

# Factory Standard - Precision Cleaning Products

Manufacture, cleaning and packaging of components



## UPDATE / CHANGE STATUS

### Change Control

- This document is currently not subject to change control.
- QM System maintains an update service for this document.
- The latest version of this document is available on the ecoNet.

### Update status

Document version: 1.0 from 10.07.2024

The development of the previous versions is listed below:

Version	Date	Name	Change/reason
1.0	10.07.2024	JH	New version

## 1. Purpose

The purpose of this factory standard is to define and ensure all necessary quality requirements for the manufacture, cleaning and packaging of components.

## 2. Applicability

This standard is applicable to the manufacture of components for the Automotive Cleaning product area.

If the technical drawing or the purchase order include requirements that deviate from this standard, the requirements stipulated in the purchase order and drawing shall override the information provided in this factory standard.

## 3. Production of components

The following points need to be observed for the manufacture of components:

### 3.1 Main mechanical assemblies and single parts

- Complete machining is required as specified on the drawings.
- Ensure that hydraulic components such as nozzles, HP manifold blocks, sealing caps etc. are absolutely burr-free. Remove loose chips and feather burrs completely. Such components must be thoroughly cleaned prior to delivery.
- Hardening, nitriding, cold nitriding, ion nitriding or electroless nickel plating in accordance with the drawing or parts list. For cold nitriding, the following supplier is to be given preference:  
**Dreistegen GmbH**  
Dreistegen 7-9  
D - 52156 Monschau  
[www.dreistegen.com](http://www.dreistegen.com)  
Alternative suppliers can be requested from Ecoclean.  
After hardening, all components made of stainless steel must be post-treated against possible corrosion for use in cleaning systems.
- For all bolts that are hardened, proof of hardening must be supplied without being requested in order to record the correct hardening process and reduce the risk of through-hardening due to the use of incorrect hardening processes/parameters. This does not apply to bolts that are cold-nitrided.
- Hardened parts to be chemically nickel-plated according to drawing (min. 30 µm layer thickness) must be tempered after nickel-plating in order to obtain a wear-resistant layer. All parts that have undergone any surface treatment must be checked for the absence of defects after installation. The layer thickness of chemical nickel-plating must be considered in machining operations.
- All hollow sections must be seal-welded. See also the welding instructions in the following document: Factory standard - General information / Chapter 7
- Check walking beam sections for straightness and twisting in all planes and straightened "cold".
- Chamfer the long sharp edges of the walking beam sections.
- Pickle all stainless steel welded joints using the spray pickling process or immersion pickling, but make sure that the surface does not become coarse-grained or that the specified tolerances are not altered.
- Care must be taken to ensure that folds, reinforcements etc. are designed or mounted so that pickling fluids can run off and undercuts can be sufficiently rinsed.

### Pre-assembly of assemblies:

- All adjustment options must still be possible. The securing holes for pins must be accessible, but are first drilled through and pinned during final Ecoclean assembly. (This means that if a device in a slotted hole has been moved as far as it will go during adjustment, the slotted hole may need to be extended).
- If rework/extra work is necessary, the responsible Ecoclean procurement employee should be informed so that any costs and necessary changes to the drawing are known and taken into account.
- With regard to thread sealant and thread locker, please refer to the following document: Factory standard General Information.
- All steel screws must be at least strength class 8.8 and galvanized; clamping levers at least 10.9; screws made of CrNi steel must be at least strength class A70. Unless otherwise stated.
- When using PEEK plastic, we distinguish between the following two materials:  
**PEEK reinforced** → MCAM Ketron HPV PEEK, Ensinger TECAPEEK PVX, Victrex PEEK 450FC30 or other PEEK of comparable quality  
**PEEK unreinforced** → MCAM Ketron 1000 PEEK, Ensinger TECAPEEK natural, Victrex PEEK 450 or other PEEK of comparable quality
- All bearing points must be filled with grease (roller bearing grease).
- Walking beam conveyors must be fully adjusted, all workpiece trays and holders must be aligned using the single-cycle template and checked against the Ecoclean checklist.
- For complex main assemblies or assemblies that cannot be transported on pallets or in pallet cages, a transport rack or transport device is included in the scope of supply and services.
- Spray preservative oil on rollers, guide bolts, rails and shafts (for anticorrosive protection during shipment). Remove any loads from rollers and levers for transportation by truck. Secure all moving parts in position so as to prevent any damage during shipment.

## 3.2 Thread sealant and thread locker

### 3.3.1 Thread sealant:

Optional

Loctite L55:

- Caution: do not cut thread too deep;
- Roughen thoroughly with a suitable tool;
- Always follow the Loctite instructions;
- Tighten correctly when screwing in;

or use hemp + Teflon sealing tape:

- Caution: do not cut thread too deep;
- Roughen thoroughly with a suitable tool;
- Apply sufficient hemp, i.e. at least enough so that no thread is visible;
- Coat hemp with Fermit;
- Wind 3-4 turns of Teflon tape onto the hemp (2-3 layers),
- Tighten correctly when screwing in;

Loctite 542:

- Nozzles in spray boxes, threaded nozzles also NPT;
- Caution: not for plastic/plastic nozzles and nozzles/HD nozzles with sealing rings!

Please observe:

- Hemp is heat-resistant to approx. 70 degrees
- Thread tape L55 is heat-resistant to approx. 130 degrees.
- Union nuts do not require thread sealant or thread locker.
- Sealing tape is required by some customers; this is also the case for oil scrubbers.
- In case of uncertainty, please contact Ecoclean Procurement;

### 3.3.2 Thread locker:

- Apply Loctite 243 medium-strength thread locker to all screws on units that are completely or only partially inside the machine housing. The screw connection must first be cleaned according to Loctite instructions.
- Apply Loctite 243 thread locker to the fastening screws of the high-pressure pipe clamps.
- Apply Loctite 243 thread locker to drive train connections (motors, gearboxes, cylinders, couplings, etc.) and their fastening screws.
- All screws treated with thread locker must be marked with a coloured dot for checking purposes.

Exceptions:

- Flange fittings (no thread locker)
- HP fittings (HT 1200 paste only)
- Pipe clamps, normal (no thread locker)
- Union nuts for hydraulic, pneumatic and high-pressure screw fittings (only HT 1200 paste)
- Ring clamping elements (according to manufacturer's specifications)
- All other components that are secured differently according to drawing specifications or installation instructions

### 3.3.3 Pre-assembly of pipework

- Stainless steel screws must always be used with a long sealing cone and in the heavy-duty version. The thread of union nuts must be coated with HT 1200 paste. The screws must be procured from Edeldienst Service Sulz GmbH; Gottlieb-Daimler-Str. 6; 72172 Sulz am Neckar

## 4 Cleanliness specifications

In their state 'as-received at Ecoclean's', the components must fulfil following requirements:

- Free of hard particles (chips, weld beads, etc.)
- Free of traces of draining liquids and residues of processing and cleaning agents, including pickling and passivation liquids
- No discoloration and/or tarnishing
- Pickled and/or passivated components must be cleaned so that no residue escapes from narrow gaps even after a long period of time. Narrow gaps and holes must be flushed out very thoroughly. Threaded inserts should only be fitted later as this would otherwise extend the cleaning time significantly.

## 5 Packaging/transport

Packaging must be designed so that the component properties are not altered during transport/handling. In particular, contamination and scratching of surfaces as well as other potential damage in transit must be avoided.

All components must be marked with the material number, order number and order item number. The required labels may not adhere permanently and must be easily removable.