

**BL & TLS**

**ICOS**

**WASHING  
AND DRYING BOX**

**WASHING  
STERILIZING  
AND DRYING TUNNEL**



THE CONSIDERABLE EXPERIENCE GAINED IN TWENTY YEARS OF ACTIVITY IN THE WASHING AND STERILIZING FIELD ENABLES **ICOS** TO OFFER ON THE INTERNATIONAL MARKET A NEW RANGE OF EQUIPMENT FOR THE TREATMENT OF TANKS USED IN THE PHARMACEUTICAL AND FOOD-PROCESSING INDUSTRIES.

THESE MACHINES ARE IDENTIFIED AS FOLLOWS:

- WASHING AND DRYING BOX, SERIES **BL**
- WASHING, STERILIZING AND DRYING TUNNEL, SERIES **TLS**

**THE BL PROCESS** INVOLVES WASHING, RINSING AND DRYING PHASES.

**THE TLS PROCESS** INVOLVES WASHING, RINSING, STERILIZING AND DRYING PHASES.

### FIELD OF APPLICATION

These machines are designed for the complete treatment of tanks used in the pharmaceutical and food processing fields.

### MAIN CHARACTERISTICS OF BOX, "BL" SERIES

- Automatic internal washing of tank by spray ball, with addition of detergent if necessary.
- Automatic internal rinsing of tank by spray ball.
- External washing by means of relative manual hose.
- Internal drying by means of compressed air heated by a heat exchanger.

### CONSTRUCTION CHARACTERISTICS OF BOX, "BL" SERIES

- Walls of AISI 304 stainless steel.
- Curtain of antistatic and self-extinguishing PVC strips applied to the front part of the box.
- Tank bottom of AISI 304 stainless steel shaped with a suitable slope for draining the water at a central point.
- Treadable 304 AISI stainless steel expanded-plate mesh over the tank.
- Water- and steam-proof internal lighting.
- Hydraulic system components of sanitary type.
- Walls assembled watertight.
- Walls finished to a scotch-brite degree.
- All the pipes in contact with fluids of sanitary type are polished to a degree of roughness  $\leq 0.5\text{mm}$ .



**MAIN CHARACTERISTICS OF TUNNEL, “TLS” SERIES**

- Construction of through type.
- Walls made of AISI 304 stainless steel.
- Loading and unloading door of folding type with manual opening with pneumatic locking devices.
- Tunnel internal lighting of water and steam proof type.
- Components of hydraulic system of sanitary type.
- Walls assembled watertight.
- All pipes in contact with fluids of sanitary type are polished to a degree of roughness  $\leq 0.5\text{mm}$

**CONSTRUCTION CHARACTERISTICS OF TUNNEL, “TLS” SERIES**

- Automatic internal washing of tank by spray ball, with addition of detergent if necessary.
- Automatic internal rinsing of tank by spray ball.
- Internal sterilization of tank at 121°C.
- Internal drying by means of compressed air heated by a heat exchanger.
- Maintenance of air class 100 inside the tunnel by means of recycling fan, heat exchanger and HEPA-type filters.

**CONTROL SYSTEM**

THE BL BOXES ARE PROVIDED WITH A MICROPROCESSOR-CONTROLLED PROCESS REGULATOR AND EVENT SEQUENCER AND WITH A SEPARATE RECORDER. THE SEQUENCER CAN BE EASILY PROGRAMMED WITH THE QUESTION/ANSWER SYSTEM AND ENABLES COMPLETELY AUTOMATIC CYCLES. THE RECORDER PRINTS OUT THE PROCESS VALUES.

THE TLS TUNNELS ARE PROVIDED WITH A COMPUTER PROGRAMMABLE CONTROLLER AND PRINTER.

THE CONTROL SYSTEM MANAGES THE MACHINE AND ITS BASIC PARAMETERS, SUCH AS TEMPERATURE, FO, PRESSURE AND LEVEL CONTROL. IT ALLOWS AN EASY INTERFACING WITH THE OPERATOR AND MAKES IT POSSIBLE TO CUSTOMIZE THE CYCLES AND TO CARRY OUT MANUAL OPERATIONS. THE SYSTEM ALSO PRODUCES A COMPLETE PROCESS DOCUMENTATION AND ASSISTS IN THE MACHINE CONVALIDATION OPERATIONS.

**N.B.:** THE COMPLETE DESCRIPTION OF THE CONTROL SYSTEM IS GIVEN IN THE RELATIVE TABLE.

ALL THE MACHINES MANUFACTURED BY ICOS IMPIANTI SRL COMPLY WITH THE MOST UP-TO-DATE PHARMACEUTICAL STANDARDS IN THEIR HIGH LEVEL OF FINISH, AND IN THEIR CONSTRUCTION AND PROCESS CHARACTERISTICS.



**PROCESS DATA FOR BOX, “BL” SERIES**

The process consists of combined actions and phases that allow maximum flexibility. The choice of processing times and the succession of the phases make it possible to obtain an ideal cycle based on the characteristics of the material to be processed.

PHASES	ACTIONS
LOADING OF TANK	MANUAL
INTERNAL WASHING	SPRAY BALL WATER, DETERGENT IF NECESSARY
1ST INTERNAL RINSE	SPRAY BALL WATER
2ND INTERNAL RINSE	SPRAY BALL WATER
EXTERNAL WASHING	WASHING WITH HOSE
INTERNAL DRYING	COMPRESSED AIR HEATED TO 130°C
UNLOADING OF TANK	MANUAL

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

**PROCESS DATA FOR TUNNEL, “TLS” SERIES**

PHASES	ACTIONS
LOADING OF TANK	MANUAL
WASHING	SPRAY BALL WATER, DETERGENT IF NECESSARY
1ST INTERNAL RINSE	SPRAY BALL WATER
2ND INTERNAL RINSE	SPRAY BALL WATER
STERILIZATION	STEAM AT 121°C
DRYING	COMPRESSED AIR HEATED TO 130°C
UNLOADING OF TANK	MANUAL

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

ICOS RESERVES THE RIGHT TO MAKE PRODUCT CHANGES WITHOUT NOTIFICATION

**Mod. Serie BL**

**RANGE OF WASHING AND DRYING BOX**

	CAPACITY	CHAMBER DIMENSIONS (mm)			OVERALL DIMENSIONS (mm)		
	Lt.	Width	Height	Depth	Width	Height	Depth
BL 1	5000	2000	2500	1000	2120	2930	1100
BL 2	7500	2000	2500	1500	2120	2930	1600
BL 3	6250	2500	2500	1000	2620	2930	1100
BL 4	9375	2500	2500	1500	2620	2930	1600
BL 5	11250	3000	2500	1500	3120	2930	1600
BL 6	15000	3000	2500	2000	3120	2930	1100

**Mod. Serie TLS**

**RANGE OF WASHING STERILIZING AND DRYING TUNNEL**

	CAPACITY	CHAMBER DIMENSIONS (mm)			OVERALL DIMENSIONS (mm)		
	Lt.	Width	Height	Depth	Width	Height	Depth
TLS 1	8160	1700	2500	1920	2000	2930	2000
TLS 2	10285	1700	2500	2420	2000	2930	2500
TLS 3	12410	1700	2500	2920	2000	2930	3000
TLS 4	16790	2300	2500	2920	2600	2930	3000
TLS 5	22540	2300	2500	3920	2600	2930	4000
TLS 6	33210	2700	2500	4920	3000	2930	5000



ICOS IMPIANTI GROUP SPA - 33080 CUSANO DI ZOPPOLA (PN) Italy  
Via Ellero,15 z.i. - Tel. +39 0434 979596 - Fax +39 0434 574080

e-mail: sales@icosimpianti.com - web site: <http://www.icosimpianti.com>