

Washers, disinfectors and automated systems for animal cages, feeding bottles and fish tanks



Steelco
devoted to hygiene



"For the Environmentally conscious"



Washers, disinfectors and automated systems for animal cages, feeding bottles and fish tanks

Steelco washers for lifescience applications are
at the forefront of knowledge and research.

Our comprehensive range includes:

Small washers

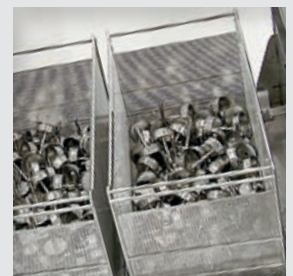
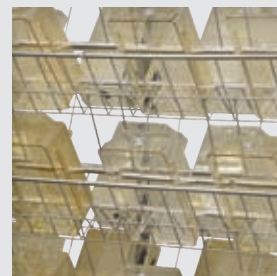
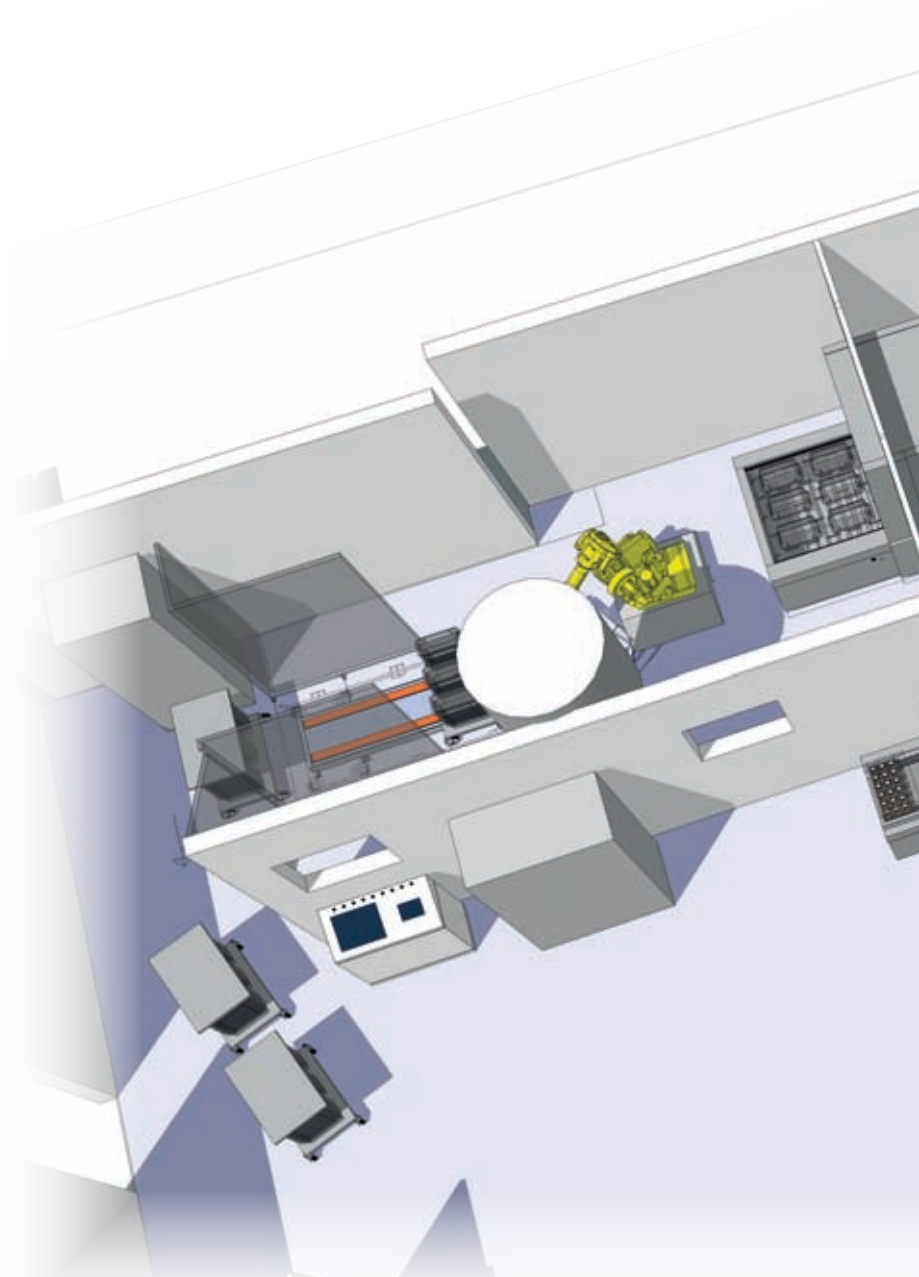
Large washers

Feeding bottle washing systems

Bedding systems

Environment control

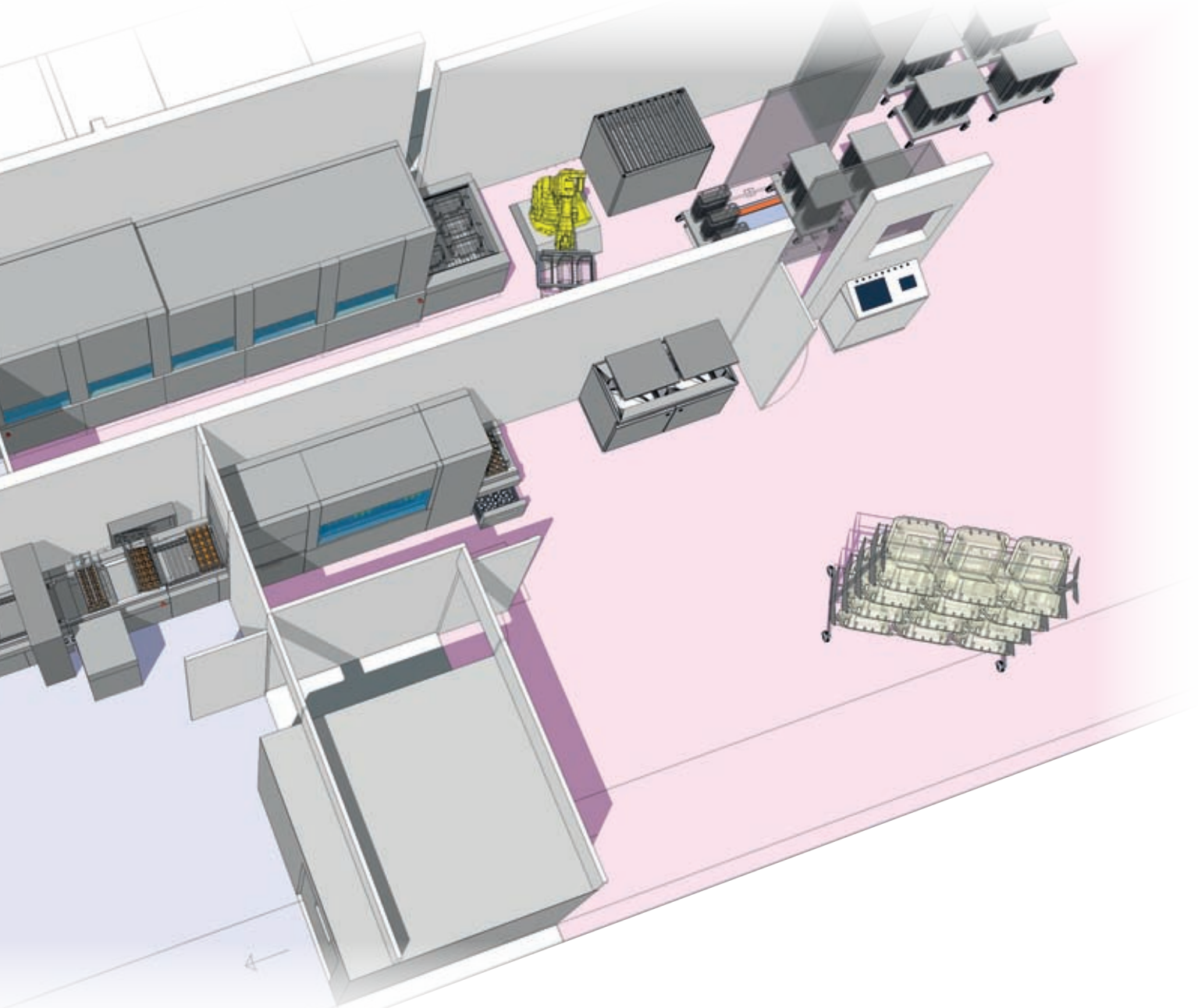
Steelco equipment epitomizes the essence
of ergonomics, safety, productivity, automation,
high throughput, usability, reliability, traceability,
allergene protection, operator safety, quality
design, space - time - water - energy saving
capabilities.





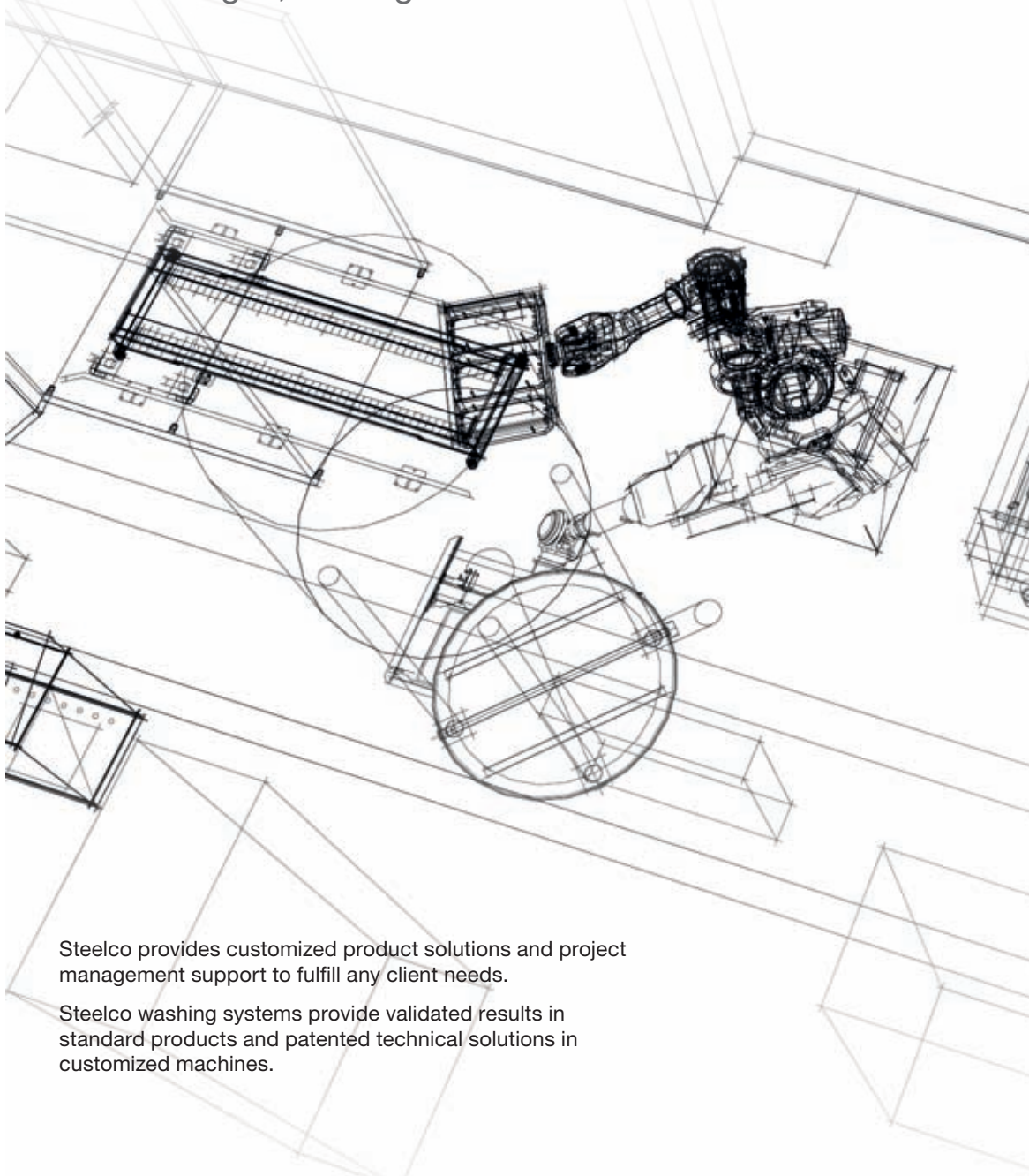
“For the Environmentally conscious”

Constant improvements and innovations lead **Steelco** products to run economically and reach a higher level of environment compatibility.

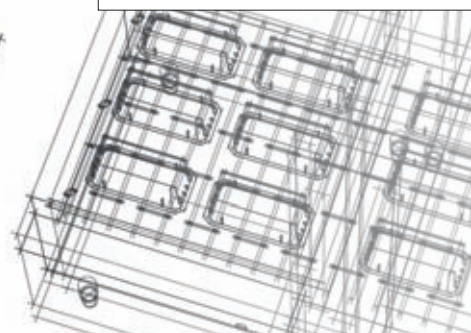




Washers, disinfectors and automated systems for animal cages, feeding bottles and fish tanks



Cages and Racks washers



Ultrasonic cleaning systems



Steelco provides customized product solutions and project management support to fulfill any client needs.

Steelco washing systems provide validated results in standard products and patented technical solutions in customized machines.

dedicated to



animal cages - fish tanks



animal cages - fish tanks
lids, components and
other smallware



feeding bottles



trolleys/pallets

operating mode



fully automatic



semi automatic



manual

machine main functions



washing



thermal/chemical
disinfection



thermodisinfection

Legend of the main machine functions
(symbols used)



Cage and feeding bottle washers

small washers

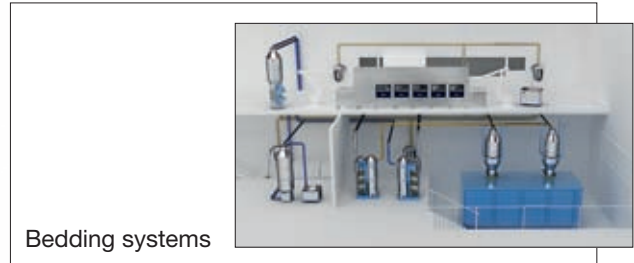


Automated tunnel washer

large washers



Bedding disposal and dispensing



Bedding systems

bedding systems

Feeding bottle washing, decapping, filling and recapping systems



Automated feeding bottle washing system



feeding bottle washers

Air showers



Safe lock doors



Decontamination locks



environment control



decontamination



pass through safe barrier



filling



filling



ultrasonic cleaning



de- capping



re- capping



hot air drying



emptying



emptying

available upgrades



productive or functionality upgrade with modules



productive upgrade with robotized or automated loading - unloading



AC 1200 - AC 1300 - AC 1400

animal feeding bottle, animal and fish cage washers

Steelco CBW equipment cleans and disinfects all types of feeding bottles, animal and fish cages.

Steelco CBW equipment assures outstanding washing and sanitization results.

Final rinse temperature is guaranteed to reach 85°C/185°F **through an independent rinsing circuit.**



AC 1400



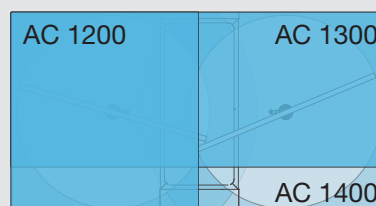
AC 1300



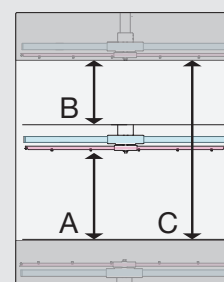
AC 1200

Washing chamber capacity

	AC 1200			AC 1300			AC 1400		
Chamber dimensions	W	D	H	W	D	H	W	D	H
mm	765	900	1130	1550	730	1130	1550	900	1130
inches	30.12	35.43	44.49	61.02	28.74	44.49	61.02	35.43	44.49
Useful heights	A	B	C	A	B	C	A	B	C
mm	345	345	790	345	345	790	345	345	790
inches	13.58	13.58	31.10	13.58	13.58	31.10	13.58	13.58	31.10



Washing chambers top view comparison



AC 1200 - AC 1300 - AC 1400 - Key features

- Drop down / vertical sliding loading door.
Pass through configuration available on AC 1400.
 - **Chamber and doors entirely made in stainless steel AISI 316L**, external body made in stainless steel AISI 304.
 - Rotating washing and rising arms positioned on the top, middle and bottom levels of the washing chamber.
 - Independent rinsing circuit.
- Multi stage filtering system.
 - Self-cleaning filter for the recirculation of the washing water.
 - Washing pump pressure switch.
 - Disinfection by rinsing at 85°C/185°F.
 - Tank and sump temperature check.
 - Equipped with 1 dosing pump of chemical product, controlled by a micro-processor which allows to modify the required product quantity for each type of cycle.
- Check of the chemical product quantity through a minimum level alarm.
 - RS 232 port for printer connection.

Optional features

- 2nd Chemical dosing pump
 - Flow meter for the checking and the validation of chemical product quantity
 - Knock down configuration
- Steam or hybrid heating
 - Double door pass through version (available for AC1400 only)
- Exhaust fan
 - Integrated printer ST2
 - Drain pump

Separated washing and rinsing circuits

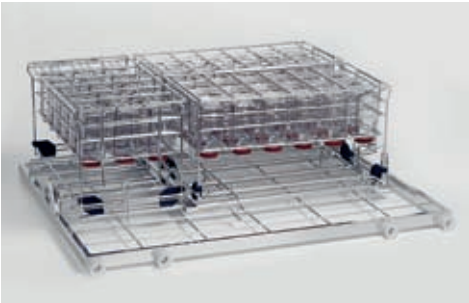


Easy access with sliding electric control panel.



Detergent cabinet with capacity up to two 10 lt. / 2.64 US gal containers.

Feeding bottle washing carts

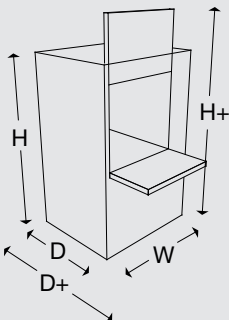


Detail of a bottle dedicated spray jets



Self-cleaning filter for the recirculation of the washing water.

Washers dimensions



		W	D	H	D+	H+
AC 1200	mm	1200	1000	1900	1475	2265
	inches	47.24	39.37	74.80	58.07	87.17
AC 1300	mm	1760	830	1900	1305	2265
	inches	69.29	32.68	74.80	51.38	87.17
AC 1400	mm	1970	1000	1900	1475	2265
	inches	77.56	39.37	74.80	58.07	87.17

Productivity per cycle*

Type of cage	W	L	H	AC 1200	AC 1300	AC 1400
TP 1145	369	156	132	20	40	50
TP GM500	375	197	130	16	30	40
AT Type 1	396	165	176	20	40	50
AT type 2	362	213	185	12	30	30
*with dedicated inserts						
Bottles				AC 1200	AC 1300	AC 1400
18 bottle positions crates				108	72	108
*with dedicated washing carts						



AC 7000

Cage and rack washer



The AC7000 series cage and rack washer is a heavy duty, large capacity, hydro-spray washer specifically designed to support the throughput of medium and large size facilities.

The machine is standard equipped with two pre-heating water tanks and two dosage units resulting in great flexibility in cycle development.

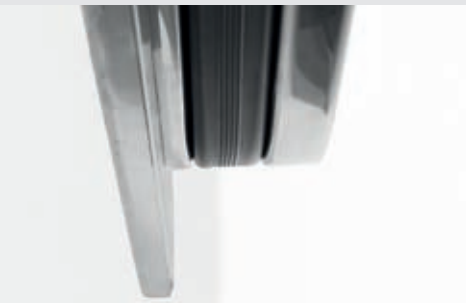


Models

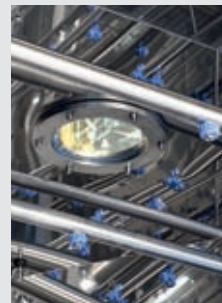
AC 7000/2 2076mm (81.73") chamber depth

AC 7000/3 3000mm (118.11") chamber depth

Chamber sealing



Chamber illumination



AC 7000 access doors are equipped with integral inflatable gaskets in order to provide a sealed chamber for SPF barrier application as well as for the decontamination and sanitization cycles.

AC 7000 - Key features



"For the Environmentally conscious"

Focused on the environment, AC 7000 washers are manufactured with energy saving systems granting the reduction of energy and water consumption.

- Operator multi language touch screen control with auto-diagnostic checking that constantly monitors and displays current cycles status and alarms, allows to optimize the washing process and to personalize programs on board of the machines. Up to 65 washing and rinsing programs available: 5 service programmes, - 10 memorized programmes and 50 free programmes.
- AC 7000 is available in single or double interlocked hinged door made of stainless steel AISI 316L with glass inspection window or in the smart full glass door version granting easy visual inspection throughout the entire process. Door orientation can be chosen both right or left hand.
- Washing chamber and filter made of s.s. AISI 316L, external body of s.s. AISI 304.
- It can be manufactured following GMP requirements including FAT/SAT/IQ/OQ protocols.
- Washing pump pressure control.
- Flush self-cleaning filter for the re-circulation of the washing water.
- Double chemical control dosing system.
- Data storage system and process control.

Optional

- Up to 6 chemical dosing pumps
- Steam extractor
- Manifold system for trolley docking with spray arms
- Drying system
- HEPA H14 air filter
- Chemical fogging facility
- Thermal disinfection at 90°C.
- VHP - Hydrogen peroxide vapour facility
- Steam sanitization
- Integrated printer
- Full glass door



large washers

Spraying nozzles



Detail of standard hybrid plastic/stainless steel nozzles and optional full stainless steel nozzles.

Oscillating spray arms



Multiple horizontally mounted oscillating arms equipped with spraying nozzles.

Wash chamber floor



The washing chamber floor consists of heavy-duty stainless steel grating. Grating sections are easily removable for cleaning and maintenance.



AC7000 - Key features

VHP

The AC7000 air-tight chamber allows the unit to be used not only to wash but also as a:

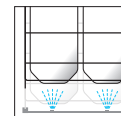
- Hydrogen Peroxide/Chlorine Dioxide decontamination pass-through chamber
- Chemical fogging chamber when fitted with a circuit of atomizer spraying disinfectant and compressed air within the chamber
- Thermal disinfection (clean steam) chamber



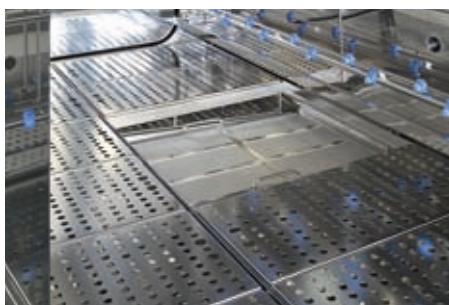
External generator connection

Manifold system

Automatic manifold for trolleys equipped with spray arms or injection systems



Water filtration

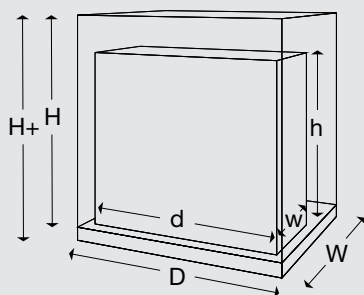


The AC 7000 is equipped with a 3 levels multi filtration system. The gross and fine filter placed in the bottom of the washing chamber remove particles bigger than 2mm and 0.9mm (0,08" and 0.035").



The extra fine filter, placed in the inlet of the wash tank filling, is a back flush self cleaning filter for the re-circulating washing water that stops particles bigger than 0,5mm (0.02").

Washers dimensions



		external dimensions				useful chamber dimensions		
		W	D	H	H+	w	d	h
AC 7000/2	mm	2200	2314	2440	2590	1100	2076	2150
	inches	86.61	91.10	96.06	101.97	43.30	81.73	84.65
AC 7000/3	mm	2200	3240	2440	2590	1100	3000	2150
	inches	86.61	127.56	96.06	101.97	43.30	118.11	84.65
AC 7000 NHP	mm	2350	2488	2720	2920	1200	2240	2350
	inches	92.52	97.95	107.08	114.96	47.24	88.19	92.52



AC 7000 NHP

Cage and rack washer

The **AC 7000 NHP** series cage and rack washer is a heavy duty, large capacity, hydro-spray washer specifically designed to support the throughput of medium and large size facilities with large animal cages and racks.

The machine is equipped as standard with three pre heating water tanks and two dosage unit resulting in great cycle settings flexibility.



large washers

- Operator multi language touch screen control with auto-diagnostic checking that constantly monitors and displays current cycles status and alarms, allow to optimize the washing process and to personalize programs on board of the machines. Up to 65 washing and rinsing programs available: 5 service programmes, - 10 memorized programmes and 50 free programmes.
- AC 7000 NHP is available in single or double interlocked hinged door made of stainless steel AISI 316L with glass inspection window. Door orientation can be chosen both right or left hand.
- Washing chamber and filter made of s.s. AISI 316L, external body of s.s. AISI 304.
- It can be manufactured following GMP requirements including FAT/SAT/IQ/OQ protocols.
- Washing pump pressure control.
- Flush self-cleaning filter for the re-circulation of the washing water.
- Double chemical control dosing system.
- Data storage system and process control.

Optional

- up to 6 chemical dosing pumps
- HEPA H14 air filter
- Chemical fogging facility
- Integrated printer
- Manifold system for trolley docking with spray arms
- VHP - Hydrogen peroxide vapour facility
- Steam sanitization

Inspection window



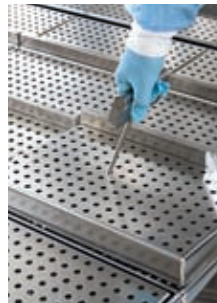
The inspection window in the inner side of the door is protected from the load

Washing system



Multiple horizontally and vertically mounted oscillating arms equipped with stainless steel spraying nozzles.

Loading grid



The loading floor is made of AISI 316L stainless steel and composed by easily lift sections to reach the bottom of the washing chamber for cleaning and filter maintenance. Adjustable rail guides to match the carts and rack castors lay out.





AC 8000

Cage and rack washer



Steelco cage and rack washers are specifically designed to support the throughput of medium and large size facilities.

This sliding door washer is standard equipped with two pre-heating water tanks and two dosage units resulting in great flexibility in cycle development.



Models

AC 8000/2 2250mm (88.58") chamber depth

AC 8000/3 3000mm (118.11") chamber depth



Lifting platform

The need for a deep pit has always been a strong constraint for the installation of a rack washer. So far it has been a problem especially in refurbishment projects. **Steelco lifting platform** assures the **same ergonomics and operator safety** as a pit installed rack washer but... **without the need of a pit.**

Spraying nozzles





"For the Environmentally conscious"

Focused on the environment, AC 8000 washers are manufactured with energy saving systems granting the reduction of energy and water consumption.

- Operator multi language touch screen control with auto-diagnostic checking that constantly monitors and displays current cycles status and alarms, allow to optimize the washing process and to personalize programs on board of the machines. Up to 65 washing and rinsing programs available: 5 service programmes, - 10 memorized programmes and 50 free programmes.
- AC 8000 is available in single or double interlocked sliding door made of stainless steel AISI 316L with glass inspection window or in the smart full glass door version granting easy visual inspection throughout the entire process. Door orientation can be chosen both right or left hand.
- Washing chamber and filter made in s.s.
- AISI 316L, external body in s.s. AISI 304.
- Can be manufactured following GMP requirements including FAT/SAT/IQ/OQ protocols.
- Washing pump pressure control.
- Flush self-cleaning filter for the re-circulation of the washing water.
- Double chemical control dosing system.
- Data storage system and process control.

Optional

- 3rd Chemical dosing pump
- Steam extractor
- Manifold system for trolley docking with spray arms
- Up to 6 chemical dosing pumps
- Drying system
- HEPA H14 air filter
- Chemical fogging facility
- Thermal disinfection at 90°C.
- VHP - Hydrogen peroxide vapour facility
- Steam sanitization
- Integrated printer
- Full glass door





AC8000 - Key features

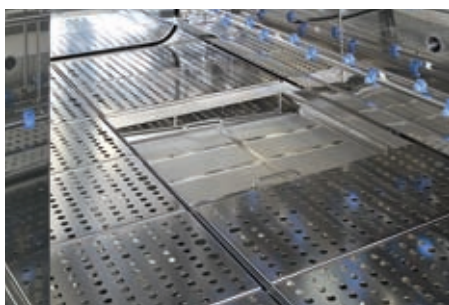
VHP

The AC8000 air-tight chamber allows the unit to be used not only to wash but also as a:

- Hydrogen Peroxide/Chlorine Dioxide decontamination pass-through chamber
- Chemical fogging chamber when fitted with a circuit of atomizer spraying disinfectant and compressed air within the chamber
- Thermal disinfection (clean steam) chamber



Water filtration

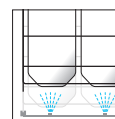


The AC 8000 is equipped with a 3 levels multi filtration system. The gross and fine filter placed in the bottom of the wash chamber remove particles bigger then 2mm and 0.9mm (0,08" and 0.035").



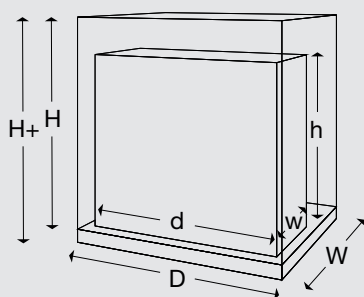
The extra fine filter, placed in the inlet of the wash tank filling, is a back flush self cleaning filter for the re-circulating wash water it stops particles bigger then 0,5mm (0.02").

Manifold system



Automatic manifold for trolleys with spray arms or injection systems

Washers dimensions



		external dimensions				washing chamber dimensions		
		W	D	H	H+	w	d	h
AC 8000/2	mm	2500	2550	2470	2650	1000	2240	2150
	inches	98.42	100.39	97.24	104.33	39.37	88.18	84.65
AC 8000/3	mm	2500	3300	2470	2650	1000	3000	2150
	inches	98.42	129.92	97.24	104.33	39.37	118.11	84.65

AC7000 and AC 8000 - Presentation racks



C1009



C762



C793



C906



large washers

	Description		W	D	H
C793	2 level rack for large size containers	mm	840	1500	1655
		inches	30.07	59.05	65.15
C864	2 level rack for large size containers	mm	840	1020	1850
		inches	30.07	40.15	72.83
C762	3 level rack for large cages with lids	mm	840	1445	1655
		inches	30.07	56.89	65.15
C1028	4 level weighted presentation rack	mm	840	1030	2050
		inches	30.07	40.55	80.71
C1009	4 level weighted presentation rack	mm	840	2000	2050
		inches	30.07	78.74	80.71

	Description		W	D	H
C865	4 level rack for large cages with lids	mm	840	1020	2000
		inches	30.07	40.16	78.74
C950	4 level rack for large cages with lids	mm	840	2120	2000
		inches	30.07	83.64	78.74
C796	5 level rack for cages with lids	mm	840	950	1935
		inches	30.07	37.40	76.18
C906	Injection rack for bottles (18 crates) automatic connection	mm	840	1460	2025
		inches	30.07	57.48	79.24
C1078	Injection rack for bottles (18 crates) manual connection	mm	840	1460	1400
		inches	30.07	57.48	55.12

Steelco AC 7000 and AC 8000 productivity per hour examples

Cage type	W	L	H	C1009	C865	C796	C762
TP 1284L	365	207	140	720	320	400	360
TP 1291H	425	266	185	560	240	300	300
TP 1290	425	266	155	560	240	300	300
TP 1500	480	385	210	400	160	200	180
TP 1145	369	156	132	960	480	500	480
TP 2000	610	435	215	320	160	200	180
TP GM500	375	197	130	800	320	400	420
TP GR900	405	355	230	400	160	200	180
TP GR1800	405	355	230	400	160	200	180

Cage type	W	L	H	C1009	C865	C796	C762
AT Type 1	396	165	176	960	400	500	480
AT type 2	362	213	185	720	320	400	360
AT type 3	443	278	198	560	240	300	300
AT type 3H	443	278	233	560	240	300	300
AD Dura Mouse	292	127	184	1200	560	600	660
AD Flex Air	300	224	147	640	320	300	360
AD Large Mouse	476	260	152	560	240	300	300
AD Rat	476	260	203	560	240	300	300
NKP M1	330	150	130	972	449	468	505

Cage type	W	L	H	C1009	C865	C796	C762
NKP M3	480	150	130	972	449	468	505
NKP MB1	450	280	130	524	224	281	281
NKP RC1	560	380	170	374	150	187	168
Isoseal Cage	390	215	190	673	299	374	337
Sealsafe 1284	365	207	140	673	299	374	337

cage bottom only, 360 seconds cycle

C865, 2 trolleys in std. chamber, productivity can be doubled.

C796 and **C762**, 2 trolleys in 3000mm (118.11") chamber, productivity can be doubled



MITO AC 3500

Automated tunnel washer

To support the growing demand of compact systems for the automatic processing of animal cages, MITO AC 3500 provides for an integrated and flexible solution for the processing of almost any type of animal cages available on the market.



AC 3500 modules

The system is composed by modules with dedicated functions:

- pre wash
- acid/alkaline wash
- rinse and final rinse
- blow down
- hot air drying (single or double size module)

Modules can be added or removed for customized solutions.

Each tunnel chamber is provided with a vertical sliding glass door for visual inspection.



Animal cages and other miscellaneous items are placed into a loading conveyor which moves through the tunnel, passing over 5 processing phases:

- 1 pre-wash
- 2 chemical wash
- 3 pre-rinse
- 4 final fresh hot water rinse
- 5 hot air drying system

AC 3500 has been developed in order to reduce water consumption. To that aim, the final rinsing water is recovered into pre-rinsing water and the pre-rinsing water into pre-washing water.

Despite the powerful action and huge water flow, the AC3500 provides a very significant reduction of use of water.

Fresh water is loaded only into a pre-heating tank to be used for the final rinse.

Control panel



A true cleaning and disinfection is obtained by proper combination of washing duration, water temperature and use of suitable detergents. Process parameters are adjustable and can be adapted to the customer's needs through the HMI control panel.

Loading conveyor



The AC 3500 is available in the 900mm (35.43") and in the wider 1100mm (43.31") belt width versions.



The system can be integrated with robotic technology for loading and unloading procedures. Robotic integration can be implemented later or on existing manual tunnel washing system. The AC 3500 is suitable for the sanitization of trays and/or cage transport pallets also.



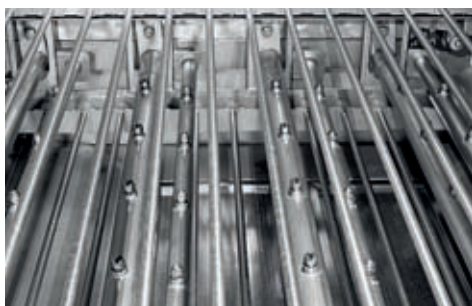
MITO AC 3500 - Key features

- **Chambers and filters made of stainless steel AISI 316L.**
- The visual inspection inside the chamber is possible at any time, thanks to the HST glass windows.
- Extremely smooth chamber surface, welded without pockets and folds assuring a perfect drain.
- AC 3500 combines high pressure and flow rate to grant outstanding washing and rinsing performances, washing up to 750 cages per hour.

Optional

- Self cleaning rinsing filter
- Monitored alkaline detergent system
- Monitored acid detergent system
- Waste separation into pre-washing tank
- Steam condenser
- Automatic tank descaling system
- Rinsing agent injection
- Exhaust fan
- pH neutralizing

Washing/rinsing chamber



Oscillating washing arms and separate rinsing circuit. Dedicated water jets for high temperature final rinsing.

Prewashing chamber



Oscillating prewashing spray jets.

Loading table



900mm (35.43") or 1100mm (43.31") belt width versions.



Hot air drying chamber



Easy access to the filter dedicated to collect cage debris on the loading table.

Module dimensions

		W	D	H
modules	mm	1350	1000	2380
900mm (35.43") belt w.	inches	53.15	39.37	93.70
tables	mm	1350	1100	975
900mm (35.43") belt w.	inches	53.15	43.31	38.38
modules	mm	1550	1000	2380
1100mm (43.31") belt w.	inches	61.02	39.37	93.70
tables	mm	1550	1100	975
1100mm (43.31") belt w.	inches	61.02	43.31	38.38

Productivity per hour

Cage type	W	L	H	900mm belt	1100mm belt
TP 1284L	365	207	140	480	720
TP 1291H	425	266	185	360	360
TP 1290	425	266	155	360	360
TP 1500	480	385	210	120	240
TP 1145	369	156	132	720	720
TP 2000	610	435	215	120	120
TP GM500	375	197	130	600	600

Cage type	W	L	H	900mm belt	1100mm belt
TP GR900	405	355	230	240	240
TP GR1800	405	355	230	240	240
AT Type 1	396	165	176	720	720
AT type 2	362	213	185	480	720
AT type 3	443	278	198	360	360
AT type 3H	443	278	233	360	360

60 seconds steps

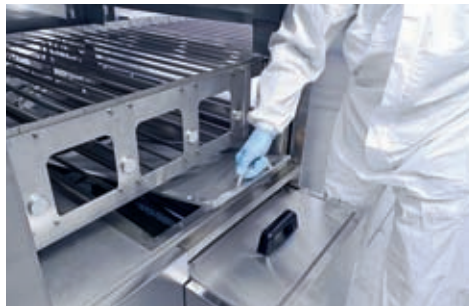
Smart water filtering system a way to increase productivity

Water filtering is one of the main issues to face when processing cages.

The amount of solid residues can easily clog the dedicated nozzles.

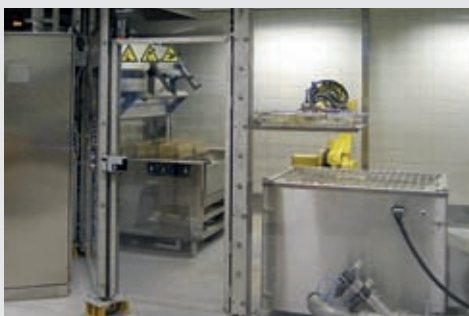
Steelco has developed a system for a fast and easy access to the filters for their maintenance.

The main filter in the prewash chamber is flushed by a conveyed water flow that maintains its surface more clean. In this way the large amount of residues is collected by a filter which is easily removable from the outside of the washer.



large washers

MITO AC 3500 - installation examples





MITO AC 3500

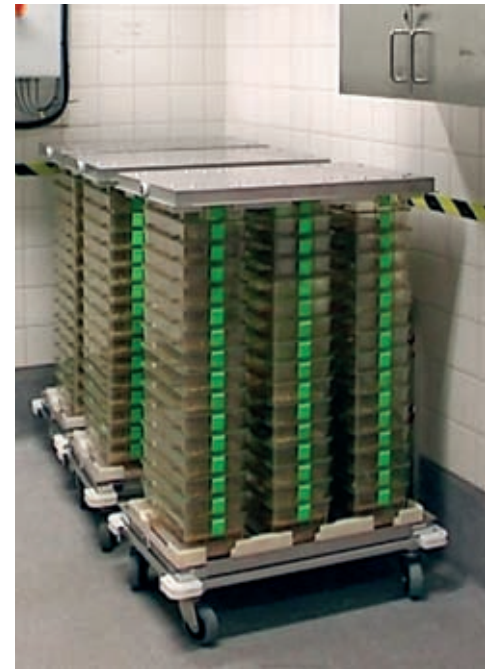
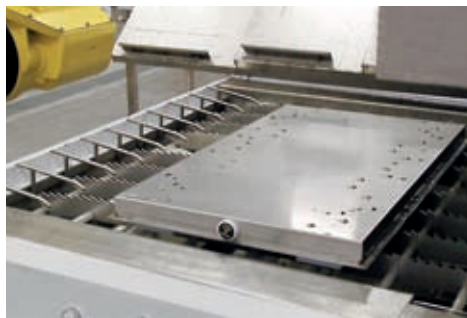
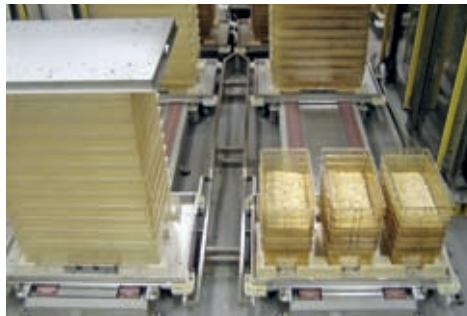
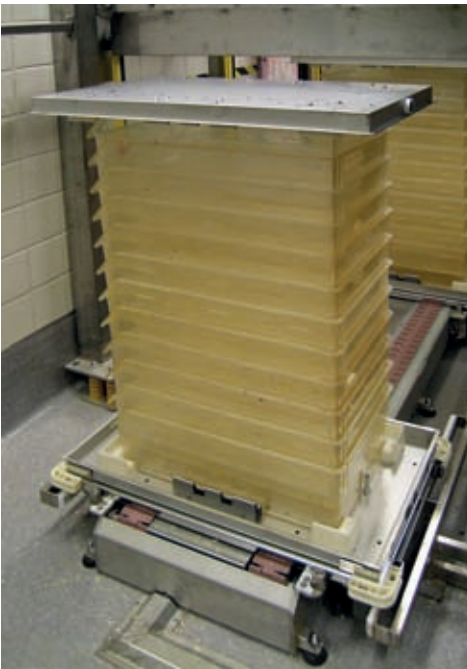
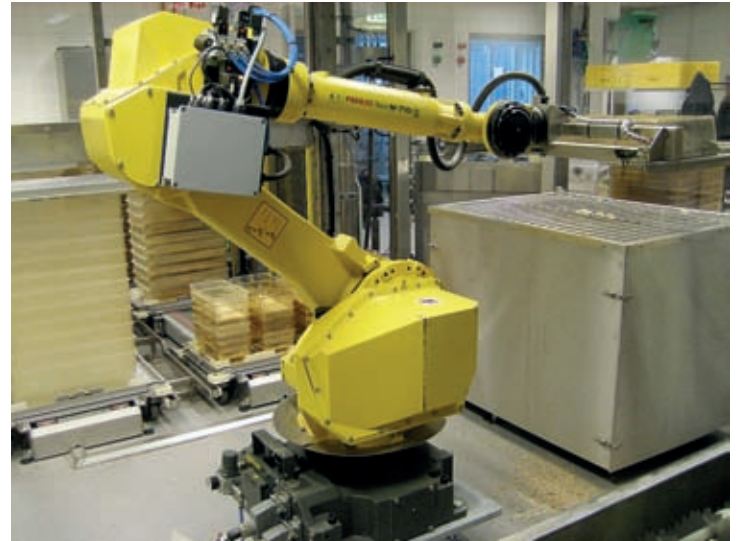
Automated loading/unloading system

Modern facilities for animal laboratory research require technological equipment in order to deal with the increasing demand for productivity. AC3500 can be provided with an automation system even in a later stage.

The automation system is characterized by:

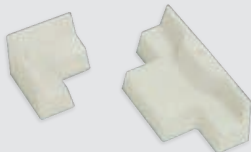
- Transport pallets for the handling of stackable cages;
- Automatic conveyors for loading and unloading stations;
- Programmed robots for the emptying and loading of the dirty cages on the tunnel washer belt as well as picking up, filling with new bedding and stacking on the cage transport pallets;
- Control station in the loading zone;

Trays and/or pallets are also placed on the machine belt. In case of integration with an automated system several HMI's are included to make the system as much friendly use as possible.



Pallet cage transport system

Plastic separators for trays allow our pallet transport solution to match with most of the cage existing on the market.



Customized solutions are available to meet the end user needs.

Steelco TeleSupport

24/7 connection to the washing central

With the tele-support software/service, a remote operator is able to verify the full functionality of the installed devices.

System access:

The access to the system of tele-support is normally done by the manufacturer, the maintainer and facility management.
For confidentiality reasons, the facility management can restrict the access to periodic and/or special situations.



large washers

Tele Support - main functions

- Access and management of the cameras to monitor the system.
- Total access to the parameters of the machines allowing the management of the washing programs (times, temperatures, chemical dosing....) and direct corrective actions and/or software updates.
- Synchronous access to the parameters of the machine and all the robotic automations installed.

Steelco SuperVisor - data management and remote monitoring of the devices

The SSV software verifies the functionality of the system through an intuitive graphical interface to allow the immediate verification of:

- Device status, alarms, blocks
- Data logging of consumptions
- Data logging of alarms
- Machine productivity and statistics

Steelco SuperVisor software allows data export in standard formats



Machine productivity and statistics

If the cage reprocessing system of the facility is equipped with an RFID system to identify the cage transport pallets, productivity statistics can be applied to any cage model type.

Machine documentation

The main screen of the software also allows quick access to the technical documentation of the machine: manuals, hydraulic - pneumatic - electrical system schematics, Piping & Instrumentation Diagram.





Bedding systems for animal cages

Steelco can support team-managers of animal research laboratories, providing them with a full system service for the customization of lay-outs of new or restructured projects.

- 1** Bedding dump station
- 2** Tunnel washer
- 3** Bedding dispenser
- 4** Filling funnel
- 5** Storage silo
- 6** Vacuum units
- 7** Pre separators
- 8** Dumpster
- 9** Vacuum points
Since the system has already a waste side vacuum system it's a good idea to install a number of vacuum points for cleaning.



1 Dump station for bedding waste.

The dump station is available in two versions: manual or robotic. It is provided with a detachable grid at the top as well as a dust extractor in order to minimize the operator's exposure to allergens. The robotic version is equipped with a fine shredder in order to prevent the vacuum system clogging.

3 Bedding dispenser.

Bedding dispenser. The bedding dispenser is available in two models: manual or robotic. Both models are equipped with a touch screen interface. The bedding dispenser is provided with a system that avoids any deposit of dust and that allows the emptying of any residue formed on the bottom part of the dispenser.

4 Filling funnel for clean bedding.

The filling funnel serves as a loader for the clean bedding and is connected to a storage silo through a suction tube. The funnel is provided with a sensor which indicates the presence of clean bedding available.

2 Tunnel washer.



5 Storage silo.

The storage silo can hold clean bedding sufficient for one day and is directly connected with the dispenser through a suction tube. The silo is provided with a low and high level sensors of clean bedding available.

6 Vacuum and filter units.

Steelco bedding systems are provided with a three stage vacuum unit with pressured air which allows the bedding transport, its dump and the removal of the deposit of dust.

7 Pre separators.

Steelco bedding systems are provided with two pre separators in order to empty the waste bedding into standard dumpster. The two pre separators work in turn. This configuration allows a homogeneous filling of the dumpster, preventing it from clogging.

8 Dumpster.

We use standard dumpsters, wheeled bins etc. with small modifications. We try to adapt the system to the local standards. We try to avoid solutions where the dumpster is a part of the vacuum system though this cause other problems such as odours, small volumes and high costs due to strength issues.



Dumping station with shredder for vacuum system connection



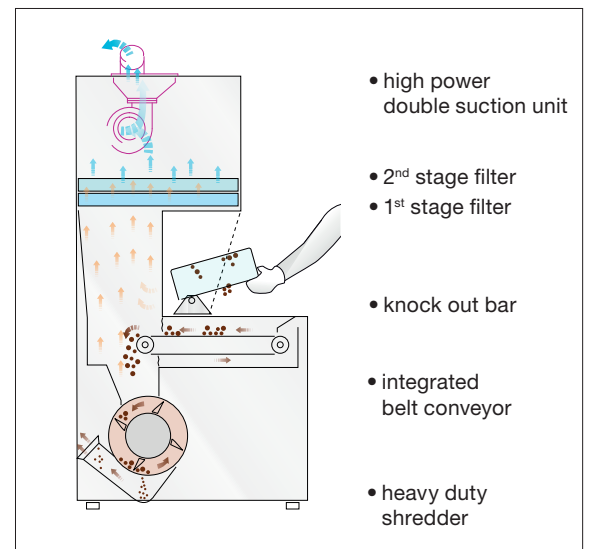
Standard configuration dedicated to the integration with centralized vacuum systems for the containment of allergens.



Steelco dumping stations with shredder are available as stand alone units to be connected to an existing vacuum system.

The device is suitable for all type of bedding (dry or wet), food and enrichments with no clogging risk.

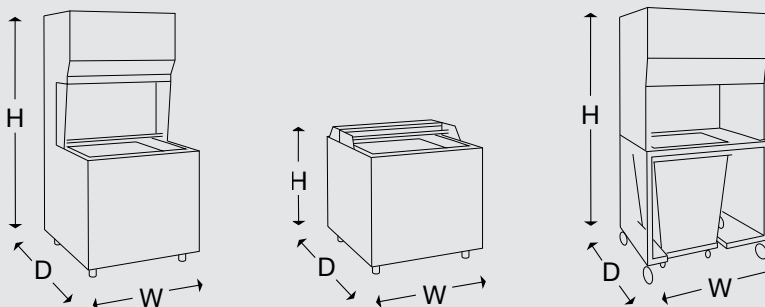
The dumping stations can be equipped with an allergene containment unit to provide high degree of air cleanliness around the operator.



Optional

- Allergene containment unit

Dumping station dimensions



Dumping station (with shredder)		W	D	H
and suction unit	mm	1200	1100	2100
	inches	47.24	43.31	82.68
without suction unit	mm	1200	1100	1050
	inches	47.24	43.31	41.34
Dumping station (mobile unit)				
and suction unit	mm	1200	850	2100
	inches	47.24	33.46	82.68



Dumping station mobile unit



Dedicated for use in small research facilities or as temporary device, this mobile dumping station is characterized by the usual attention to ergonomics typical of Steelco products.

The allergene containment unit offers the same high level operator protection as the shredder equipped version one.

Bedding dispenser stand alone unit



Steelco bedding dispenser provides accurate dispensing of any kind of free flow bedding.

In order to protect the operator from dust exposure, the dispenser is equipped with an efficient air suction system.

Key features

- **Structure and panels made of stainless steel AISI 304.**
- Standard equipped with 2 dispensing ports.
- Suitable for conveyed filling as well as manual bedding refill at ergonomic height.
- Soft touch control panel with LCD display and up to 40 pre set quantity programs

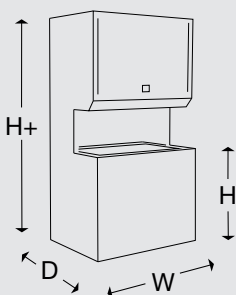
Optional

- configuration with more than 2 dispensing ports

In line dispenser with cage inverter

In addition to the stand alone bedding dispenser, Steelco can provide in-line dispensing solutions connected with a centralized vacuum system and allergene containment unit.

In a high productivity solution, the in line dispensing system is normally integrated with the automatic cage inverter. This device is dedicated to automatically invert upside down cages coming out from a a tunnel cage washer. The automatic system is conceived to match with the different type of cages and eventually to align them perfectly for the next bedding dispensing phase.



Bedding dispenser	W	D	H	H+
mm	1000	750	850	1950
inches	39.37	29.53	33.46	76.77



MITO FBS

Semiautomatic feeding bottle washing with integrated filling system

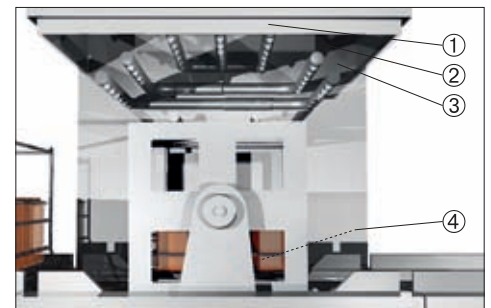


MITO FBS grants the **automatic emptying, washing, rinsing and filling of 18 bottles per cycle**.

This machine is suitable for small size facilities granting a complete **bottles and caps** reprocessing through a low budget solution.

MITO FBS is a modular system and be comprised of multifunctional loading and unloading tables and accessories.

The core of the system



Our patented rotating system allows the automatic bottle emptying, washing, rinsing and filling.

Water distribution system:

- ① filling system
- ② top rinsing system
- ③ washing system
- ④ bottom rinsing system

MITO FBS



bottle emptying station



Bottle treatment



Loading of the bottle crates



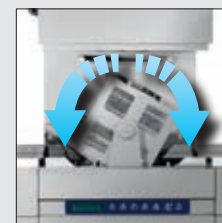
Rotation for the bottle emptying, washing and rinsing



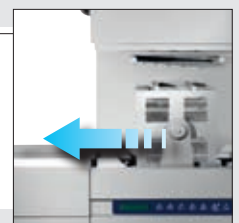
Back rotation for the bottle filling



Bottle filling



Caps crate rotation forward - backward during the washing phase



Unloading of the caps crate

Caps treatment

MITO FBS - Key features

MITO FBS

- Chamber entirely made of stainless steel AISI 316L.
- Independent washing and rinsing system.
- Individual nozzles for full bottles coverage during the washing/rinsing phases .
- Disinfection by rinsing at 85°C/185°F.
- Washing water filtration system to protect the recirculation and the drain pumps from debris. Easily removable water filtration system.
- Three default settings for bottle filling.
- Microprocessor control system with RS232 port for external connection. LCD Display control panel, provided with up to 40 programs capacity.

Manual de-capper

- Patented individual cap remover.

Bottle dripping station

- Serves as unloading table for the MITO FBS washing system.
- The top surface is made of AISI 316L stainless steel and slopes towards a central drain.
- Access to the lockable bottom storage.

Bottle emptying station

- Serves as loading table for the MITO FBS washing system.
- Top surface and sink are made of stainless steel AISI 316L.
- Access to the lockable bottom storage.
- Emptying station can be equipped with rinsing taps and manual cap remover.

Ultrasonic bath version

- The sink is provided with a sliding cover.
- Automatic treatment cycle. LED display and timer for cycle control.
- Pump for automatic chemical dosage. Check of the chemical quantity through a minimum level alarm.
- Ultrasonic generator provided with a filter against radio frequency interferences and with power control from 0 to 100%. The ultrasonic frequency is modulated in order to avoid neutralized areas.

Semiautomatic complete solution



This solution shows a loading table with ultrasonic bath equipped with a rinsing tap and a manual de-capper followed by a washing and filling machine and an unloading table for "in line" operation.

Manual decapper



Caps crate

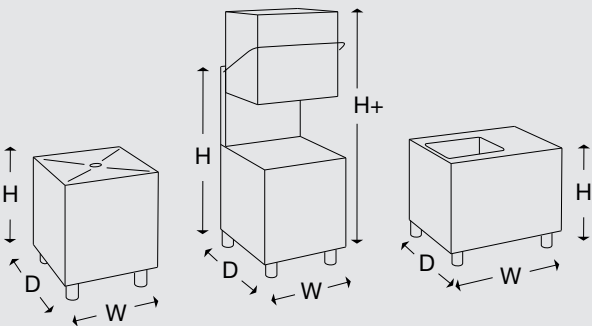


Bottle emptying station with ultrasonic bath



Caps washing and disinfection

During the washing phase the caps crate is rotated backwards and forwards, granting a better water coverage.



Washer and module dimensions		W	D	H	H+
Hood type washer	mm	650	700	1465	1885
	inches	25.59	27.56	57.68	74.21
Emptying station	mm	1000	700	850	-
	inches	39.37	27.56	33.46	-
Ultrasonic bath emptying station	mm	1300	700	850	-
	inches	51.18	27.56	33.46	-
Dripping station	mm	600	700	850	-
	inches	23.62	27.56	33.46	-



MITO 2B

Semiautomatic feeding bottle washing system



MITO 2B is a hood type **bottle washer/sanitizer** with a capacity of 2x18 bottle crates per cycle.

MITO 2B system shares the multifunctional loading tables and smart accessories of MITO FBS system, plus a dedicated module for bottle filling.

MITO 2B is suitable for small size facilities and can be provided with a semiautomatic bottle recapping module that significantly reduce the operator labor.

Key features

- **Chamber entirely made of stainless steel AISI 316L.**
- Independent washing and rinsing system.
- Disinfection by rinsing at 85°C/185°F.
- Washing water filtration system in order to protect the recirculation and the drain pumps from debris. The filter is easily removable for cleaning.
- Individual nozzles for the full bottles coverage during the washing and rinsing cycle.
- Microprocessor control system with RS232 port for external connection.
- LCD Display control panel, provided with up to 40 programs capacity.

MITO 2B



MITO filling module

Semiautomatic feeding bottle filling station



Filling module for one or two bottle crates.
This module can be manual loaded or automatically conveyed.
The bottle filling starts automatically once the crates are correctly positioned. The system is offered with a 3 position timer for setting different bottle filling volumes.

Key features

- Serves as unloading table for MITO 2B washing system.
- Top surface is made of AISI 316L stainless steel and slopes towards a central drain.
- Access to the lockable bottom storage.

Optional

- Interchangeable filling grid for different crate bottles size
- Customized solution combined with drinking water acidification unit

Filtration unit

for drinking water

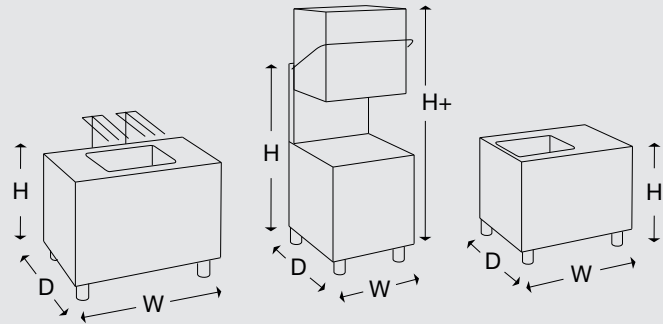
- High level water filtering system on a wall-mounted structure.
- 3 water filtering batteries with cartridges for filtration from 10µ up to 0.2µ.
 - Double pressure gauges for the monitoring of water pressure into the filters.
 - Dimensions: 800x170x500h mm (31.49"x6.69"x19.68")

Optional

- Carbon filter, UV light, auto disinfection circuit



feeding bottle washers



Washer and module dimensions		W	D	H	H+
Hood type washer	mm	650	700	1465	1885
	inches	25.59	27.56	57.68	74.21
Emptying station	mm	1000	700	850	-
	inches	39.37	27.56	33.46	-
Ultrasonic bath emptying station	mm	1300	700	850	-
	inches	51.18	27.56	33.46	-
Filling station	mm	1000	700	850	-
	inches	39.37	27.56	33.46	-



MITO PT

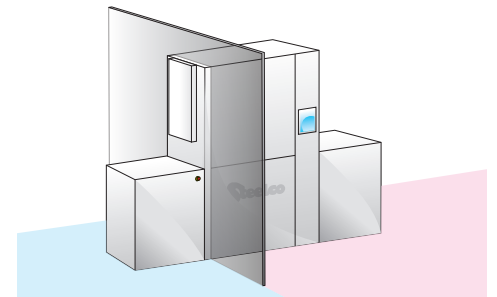
Automatic pass-through feeding bottle washers



Mito PT has been developed for small size facilities and provides flexible solutions for the bottle feeding processing.

MITO PT can wash and rinse automatically up to 18 bottles in a crate per cycle and can process different type of bottles. A special version with a powerful drying system is also available.

Suitable for pass-through applications

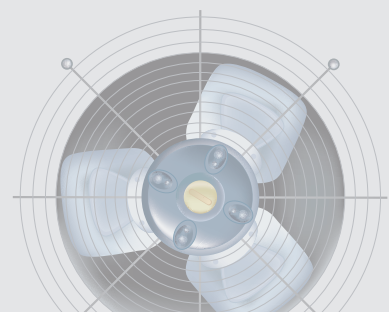


MITO PT is a double door module, suitable for in line and conventional barrier pass-through application.



MITO PT with built in hot air drying unit

Feeding bottle washer enhanced with a powerful drying unit. This system ensures a complete drying of the bottles in order to allow a longer waiting time before the sterilization process starts.



MITO PT - Key features

- Chamber and doors entirely made in stainless steel AISI 316L, external body AISI 304.
 - The unit is designed and constructed with extreme care, finished with smooth and crevice free washing chamber.
 - Self cleaning sump with rounded edges.
- Separate washing and rinsing circuits to avoid cross contamination.
 - Double stage water filtering system.
 - Disinfection by rinsing up to 90°C/194°F
 - Standard provided with a dosage unit and flow meter.
- PLC control system with 5.7" touch screen LCD display.
 - Printer connection for the documentation of relevant cycle data.
 - Up to 10 wahing/rinsing cycle programs.
 - Programming protection through 3 password levels.

Optional

- Full glass doors for visual inspection of the process
 - DI water tank for additional final rinse
- Integrated printer on machine front panel
 - Conductivity control for DI water tank
- Speed controlled exhaust fan for vapour extraction

Single phase cycle



The bottles are placed into a crate in an "upside down" position and are automatically loaded, washed and sanitized through an internal and external rinsing.

Once the washing cycle has been completed, the crate is unloaded from the clean side and collected onto a buffering conveyor.

Loading/unloading buffering conveyors



Buffering conveyors for the automatic loading and unloading of the crates.

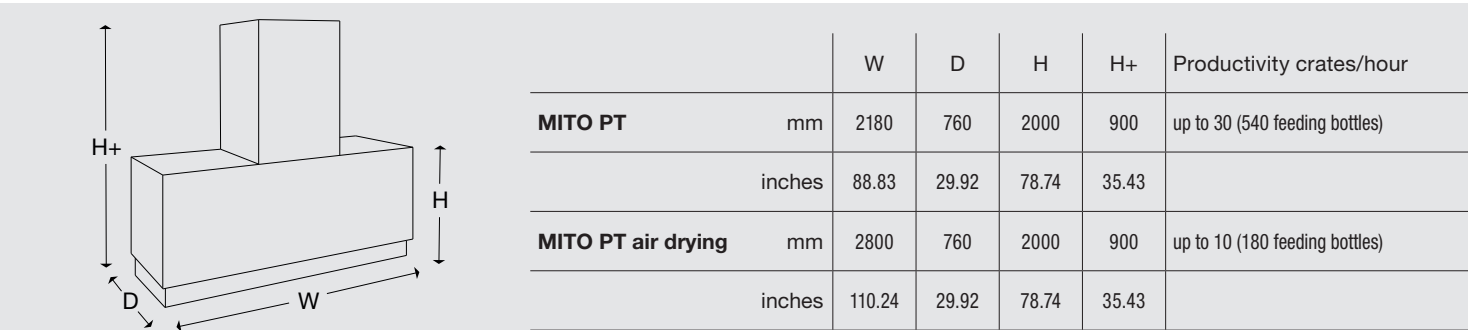
MITO PT can be completed with manual or automatic de-capping and emptying tables as well as manual or automatic filling and recapping stations.



Highlights of Steelco systems already installed.

feeding bottle washers

Washers dimensions and productivity per cycle





MITO recapping module

Semiautomatic feeding bottle recapper



This semiautomatic recapping unit is dedicated to small and medium size animal science facilities. Bottle recapping has been made easier in order to reduce significantly the **operator physical job and repetitive actions**.

MITO recapping module is compatible with any Steelco bottle crate.

Key features

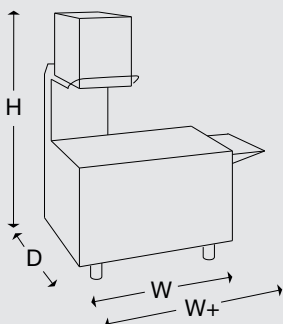
- Workbench made of stainless steel AISI 316L
- External structure made of stainless steel AISI 304
- Automatic system for different bottle heights
- Left or right hand configuration for in-line integration with the washing systems.

Optional features

- Feeding bottle filling grid
- Extra removable support for caps



Dimensions



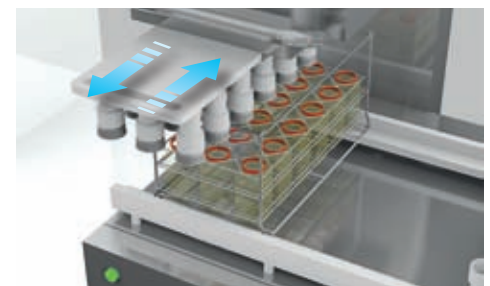
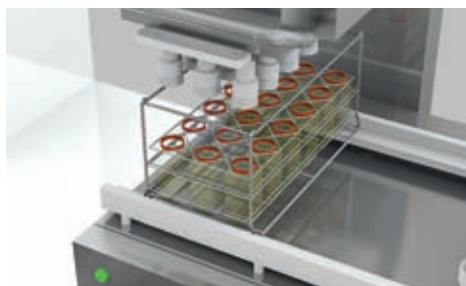
	mm	inches
W	1000	39.97
W+	1300	44.53
D	850	33.46
H	1850	72.83

Caps pre-loading operations:

Caps can be prepared for the recapping process through a **manual placement into a removable support or directly into the recapping device**, by simply pulling the device without removing it. In this case it would be possible to install on the same workbench a filling unit in order to create a **compact semi-automatic filling and recapping system**.

Recapping operation:

The recapping device is pulled down until it reaches the top of the bottles. Once the device has been aligned, the automatic recapping operates by simply pushing the start buttons, with **minimal operator's efforts**. Finally, the recapping device turns to its initial position allowing the removal of the bottle crate.





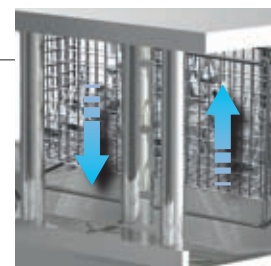
UC 300 - UC 400/1 - UC 400/2

Ultrasonic cleaning system

The Steelco UC range machines combine a stainless steel cleaning tank with a powerful ultrasonic generator. Thanks to the effectiveness of the ultrasonic power, these devices can reach the highest levels of cleanliness.



The baskets are automatically lifted at the end of the cycle through a pneumatic system provided with a security device.



Under bench storage for chemical canisters.



Key features

- Washing tank made of stainless steel AISI 316L, external body made of stainless steel AISI 304.
- LED display and timer for cycle control.
- Automatic tank filling and water control level.
- Pump for the automatic chemical dosage.
- Automatic check of the chemical quantity through a minimum level sensor.
- Ultrasonic generator provided with a filter against radio frequency interferences and with power control from 0 to 100%.
- The ultrasonic frequency is modulated in order to avoid neutralized areas.
- Standard Ultrasonic frequency 38 kHz, other frequencies on request.
- Tank dimensions 600x350x350h mm (3.62"x13.78"x13.78")
- The UC 400/2 model is configured with two tanks. One tank performs the ultrasonic washing, the other one is dedicated only to the rinsing of the caps.

Optional

- Hinged covers for manual operating version
- UC 400/2 model configured with ultrasonic function on both tanks

Dimensions

Models

		W	D	H	*H+
UC 300	mm	800	700	950	1270
	inches	31.50	27.56	37.40	50.00
UC 400/1	mm	1500	700	950	1270
	inches	59.06	27.56	37.40	50.00
UC 400/2	mm	1500	700	950	1270
	inches	59.06	27.56	37.40	50.00

*with open lids



UC 300



UC 400/1



UC 400/2



De-Capper

Automatic cap remover and emptying station



This unit automatically de caps the feeding bottle. It comes as a stand alone unit or it can be integrated with an existing bottle line.

Steelco De-capper can be customized in order to accept different sizes and models of bottles and caps.

This automated system reduces the repetitive operations and management of heavy crates bottles by staff.

Key features

- Entirely made of AISI 304 stainless steel.
- 1 x 18 bottle crate capacity.
- Automatic loading and unloading tables with 2 crates capacity.
- Touch screen display.

Optional

- Full glass doors for visual inspection of the process

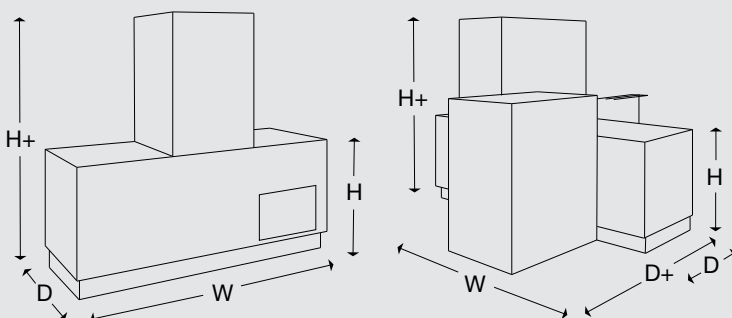
Ergonomy



The removed caps are automatically conveyed into two **canisters placed inside a drawer** which is easily accessible from the machine loading side.



Full automatic solution combining decapping and washing systems.



	W	D	D+	H	H+	Productivity crates/hour
De-Capper mm	2320	760	-	900	1990	up to 60 (540 feeding bottles)
inches	91.34	29.92	-	35.43	78.34	
Re-Capper mm	2700	760	1745	900	1900	up to 60 (540 feeding bottles)
inches	106.30	29.92	68.70	35.43	74.80	



Re-Capper

Automatic filling and re-capping station



When compact means complete!

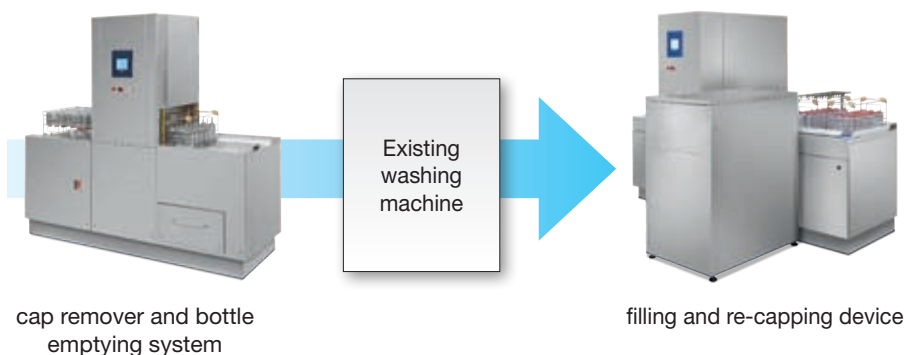
This unit automatically recaps the feeding bottle. It comes as a stand alone unit or it can be integrated with an existing bottle line.

This automatic device is able to fill and re-cap 1 bottle crate in 1 minute and can be combined with different types of washing devices, reducing the need for staff.

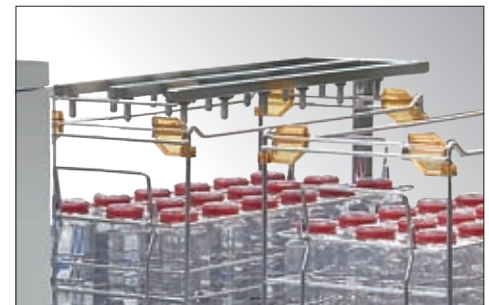
Key features

- Entirely made of AISI 304 stainless steel.
- 1x18 bottles crate capacity.
- Automatic loading table with 1 crate capacity.
- Automatic loading table with 2 crates capacity.
- Touch screen display.

System integration



Auto start function



The filling system starts automatically once the crate is positioned

5 phases cycle



Cap loading



Manual or automatic bottle crates loading



Automatic bottle filling



Automatic bottle recapping



Manual or automatic bottle crates unloading



MITO FB

Automated feeding bottles washing system



Recapping station



This automatic system runs parallel to an automatic loading cap conveyor. The conveyor drives the caps vertically positioned to the recapping module that automatically transfers and couples them with the bottles.

Filling station for two bottle crates



This module could be manual loaded or automatically conveyed. Bottle filling automatically starts once two crates are correctly positioned. The system is offered completed with a 3 position timer for setting different bottle filling volumes.

Bottle crate rotating station



This patented system allows to convey automatically the bottle crates to the filling station.

MITO FB offers an integrated and flexible solution to support the increasing demand for compact systems for the **semiautomatic or automatic handling of bottles and caps.**



Fully automatic solution: de-capping, washing, filling and re-capping

Functions on demand



De-capping and washing solution



De-capping, washing and filling solution

feeding bottle washers

Double washing chamber station



The washing area is bounded by automatic interlocking sliding doors.

Automatic loading table



Connected to the automatic cap remover and emptying station, this system avoids the risk connected to the manual loading of the bottle crates into the cap remover. The unit removes at once 18 caps automatically collected into two containers placed into a drawer.

Removed caps collecting drawer



The removed caps are automatically conveyed into two canisters placed inside a drawer which can be easily removed from the machine loading side. The loading module can be equipped with an ultrasonic washing system for the caps. (optional).



MITO FB - Key features

- Up to 1150 bottles processed in one hour.
- Chamber entirely made of stainless steel AISI 316L, external body of AISI 304
- Independent washing and rinsing systems.
- Washing and rinsing chambers provided with interlocked sliding doors.
- Automatic sliding glass door for chamber control.
- Individual nozzles for bottle full coverage in washing and rinsing chambers.
- Washing and rinsing chambers provided with breather pipe.



Optional

- Water filtering system
- Extraction fan to evacuate condense and vapour

MITO FB - Additional modules

Semiautomatic filling station

- Serves as an unloading table for the MITO FB washing system.
- Top surface sloping to a central drain made of stainless steel AISI 316L.
- Access to the lockable bottom storage.
- Able to accomodate water acidification unit.
- 3 position timer for setting different bottle filling volumes.

Automatic crate rotating station

- Serves as an unloading table for the MITO FB washing system, rotates the crates making them ready for the filling

Automatic filling station

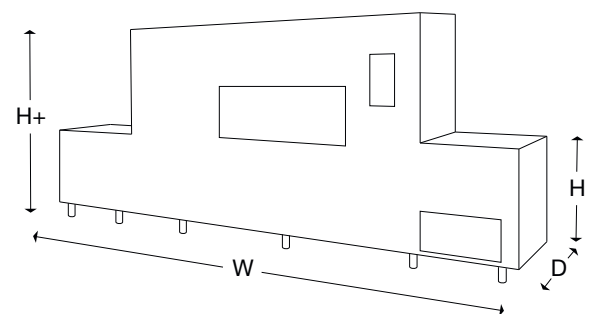
- Top surface sloping to a central drain made of stainless steel AISI 316L.
- Fully controlled by washer control panel.

Automatic recapping station

- with cap loading conveyor system.

Washer dimensions

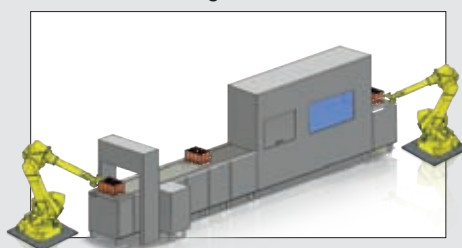
		W	D	H	H+
Single washing and rinsing chamber	mm	3400	760	900	2000
	inches	133.85	279.92	35.43	78.74
Double washing and rinsing chamber	mm	3800	760	900	2000
	inches	149.60	279.92	35.43	78.74



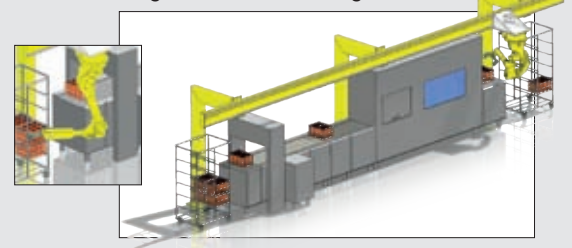
Robot technology

MITO FB can be integrated with robot technology for loading and unloading of the bottle crates.

Double robot configuration

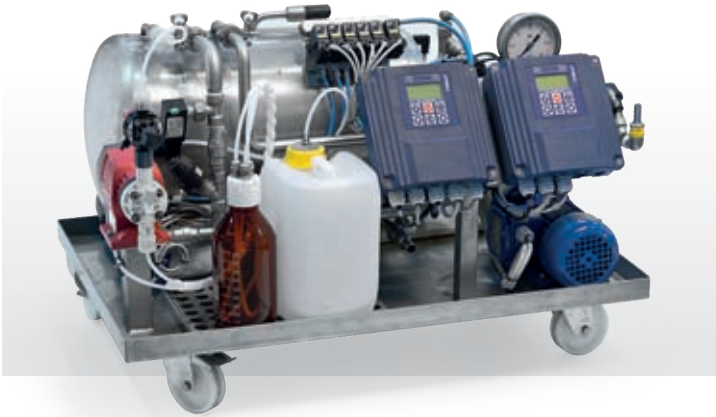


Single robot on rail configuration





Acidification unit for drinking water



Laboratory animal drinking water is sometimes continuously acidified for disinfection. For those facilities that require acidified water, Steelco provides equipment for continuous acidification of bottled water.

As a general guideline, drinking water should be acidified to a pH of 2.5 to 3.0. This, in order to guarantee a bactericidal effect.

The system is equipped with an automatic proportional outlet pump and with two pH meters that automatically monitor the treated water pH.

Dimensions
880x800x600h mm (34.65"x31.50"x23.62")

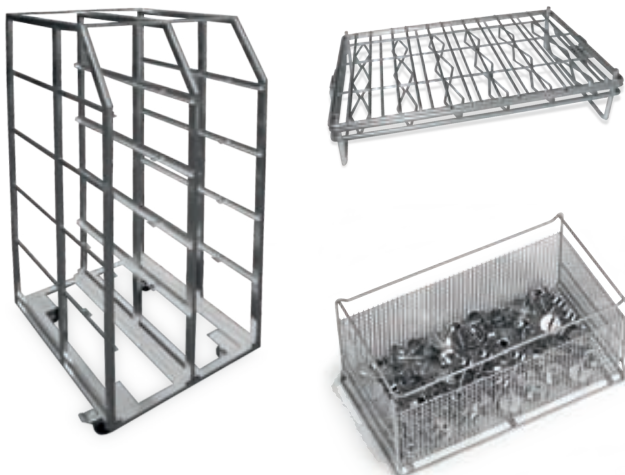
Key features

- **Totally made of corrosion resistant stainless steel AISI 316L.**
- 80lt (21 Gal US) tank completed with water valve level sensor, pressure switch, flowmeter, pH sensor and two pumps.
- The system is equipped with a chemical dosing pump which has a proportional dosing system connected to the pH sensor, a water mixing system is active in order to obtain a correct pH acid solution value.
- A PLC microprocessor checks all the phases and guarantees the correct result, thanks to a second pH probe that checks the correct pH value at the moment of the use. If this doesn't happen, the system re-establish the pH value set before the use.

Crates and trolleys for feeding bottles

The range of Steelco accessories dedicated to sanitizing bottles for animal feed is **aimed at facilitating the tasks of the operator**. The smart solution to open and lock the lid of the bottle crates is an example of effectiveness.

The crates for containing bottles for animal feed are available for all models in the market. Collecting crates for bottle caps and autoclavable stainless steel transport trolleys are also available.





Decontamination lock

Multiple decontamination method chamber

Steelco decontamination lock is an interlocking door chamber that may be used with multiple decontamination methods. The decon lock can be integrated with any type of existing vapor generators.



Steelco control panel allows the setting of the cycle and the monitoring of the entire process.

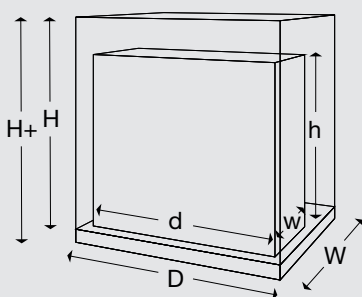
Controls

- Touch screen panel
- Emergency push-buttons (on both sides)
- Internal safety for "man on board" with emergency circuit
- Emergency light signals
- Main switch button
- Gas monitoring system
- Sampling test point
- Interlocking doors
- Inflatable gasket control
- Control system interfaced with the generators for signal exchange



Chamber sealing

Decontamination lock access doors are equipped with two independent integral inflatable gaskets. Gaskets are separately controlled.



	external dimensions					chamber dimensions		
	W	D	H	H+	*H+	w	d	h
mm	2200	2314	2440	2460	2510	1100	2076	2150
inches	86.61	91.10	96.06	96.85	98.82	43.30	81.73	84.65

* Decontamination lock equipped with drain

Decontamination lock - Key features

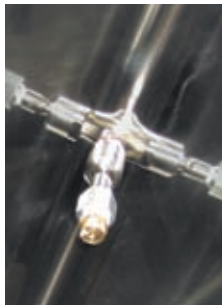


- **Totally made of corrosion resistant stainless steel AISI 316L.**

- FAT-SAT-IQ-OQ-PQ for full validation available.

Optional

- Full glass doors for visual inspection of the process
- Exhaust air duct filters
- Decontamination product dosing
- Catalizer
- Fogging disinfection system
- Ventilators
- Filtration unit
- Anti skid floor
- Self cleaning system



Fogging atomizer



Gas injection point



High speed aeration unit



Ext. generator connection

Safe lock doors

Controlled environment

Steelco Safe Lock Doors give our customers a flexible and customized solution for any application where perfect tightness and safety measures are a must.

Key features

- The doors can be made of stainless steel AISI 316 L with glass inspection window or in the smart full glass door version.
- The glass is available also in red color which prevents small animals such as mice and rats to be disturbed by normal activities of human beings.
- Doors can be opened through push-button, badge or any other kind of device that can be chosen by the Customer.
- Opening push-buttons and unlocking safety devices assure a fast opening in case of emergency.
- Perfect tightness is given by the gaskets which are operated by a PLC. The system is also interfaced with a system for the access control.



Sliding door version

Wing door version



environment control

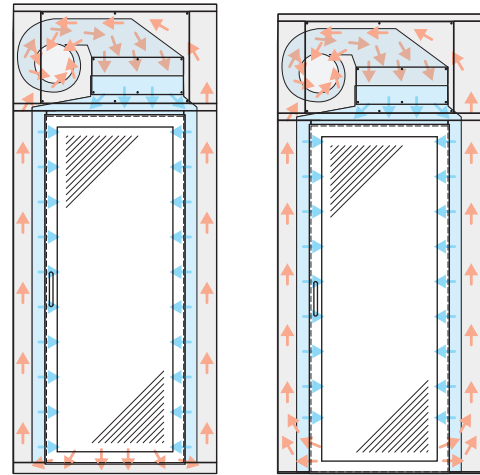


AS 1000

Air shower



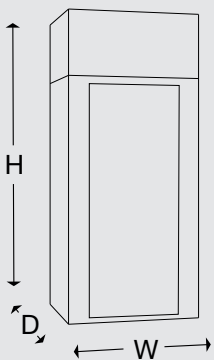
Steelco Air Shower AS 1000 is designed to remove surface contamination from personnel prior entering a lower level contaminated environment.



Steelco AS100 is available with and without the suction floor.

User Friendliness

- Open the access door
- Enter in the air shower
- Close the access door
- The unit automatically detect the presence of the person
- The unit starts the cycle
- At the end of the cycle the door automatically unlocks allowing the access to the clean area
- The duration of the air shower cycle can be easily adjusted



Dimensions

		W	D	H	*H
AS 1000 straight passage	mm	1125	1000	2560	2600
	inches	44.29	39.37	100.78	102.36
AS 1000 angle and T passage	mm	1125	1125	2560	2600
	inches	44.29	44.29	100.78	102.36

* Suction floor versions



AS 1000 - Key features

- Outstanding level of cleanness, the AS 1000 is equipped with 40 air nozzles (10 on each cabinet corner) to create an enveloping air flow.
- High efficiency blower for an average air velocity equal or higher than 20m/s.
- Two level filtration system: blower pre filter, HEPA H14 filter.
- Full body in stainless steel for easier cleanability, long duration and better resistance to scratches.
- Designed to be floor mounted between areas with different levels of contaminations.
- Different available configurations: Straight through passage, Angle passage, T passage (with 3 door passage).
- Emergency push buttons inside and outside the chamber.
- Electronic controller with LED countdown displays on both external access sides of the cabinet and inside the chamber.
- Automatic person presence detection for automatic start of the blowing cycle.
- Interlocking doors with magnetic locks.



Cabinet lightning



High efficiency air nozzles



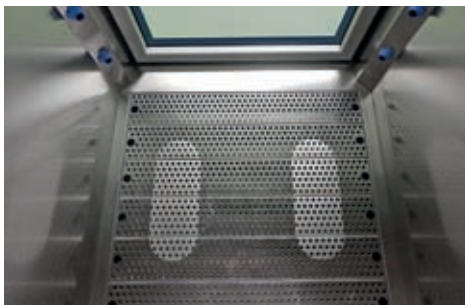
Operator control panel with detailed efficiency informations and required emergency function push buttons



AS 1000 suction floor version



Stainless Steel removable grids floor.

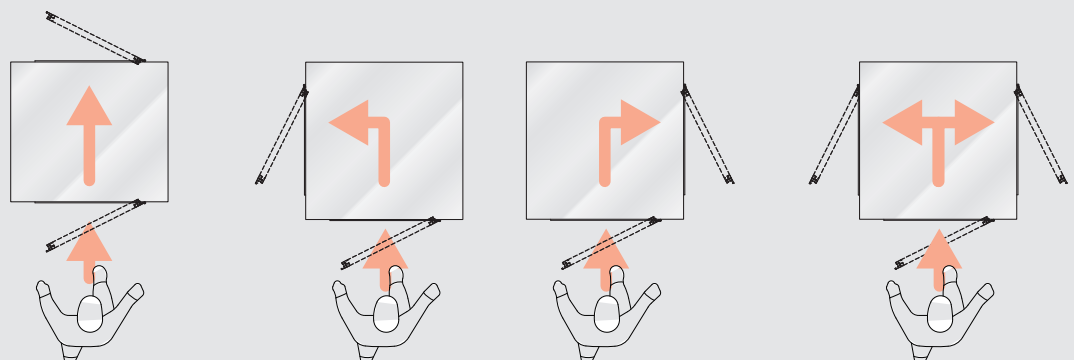


User friendly design

Configurations

Different available configurations with left or right door openings:

- Straight through passage,
- Angle passage left or right
- T passage (3 door passage)





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