

BUSTER ICU Cage

Instructions for Use

The BUSTER ICU Cages are collapsible
They are portable and can be set up in the prep. room or any appropriate site
They fit standard stainless steel kennels
They allow for the provision of oxygen
They allow for the provision of heat
They also allow for the cooling of animals
Can be used as anaesthetic chamber provided a co-axial circuit is used

Contents

Remove all the packaging and check the components
1 x carry bag
1 x ICU Cage
1 x mat (see sheet BUSTER Kennel Mats)
BUSTER Gel pack(s): 1 x S, 2 x M, 4 x L (see sheet for activation of gel pack)
Oxygen accessories pack
6 x Venturi, nebulizer, T piece, cap 2.1m oxygen tubing (see sheet Use of Oxygen)
BUSTER Electric heat pad - medium and large BUSTER ICU Cages only. (See sheet BUSTER Electric Heat Pad)



Cat. No 271711 - Small
Cat. No 271712 - Medium
Cat. No 271713 - Large

Follow the assembly instructions detailed below.

Once assembled, place the animal in the BUSTER ICU Cage.
 The front zipper can be closed or left slightly open for drip lines.
 Attach the T piece to the port on the BUSTER ICU cage.
 Attach the cap to the other end of the T piece
 Attach the appropriate Venturi or nebuliser (see Use of Oxygen sheet) to the down arm of the T piece.
 Attach the oxygen tubing to the end of the Venturi or nebuliser.
 Attach the other end of the oxygen tubing to the blank Venturi
 Attach the blank Venturi to outlet port on your anaesthetic machine.
 Turn on the oxygen supply at the appropriate flow rate (see Use of Oxygen sheet)
 The minimum oxygen flow rate is 2 litre per minute.

Animals in BUSTER ICU Cages are critical care patients and need regular monitoring.
 It is vital to monitor the animal's temperature regularly.
 One of the most common problems with all ICU cages is animals over heating.
 If over heating occurs or is likely to occur, use the frozen/cooled BUSTER Gel Packs to draw heat away from the animal.

Cleaning

After use remove the mat from the BUSTER ICU Cage and clean as instructed in the Sheet BUSTER Kennel Mat.
 Wipe the inside of the cage with disinfectant or parvocide.
 Wipe with a damp cloth. Dry with paper towel.
 For more rigorous cleaning the steel frame can be removed from the cage.
 To remove the frame, collapse the steel frame without collapsing the nylon/PVC cover.
 Undo the zip at the base of the cage and remove the frame.
 The inside of the cage can now be thoroughly cleaned and even soaked using disinfectant or parvocide.
 Rinse and wipe with a damp cloth. Dry with paper towel.
 The metal frame should not be submerged.
 Replacement of the frame is the reverse of removal.

REMEMBER TO REMOVE THE MAT FROM THE CAGE BEFORE COLLAPSING.

Assembly Instructions for BUSTER ICU Cages



Remove the BUSTER ICU Cage from its carrying case



Undo the plastic clips on either side



Gently raise up the sides of the cage



Lift up the top bars on one side



Gently slide back the spring loaded collar and align the bars. Gently release the spring loaded collar securing the bar. Repeat on the other top bar



Insert the foam base. If using the gel packs (hot or cold) it is easier to put these in the foam base mat before putting the mat in the BUSTER ICU Cage



The unit is now ready for use. After use collapsing for storage is the reverse of these assembly instructions. PLEASE ensure that the foam base is removed BEFORE the frame is collapsed.

For veterinary use only

Use of Oxygen

Each BUSTER ICU Cage comes with an oxygen accessories kit.

Contents

6 x Venturi – 1 of each colour green, red, yellow, white, blue and a blank (no holes)
1 x Nebuliser
1 x T piece
1 x Cap
1 x 2.1m oxygen tubing

Instructions for Use

Attach the blank Venturi (no holes) to one end of the oxygen tubing.
This then attaches to the oxygen supply.

For Nebulisation

Unscrew the top half of the nebuliser and add the chosen medication.
Keep the nebuliser vertically whilst screwing back together.
Attach the end of the oxygen tubing to the base of the nebuliser.
Attach the top of the nebuliser to the vertical arm of the T piece
Attach one of the horizontal arms of the T piece to the BUSTER ICU Cage.
Close the other horizontal arm with the cap provided.
Turn on the oxygen at sufficient flow rate to nebulise the chosen medication.

For Oxygen Therapy

Attach the appropriate coloured Venturi to the other end of the oxygen tubing.
Attach the Venturi to the vertical arm of the T piece.
Push one of the horizontal arms of the T piece into the port on the BUSTER ICU Cage.
Close the other arm of the T piece with the cap provided.
Turn on the oxygen to the appropriate flow rate.
The minimum oxygen flow rate is 2 litres per minute.

For veterinary use only



Cat. No 271725



Rationale for Controlled Oxygen Therapy

Excess oxygen can be harmful. Like many drugs, oxygen can be associated with toxicity and excess of oxygen can be harmful to lungs (pulmonary endothelium). The use of inspired oxygen greater than 60% should be avoided. Decreasing the amount of supplemented oxygen at the earliest possible time should be routine practice.

Venturi

Principals of Operation

The Venturi works in a similar fashion to a carburetter in a car engine. Oxygen is delivered into the Venturi barrel. As the oxygen passes through the barrel it draws in a calculated amount of air which mixes with the oxygen. The resulting oxygen/air mixture is then delivered into the BUSTER ICU Cage. The amount of air drawn in by each Venturi is determined by the size of the holes in the Venturi. Each Venturi delivers a constant % oxygen/air enrichment independent of oxygen flow rate.

Choice of Venturi

Different conditions require different levels of oxygen enrichment. For instance, an animal with fractured ribs only needs 24-28% oxygen enrichment while an animal with congestive cardiac failure requires 60% oxygen enrichment. Each Venturi corresponds to different % enrichment.

See below.

Diagram 1

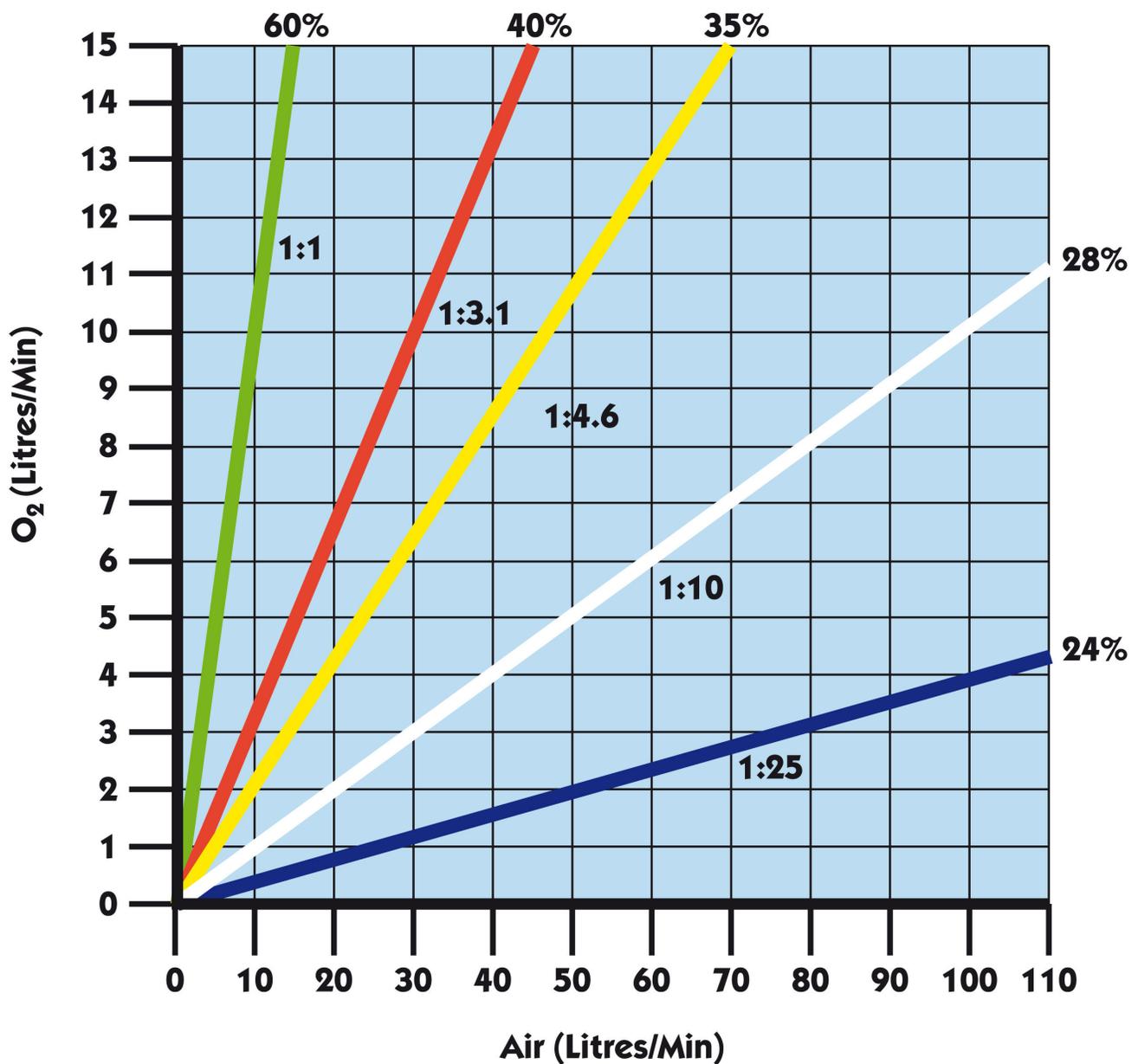
Conditions where the alveolar oxygen exchange mechanism is unaffected, but there is mechanical or physiological compromise of ventilation	Examples: Pre and post anaesthetic oxygenation of rabbits Fractured ribs Diaphragmatic hernia	Choice of Venturi 24% ● 28% ○
Conditions where the alveolar oxygen exchange mechanism is compromised	Examples: Longstanding obstructive airway disease (Chronic bronchitis) Mild lung contusion	35% ● 40% ●
Conditions where the alveolar oxygen exchange mechanism is severely compromised	Examples: Severe lung contusion Pneumonia Lung congestion Congestive cardiac failure	60% ●





Calculating Total Gas Mixture Flow Rates

The approximate volume of each BUSTER ICU Cage is as follows: small 50 litres, medium 120 litres and large 460 litres. Select the Venturi for the condition using diagram 1 below. Run the flow rates high initially to fill the ICU cage with oxygen enriched air at the appropriate concentration. Calculate minute tidal volume (10ml/kg x breaths per minute). Aim to change at least twice the minute tidal volume of air/oxygen mixture per minute. Calculate the oxygen flow rate using the chart below.



Example

24% Venturi

At the minimum O₂ flow rate of 2 litres/min, this Venturi will generate a total flow rate of 52 litres/min. To calculate the total flow rate from the same Venturi if O₂ flow is increased to say 4 litres/min, simply look for 4 litres/min on the vertical axis of the graph and follow the horizontal line until it intersects the 24% line. At this point of the intersection look to see what air flow rate on the horizontal axis is appropriate. In this case it is 100 litres/min. Add the O₂ flow rate for the final mixture flow rate. 100 (air entrained) + 4 (oxygen flow) = 104 litres/min. Similar calculations can be carried out for the remaining Venturi concentrations at varying O₂ flow rates.

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