

The new Vetronic Services Annequin for anaesthesia training

Annequin is a new dummy animal from Vetronic Services capable of accurately emulating the behaviour and responses seen in ventilated animals with respect to CO₂ elimination. The Annequin kit can be used with any standard ventilator and any form of capnograph. Annequin mimics a normal animal by having a constant rate of CO₂ production that must be removed by ventilation. However, you will need to supply the Annequin with a feed of 100% CO₂. This is usually readily available in practice as this gas is used for insufflation during laparoscopies

The Annequin kit (VS0800) consists of the following parts:

VS0710 - 1 x single Annequin fitted with a 'lung' , oral 15mm ET connector and CO₂ feed portal

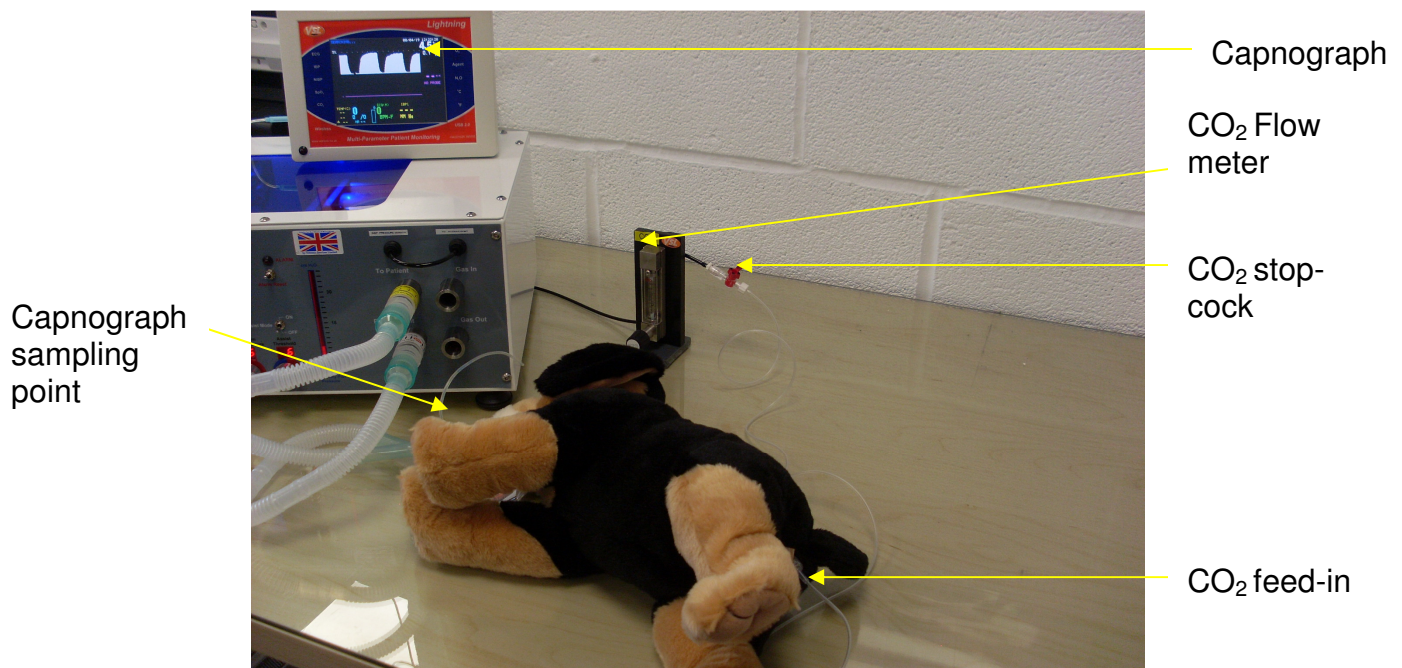
2732 - 1 x 2.45m CO₂ feed line with male-male luer connections

VS0750 - 1 x 0-100ml/min CO₂ flow meter on a stand

VS0760 - 1 x luer-luer stop-cock

VS0765 - 1 x 2m length 4mm polyethylene tubing with 1 x male luer connector

Here is a standard setup for the Annequin, using Merlin as a ventilator





Procedure



1. Connect the CO₂ Flow Meter to the supply of 100% CO₂ from the bottom connector of the Flow Meter.
2. Connect one end of the 2.45 m feed line to the CO₂ stop-cock outlet but have the stop-cock turned OFF.
3. Connect the other end of the 2.45m feed line to the Annequin just under the tail
4. Connect your patient to the ventilator
5. Connect a capnograph in the normal manner
6. Set a Tidal Volume (TV) that results in a Peak Inspiratory Pressure (PIP) of around 10cm H₂O
7. Set a Respiratory Rate (RR) to the normal expected for an animal of that Tidal Volume.
8. Turn the CO₂ stop-cock ON

e.g. Ventilating the Annequin with 140 mls produces a PIP of 10cm
A TV of 140mls equates to a dog of around 14-15kg.
Such a dog would typically have a RR of 16-20, so set the RR of the ventilator to 18. The Minute Volume of this patient is now 2.5L/min

9. Now adjust the CO₂ flow to produce a steady end-tidal value of 40mmHg or 5% CO₂.

This is now your base setup. Make a note of the CO₂ flow required for this base setup.

Use the CO₂ stop-cock valve to halt the addition of CO₂ while ventilation is halted. This prevents a large build-up of CO₂ that takes several breaths to disperse.

Suggested Demonstrations

- Increase the Minute Volume to show the effect of hyperventilation
- Decrease the Minute Volume to show the effect of hypoventilation
- Add a length of tubing or an HME to the end of the Y-piece to show the effect of added Dead Space
- Increase the expiratory resistance to show the shark-fin character of the capnogram when expiration is hindered
- Turn off the CO₂ feed to show the effect of loss of cardiac output
- Increase the CO₂ feed by 25% and then adjust the MV to return to normocapnia
- Decrease the CO₂ feed by 25% and then adjust the MV to return to normocapnia
- Increase the dead space and adjust the MV to return to normocapnia