

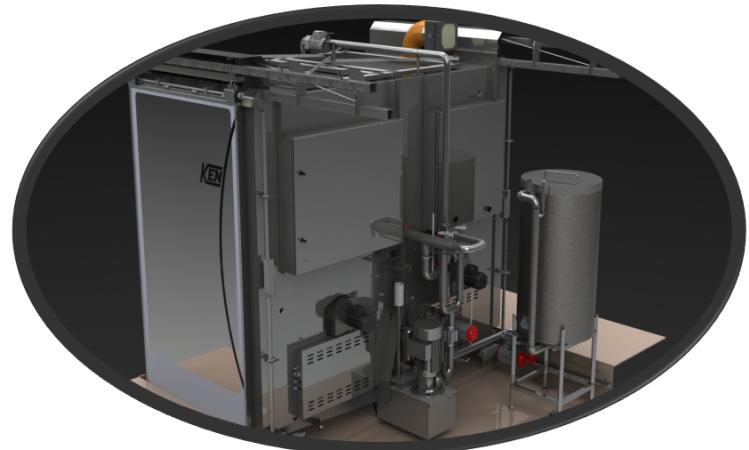
Washing of Carts, Instruments, Trolleys

- KEN have successfully been in the market since early 40's
- In 2010 KEN presented the new large scale cleaning, disinfecting and drying system CWD 5000
- CWD 5000 can be used for a vast number of articles needing exceptional cleaning and disinfection.



CWD 5000: General Information

- Meets all relevant standards, incl. ISO 158831, 2, 5, 6 and 7
- All stainless steel which is in contact with the process is AISI 316 L (acid proof)
- Loading on floor level; pit depth only 150 mm
- Compact size: hwxwd: 2660 x 2447 x 2650 mm
- Washing area: hwxwd: 1930 x 1040 x 2182 mm
- Standard with tempered glass doors
- Lowest Cost of Ownership in the market!



KEN CWD 5000

Low total investment/installation cost!

- ***Very compact***
- ***Energy optimized drying***

Low operating costs!

- ***Lowest water consumption in the market***
- ***Efficient spread of water***
- ***Intelligent pressure***
- ***Automatic self cleaning***
- ***No risk of cross contamination***
- ***Guaranteed high level of hygiene***

Great flexibility

- ***Many programmes***
- ***Many programme design possibilities***



KEN CWD 5000 – Unique drying

Energy Optimized drying

Drying by means of a “Closed Air Flow System”.

No fresh air is brought into the chamber and no hot humid air is being exhausted.

2 valves on top of machine – for over pressure and under pressure pressurization

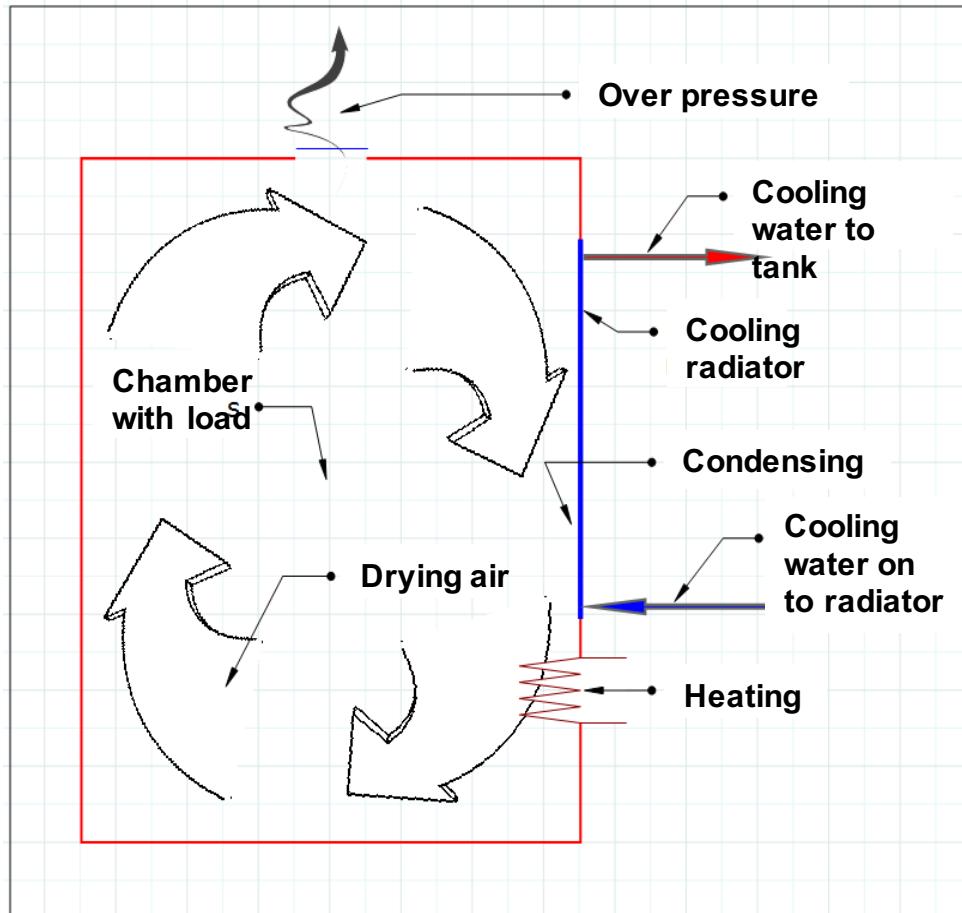
The under pressure valve uses a very small HEPA filter

The Closed Air System offers;

- ***Costs for ventilation is very low as discharge is app. 10m³/h with air gab and no fresh air supply.***
- ***Very low service costs for a very small HEPA filter (20*20 cm)***

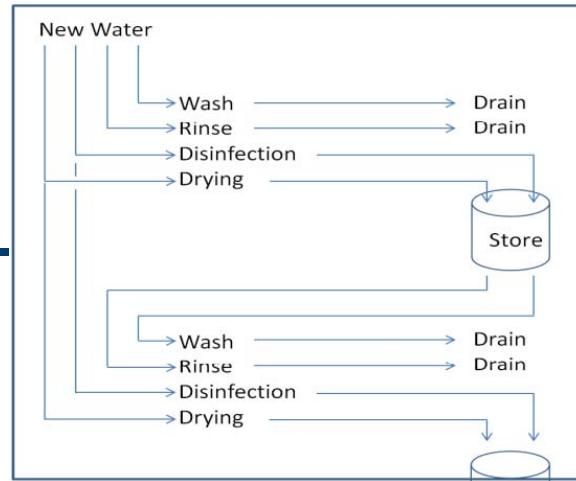
KEN CWD 5000 – Unique Drying

- New energy-saving drying system based on a Closed Air flow System
 - No air supply necessary – cost saving!
- Hot and wet air is circulated in the machine with ventilators and is cooled down by passing a condenser
- By cooling down humidity is condensed and is running out of the system
- Condenser is connected to cold deionized water
- Water coming out of the closed air flow system, has a temperature of 60 - 70° C (energy recovery)
- This hot water is pumped into the storage tank to be used during next washing process



KEN CWD 5000 – water consumption

***The lowest water consumption in the market
– by far!***



Possibility to reuse disinfection water for washing

Possibility to reuse cooling water from drying for final rinse

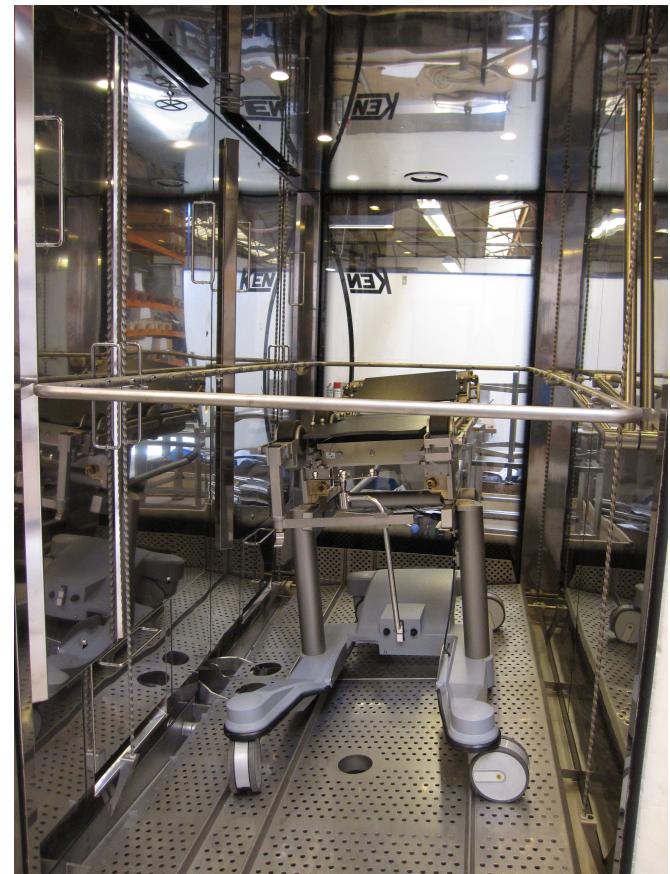
Double use of water saves time for preheating and saves the cost for RO-water

Only reuse of water which is not / will not be contaminated

The upper and lower washing point of the washing frame can be defined to wash where goods is located.

CWD 5000: Unique Washing System

- Washing frame with fixed spray nozzles.
- Automatic chemical dosing system with flow control
- Makes washing from all four sides possible
- Position of washing frame can be individually programmed for every program.
- Both thermal and chemical disinfection can be done in the CWD 5000.



KEN CWD 5000 – pressure control

Intelligent pressure



The pressure in the nozzles can be individually adjusted in all program phases, and individually in the washing frame as well as the trolleys – a total of 18 different pressure levels

The pressure in the trolleys and the washing frame is individually programmed according to type of load and design of programme

The pressure is controlled by pressure transducers that regulates the pump- and nozzle pressure by floating frequency regulation

KEN CWD 5000 – spread of water



Efficient spread of water

Two hydraulic couplings in the bottom will automatically connect to the trolleys. The couplings are level with the floor when not in use.

A simple "pilot jet, act as guaranty that the trolleys are connected correctly thus the pressure in the trolleys nozzles is ensured.

All this leads to;

Water consumption – examples :

- ▷ Rinse. Approx. 75 liters / no reuse
- ▷ Wash. Approx. 75 liters / no reuse
- ▷ Disinfection. Approx. 75 liters / can be reused
- ▷ Drying. Approx. 50 liters / can be reused
- ▷ Cooling: Approx. 50 liters / can be reused

KEN CWD 5000 – Self cleaning

Minimal time consumption for self-cleaning



The machine chamber floor is elevatable in the range 0 - 45 °
0-35 °

Is primarily used during the self cleaning program
It is possible to define an own cleaning program where the machine automatically makes a cleaning and disinfection.

The cleaning is also made under the floorboards without heavy lifting or special procedure before starting the program.

The program can be configured with the same parameters as any other program

KEN CWD 5000 - Safety

No risk of cross contamination

Ao survillance of storage tank

Temperature controlled storage tank

Time controlled storage of water in tank

The machine is fully drainable.

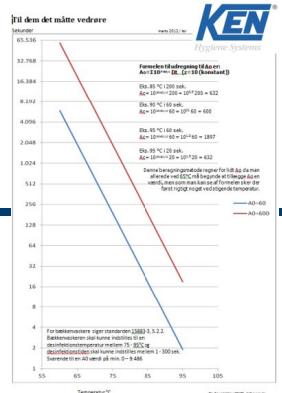
Selection made through programming

Total Drainage made with vacuum, (vacuum cleaner principle).

The machine has no "Dead Legs"

All pipes and surfaces have slope towards the drain or drainage points





KEN CWD 5000 - Hygiene

Guaranteed high level of hygiene

Type of desinfection can be programmed to follow a predetermined Ao or an Temp/Time setting

Ao can be set between 60 - 9999

Wash from all angles warrants high hygiene

The washing frame is designed to ensure wash from four sides

Specially designed spindles moves the frame up- and downwards

The design of the spindles is very open and ensures a high level of hygiene .

KEN CWD 5000



Guaranteed high level of hygiene

All nozzles are "fixed" to ensure the type approval is maintained.

A nozzle that can be adjusted or turned, dismounted or changed jeopardizes the type approval – change in spread.

CWD 5000 is delivered with min. 3 chemical dosing pumps.

Time or temperature of the dosing of the chemical can be selected during programming.

KEN CWD 5000



Guaranteed high level of hygiene

Chemical residues in the final rinse can be controlled (0-1000uS)

If purity of the water is not achieved according to preset value, the final rinse is repeated followed by a new measurement.

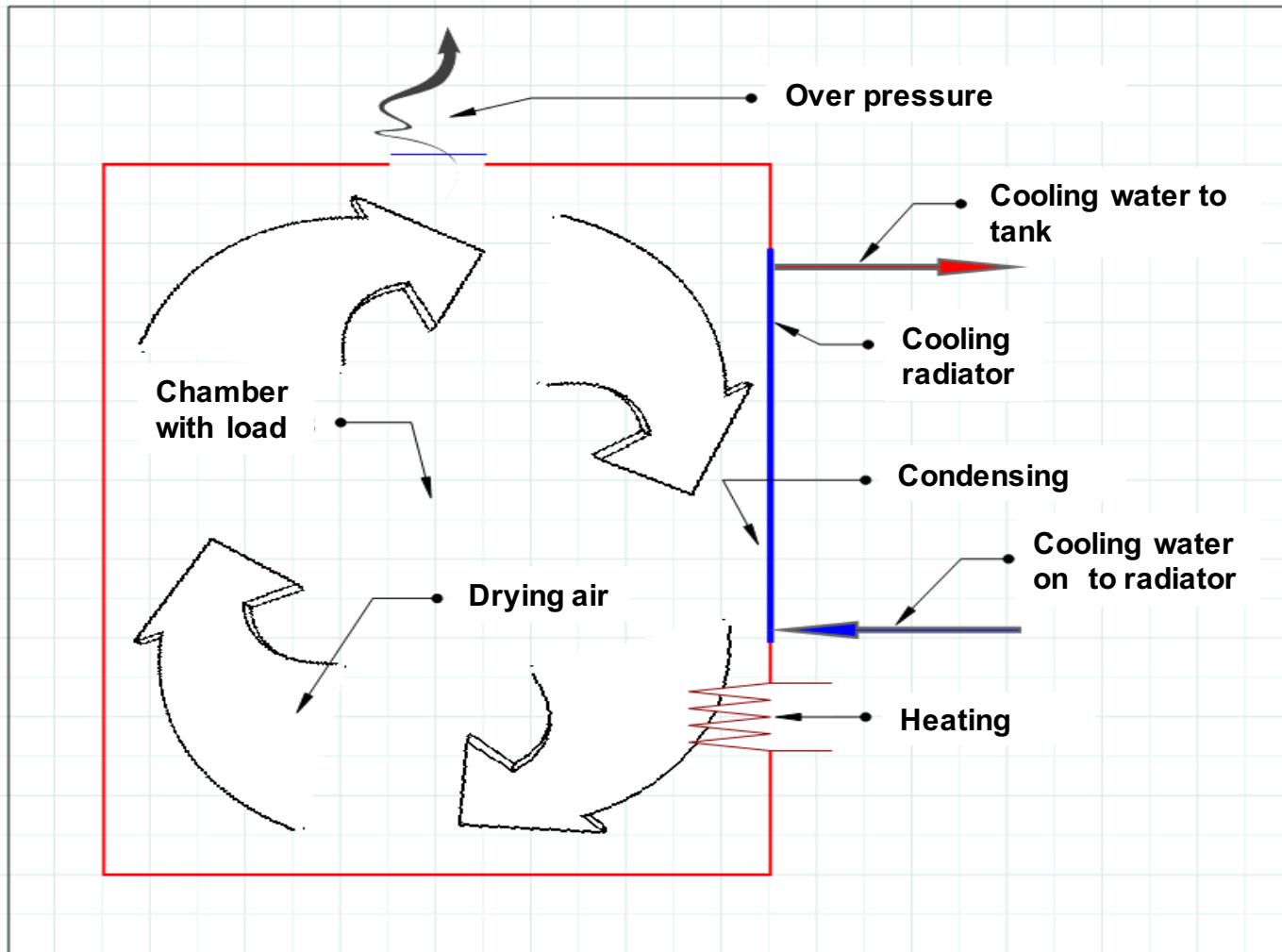
This control can be made 1-9 times, and if purity of the water is not achieved an alarm will appear

Adjustable floor 0 – 5°

Used to ensure water runs effectively of the goods

Can be programmed freely 0-5 °

KEN CWD 5000– Drying and Cooling



KEN CWD 5000

Multiple programmes

CWD5000 has min. 18 programme "spaces"

All programmes can be made active or inactive

Active: can be actively used and selected from the userpanel

Inactive: cannot be used or selected – but can be made active

For example in connection with validation/service

Many design possibilities

Each programme can have 9 programphases

In each programphase you can freely choose between 5 phasetypes

1. Wash
2. Rinse
3. Disinfection
4. Drying
5. Cooling

Name of phase can be changed



CWD 5000: Washing program

Standard washing program (example)

1. Pre-rinse with cold water without chemicals
2. Washing with 50° C hot water with chemicals (from storage tank)
3. Rinse with hot water from storage tank without chemicals
4. Thermal disinfection process with 85° C hot water (ionized) without chemicals or chemical disinfection with 55° C hot water
5. Drying process with 70 - 80° C hot air

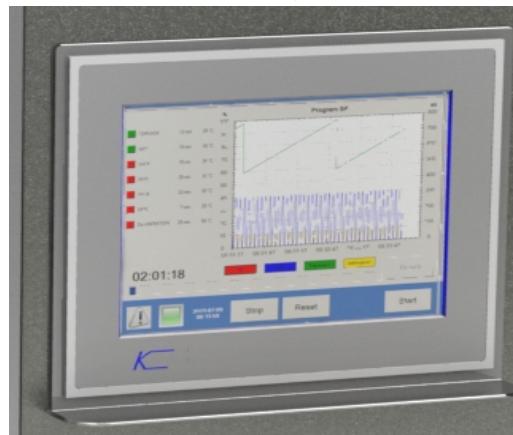


Water consumption: 150 liter

Process time: 50 – 60 minutes (depending on water temperatures)

CWD 5000: Controller

- Standard Beckhoff controller with open program structure
- Standard with 9 programs; can be individually adjusted by trained technician
- Easy operation with graphic display 12"
- Displays program steps, target and actual values, temperature, batch number and error messages
- Thermal disinfection controlled by A° value (600). A° 3000 can be reached.
- Documentation of the various parameters is guaranteed for all charges
- All parameters are double checked by 2 independent controllers



CWD 5000: The Cost saving solution

- Energy recovering system
- Minimized water consumption – only 75 litres / program step
- Storage tank of 200 litre for reusing of heated cooling water and hot water from disinfection process.
- Storage tank is insulated and temperature controlled by two PT 100 sensors
- Minimized energy consumption for heating
- Minimized chemical consumption
- Minimized costs for ventilation of the room

CWD 5000: Other USP

- With inclining floor (up to 45°)
- Self cleaning program
- One way filter catches smallest particles
- Energy saving interior lights
- Heat and noise insulated glass doors
- Possibility for XML protocol for traceability
- Noise level at less 60 dB



KEN CWD 5000 – News

Frequency controlled pumps

“Soft start-up” – gentle to the goods

Reduced water consumption (-25%)

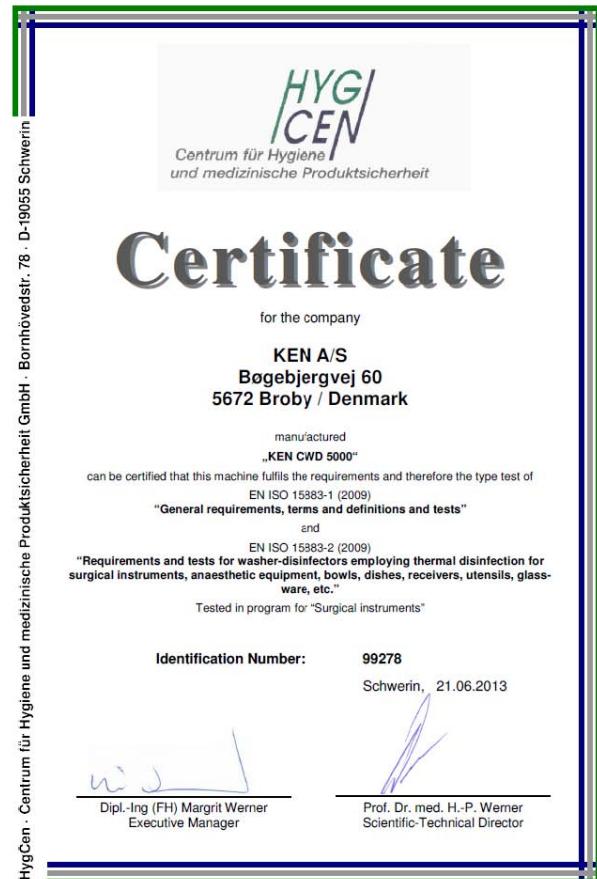
From standard 75 litre to 55 litre

Short heating-up

Less consumption of detergents

Low sound level

KEN CWD 5000 – The right Energy solution



KEN CWD 5000/L

KEN CWD 5000



Useable washing area: D = 2420mm, W = 1040mm, H = 1930mm

KEN CWD 5000-L



Useable washing area : D = 2840mm, W = 1290mm, H = 1930mm