



Laminar Flow

CSM

Change Speed Motion

- Cost savings
- Labour savings
- Reduced fatigue & stress on human operators
- Reduced musculo-skeletal disorders
- Improved safety
- Significant productivity gains



"A true revolution transforming repetitive cage changing operations into an automatic process".



TECNIPLAST
innovation through passionSM

1/Introduction

CSM is an automated device which opens and closes Sealsafe Plus Individually Ventilated Cages under laminar flow inside an ISO5 Class* CS5 changing station.

2/Cost reduction

Simultaneous Operations(time saving). When changing a cage, several operations are carried out: thanks to the CSM, some of these are performed at the same time (e.g. clean and dirty cages are opened and closed simultaneously by the machine). This translates into a reduction of manual operations performed by the operator, which has been calculated at - 27%. Such a reduction in manual operations makes for a significant time reduction in manual operations (-50% by "CSM").

3/Enhanced efficiency

Repetitive operations during cage changing become automatic processes performed by "CSM": this makes for increased speed and accuracy. The operator doesn't need to modify his/her manual operation procedures, but simply part of them (the most repetitive ones) are performed by the machine.

4/Contamination control

The precision of the operations performed by the machine avoids common human mistakes like inadvertently putting bottles and cage tops outside the laminar flow area (air barrier grid) of the changing cabinet: this reduces the risk of procedural mistakes (no cross-contamination).

5/Reliability, Robustness, Cleanability

The CSM needs no ordinary maintenance (no lubrication): it can perform more than 30,000 cycles without stopping. The system is very easy to clean, and is compatible with a variety of chemical disinfectants. Lastly, it is also very easy to remove it or lift it from the working surface: a mechanical device blocks the machine in a "cleaning" position and allows to clean the working area, or even to remove the working area panels and clean the pre-filters.

6/Safety

CSM, thanks to the so called "Protector System", prevents damage resulting from robot crashes: the Protector is designed to send a signal to the robot to perform an instantaneous emergency stop when it detects obstacles, minimizing damage to the tooling, providing safety to animals and operator. After a possible collision the system opens again and an alarm is switched on (Stop and Automatic Reset). This perfectly safe management of the speed and of the closing power is determined by the 4-coil motors on the device. Furthermore, compliance with Low Voltage Directive (24V DC motors) eliminates any risk of electric shocks.

7/Well being of the operator

The operator does not have to concentrate on the precision of movements required by the procedure: this results in reduced fatigue and stress, which means that the incidence of musculo-skeletal disorders drastically decreases (e.g. carpal tunnel syndrome)..

8/Flexibility

Available in two and four cage configurations.



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Cage opening and closing operations have been the same for years, without any improvement, while other vivarium equipment has undergone a considerable evolution toward automation. Now TP, first in the world, is proud to announce a new system introducing automation in cage opening and closing operations, using the ultimate in robotic technology. The system transforms repetitive operations into automatic processes offering consistent benefits in comparison with traditional systems: cost reduction, increased efficiency and guaranteed contamination control. You will perceive easily how the user can improve operations by increasing speed & accuracy and thus paying off the investment in the short term.

Introduction

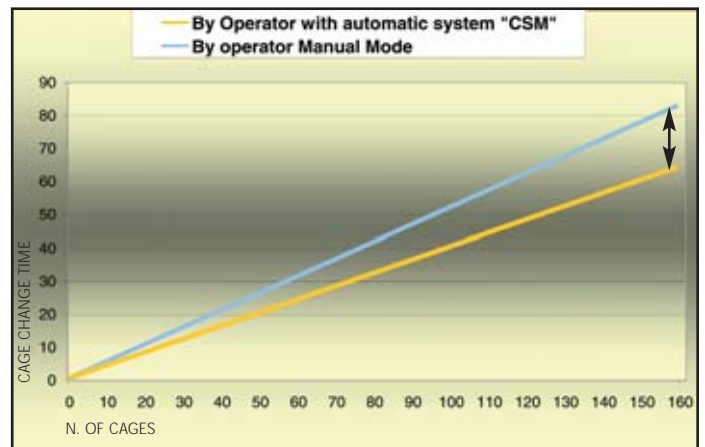
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*ISO5 Class guarantees protection for the animals from external or cross-contamination.

Cost reduction

2



Δ = 20 minutes less for a 2GM160 rack.

Enhanced efficiency/Contamination control

3&4



Reliability, Robustness, Cleanability

5



TECHNICAL SHEET

CSM

Overall Dimensions (L x W x H) mm / inch: 900 x 450 x 300 / 35.43 x 17.72 x 11.8

Electric Consumption: 100-240 V - 50-60 hz - 1.9 A

Weight: 30 kg

Safety

6



Flexibility

8



Two Cage Configuration

- Full cage change setup
- Diet refilling by food hopper
- Bedding collection for sentinel cage
- Bottle change procedure



Four Cage Configuration

- Full cage change setup
- Weaving procedure
- Sexing separation

Options

Two Cage Configuration (allows the user to have sufficient space on the working surface)

Ideal for:

- Full cage change set up.
- Diet refilling by food hopper.
- Bedding collection for sentinel cage
- Bottle change Procedure.
- Four cage configuration.

Four Cage Configuration (allows the user to open up to 4 cages simultaneously)

Ideal for:

- Full cage change setup.
- Weaning procedure.
- Sexing separation.

Related Products

To maximise operational efficiency and learn more about these products contact your local representative.



CS5 changing station.

Compact and light double side mobile Changing Station that allows the user to easily move the cabinet inside the animal room.



Sealsafe Plus: high containment, certified protection from allergens, high density and practicality of use. The IVC (r)evolution.



Logistic trolleys offer safety and ergonomic features that enable high load-density for moving cages and bottles, crates, pallets and covers.

 **TECNIPLAST**

HEADQUARTERS

ITALY | Tel. +39 0332 809711 • www.tecniplast.it • E-mail: tecnicom@tecniplast.it

AUSTRALIA/NEW ZEALAND | Tel. + 61 2 8845 6500 • www.tecniplast.it • E-mail: info@tecniplast.com.au

FRANCE | Tél. 04 72 52 94 41 • www.tecniplast.fr • E-mail: info@tecniplast.fr

GERMANY | Tel. 08805 921320 • www.tecniplast.de • E-mail: info@tecniplast.de

UNITED KINGDOM | Tel. 0845 0504556 • www.tecniplast.it • E-mail: info@tecniplastuk.com

JAPAN | Tel. + 03 5770 5375 • www.tecniplast.it • E-mail: info@tecniplastjapan.co.jp

USA/CANADA | Toll Free: 877.669.2243 • www.tecniplastusa.com • E-mail: info@tecniplastusa.com



ISO-9001 - Cert. n° 0875



ISO-14001 - Cert. n° 0256A/0

