

Ensuring Accurate $F_{I}O_2$ Delivery on the Newport e360 Ventilator

Meeting patient flow demands

The Newport e360 Ventilator's Emergency Intake Valve is a safety feature which ensures patient access to ambient air if the ventilator or gas delivery system shuts down.

This valve will also allow the patient to entrain room air into the breathing circuit during ventilation if the trigger is not set sensitively enough or if the Volume Control breath type is used with a patient whose strong spontaneous efforts demand more flow than the set flow at any given time. If room air is entrained, the delivered $F_{I}O_2$ will be lower than set $F_{I}O_2$. One of the indications that this is happening is a Low $F_{I}O_2$ Alarm.

Newport Medical suggests that you follow this four step process to ensure that patient demand for flow is always met without entraining air through the emergency intake valve. This will ensure accurate $F_{I}O_2$ delivery.

1. Verify that Leak Compensation is turned ON.
2. Set (flow or pressure) Trigger as close to the minimum setting as possible without causing auto-triggering of the ventilator.
3. Ensure that the mandatory flow is set high enough to cause a prompt pressure rise at the onset of every mandatory breath and keep airway pressure from ever going below zero during inspiration.
4. For patients who have a strong spontaneous effort: use Volume Target Pressure Control (VTPC) instead of Volume Control (VC).

Raising the mandatory flow in Volume Control (VC) may not resolve a flow mismatch problem for patients with strong spontaneous breathing efforts. The VC breath type delivers fixed flow patterns and these patients usually don't breathe in fixed patterns. Switching to VTPC, which uses a variable flow pattern, allows patient flow needs to be met throughout the inspiratory phase of the breath.

VTPC allows you to set the tidal volume in the same way you do when using VC. The difference is that you will also need to set a maximum pressure (Pressure Limit) that the ventilator can use in order to deliver the set Tidal Volume. This is a convenient and useful breath type for most patients, especially those who are actively breathing.

To use VTPC, simply set the Volume Target to "ON" in the Advanced Settings. e360S users may use Pressure Control (PC) instead of VTPC to achieve improved flow synchrony.