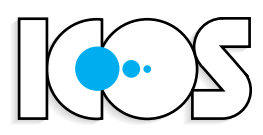


OS

LT & LST



**WASHING
SILICONIZING
STERILIZING
AND DRYING
MACHINES
FOR PHARMACEUTICAL
CLOSURES**



ICOS HAS A LONG EXPERIENCE IN THE TREATMENT OF STOPPERS FOR CONTAINERS NORMALLY USED IN THE PHARMACEUTICAL INDUSTRY. THIS NEW RANGE OF ICOS MACHINES FEATURES A SERIES OF INNOVATIVE FEATURES THAT SATISFY THE REQUIREMENTS OF THE INDUSTRY. THIS RANGE OF MACHINES IS MADE UP OF TWO MAIN CATEGORIES:

STOPPER WASHERS, "LT" MODEL: THE "LT" OPERATING PROCESS CONSISTS OF THE WASHING, RINSING, SILICONIZING, DRYING AND COOLING PHASES.

STOPPER WASHER-STERILIZERS, "LST" MODEL: THE "LST" PROCESS, IN ADDITION TO THE WASHING, RINSING, SILICONIZING, DRYING AND COOLING PHASES ALSO INCLUDES THE STERILIZING PHASE. THE COMPLETE PROCESS MAKES IT POSSIBLE TO ELIMINATE NEEDLESS INTERMEDIATE HANDLING OF THE PRODUCT.

FIELD OF APPLICATION

These machines are designed for the complete treatment of sealing devices for pharmaceutical products, rubber and plastic stoppers, droppers, metal rings and similar components.

MAIN CHARACTERISTICS

- Distribution of load in separate baskets for a better final results. Washing by simultaneous combination of basket rotation and fluid-bed action guaranteed by a recycling pump and spray nozzles. The particles in suspension are skimmed off.
- Siliconizing evenness guaranteed by recycling pump.
- Sterilization at 121°C.
- Drying with filtered hot air.
- Chamber can be completely inspected through loading door.
- Automatic opening and closing of baskets.
- Chamber doors made in accordance with requirements for sterile environments.
- Possibility of automatic application of load.
- Possibility of interfacing unloading door with the isolator.
- Various automatic unloading possibilities.
- Machine equipped with connections for validation tests.

CONSTRUCTION CHARACTERISTICS

The machine body and associated safety devices are manufactured and tested in compliance with the standards required in the country of destination. Unless there is a specific request, the machines and systems are manufactured in compliance with the CE Standards.

- Machine body completely of AISI 316L stainless-steel construction, with the exception of the jacket, which, in the standard version, is made of AISI 304 stainless steel.
- Support frame of AISI 304 stainless steel.
- External panelling made of AISI 304 stainless steel.
- All machine components of sanitary type.
- Machine body insulated with ceramic material and with external facing of sheet stainless steel.
- Chamber inside surface, tubing, baskets and all parts in contact with the product polished to a degree of roughness $\leq 0.5 \mu$.
- Unloading door equipped with a system of interfacing with the sterile zone.
- Automatic unloading of treated material; possibility of using three types of containers.



BASKETS DETAIL



UNLOADING SIDE WITH ISOLATOR



LOADING SIDE MOD.: LST 20-40-80



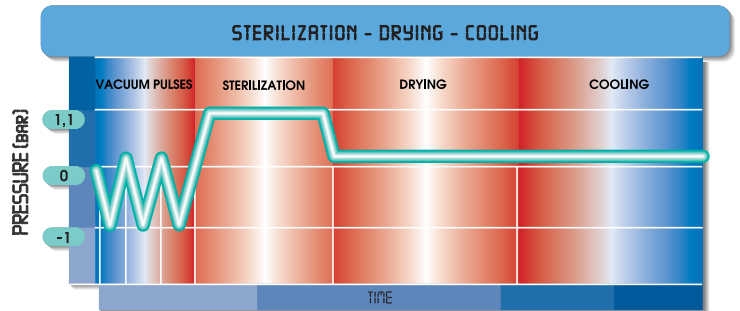
UNLOADING SIDE WITH BAG THERMOSEALER



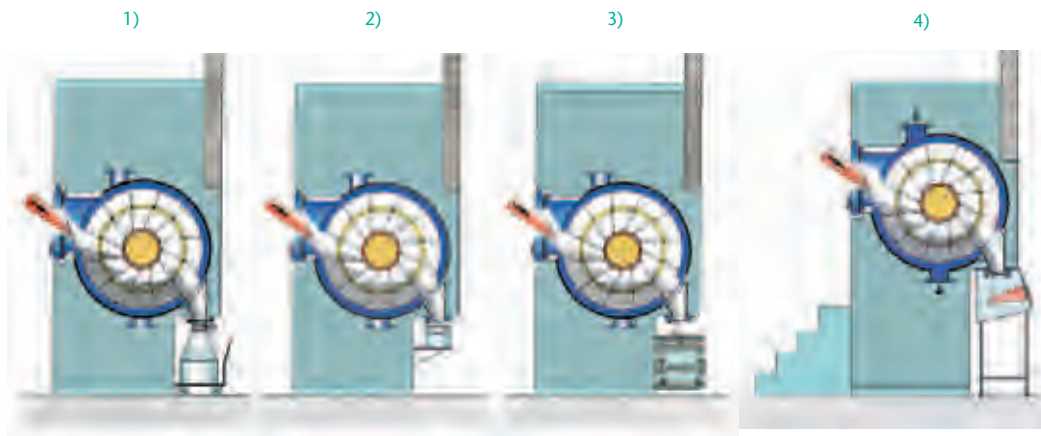
CONTROL BOARD



LOADING SIDE MOD.: LST 120-180-240



- 1) MANUAL LOADING - AUTOMATIC UNLOADING INTO WHEELED TANKS
- 2) MANUAL LOADING - AUTOMATIC UNLOADING INTO CONTAINERS
- 3) MANUAL LOADING - AUTOMATIC UNLOADING INTO STERILE BAGS
- 4) MANUAL LOADING - AUTOMATIC UNLOADING INTO ISOLATOR
- 5) AUTOMATIC LOADING - AUTOMATIC UNLOADING INTO WHEELED TANKS
- 6) AUTOMATIC LOADING - AUTOMATIC UNLOADING INTO CONTAINERS
- 7) AUTOMATIC LOADING - AUTOMATIC UNLOADING INTO STERILE BAGS
- 8) AUTOMATIC LOADING - AUTOMATIC UNLOADING INTO ISOLATOR



CONTROL SYSTEM

The machines of the "LT" and "LST" series are provided with a control system consisting of a controller, a programmable computer and a printer.

The control system manages the machine and its basic parameters, such as Fo, pressures and level control; it allows an easy interfacing with the operator and makes it possible to customize the process cycles and the manual operations.

In addition, the system produces a complete process documentation and assists the operators in the machine convalidation operations.

N.B.: A full description of the control system is contained in the relative booklet.



LOADING & UNLOADING IN ONE SIDE MOD.: LT 20

PROCESS DATA

The process consists of combined phases and actions designed to provide maximum process flexibility. The choice of times and phase succession makes it possible to obtain the most appropriate cycle for the characteristics of the material to be processed.

PHASES	ACTIONS
LOADING OF MATERIAL	THROUGH PREARRANGED SYSTEM
WASHING	ROTATION, FLUID BED, DETERGENT
OVERFLOW	ROTATION, WATER DIFFUSER
UNLOADING	ROTATION, WATER SPRAYING
DRIPPING	ROTATION
1ST RINSE	ROTATION, FLUID BED
OVERFLOW	ROTATION, WATER DIFFUSER
UNLOADING	ROTATION, WATER SPRAYING
DRIPPING	ROTATION
2ND RINSE	ROTATION, FLUID BED
OVERFLOW	ROTATION, WATER DIFFUSER
UNLOADING	ROTATION, WATER SPRAYING
DRIPPING	ROTATION
3RD RINSE	ROTATION, FLUID BED
OVERFLOW	ROTATION, WATER DIFFUSER
UNLOADING	ROTATION, WATER SPRAYING
DRIPPING	ROTATION
SILICONIZING	ROTATION, FLUID BED, SILICONE
UNLOADING	ROTATION, WATER SPRAYING
DRIPPING	ROTATION
STERILIZATION	STEAM AT 121°C
DRYING	STERILE AIR AT 130°C
COOLING	STERILE AIR AT 20°C
PRODUCT DISCHARGE	IN A CLEAN ENVIRONMENT BY MEANS OF PREARRANGED SYSTEM

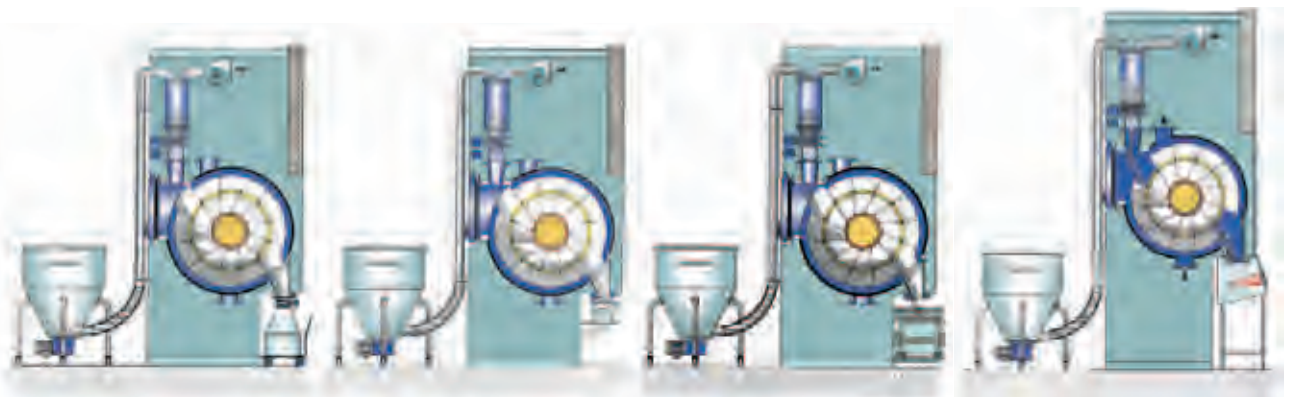
N.B.: The above phases refer to a standard program.

5)

6)

7)

8)



WASHING, SILICONIZING, DRYNG MACHINE FOR PHARMACEUTICAL CLOSURES

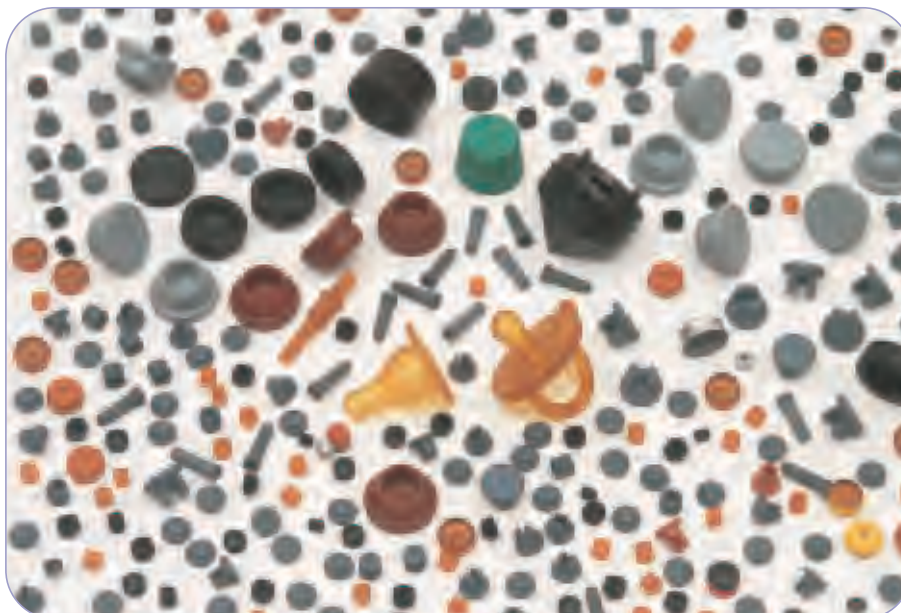
Mod. Serie LT

	OVERALL DIMENSION			HOPPERS NO.	USEFUL VOLUME	HOPPERS TOTAL VOLUME
	Width	Depth	Height			
LT 20	2000	1020	2600	2	20	60
LT 40	2200	1160	2600	4	40	120
LT 80	2600	1330	2600	8	80	240
LT 120	2600	1550	2600	12	120	360
LT 180	2800	1700	2800	18	180	540
LT 240	3000	1930	3000	20	240	720

WASHING, SILICONIZING, STERILIZING, DRYNG MACHINE FOR PHARMACEUTICAL CLOSURES

Mod. Serie LST

	OVERALL DIMENSION			HOPPERS NO.	USEFUL VOLUME	HOPPERS TOTAL VOLUME
	Width	Depth	Height			
LST 20	2400	1020	2600	2	20	60
LST 40	2600	1160	2600	4	40	120
LST 80	2800	1330	2600	8	80	240
LST 120	3000	1550	2600	12	120	360
LST 180	3200	1700	2800	18	180	540
LST 240	3400	1930	3000	20	240	720





PROGETTO E STAMPA: CENTRO STAMPA - ODERZO (TV)

REV. C



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