

Calibration and Preventive Maintenance Reminder

Microstream®-Enabled Patient Monitors

Calibration and periodic preventive maintenance ensure the highest level of monitor performance and quality etCO₂ sampling. The schedule is based on the number of operating hours, which can be accessed any time by checking the information screen in service mode.

Calibration Schedule

Capnostream® 20 and Capnostream 20p bedside monitors, and Microcap® and Microcap Plus hand-held capnographs

'Calibration Required' is displayed on the monitor when it is time to calibrate. To maintain optimal performance, clinicians should immediately contact the biomedical/clinical engineering department to perform the calibration.

Refer to operator's manuals for calibration details.

OEM capnography patient monitors

Examples include:

- Philips Intellivue™ and Sure Signs monitors with Microstream®-enabled etCO₂
- Dräger Infinity® Delta XL with Microstream Pod
- Carefusion Alaris® System etCO₂ module
- Fukuda Denshi Dynascope™ monitors with Microstream® etCO₂
- Physio Control LP15 etCO₂ monitor/defibrillator
- ZOLL X Series™ monitor/defibrillator

New OEM units are delivered factory calibrated. After installation, an initial calibration should be performed at 1,200 operating hours.

Following the initial calibration, biomedical/clinical engineering should perform calibration every 4,000 operating hours or annually, whichever comes first.

IMPORTANT: Some OEM devices do not present a warning message that calibration is required.

Preventive Maintenance

Capnostream® 20 and Capnostream 20p bedside monitors and Microcap® hand-held capnographs

Periodic preventive maintenance should be performed as follows:

- 20,000 or 30,000 operating hours, depending on the type of module
 - The information on the service screen gives the number of hours remaining until servicing or calibration is required. To access the service screen, select 'System' from the menu bar at the bottom of the home screen, and then select 'Service'.

Microcap® Plus hand-held capnograph

- Pump and flow system should be replaced every 7,000 operating hours
- To check the monitor's operating hours, go to the information screen in the service mode

To schedule maintenance, contact Covidien Technical Services at (800) 635-5267, option 3.

OEM capnography patient monitors

Periodic preventive maintenance should be performed after 20,000 or 30,000 operating hours, as per the recommendation of the particular module in your system. If you are unsure of the module in your system, please refer to the operator's manual or contact your Covidien Sales Representative.

Preventive maintenance includes replacing the module's internal pump and sensor.

To schedule maintenance, contact the monitor manufacturer's service department.



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Troubleshooting

Alert Message	Action
No Breath	<ul style="list-style-type: none">• Check patient status• Check connection and positioning of patient sampling line
FilterLine	<ul style="list-style-type: none">• Ensure patient sampling line is correctly connected to the monitor. Do not overtighten.
Clear FilterLine	<ul style="list-style-type: none">• Check patient sampling line for kinks or fluids
Blockage	<ul style="list-style-type: none">• Check patient sampling line for kinks• Disconnect and reconnect patient sampling line• If blockage cannot be cleared, replace patient sampling line
Calibration Required	<ul style="list-style-type: none">• Calibrate according to manufacturer's recommendations

Technical Problem	Action
Monitor will not turn on	<ul style="list-style-type: none">• Check A/C connection• Ensure on/off switch is on• Ensure battery is inserted correctly• Replace or recharge battery or connect to AC power
No waveform on screen	<ul style="list-style-type: none">• Check patient status• Check position of patient sampling line• Ensure patient sampling line is correctly connected to monitor. Do not overtighten.• Check for proper scale of waveform