

DS 500 DRS

Surgical instruments washer disinfectors



DS 500 DRS is an under counter washer disinfectors designed for the cleaning, **thermal disinfection** and **forced hot air drying** of surgical instruments, dental instruments and laboratory glassware.

This unit has 2 injection connections for washing and drying allowing the use of upper, lower and dual injection wash carts with up to 4 loading levels.

The upper level has telescopic bearing rails enabling the use of specific upper wash carts. The drop-down door provides a loading platform for lower and dual injection wash carts for a convenient loading and unloading job.

The electronic programmable microprocessor is capable of storing up to 40 programs: 20 standard programs and 20 additional customizable cycles (password protected) so customers can configure dedicated programs for their independent needs. The user can customize any parameter needed to a wash cycle.

General description

Dimensions

External: WxDxH
900mm x 630mm x 850mm
35.43" x 24.80" x 33.46"

Chamber: WxDxH
555mm x 500mm x 670mm
21.85" x 19.68" x 26.38"

Door passage: WxH
540mm x 540mm
21.26" x 21.26"

Standard compliant

Steelco DS 500 DRS range of washer disinfectors is designed to comply with the European EN ISO 15883 and is a medical devices CE classified (Community Rule 93/42/CEE)

Water consumption

12 l (3.1 gal.) per chamber fill

Heat loss

280 kcal/h (1'111 Btu/h)

Sound level

Washing: 56,3 dB

Drying: 57,8 dB

Standard features stainless steel door version

Water softener (this configuration defines the DS 500 DRSD version)

- Softens incoming hot and cold water
- Programmable automatic regeneration with salt bag and alarm for low level of salt

Hinged dropdown door

- Stainless steel door frame, stainless steel AISI 316L (DIN 1.4404) washing chamber side, stainless steel AISI 304 external side.
- The door acts as a loading platform for lower and dual injection wash carts for a convenient loading and unloading job
- Fully insulated to reduce heat loss and noise

Fully extendable load bearing arms

- The upper level has fully extendable telescopic bearing rails enabling the use of specific upper wash carts

Washing system

- Two rotary spray arms, one at the bottom and one at the top of the chamber
- Spray arms made of AISI 316L stainless steel (DIN 1.4404)
- Easy disassembling washing arms for cleaning and maintenance
- Up to three more washing arms in the available wash carts

Direct injection system

- Up to two wash chamber connections for injection washing basket

Circulation pump

- Pump flow rate 270 l/min (30,64 gal.US/min)
- Pump power 550 W

Filter system

- Three stage filtration system helps protect recirculation and drain pumps from debris
- Filters can be easily removed for cleaning
- Water filtration on inlet water solenoid valves

Steam condenser

- Removes steam vapours at a set temperature programmable from: 0-93 °C (32 °F- 200 °F)

Chemical dosing

- Two peristaltic pumps provide precise addition of liquid chemical agents
- Vacuum switch for checking chemical presence

Chemical storage

- The side cabinet offers a large storage to allocate up to two 5 lt. (1.32 Gal US) chemical containers

Electric heater

- 5.1 kW electric heating elements providing heating up to 93°C (200°F)
- Electric thermostat
- Two independent PT1000 temperature probes

Forced hot air-drying system

- Air circulation in the chamber, through the chamber washing arms and through the washing carts injections
- ISO coarse pre-filter
- 2 kW heating elements provide up to 140 °C (184°F) air
- Blower flow rate up to 116 m³/h (4.096 ft³/h), 450 W of power

Microprocessor control system

- Possibility of up to 40 storable programs 20 standard programs, 20 user definable programs
- Password protected programming

System control panel



- Digit pressure function buttons
- 32 Character LCD display

System monitoring

- Audible and visual alarms provide quality control for each wash cycle
- Pressure sensors to control chamber water level and to prevent water overflow
- RS 232 port for printer connection to monitor and validate washing cycle

- USB port for historical cycle data, machine parameters and washing programs download. Allows easy software upgrades

Drain pump

- Independently operated drain pump for an efficient pumping out wastewater

Independent monitoring system

Standard features variations for full glass door version only

Hinged dropdown door

- Stainless steel door frame, stainless steel AISI 316L (DIN 1.4404) washing chamber side, high visibility HST tempered full glass door external side
- The door acts as a loading platform for lower and dual injection wash carts for a convenient loading and unloading job

System control panel



- Soft touch control system on glass panel
- Graphic color LCD display

Programming and cycle operation

The user can create customized programs to meet specific needs. Listed are various phases that can be programmed and repeated into various combinations.

- **Pre-Wash** – User can define the number of pre-washes, length of pre-washes and select water type
- **Wash** – User can define the length of the wash cycle, detergent dosing and dosing temperature, temperature of the water and select between cold, hot and DI water or mix two sources
- **Chamber flush during drain** – User can define flush time execution during the draining of the chamber

- **Neutralization** – User can select the length of the rinse, the presence and the amount of neutralizer, temperature of the water and select between cold, hot and DI water or mix two sources
- **Thermal disinfection** – User can define the length of the DI rinse, temperature of the water up to 93°C (200°F) presence and amount of rinse aid
- **Drying** – Programmable between low speed and high speed drying and up to a temperature of 140°C (284°F). Operation time of the steam condenser

Safety features

Door locking

- Prevents interference with wash cycle once the machine is in operation

Drop down door

- Eliminates the safety hazard associated with guillotine type doors
- Counterbalanced for safe operation

Construction

Washing chamber

- Constructed using AISI 316L BA Ra < 0.8 µm (Ra < 30 µin)
- Designed and constructed with smooth edges and corners removing areas where dirt can accumulate and allow bacterial growth

Exterior

- AISI 304 Scotch Brite finish Ra < 1.2 µm (Ra < 40 µin)

Components

- Constructed using high quality stainless steel and other materials which are resistant against the effects of aggressive detergents

Insulation

- High performance melamine insulation guards against heat loss and reduces noise level

Option features

8000 W

- Extra heating elements in the wash chamber
- Raises total power to 8 kW to reduce cycle time through shorter heating time in the wash chamber
- Only available for 3 phases electrical connection

Light inside the chamber

- Only available for full glass door version

Device main switch

ON-OFF control panel switch

Drain cooling system, controlled with solenoid valve

- Wastewater is cooled down to 60°C (140°F)

Built-in pressure booster pump for demineralized water

- Allow the machine connection to non-pressure demineralized water tank supply

Steam condenser air exhaust on frontal side

Boiler 18Lt for demineralized water pre-heating

- Pre-heats DI water to a programmed temperature 0-93°C (32-200°F). Active when washing chamber heating elements are off
- Water is pushed by DI water pressure (no pump)
- Requires 600mm (23.62") height stand or fully dedicated side cabinet (machine is built as a single 900mm (35.43") wide unit

HEPA filtration

- HEPA filter H14 grade with global efficiency M.P.P.S. 99,995% (EN 1822)

Additional dosing pump

- Up to two extra peristaltic pumps for chemical dosing to meet specific wash requirements (fourth dosing pump must be placed externally)
- Fourth peristaltic pump for chemical dosing can be added into an accessory side cabinet

Flowmeters

- For additional chemical dosing control

Analogic pressure transducer

- To monitor water pressure values in the washing circuit

Conductivity sensor

- Accurate measuring of the conductivity value during the final rinse
- Requires side cabinet

Pressure switch on washing circuit

Printer

- For validating washing phases with detailed information
- ST2 printer integrated on the front panel

Kit gateway for Ethernet connection

- For compatibility with traceability software SteelcoData Live or Pro

Stainless steel stand

- Different configurations available

Water demineralization system for DI water supply

- Equipped with priming, pressure relief valve and conductivity system
- Additional cabinet is needed
- 25 Lt resins refill bag available

Floor anchoring brackets

- Anchors washer to floor

Racks and carts

A large variety of basket trays, injector racks, net baskets for: surgical instruments, MIS instruments, anaesthesia instruments, ophthalmology instruments, OP rubber shoes, containers, baby bottles...

Chemical products

A large selection of cleaning chemicals is available

Validation support documentation and services

Installation Qualification (IQ), Operational Qualification (OQ) and Performance Qualification (PQ) testing available upon request

Required utilities

For connection details please refer to installation drawing of the selected model/version.

Hot water, Cold Water, DI Water

Drain Connection

Electrical requirements

- Electricity (5.6 kW and 8.0 kW models)
- 400V/3~+N/50Hz,
- 208V/3~+N/60Hz,
- 480V/3~+N/60Hz
- Other electrical connections are available to match electrical requirements of installation site