

ISO TECHNOLOGY

BIOEXCLUSION & BIOCONTAINMENT
APPLICATIONS



HOUSING





TECNIPLAST HAS BEEN INVOLVED FOR MORE THAN 60 YEARS IN THE FIELD OF LAB ANIMAL RESEARCH AND IN ITS INNOVATIONS TO ACHIEVE THE CHALLENGING GOALS SET BY THE SCIENTIFIC RESEARCH.

THE ORIGINAL NEED TO HAVE JUST A "CONTAINER" FOR RODENTS HAS EVOLVED OVER TIME TO MEET THE NEED OF A RANGE OF PRACTICAL, SCIENTIFIC REQUIREMENTS.

THESE INCLUDE: HEALTH STATUS, BIO-CONTAINMENT OR BIO-EXCLUSION, SEPARATION OF SMALL GROUPS OF ANIMALS, SPACE SAVING, ERGONOMICS, PRACTICALITY OF USE, AND LAST BUT NOT LEAST, ANIMAL AND HUMAN WELFARE. COMPLIANCE WITH THESE CRITERIA IS ESSENTIAL IN ORDER TO AVOID UNDESIRABLE VARIABLES AND ACHIEVE RELIABLE SCIENTIFIC OUTCOMES. THE STATE OF ART IN TERMS OF CAGING SYSTEMS FOR RODENTS IS REPRESENTED BY MODERN INDIVIDUALLY VENTILATED CAGES (IVCs).

IMPROVING THE OUTCOME OF BIOMEDICAL RESEARCH REQUIRES MORE THAN JUST KEEPING PEOPLE SAFE AND ENSURING ANIMAL WELL-BEING – IT REQUIRES US TO PARTNER WITH OUR CLIENTS. ONLY IN THE SPIRIT OF TRUE PARTNERSHIP AND SUPPORT WE CAN HELP OUR CLIENTS TO ACHIEVE THEIR GOALS.

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BIOEXCLUSION



FOR MICE

ISO CAGE P



FOR RATS
& HAMSTERS

ISORAT900 P



ISO CHECK



ACCESSORIES

WHEN YOU WORK WITH
GNOTOBIOTICS, GERM-FREE AND
IMMUNOCOMPROMISED ANIMALS,
TECNIPLAST CAN PROVIDE SPECIAL IVCS
DESIGNED TO SOLVE YOUR SPECIFIC
APPLICATION NEEDS.



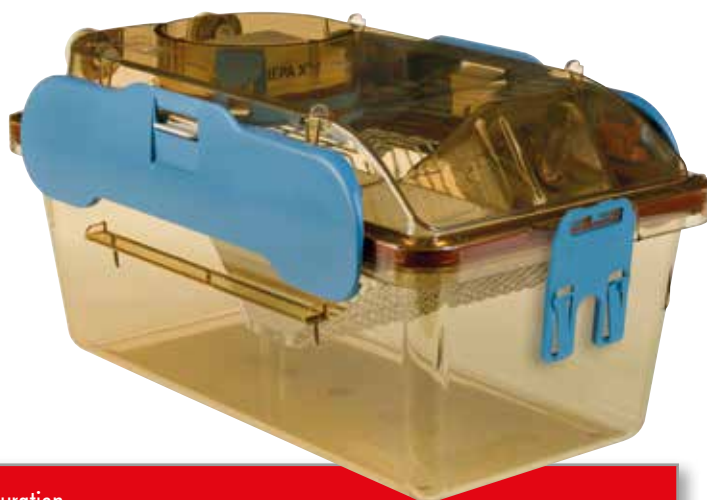
GNOTOBIOLOGY IS THE STUDY OF GERM-FREE ANIMALS TO EXPLORE THE IMPACT OF MICROORGANISMS ON PHYSIOLOGY AND DISEASES.

THE WORD "GERM-FREE" REFERS TO A GENETICALLY MODIFIED ANIMAL COMPLETELY FREE OF ALL FOREIGN LIFE FORMS, EXCLUDING ITSELF. GNOTOBIOLOGY ALSO STUDIES THE INTERACTION OF GERM-FREE ANIMALS THAT ARE INOCULATED WITH ONE OR MORE MICROBES.

THESE ANIMALS WITH A KNOWN, DEFINED MICROBIOTA ARE IDENTIFIED AS GNOTOBIOTIC ANIMALS.

ISOCAGE P

ISOcage P system has been designed in order to achieve the safety and protection of an isolator coupled with the advantages of an IVC, in terms of ergonomics, flexibility and density. ISOcage P is an isolator at cage level that allows the carrying out of multiple studies on the same rack, providing strong bioexclusion for maximum animal protection, excluding any possibility of cage-to-cage contamination. It is especially designed for gnotobiotics, germ-free and immunocompromised animals.



Rack configuration

ISO30P	30 cages (6w x 5h), single sided
ISO48P	48 cages (6w x 8h), single sided
ISO60P	60 cages (6w x 5h), double sided
ISO96P	96 cages (6w x 8h), double sided

IDEAL BIOEXCLUSION & PROTECTION

- Twin clamps and double gasket self-closing nozzles: ISOcage P is a real airtight, hermetic cage. Once removed from the rack, it remains pressurized for a long time: safety and protection for the animals
- Pressure driven microprocessor based ventilation control: constant high positive pressure to provide safe intra-cage environment

ANIMAL SAFETY

- Two blowers working simultaneously: redundancy in the unfortunate case of a blower failure
- Battery back-up system can provide adequate ventilation for more than 24 hours in case of power failure
- Automatic Visual Docking Indicator and great visibility: operator can immediately see if the cage is properly in place
- Possibility to export data via USB, error recording, on-line help menu, UPS-saver mode, connection to BMS: safety and easy data monitoring

DENSITY AND ERGONOMICS

- ISOcage P allows the carrying out of different studies on the same rack, achieving an IVC-like density
- Large touch screen with user-friendly interface
- Optimal handling and procedures, thanks to the new "open-clamp" locking system

ANIMAL WELFARE

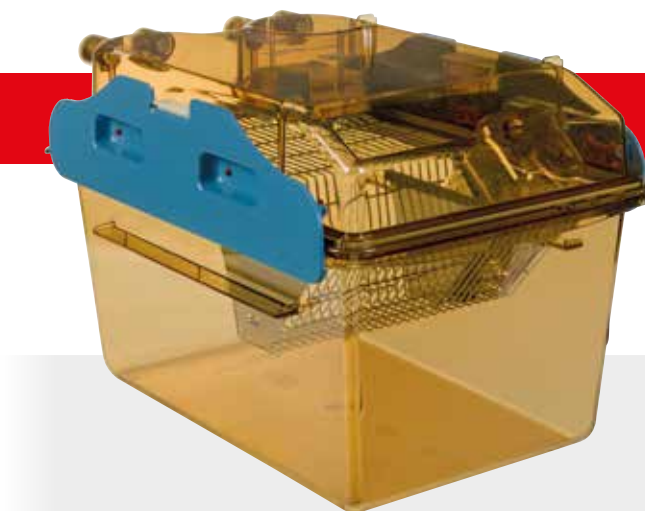
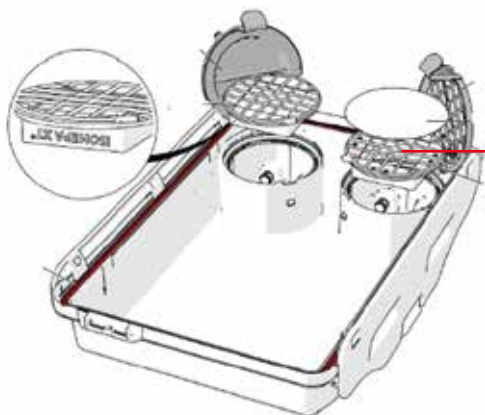
- Air valves placed on the top: no air drafts to minimize anxiety- and stress-induced behaviours. Protection and welfare for gnotobiotics, germ-free or immunocompromised animals
- The Air Handling Unit provides ventilation without transmitting vibrations to the rack, ensuring standardization of the experiment

LOW RUNNING COSTS

- New low consumption ECM DC-Blowers together with protection-related lower personnel costs reduce the overall system's running costs

ISORAT900 P

ISORat900 P is an isolator at cage level, designed for multispecies applications. It gives the flexibility to have multiple experiments on the same rack, providing strong Bioexclusion for gnotobiotics, germ-free or immunocompromised animals, in order to maximise the animal protection, and to avoid the risk of cross-contamination.



THE OPTIONAL EXHAUST HEPA FILTER AT CAGE LEVEL MAINTAINS THE SAFETY OF THE SYSTEM EVEN WHEN WORKING WITH ANIMALS INFECTED WITH HAZARDOUS PATHOGENS.

Rack configuration	
ISORAT25P	25 cages (5w x 5h), single sided



DVC[®] ISO
DIGITAL VENTILATED CAGE

The Digital Ventilated Cage ISO (DVC[®] ISO) is a unique and revolutionary home-cage monitoring system, designed for standard Tecniplast ISO cages for mice, made up of a mix of electronics and software components to collect a set of information directly from the home cage in the home rack.

TAKE A LOOK AT THE DIGILAB BROCHURE OR VISIT DIGITALCAGE-TECNIPLAST.COM TO FIND OUT MORE

Mobile
Biosafety
Changing
Station for
germ free

GUARANTEED
PROTECTION FOR
YOUR STAFF AND
ANIMALS ENSURING
AN EFFECTIVE BARRIER,
PREVENTING GERM FREE
HEALTH STATUS OF THE
ANIMALS AND CROSS
CONTAMINATION.



TAKE A LOOK AT TECNIPLAST **LAMINAR FLOW** BROCHURE TO DISCOVER OUR ARIA ISO-TECH60 P

TECNIPLAST ISOCHECK

QUICK CHECK FOR LONG-LIFE EXPERIMENTS



The new Tecniplast ISOcheck is a smart, electronic tool specifically designed to check if ISOcages are correctly maintained and therefore perform up to expectation.

So as always to guarantee the highest standard of the ISO system and the relative experiments, the cages can now be tested inside the facility on a regular basis.

The ISOcheck is available for both **ISO Positive** and **ISO Negative** cages; it consists of a single cage checking station which provides a very quick PASS or FAIL result.



SAFETY FOR ANIMALS AND OPERATORS

The ISOcheck station provides information about the maintenance status of ISOcages.

RELIABLE AND USER FRIENDLY

ISOcages are automatically tested after being docked in the mini-rack. The test starts just by clicking on the screen.

ERGONOMIC

Portable solution that can be placed on any surface/table close to the Biosafety Cabinet.

Thanks to the adjustable touch screen, the station can also be directly placed onto the BSC working surface.

EASY TO CLEAN

The electronic part can be easily dismounted for cleaning and disinfection, while the rack can be autoclaved.

AUTOCLAVE DECONTAMINATION RACK

ISO decontamination rack allows the complete closed and clean cages, filled with bedding, food, and water to be placed in the autoclave. The open valve allows the steam to enter and decontaminate the whole cage. No more worries about contaminants.

ERGONOMICS AND FLEXIBILITY

- ISO decontamination rack is modular: possibility to stack multiple racks to fit in most autoclave sizes
- The easy locking system and the light weight of the rack make it easy to be used by just one person



ISO MINI P

ISO Mini P is a compact, mobile unit designed to ensure and ideal bioexclusion. Thanks to the battery backup system it can also be used to move the animal groups between units, maintaining the same ventilating conditions and safety of an ISOcage P standard rack.

- Can be used as an emergency/temporary rack: no more logistic and procedural problems
- Maintains reliability of research

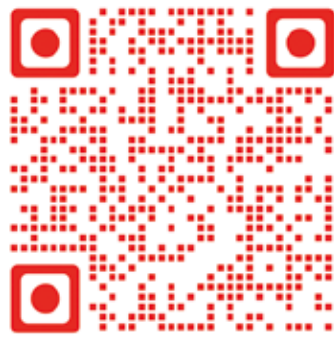
DECONTANK

The DeconTank is a plastic box with a holding chamber that allows complete coverage of disinfectant on the cage surface, allowing for appropriate external decontamination. The DeconTank is dedicated to all the facilities that are working with a Biosafety Cabinet without an integrated dunk tank, but wish to achieve a complete and safe decontamination of the cage external surface. It is a handy, portable solution that can be placed on any surface/table to be located near the Biosafety Cabinet. Thanks to the optional trolley, the height is fully adjustable to be aligned to the opening of the BSC.

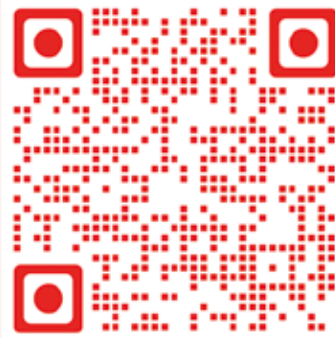




CHECK OUT
HOW TO DECONTAMINATE
THE ISO-CAGE
AIR HANDLING UNIT
USING IWT EQUIPMENT!

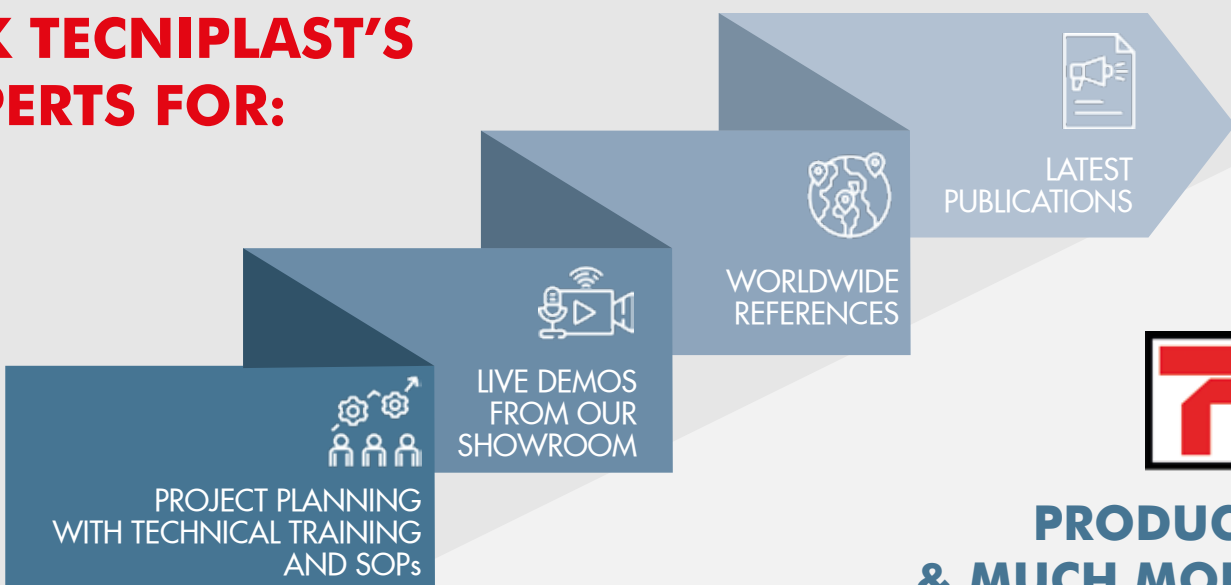


AHU + RACK



AHU

ASK TECNIPLAST'S EXPERTS FOR:



**PRODUCTS
& MUCH MORE!**

CONTACT TECNIPLAST'S AXENIC TEAM AT AXENIC@TECNIPLAST.IT TO FIND OUT MORE

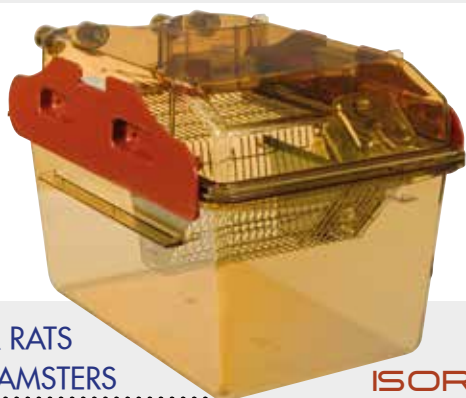


BIOCONTAINMENT



FOR MICE

ISO CAGE N



FOR RATS
& HAMSTERS

ISO RAT900 N



ISO CHECK



FOR FERRETS

ISO XL



ACCESSORIES

WHEN YOU WORK IN A HIGH
RISK BIOSAFETY ENVIRONMENT
TECNIPLAST CAN PROVIDE SPECIAL
IVCS DESIGNED TO SOLVE YOUR
SPECIFIC APPLICATION NEEDS.



IN ANIMAL FACILITIES WHERE THE KEY FOCUS OF RESEARCH IS ZOO NOTIC AGENTS, THE CONCEPT OF 'BIOCONTAINMENT' IS STRICTLY ASSOCIATED WITH LABORATORY BIOSAFETY SOLUTIONS.

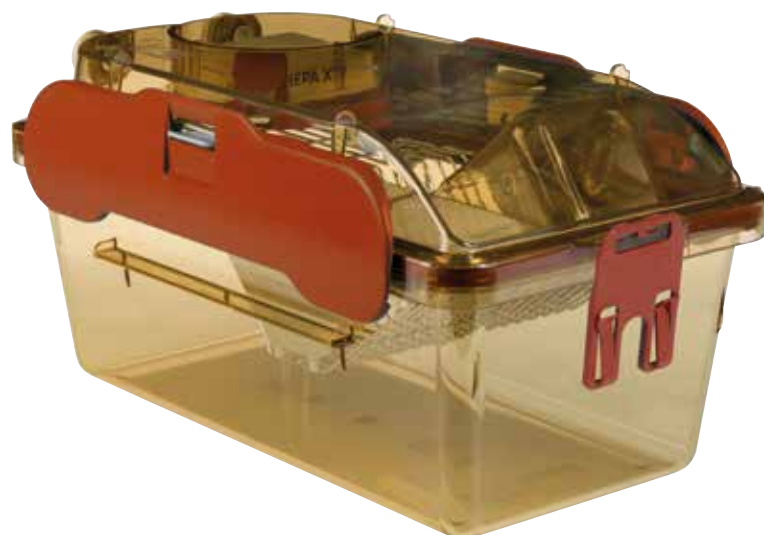
THIS IS A CONSEQUENCE OF THE POTENTIAL RISK OF THE SURROUNDING ENVIRONMENT AND OPERATOR'S EXPOSURE TO ANIMALS INFECTED WITH BIOLOGICAL AGENTS.

ANIMAL LABORATORIES USING ZOO NOTIC AGENTS ARE SPECIFICALLY DESIGNED AND CLASSIFIED AS THE FOLLOWING: ABSL (ANIMAL BIO-SAFETY LEVEL) 2, 3 AND 4 ACCORDING TO THE RISK TO HUMAN HEALTH.

PART OF THE RISK ASSESSMENT IS THE CHOICE OF PRIMARY AND SECONDARY BARRIERS IN RELATION TO THE LEVEL OF PROTECTION REQUIRED DURING STUDIES WITH THESE INFECTED ANIMALS

ISOCAGE N

ISOcage N system has been designed to achieve the safety and protection of an isolator coupled with the advantages of an IVC, in terms of ergonomics, flexibility and density. ISOcage N is an isolator at cage level that allows the carrying out of multiple studies on the same rack, providing strong Biocontainment for maximum personnel protection.



Rack configuration

ISO30N	30 cages (6w x 5h), single sided
ISO48N	48 cages (6w x 8h), single sided
ISO60N	60 cages (6w x 5h), double sided
ISO96N	96 cages (6w x 8h), double sided

IDEAL BIOCONTAINMENT

- Exhaust air is HEPA filtered at cage level: complete confinement of biohazards at cage level, keeping the air circuits sterile
- Twin clamps and double gasketed self-closing nozzles: ISOcage N is a real airtight, hermetic cage. Once removed from the rack, it remains pressurized for a long time: safety and protection for operators
- Pressure driven microprocessor based ventilation control: constant high negative pressure to provide safe environment



SPECIAL CLOSURE CLAMPS

OPERATORS' SAFETY

- High resistant Polyphenylsulfone cage to ensure the integrity of the cage even if dropped, hit or mechanically stressed
- Two blowers working simultaneously: redundancy in the unfortunate case of a blower failure
- Battery back-up system can provide adequate ventilation for more than 24 hours in case of power failure
- Possibility to export data via USB, error recording, on-line help menu, UPS-saver mode, connection to BMS: safety and easy data monitoring

SILICONE
FRAME



DOUBLE
GASKET



CAGE LEVEL HEPA FILTER FOR EXHAUST AIR

DENSITY AND ERGONOMICS

- Being an isolator at cage level, ISOcage N allows the carrying out of different studies on the same rack, achieving an IVC-like density
- Large touch screen with user-friendly interface: easy to use and check parameters or eventual alarms
- Automatic Visual Docking Indicator and great visibility: operator can immediately see if the cage is properly in place for a safer and easier daily check
- Optimal handling and procedures, thanks to the new "open-clamp" locking system

ANIMAL WELFARE

- The Air Handling Unit provides ventilation without transmitting vibrations to the rack, ensuring standardization of the experiment
- Air valves placed in the top in order to avoid undesired variables that may affect research outcomes, such as air drafts at animal level

LOW RUNNING COSTS

- New low consumption ECM DC-Blowers together with protection-related lower personnel costs reduce the overall system's running costs.



EMPOWER YOUR ISO CAGES WITH TECNIPLAST'S REVOLUTIONARY **DVC** ISO
TAKE A LOOK AT THE DIGILAB BROCHURE OR VISIT [DIGITALCAGE-TECNIPLAST.COM](https://digitalcage-tecniplast.com) TO FIND OUT MORE

ISORAT900 N

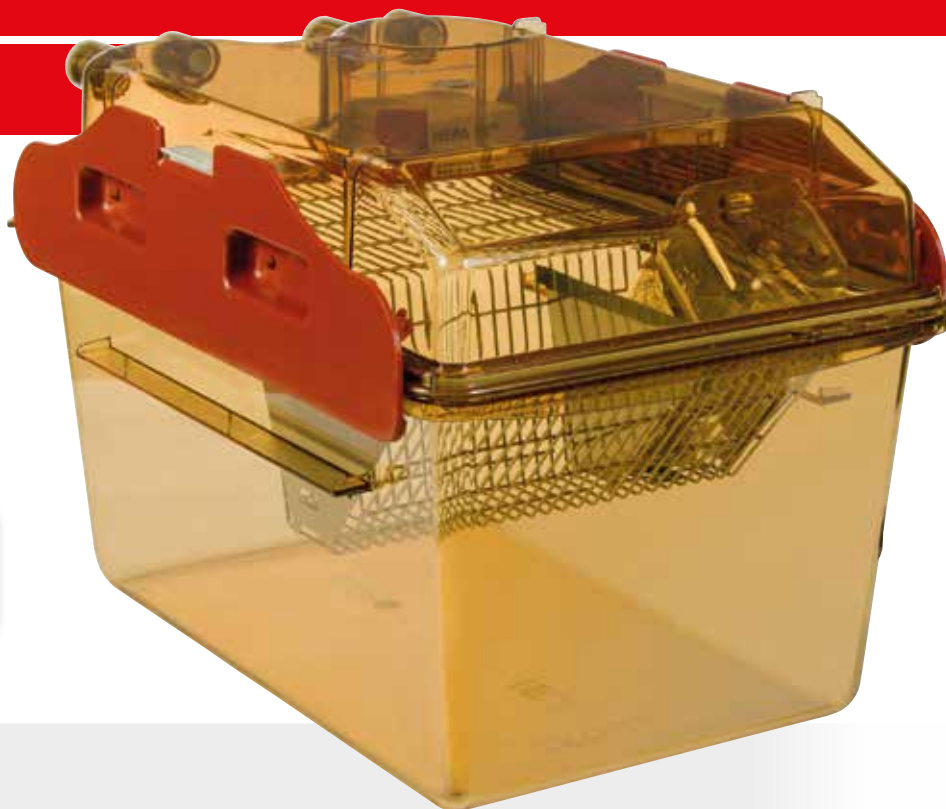
ISORat900 N is an isolator at cage level designed for rats and hamsters.

It allows to carry out different experiments on the same rack, maintaining a strong negative pressure for the safety of the personnel.

Rack configuration

ISORAT25N

25 cages (5x5) single sided



ISOcage
Biosafety Station
+
ISOcage N
=
Tecniplast
Biocontainment
System



TAKE A LOOK AT TECNIPLAST **LAMINAR FLOW** BROCHURE TO DISCOVER OUR ARIA ISO-TECH60 N

TECNIPLAST ISOCHECK

QUICK CHECK FOR LONG-LIFE EXPERIMENTS



ISO Positive



ISO Negative

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The ISOcheck is available for both **ISO Positive** and **ISO Negative** cages; it consists of a single cage checking station which provides a very quick PASS or FAIL result.



SAFETY FOR ANIMALS AND OPERATORS

The ISOcheck station provides information about the maintenance status of ISOcages.

RELIABLE AND USER FRIENDLY

ISOcages are automatically tested after being docked in the mini-rack. The test starts just by clicking on the screen.

ERGONOMIC

Portable solution that can be placed on any surface/table close to the Biosafety Cabinet.

Thanks to the adjustable touch screen, the station can also be directly placed onto the BSC working surface.

EASY TO CLEAN

The electronic part can be easily dismantled for cleaning and disinfection, while the rack can be autoclaved.

ISO XL

The BSL3 & BSL4 containment system for ferrets.

MAXIMUM SAFETY

- **INLET AND OUTLET ULPA FILTERS** - The cage achieves biocontainment at cage level, minimising costs for building ABSL3/4 laboratories. The negative pressure works so that the air flows into the cage through the INLET ULPA filter, removing odours and dander from the cage floor and the excreta pan, while protecting technicians from exposure to allergens

PRACTICALITY OF USE

- **EXTERNAL WATER BOTTLE AND FEEDER** - Bottles can be changed and food refilled without disturbing or stressing the animals. Safety is guaranteed also by the presence of a 0.2 micron PALL filter between the drinking valve and the bottle
- **TRANSFER BOX** - To move the animal under a bio-containment cabinet without touching it
- **OPENING FOR BAG IN-BAG OUT PROCEDURE** - The waste tray may be changed during the experiment without opening the main door of the cage



2 CAGES CONFIGURATION

AUTOCLAVE DECONTAMINATION

ISO decontamination rack makes for easier Standard Operating Procedures and related workflows, allowing to autoclave the complete closed cage, always providing maximum protection.

ERGONOMICS AND FLEXIBILITY

- ISO decontamination rack is modular: possibility to stack multiple racks to fit in most autoclave sizes
- The easy locking system and the light weight of the rack make it easy to be used by just one person



MODULAR SYSTEM TO FIT DIFFERENT AUTOCLAVE SIZES

ISO MINI N



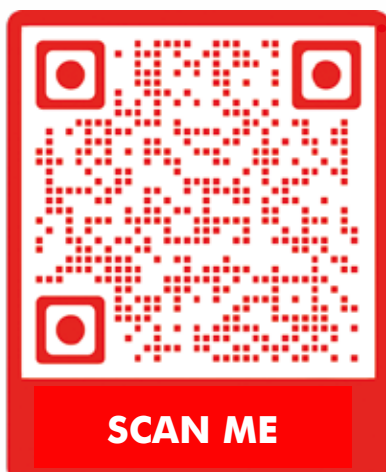
SAFETY FOR OPERATORS AND ANIMALS

- Designed to move cages across different areas maintaining the same pressure-driven ventilation as in the ISOcage N rack
- Can be used as an emergency/ temporary rack: no more logistic and procedural problems

UNINTERRUPTIBLE POWER SYSTEM (UPS)

- Safety for animals, people and research





DISCOVER THE FULL RANGE OF
TECNIPLAST'S EQUIPMENT FOR
YOUR BIOCONTAINMENT NEEDS!

ASK TECNIPLAST'S EXPERTS FOR:



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& SOPs



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FROM OUR
SHOWROOM



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PUBLICATIONS



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& MUCH MORE!**

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CERTIFIED BY DNV GL
= ISO 9001 =

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