machines**



**Ultrasonic and spraying washing machines**



**Water jet robotic deburring systems**



**Shot peening and shot blasting systems**

