“GETTING OVER ONE MORE HURDLE”
NEONATAL SOFTWARE AND SCREEN CHANGES

The NeoMode software has enabled the use of the Puritan Bennett™ 840 ventilator on neonates and adults, providing a more consistent approach to mechanical ventilation for respiratory departments. More important, this also allows the latest technology to be used to ventilate neonatal patients.

The following steps serve as a set-up guide for neonatal patients.

Step 1
Determine which circuit and expiratory filter to use

<table>
<thead>
<tr>
<th>Circuit Size</th>
<th>Patient Size</th>
<th>Expiratory Filter to Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neonate</td>
<td>0.3 to 7.0 kg</td>
<td>Specialized green disposable filter with reusable mounting plate</td>
</tr>
<tr>
<td>Pediatric</td>
<td>7.0 to 24 kg</td>
<td>Normal full-size expiratory filter</td>
</tr>
<tr>
<td>Adult</td>
<td>25 kg and higher</td>
<td>Normal full-size expiratory filter</td>
</tr>
</tbody>
</table>

Step 2
Turn on the unit; let it warm up for 10 minutes

If the ventilator has not reached normal operating temperatures from recent use, allow it to warm up for at least 10 minutes before running SST to ensure accurate testing (per ventilator operator’s manual). Because you can ventilate down to 5 ml of volume, make sure delivered volumes/flows are accurate. This only applies to a cold start and not when you are just changing tubing on a patient when the machine has already been running. You don't have to have the machine cycling; just “on.”
Step 3
Complete the SST (the following is specific to neonates)
When you start the SST, make sure you change the “circuit type” to pediatric or neo-
nate (neonate configuration shown, #2 [part # 4-076408-00], #4 [part # 4-076405-00]).

Step 4
Select “new patient”
• If you are in the neonatal mode, you will see “neonate circuit” appears on the second
  screen where you enter ideal body weight.
• In neonatal setting, the machine will also default to “SIMV pressure control with
  flow trigger.”

Input IBW followed by initial ventilation parameters (following are an example of
common starting points, which will vary based on patient condition/needs).
### Pressure Control Settings (example of settings)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Setting &amp; Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.T.</td>
<td>0.30 to 0.40 Seconds, <strong>Rate</strong> 20-40, <strong>Inspiratory Pressure</strong> 16, and <strong>PEEP</strong> 4 cm</td>
</tr>
<tr>
<td>Flow Sensitivity</td>
<td>– 0.3 to 0.5 L/min (default is 0.5 L/min)</td>
</tr>
<tr>
<td>Rise Time %</td>
<td>– default of 50%</td>
</tr>
<tr>
<td>Expiratory Sensitivity</td>
<td>– default of 25% (Pressure Support Termination)</td>
</tr>
<tr>
<td>Pressure Support</td>
<td>– Some clinicians add Pressure Support to overcome the work imposed by the artificial airway.</td>
</tr>
</tbody>
</table>

**Note:** Inspiratory pressure is about PEEP, so when you set an inspiratory pressure of 20 and a PEEP of 4, you start on a PEEP of 4 cm and go up another 20 cm to a total of 24 cm of peak pressure on the Puritan Bennett™ 840 ventilator. Other ventilators, like the Sechrist™* and Infant Star®*, with the same settings of 20/4 would stop at 20 cm total.

### Other Tips to Remember

- Because neonatal patients have a greater leak potential, the low exhaled minute ventilation alarm can be turned off only in the neonatal mode to prevent nuisance alarms.
- The exhaled tidal volume display is compensated for altitude, tubing volume and humidity approach; the graphics are not.
- Although ranges were indicated for circuit size by patient, you can override those values with the same circuit you may have available (i.e., pediatric circuit for patients at 6 kg). Weight of the circuit plays a rule as you overlap the recommended circuit size.

### Verify the Ventilator was Tested with the Correct Circuit

In the top left-hand side of the upper screen you will see what type of circuit was used in the SST.
Practice Initial Settings

Points to Remember

- Make sure leak compensation is turned on. If you don’t have the software and detect auto triggering you will need to increase the flow sensitivity.

- When using pressure support, if a leak is present and you don’t have leak compensation you may get an “inspiration too long” alarm. If you see this, increase the $E_{SENS}$ from 25% until it stops; check graphics for fine-tuning.

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**Remember Pi inspiratory pressure is on top of PEEP so a setting on the Infant Star of 20/5 would be 15/5 on the 840.**

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Note: O$_2$ Sensor disabled.