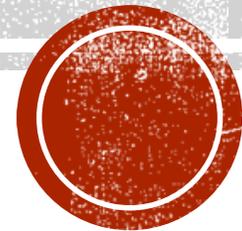


HT-70 VENTILATOR

Alaska Native Medical Center
Respiratory Therapy Department

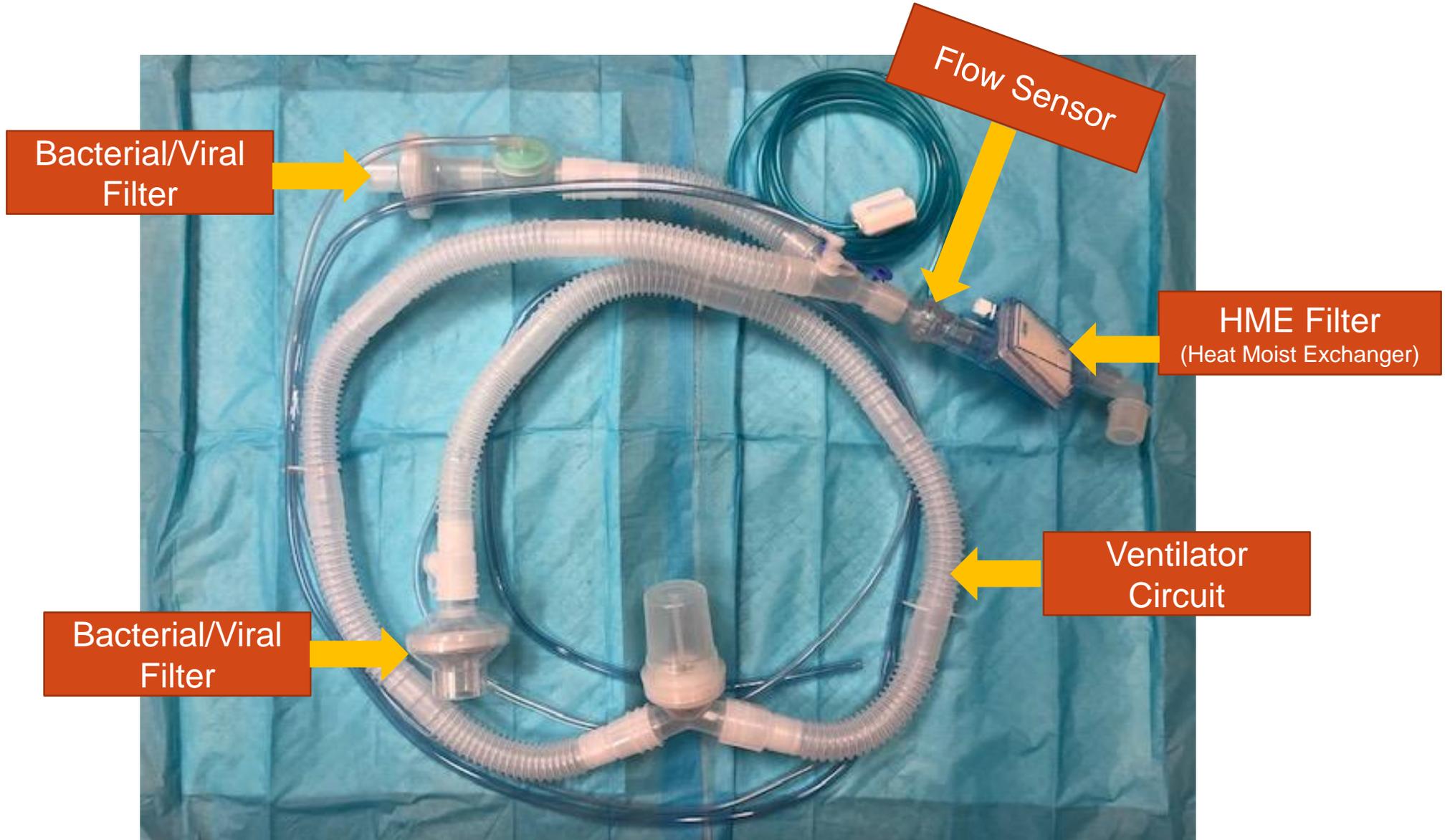


OBJECTIVES

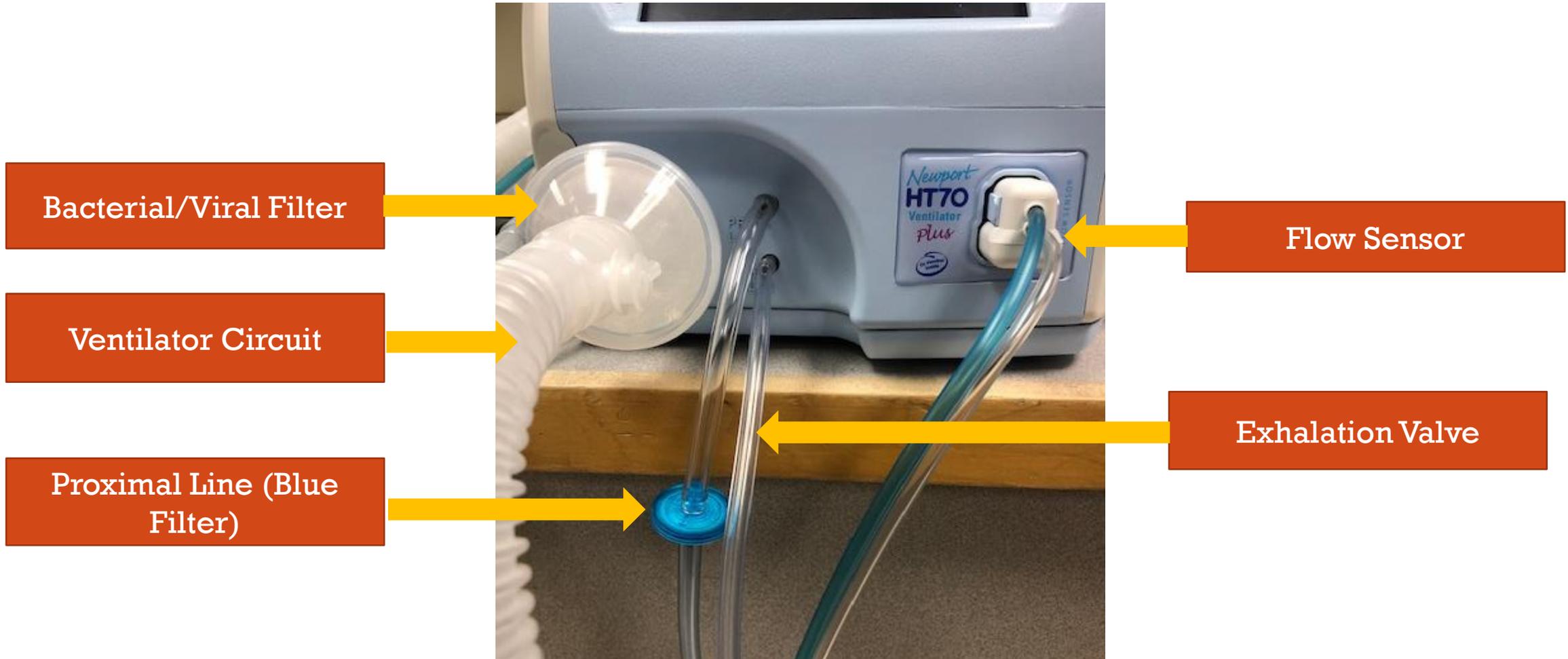
- Ventilator circuit set-up and placement
- Circuit Calibration
- Oxygen Calibration
- Examples of settings
- Alarms
- Locate Measureable Values
- More Button
- Additional Information
- References



CIRCUIT SET-UP



CIRCUIT PLACED ON THE HT-70



CIRCUIT CHECK

Touch the *Circuit Check* button at the top of the touchscreen and follow the on-screen instructions.

Step 1: Occlude the patient connection end of the circuit. (Do not use a test lung.)

Step 2: Press the *Accept* button to confirm to procedure the Circuit Check.

Step 3: Proceed to open the patient connection end of the patient circuit.

Step 4: Press the *Accept* button to continue the *Circuit Check*.

Step 5: If the test passes, a message “Circuit Check PASSED Press Accept to Confirm” will be displayed.

Step 6: When the Circuit Check is completed, patient settings as needed. Touch the *Start Ventilation* button when you are ready to begin ventilation.

Step 7: To cancel the Circuit Check and return to the Startup Screen. Press the *Cancel* button.

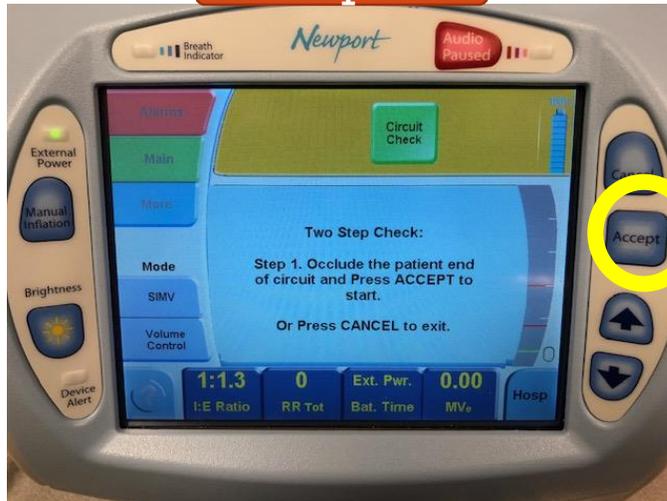


CIRCUIT CHECK

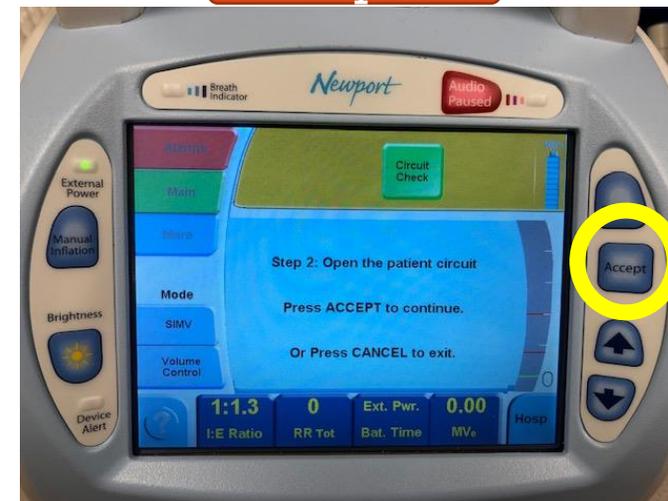
Step 1



Step 2



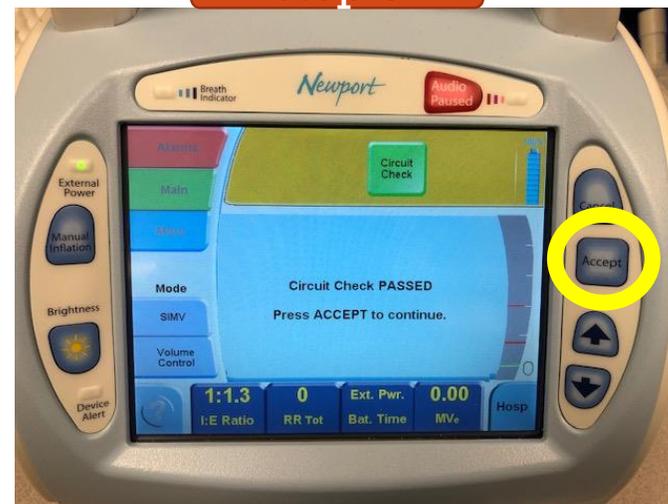
Step 3



Step 4



Step 5



CIRCUIT CHECK TROUBLESHOOTING

- If the Circuit Check fails:
 1. Circuit Check FAILED, Press *Accept* to Continue will be displayed.
 2. Next press the *Accept* button to return to Startup Screen.
 3. Ensure breathing circuit connections are properly connected and leak free.
 4. Ensure the Air Oxygen Entrainment Mixer is not attached to the Fresh Gas Intake port.
 5. Next touch the *Circuit Check* button to redo the test.
 6. If Circuit Check fails repeatedly, try another circuit.



OXYGEN CALIBRATION

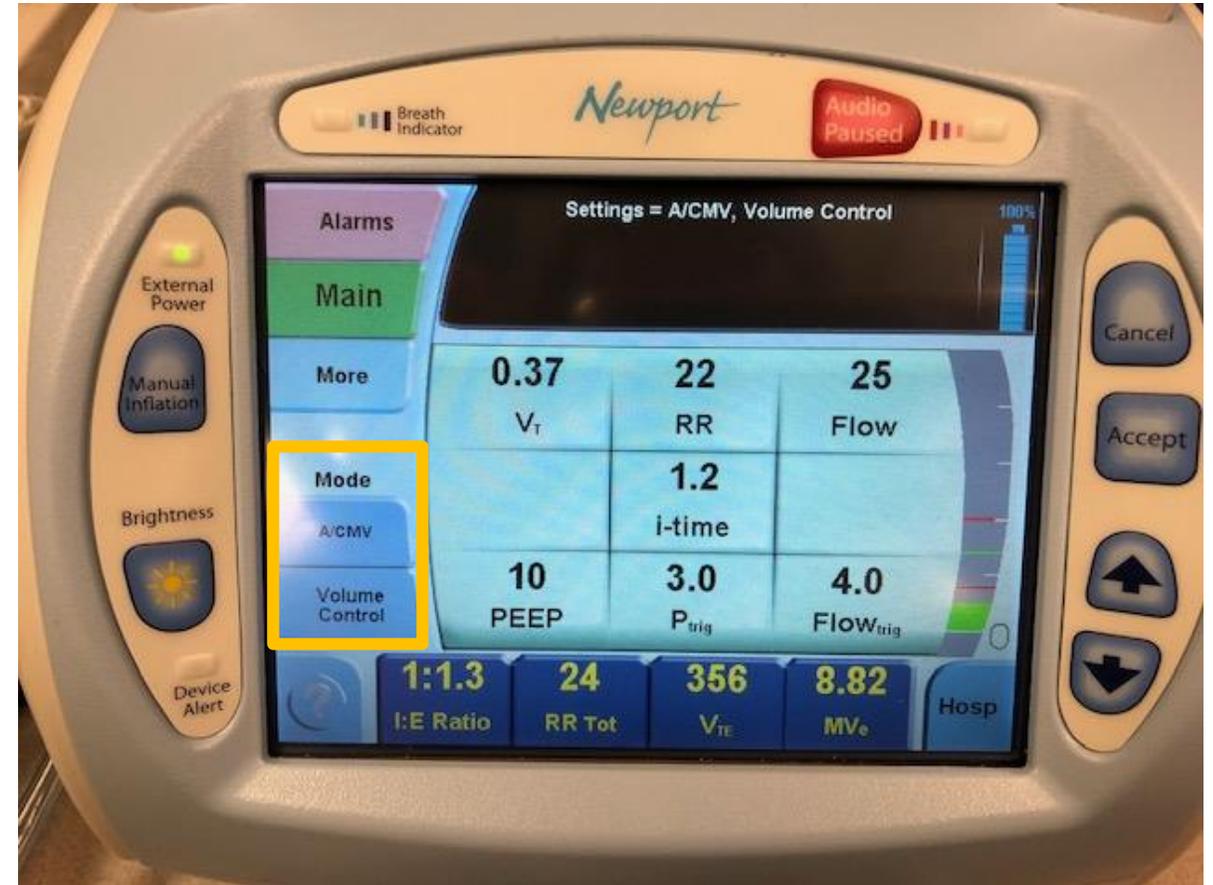
- Press more settings
- Press Calibrate O2 Monitor
- Allows the user to calibrate the internal oxygen sensor.
- Either a single point or a two point calibration can be done. This can be done while on a patient if they can tolerate the desired calibration point (room air or 100% oxygen). Touch this button to go to the
- Calibrate O2 Mon screen.
- O2 Cal, 21% O2. Touch this button and follow the onscreen directions to calibrate at room air. Ensure that no oxygen device is connected to the air intake port on the right side of the ventilator.
- O2 Cal, 100% O2. Touch this button and follow the onscreen directions to calibrate at 100% oxygen. Ensure that 100% oxygen is being delivered to the air intake port on the right side of the ventilator.
- Newport suggests using the Low Flow Oxygen Reservoir with 10 L/min. of medical grade 100% oxygen connected to it.



EXAMPLE SETTINGS ON HT-70

Female 5'7"

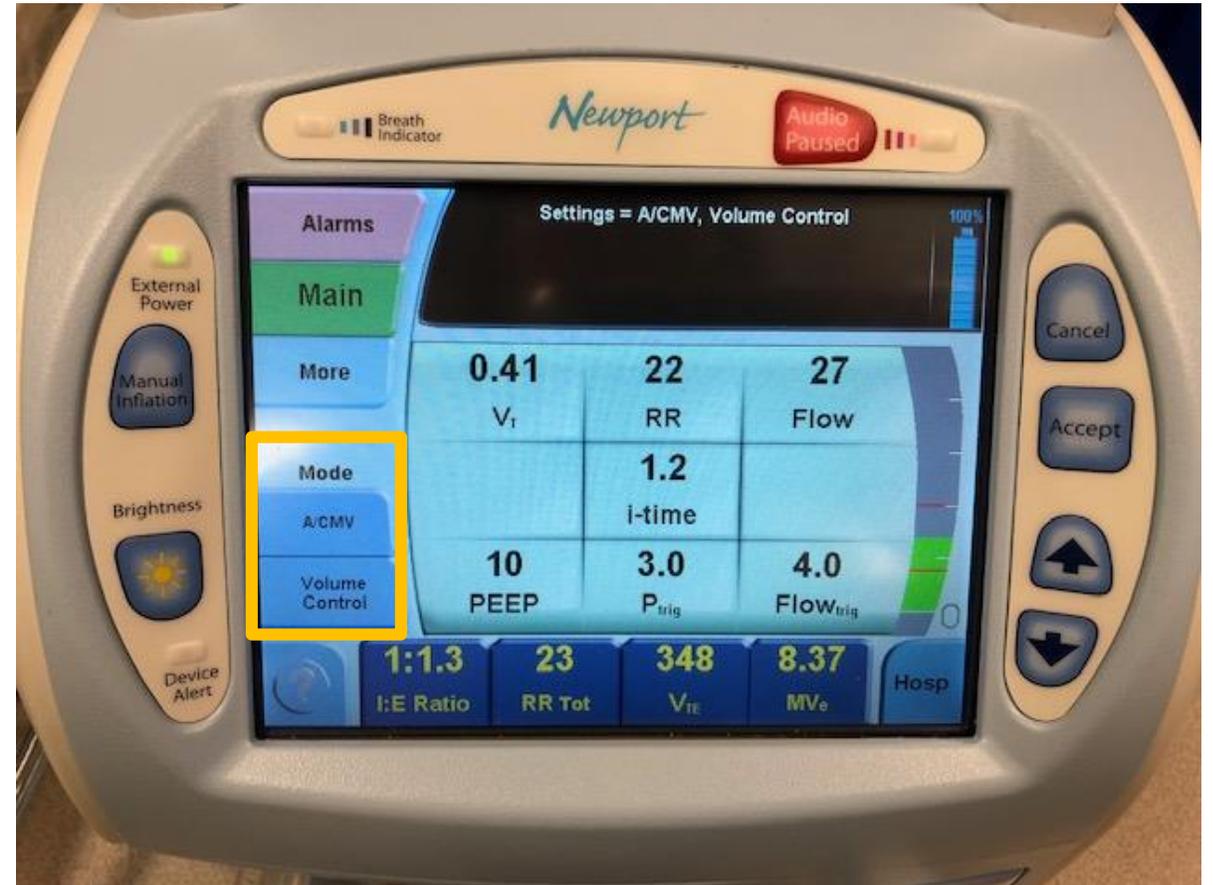
- Mode: A/CMV Volume
- Tidal Volume (V_t) 370 ml 0.37 liter
 - 6 ml/Predicted Body Weight from ARDS Network
- Respiratory Rate (RR) 22
- I-Time 1.2
- PEEP 10
- P_{trig} 3
- $Flow_{trig}$ 4



EXAMPLE SETTINGS ON HT-70

Male 5'8"

- Mode: A/CMV Volume
- Tidal Volume (V_t) 410 ml 0.41 liter
 - 6 ml/Predicted Body Weight from ARDS Network
- Respiratory Rate (RR) 22
- I-Time 1.2
- PEEP 10
- P_{trig} 3
- $Flow_{trig}$ 4



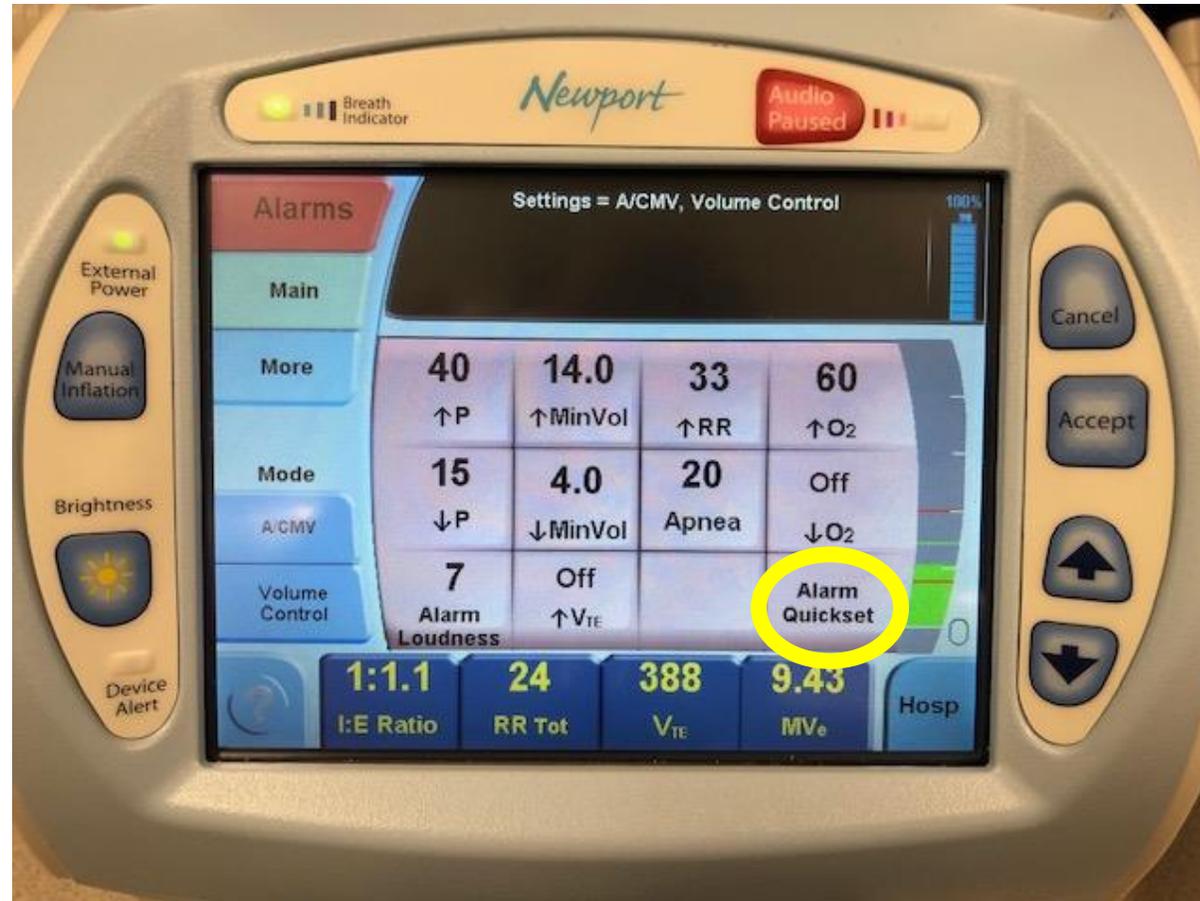
SETTING ALARMS

- Note: You cannot complete Alarm Quickset in Standby mode. Ventilator must be on a patient and operating.
- Touch Alarms button, then touch Alarm Quickset.
- During Ventilating condition, when there are no active alarms violations, Alarm Quickset will automatically set the alarm limits. Touch this button to enter the Alarm Quickset screen, then press *Accept* to activate or *Cancel* to return to the *Alarms* screen.
- When activated, Alarm Quickset monitors settings for 30 seconds and then sets the alarms. If an alarm occurs during the monitoring period, Quickset is canceled. During the 30 second period the touch screen will not respond unless an alarm occurs or the *Cancel* button is pressed.



ALARM SCREEN

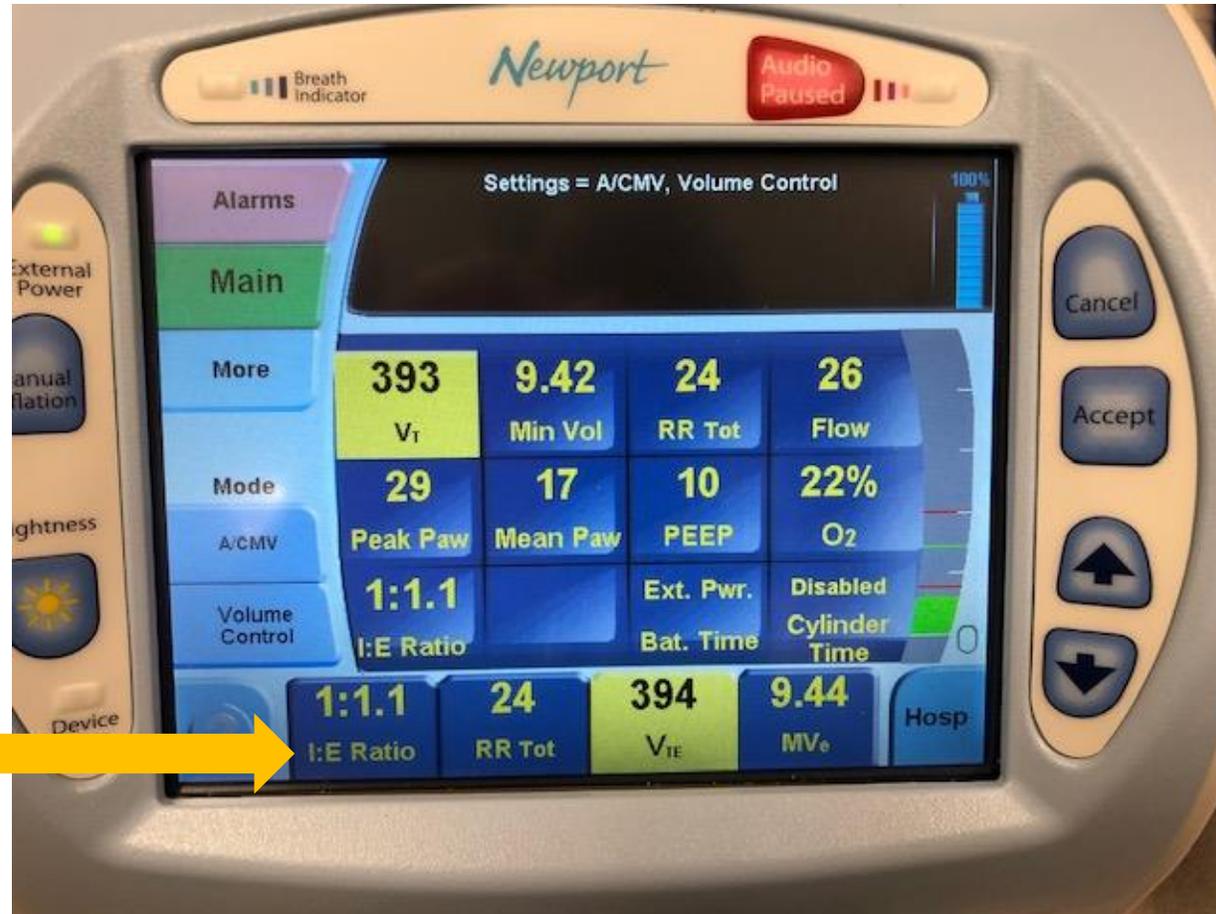
Press Alarms for the Alarm Screen



Press Alarm Quickset, will take 30 seconds and will adjust alarm settings



HOW TO SEE MEASUREABLE VALUES



Press on any
measureable reading
to pull up others
measureable values



MORE BUTTON

Ramp Flow: Descending or Square

Slope Rise: One is slowest, used for Pressure Control and Pressure Support breath 3-4

Calibrate O2 Monitor: Calibration internal oxygen sensor (section 4-17)

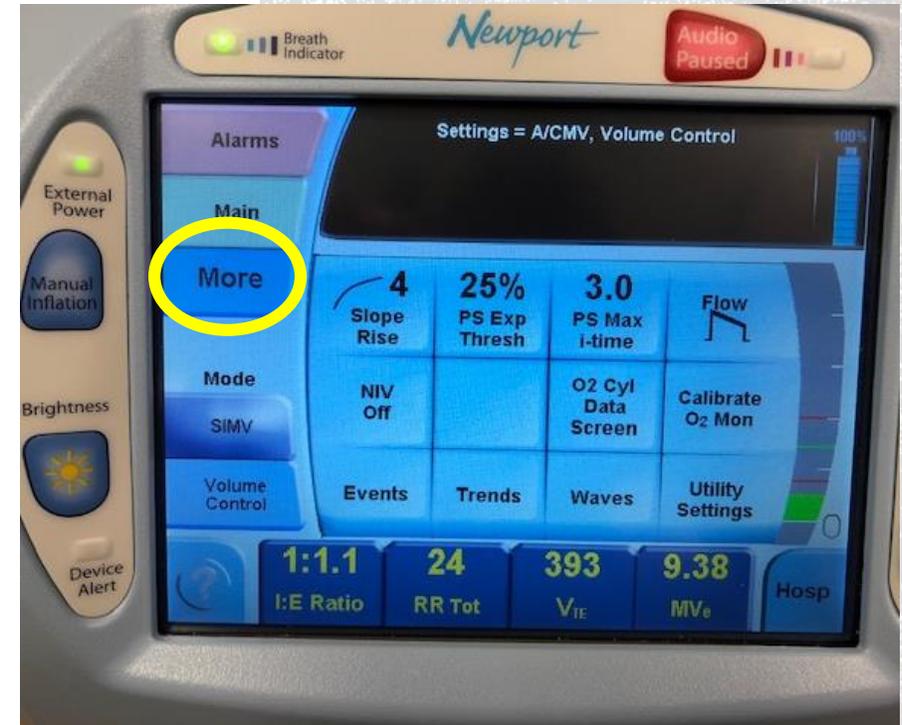
O2 Cylinder Data Screen: Used to set up oxygen cylinder content tracking (section 4-16)

Events: New events occurs, parameter change, alarms, calibration (section 4-13)

Trends: Display the trended data for monitored parameters (section 4-14)

Waves: Pressure, Volume and Flow (section 4-15)

Utility Settings: Custom Settings, BUV Settings, Back-up ventilation when patient is in spont. mode. (section 4-18)



ADDITIONAL INFORMATION

- Patients Population
 - $\geq 5\text{kg}$ (Operators Manual Section 1-4)
- Battery Life
 - 10 hours fully charged
 - Back-up Battery Low Alarm (Operators Manual section 6-11)
 - Minimum of 15 minutes left on the back-up battery.
 - Find alternate power source immediately.
- Oxygen Source (Operators Manual Section 3-14)
 - 50 psi off of wall
 - Oxygen tank



REFERENCES

- HT-70 Operator Manual

https://www.medtronic.com/content/dam/covidien/library/us/en/product/portable-ventilation/HT70UserManual_EN_10157030C00.pdf

- ARDS Network Management of Ventilator

http://www.ardsnet.org/files/ventilator_protocol_2008-07.pdf

- ARDS Network PBW & Tidal Volume

http://www.ardsnet.org/files/pbwtables_2005-02-02.pdf

