

# Individually Ventilated Caging System

## TECHNOLOGY BUILT TO PROTECT ANIMALS AND RESEARCHERS

Orchid's IVC system not only ensures high biological safety for laboratory animals and scientists but also matches the at-par level of compliance for safety, animal welfare, and ergonomics.



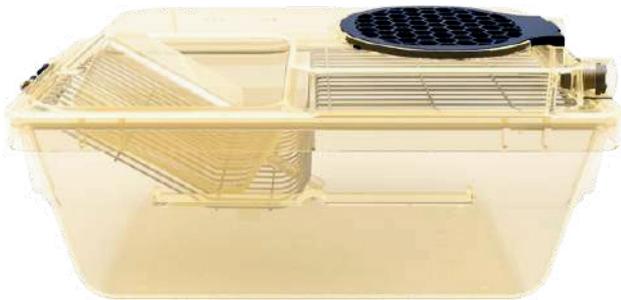
**Designed To Match The At-Par Level Of Compliance For Safety, Animal Welfare, And Ergonomics.**



**Ventilator unit fitted with inbuilt UV-C light inside the cabinet for disinfection of the exhaust air coming from cages before releasing to the external environment.\***

*\*Patent Filed*

## INDIVIDUALLY VENTILATED CAGE FOR MICE, RATS & GUINEA PIGS:



US 300, US 500, US 530  
(MICE)



US 900  
(RAT & GUINEA PIG)

### ERGONOMICS:

- Quick finger touch swing type locks enabling quick locking and unlocking at the same time giving safe locking.
- Card holder fitting on the edge gives visibility of the animal inside the cage.
- External self-centering water bottle enabling quick bottle change without removing cage.
- Snap fit filter holder enabling easy removal of filter.
- Excellent lid stacking without damaging cage locks.
- Cages are made of polysulfone polymer with transparency enough to reveal the contents inside.
- Symmetrical cage bottom from both end without any projections inside.
- All components of Cages like Cage lid, Tray, Lock, Filter plates, card holder and bottle are made of polysulfone material, air tight spring-loaded air inlet, air outlet and bottle inlet valves made of silicon material, ensure no air leakage and can withstand repeated sterilization at 121° C
- Silicone compression seal in the lid ensuring complete seal around the cage.



### *\*Patent Pending*

- Water bottle grommet design avoiding any air leakage when water bottle is inserted in the cage.\*
- Specially designed wire bar grill reducing the foot print while storage or washing.\*

## ANIMAL WELFARE

- No direct air drift at animal level, air inlet and outlet at the top level ensures less animal stress and heat loss
- Air velocity within the cage at animal level not more than 0.2m/sec
- Wider 0.3µ Passive filter of 99.9% efficiency on cage lid ensuring animal safety in power failure or cage is off the rack for long time without compromising the protection

## SAFETY

- Air tight spring-loaded air inlet, air outlet and bottle inlet valves ensure no air leakage
- Silicone compression seal in the lid ensuring complete seal around the cage
- S.S 304 grill without any sharp edges & v shapes points.

## VENTILATOR UNIT



## ERGONOMICS

- Light weight easy to move system with Touch screen display at eye level.
- Separate indicators on the control panel for indication of Parameters out of range, Supply HEPA filter change and exhaust HEPA filter change.
- Alarm can be configured with the building management software (BMS).
- Washable pre filters on supply & exhaust side with easy access for routine cleaning.
- Easily settable ACH from range of 50 – 100 ACH ( $\pm 5$ )

## ANIMAL WELFARE

- Stand-alone separate Ventilator gives less vibrations and noise level to cage level
- Continuous monitoring of Temperature, % RH and provision to set limits
- Mobile messaging system for error logs enabling user to take immediate action to protect animals\*
- Multiple ventilator connectivity and control from computer or mobile through Ethernet port.
- Parameters like ACH, number of cages & pressure modes can be easily set & monitored.
- Positive or Negative pressure modes can be set from the control panel.
- Data logs download on the computer through Ethernet port.
- Noise Level generated by the system is less than 50 db.
- Unit is fitted with 4 castor wheel (2 with brakes)

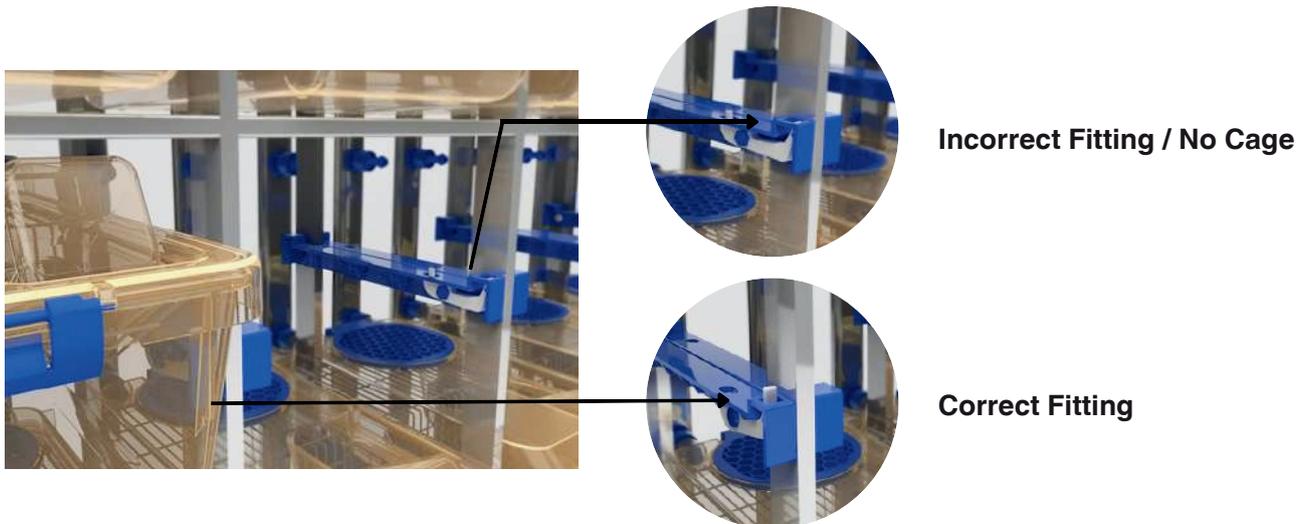
## ECONOMICS

- Low power consumption and less maintenance blowers
- Stand-alone Ventilator can be connected to 4 single sided racks or 2 double sided racks.
- Both supply & exhaust air streams are HEPA filtered.
- HEPA filters are DOP tested for efficiency of 99.99% for 0.3  $\mu$  particles
- Display has standby screen or night mode to avoid disturbance to animals

## COMPLIANCE

- Two level password protected system ensuring restricted access
- Auto data logging of parameters
- Error logs for parameters out of upper and lower limits set

**RACKS FOR INDIVIDUALLY VENTILATED CAGES:** Orchid's IVC Racking offers complete flexibility to meet any laboratory design. Fully mobile racks are available in a wide range of cage capacities and in addition to that further racks can be added at any time to the existing Ventilator.



- Cage holding rails fitted with visual docking indicators to ensuring proper fitting of cage\*
- Spring loaded non rupture air supply and exhaust valve Air supply and exhaust valves
- designed to prevent entry within the inner cage environment avoiding any cross contamination Press fit air supply and exhaust valve allows easy removal for cleaning purpose Racks are
- fitted with autoclavable common rail for easy loading, removal & locking of cage in the rack
- providing proper cage alignment and avoiding any air leakage from any of the vents. (\*Optional)

## EFFICACY AND EFFICIENCY

Orchid's IVC system is designed by taking into consideration airflow pattern, uniform air distribution, air velocities at animal level and differential pressure.

Cage design is optimized by CFD analysis for ensuring the uniform air distribution without any dead spot in the cage.

Further system is tested for various parameters ensuring that product delivered performs to the highest level of biological safety at the same time ensuring animal welfare.

1. Air velocity at animal level.
  2. Sound level.
  3. Vibrations within the cage.
  4. Air leakage through silicon gasket using smoke test.
  5. Smoke recovery test.
- (\*Optional)

## ORDERING INFORMATION FOR IVC CAGE:

Model	Floor Space Approx. (sq. cm)	Species	Free Height (cm)	Over all Cage Size (L x W X H) in mm ( $\pm$ 10 mm)	Material of construction	Components Included
US 300	360	Mice	13	366x160x180	Polysulfone/ Polyetherimide	<ul style="list-style-type: none"> <li>• Cage base</li> <li>• Cage Lid with silicon gasket</li> <li>• Filter retainer plate</li> <li>• Card holder</li> <li>• Passive filter of 0.3<math>\mu</math></li> <li>• Stainless steel grill</li> <li>• Water bottle of 250 ml with SS cap</li> </ul>
US 500	500	Mice	13.5	394x199x175	Polysulfone/ Polyetherimide	<ul style="list-style-type: none"> <li>• Cage base</li> <li>• Cage Lid with silicon gasket</li> <li>• Filter retainer plate</li> <li>• Card holder</li> <li>• Passive filter of 0.3<math>\mu</math></li> <li>• Stainless steel grill</li> <li>• Water bottle of 300 ml with SS cap</li> </ul>

US 530	530	Mice	14	394x198x182	Polysulfone/ Polyetherimide	<ul style="list-style-type: none"> <li>• Cage base</li> <li>• Cage Lid with silicon gasket</li> <li>• Filter retainer plate</li> <li>• Card holder</li> <li>• Passive filter of 0.3µ</li> <li>• Stainless steel grill</li> <li>• Water bottle of 300 ml with SS cap</li> </ul>
US 530-CT	530	Mice	14	396x214x192	Polysulfone/ Polyetherimide	<ul style="list-style-type: none"> <li>• Cage base</li> <li>• Cage Lid</li> <li>• Filter retainer plate</li> <li>• Card holder</li> <li>• Passive filter of 0.3µ</li> <li>• Stainless steel grill provided with nylon gasket on the periphery for sealing between cage lid &amp; cage base</li> <li>• Water bottle of 300ml with SS cap</li> </ul>
US 900	925	Rat	19	436x275x235	Polysulfone/ Polyetherimide	<ul style="list-style-type: none"> <li>• Cage base</li> <li>• Cage Lid with silicon gasket</li> <li>• Filter retainer plate</li> <li>• Card holder</li> <li>• Passive filter of 0.3µ</li> <li>• Stainless steel grill</li> <li>• Water bottle of 500 ml with SS cap</li> </ul>
US 900-GP	925	Guinea pig	19	436x275x235	Polysulfone/ Polyetherimide	<ul style="list-style-type: none"> <li>• Cage base</li> <li>• Cage Lid with silicon gasket</li> <li>• Filter retainer plate</li> <li>• Card holder</li> <li>• Passive filter of 0.3µ</li> <li>• Stainless steel grill</li> <li>• SS304 feed hopper</li> <li>• Water bottle of 500 ml with SS cap</li> </ul>

## ORDERING INFORMATION FOR VENTILATOR UNIT:

Model	Material of construction	Components Included	Over All Dimensions- LxWxH in mm (+/- 10mm)
US-Y	<p>High Grade Plastic &amp; Stainless steel 304 panel, with 7" touch screen display</p> <p>Power Requirement: 220-240V, 50 Hz, 350 watts.</p> <p>Unit Fitted with castor wheels with SS ball bearing, wheels reinforced with high quality polyurethane material.</p>	<ul style="list-style-type: none"> <li>• Ventilator</li> <li>• Flexible hose pipe</li> <li>• Silicon end caps</li> <li>• Supply &amp; exhaust HEPA Filter</li> <li>• Supply &amp; exhaust prefilter</li> <li>• Ethernet port for communication &amp; data download on computer</li> <li>• Exhaust pipe for connecting with room's exhaust system</li> </ul>	435 x 600 x1540
US-Y-UV	<p>High Grade Plastic &amp; Stainless steel 304 panel, with 7" touch screen display.</p> <p>Power Requirement: 220-240V, 50 Hz, 350 watts.</p> <p>Unit Fitted with castor wheels with SS ball bearing, wheels reinforced with high quality polyurethane material.</p>	<ul style="list-style-type: none"> <li>• Ventilator with UVC light for exhaust air disinfection</li> <li>• Flexible hose pipe</li> <li>• Silicon end caps</li> <li>• Supply &amp; exhaust HEPA Filter</li> <li>• Supply &amp; exhaust prefilter</li> <li>• Ethernet port for communication &amp; data download on computer</li> <li>• Exhaust pipe for connecting with room's exhaust system</li> </ul>	435 x 600 x1540
Optional: ACC-US-C	<p>WIFI module suitable for IVC ventilator unit: Data transfer to cloud storage and facility to monitor the data using mobile application.</p> <p><b>Note:</b> <i>Wifi with suitable internet speed needed for functioning of this module to be arranged by user</i></p>		

## ORDERING INFORMATION FOR IVC RACKING:

Made of stainless steel 304 material with special grade silicone connectors and end caps, fitted with 4 castor wheels (2 with brakes & 2 without brakes) for ease of movement. (Wheel material available in options of PU wheel with nylon polyamide center or complete wheel made of autoclavable polymer materials with SS 304 bracket and double locking mechanism)

Rack Model	Suitable Cage Model	Side	Number of cages/Rack	Diemensions (LxWxH) (± 10 mm)	
<b>Mice Cage Racks</b>					
R-US3-S-32	US 300	Single	32	776 X 480 X 2000 mm	
R-US3-S-40			40	962.5 X 480 X 2000 mm	
R-US3-S-48			48	1149 X 480 X 2000 mm	
R-US3-S-56			56	1335.5 X 480 X 2000 mm	
R-US3-S-64			64	1522 X 480 X 2000 mm	
R-US3-S-72			72	1708.5 X 480 X 2000 mm	
R-US3-S-80			80	1895 X 480 X 2000 mm	
R-US3-D-64			Double	64	776 X 847 X 2000 mm
R-US3-D-80		80		962.5 X 847X 2000 mm	
R-US3-D-96		96		1149 X 847 X 2000 mm	
R-US3-D-112		112		1335.5 X 847 X 2000 mm	
R-US3-D-128		128		1522 X 847 X 2000 mm	
R-US3-D-144		144		1708.5 X 847 X 2000 mm	
R-US3-D-160		160		1895 X 847 X 2000 mm	
R-US5-S-32		US 500		Single	32
R-US5-S-40			40		1152.5 X 480 X 1915 mm
R-US5-S-48	48		1377 X 480 X 1915 mm		
R-US5-S-56	56		1601.5 X 480 X 1915 mm		
R-US5-S-60	60		1377 X 480 X 2227 mm		

R-US5-S-64	US 500	Single	64	1826 X 480 X 1915 mm	
R-US5-S-70			70	1601.5 X 480 X 2227 mm	
R-US5-S-72			72	2050.5 X 480 X 1915 mm	
R-US5-S-80			80	2275 X 480 X 1915 mm	
R-US5-D-64		Double	64	928 X 892 X 1915 mm	
R-US5-D-80			80	1152.5 X 892 X 1915 mm	
R-US5-D-96			96	1377 X 892 X 1915 mm	
R-US5-D-112			112	1601.5 X 892 X 1915 mm	
R-US5-D-120			120	1377 X 892 X 2227 mm	
R-US5-D-128			128	1826 X 892 X 1915 mm	
R-US5-D-140			140	1601.5 X 892 X 2227 mm	
R-US5-D-144			144	2050.5 X 892 X 1915 mm	
R-US5-D-160			160	2275 X 892 X 1915 mm	
R-US53-S-32			US 530 & US 530 CT	Single	32
R-US53-S-40		40			1152.5 X 480 X 2005 mm
R-US53-S-48		48			1377 X 480 X 2005 mm
R-US53-S-56	56	1601.5 X 480 X 2005 mm			
R-US53-S-64	64	1826 X 480 X 2005 mm			
R-US53-S-72	72	2050.5 X 480 X 2005 mm			
R-US53-S-80	80	2275 X 480 X 2005 mm			

R-US53-D-64	US 530 & US 530 CT	Double	64	928 X 892 X 2005 mm
R-US53-D-80			80	1152.5 X 892 X 2005 mm
R-US53-D-96			96	1377 X 892 X 2005 mm
R-US53-D-112			112	1601.5 X 892 X 2005 mm
R-US53-D-128			128	1826 X 892 X 2005 mm
R-US53-D-144			144	2050.5 X 892 X 2005 mm
R-US53-D-160			160	2275 X 892 X 2005 mm
<b>Rat &amp; Guinea Pig Cage Racks</b>				
R-US9-S-18	US 900 & US 900-GP	Single	18	921 X 530 X 1985 mm
R-US9-S-24			24	1218 X 530 X 1985 mm
R-US9-S-30			30	1515 X 530 X 1985 mm
R-US9-S-36			36	1812 X 530 X 1985 mm
R-US9-D-36		Double	36	921 X 964.5 X 1985 mm
R-US9-D-48			48	1218 X 964.5 X 1985 mm
R-US9-D-60			60	1515 X 964.5 X 1985 mm
R-US9-D-72			72	1812 X 964.5 X 1985 mm



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