

Procedure for Supporting Patients During the Anesthesia Machine Power Up Test To be Repeated at Least Every 72-Hours of Use

The following procedure provides a step-by-step description of the steps to be followed to complete the startup-test as safely as possible.

- 1) Administer neuromuscular blocker and/or sedation to prevent patient coughing
- 2) Have ready, a metal clamp with non-serrated jaws (e.g., perfusionists' pump tubing clamp) for the endotracheal tube (ETT), and fresh breathing circuit filters and tubing if they will be exchanged.
- 3) If a transport ventilator is available, prepare it by connecting to the appropriate gas and electrical outlets, put on a fresh breathing circuit with a breathing circuit filter, then power it on and perform its startup-test before using it on a patient.
- 4) If a transport ventilator is not available, a separate person should manually ventilate the patient. Place a HEPA filter and PEEP valve on the expiratory outlet of the patient's designated manual-resuscitator system and connect it to an oxygen source set to deliver 10L/min of oxygen. It is preferable to have a stand-alone respiratory monitor if manually ventilating, or at least a timer to pace respiratory rate.
- 5) Write down the current patient ventilator settings (e.g., ventilator mode, tidal volume, respiratory rate, I:E ratio, PEEP, fresh gas flow settings, etc.) to aid in programming the anesthesia machine to the identical settings after the startup-test is completed.
- 6) Program the portable ventilator settings to match the patient's ventilator settings as closely as possible, or set the manual-resuscitator PEEP valve.
- 7) Open the anesthesia machine APL valve and turn off fresh gas flows.
- 8) Clamp the ETT at the end of the ventilator inspiratory phase (to maintain lung volume and prevent aerosolization when the anesthesia circuit is disconnected).
- 9) Switch the anesthesia machine to manual ventilation mode.
- 10) Disconnect the ETT from the breathing circuit and HMEF (if there is one at the ETT).
- 11) Connect the portable ventilator or manual resuscitator system to the ETT, unclamp the ETT, and begin ventilating the patient.
- 12) This is a good time to place fresh breathing circuit filters and tubing on the anesthesia machine.
- 13) Power down the anesthesia machine, and restart to perform a startup-test.
- 14) When the startup-test is completed, program the anesthesia machine to match the settings that were written down in Step 5.
- 15) Ensure that the anesthesia machine is in manual ventilation mode.
- 16) Clamp the ETT during the inspiratory phase of the transport ventilator or manual resuscitator.
- 17) Pause ventilation with the portable ventilator ventilation or manual resuscitator.
- 18) Disconnect the ETT from the portable ventilator ventilation or manual resuscitator, and connect to the anesthesia machine breathing circuit.
- 19) Unclamp the ETT.
- 20) Switch the anesthesia machine to preprogrammed ventilator mode and confirm appropriate ventilation.
- 21) If the breathing circuit was not replaced, clean the occlusion plug used during the startup-test.