

UCL-Ventura CPAP System Clinical Guidance

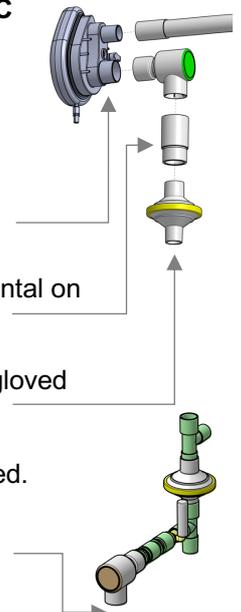
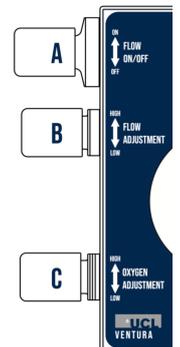
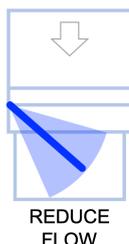
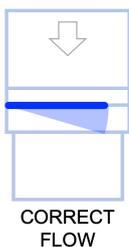
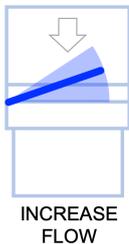
Intended Use

- The UCL-Ventura CPAP device is a stand-alone flow generator. Used in conjunction with the associated circuit, it can provide CPAP support for patients with COVID-19 who are hypoxaemic, tachypnoeic, and have increased work of breathing despite supplemental face mask oxygen.
- The UCL-Ventura is powered purely by 4-bar oxygen (no electricity/medical air required).
- The device can provide an oxygen concentration to the patient of 30-95%.
- The level of CPAP is dictated by the rating of the PEEP valve at the patient mask.
- Suggested range of operation: CPAP of 5-10 cmH₂O, titrate oxygen to targeted SpO₂ oxygen. The circuit should be set-up with a 20 cmH₂O safety PEEP valve (placed near the oxygen analyser). Patients requiring more support may benefit from more sophisticated devices.

All hospitals must work with their oxygen engineering teams to ascertain their VIE outflow, and downstream flows and pressures to specific ward areas, before deploying these devices.

Patient Application

- **DO NOT USE ON CONFIRMED OR SUSPECTED COVID-19 PATIENTS WITHOUT THE APPROPRIATE PROTECTION.**
- Assemble the patient circuit as detailed in the user manual and connect the UCL-Ventura to the 4-bar oxygen supply directly or by using an extension hose.
- Turn the **FLOW ON/OFF** control **A** fully ON (anticlockwise) and open the **FLOW ADJUSTMENT** control **B** (3-4 complete rotations anticlockwise). The UCL-Ventura will start to make a whooshing sound that increases with the flow.
- Increase the oxygen concentration by turning the **OXYGEN ADJUSTMENT** control **C** (anticlockwise) to the desired level.
- Apply mask to the patient with appropriate straps and ensure a good fit.
- Alter the **FLOW ADJUSTMENT** control **B** to ensure optimal flow to:
 - Flutter the mask outlet valve (larger port) throughout the respiratory cycle (the valve will flutter less during inspiration).
 - Hold the blue flow indicator flag (where fitted) horizontal or just below horizontal on inspiration (see left), the flag will remain below horizontal on expiration.
 - A virtually continuous flow at the outlet filter should be felt on the back of a gloved hand throughout the respiratory cycle.
- Alter the **OXYGEN ADJUSTMENT** control **C** if the oxygen concentration has changed.
- No flow (felt or audible) should come from the 20 cmH₂O PEEP safety valve. If gas escapes then the flow is too high and it should be reduced (control **B**, clockwise).



Ongoing Care

Check hourly, or if patient becomes uncomfortable/distressed, that:

1. Patient flow is sufficient:
 - The mask outlet port valve is fluttering throughout the respiratory cycle.
 - The blue flow-indicator flag is near horizontal to just below horizontal (not pointing upwards) on inspiration.
 - A continuous flow is felt from the mask outlet filter on the back of a gloved hand.If not, increase flow (**B** anticlockwise).
2. Patient flow is not excessive:
 - There is no flow or sound of flow from the safety PEEP valve (20 cmH₂O).
 - The blue flow-indicator flag is horizontal to just below horizontal (not pointing downwards) on inspiration.If not, decrease flow (**B** clockwise).
3. The desired oxygen concentration remains constant. If not, adjust **C**.
4. The patient is comfortable and CPAP mask remains tight-fitting (any leak will waste oxygen and cause a loss of PEEP)

- Change only the patient mask outlet filter every 24 hours. Use only Flo-Guard filters supplied with device (such filters are of low resistance).
- Like many high-flow systems, the gas is not humidified. Ensure the patient is drinking regularly or set up IV fluids. Patients will dehydrate quickly on these systems.
- Check the patient for mask-related pressure injuries.
- The UCL-Ventura flow generator and oxygen analyser (including T-piece sensor) is re-usable **do not throw away**. Clean with Green Clinell (or equivalent Chlorhexidine / 70% alcohol) wipes between COVID-19 patients, or apply your Trust's protocol for cleaning reusable equipment.
- The UCL-Ventura flow generator can be sterilised with Ethylene Oxide, though this is not required during the current outbreak.

Attention

- Altering the CPAP is done by changing the mask PEEP valve (NOT by changing flow).
- Patients need close observation as they can rapidly deteriorate (as with any patient on CPAP).
- Recognise early if CPAP is failing and consider an escalation plan.
- This is a high flow device so inappropriate use (e.g. excessive flow), or use of multiple devices, may have a negative impact on hospital oxygen supply or pipeline pressure. Discuss your CPAP needs with your hospital engineer and be aware of any hospital supply issues.
- Switch off if not in use to avoid wasting oxygen.