Note
Please refer to user guide for detailed information about performance, specifications, operation and recommended cleaning and maintenance.

Note
Accessory images within this document are for reference only. Connector styles and colors may vary based on your monitor. Accessory color connections coordinate with ports on the side of the monitor.

ECG

! **Equipment Alert**
Prepare the lead sites with the supplied electrode Redux gel for best contact.
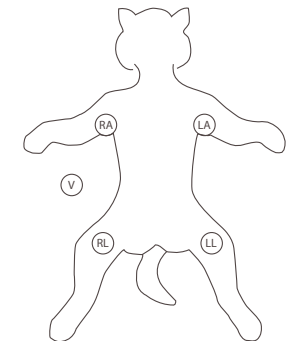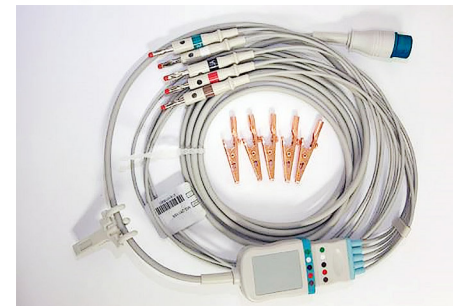
Step 1: Connect ECG Clips, Leads and Cable.
A) Connect the copper clips to the silver posts at the end of each lead wire.
B) Connect lead wire set to its corresponding color-coded receptacle on the ECG trunk cable.
C) Plug ECG trunk cable into receptacle on the side of the monitor.

3 Lead Shown
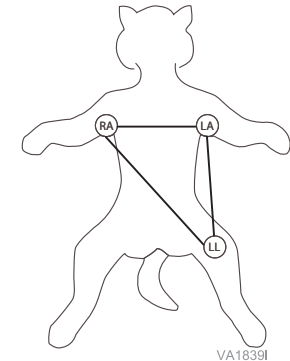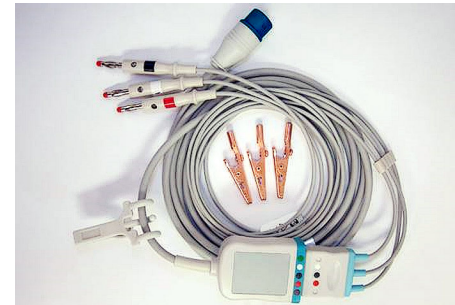
VA1839i

5 Lead Shown

VA1838i

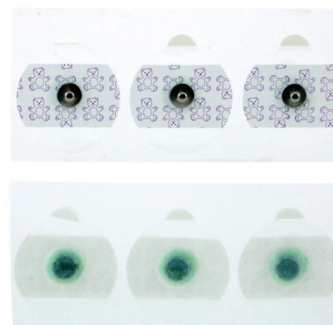# Additional Clips/Accessory Options

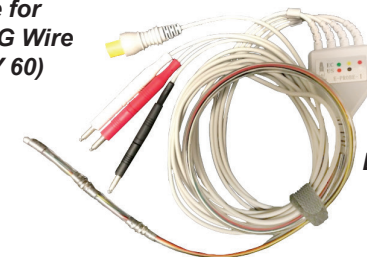**To order visit: midmarkserviceparts.com or call 1-800-MIDMARK x8750**

Copper ECG Alligator Clip

Flat ECG Clips (5 PK)

Small Pregelled Electrode for Snap-on ECG Wire Sets (QTY 60)

ECG Esophageal Probes

VA2537

English-1   TP200 20-42-FO-00012 Rev A2 ECO088522   Style G   **003-2422-00 Rev. AA5 (9/18/23)**

CO2

Setting up CO2.

A) Prior to monitoring CO2 for the first time, turn on the CO2 module within the monitor by selecting Menu/Settings/Modules.

B) Select Respironics for a Capnostat5 or LoFlo sensor or Masimo for an IRMA or ISA analyzer.

Note: A pop up message will appear to restart the monitor. Restart using the power button once the monitor is powered off.
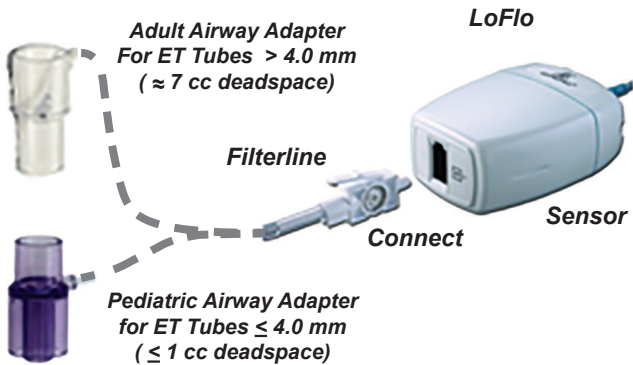

If monitoring CO2 connect optional CO2 sensor to monitor.

A) Insert the CO2 sensor cable connector into the CO2 receptacle of the monitor. Click into place.

B) Select the correct adapter / filterline to minimize dead space and snap into sensor. Reference images for adapter and filterline sizes and dead space specifications.

C) Allow the sensor to warm up. (2 minutes maximum) before zeroing or attaching to patient.

D) Install the airway adapter between the ET tube and the anesthesia patient hose. Verify fitting is secure and tight.

E) To remove the CO2 sensor from the monitor, grab the body portion of the connector and pull. Do not pull the cord.

Note: For sidestream monitoring during anesthesia, an exhaust tube to remove the sample gas to a scavenging system may be used. Attach it to the side stream module at the outlet connector.

To zero your sensor.

A) Plug in the CO2 sensor.

B) Confirm the airway adapter or filterline is installed.

C) Select the CO2 waveform or CO2 data in the Parameter box to enter the CO2 Setup Menu.

D) Make sure the sensor is not being used or connected to the patient and "CO2 is Warming Up" no longer displays in the Status Bar. Press "Start Zero Calibration".

E) The zeroing function will gray out on the menu and the status bar will display "CO2 IS ZEROING". Upon successful completion, the message "CO2 Zero successful" will appear.

Adult Airway Adapter
For ET Tubes > 4.0 mm
(≈ 7 cc deadspace)

LoFlo

Filterline

Connect

Sensor

Pediatric Airway Adapter
for ET Tubes ≤ 4.0 mm
(≤ 1 cc deadspace)

Pediatric Airway Adapter
for ET Tubes ≤ 4.0 mm
(≤ 0.7 cc deadspace)

ISA

Adult Airway Adapter
For ET Tubes > 4.0 mm
(≈ 6 cc deadspace)

⚠ **Caution**
Never zero the CO2 sensor without an adapter or filterline installed. Alarms relating to the adapter may prevent a successful zero. When zeroing, always remove the adapter from the patient.
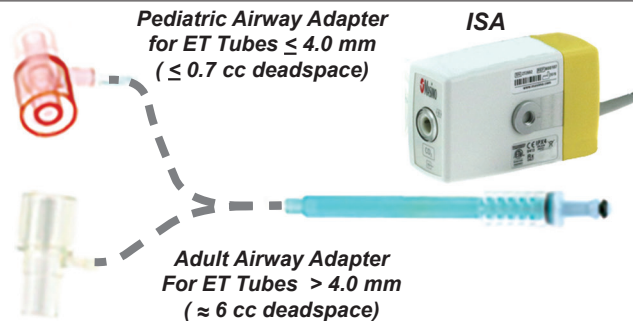
⚠ **Caution**
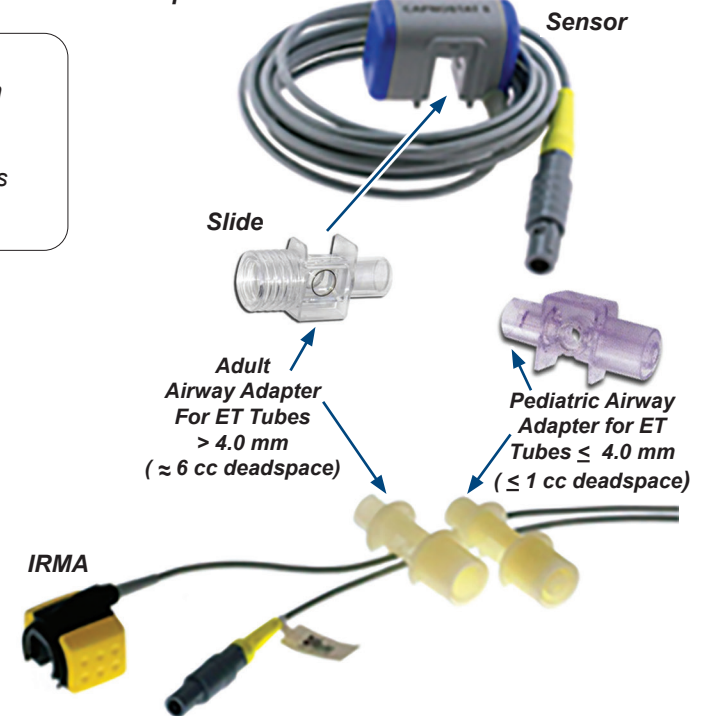Airway adapters are intended for single patient use.

⚠ **Caution**
Cable should be loosely coiled for storage. Do not band or kink the cable to prevent damage.

Capnostat 5

Sensor

Slide

Adult
Airway Adapter
For ET Tubes
> 4.0 mm
(≈ 6 cc deadspace)

Pediatric Airway
Adapter for ET
Tubes ≤ 4.0 mm
(≤ 1 cc deadspace)

IRMA

English-2

003-2422-00

Temperature

Connect temperature probe.

A) Insert the temperature probe into either of the temperature receptacles on the side panel.

B) The temperate probe's intended use is the patient's esophagus or the rectum.

⚠ **Caution**
While esophageal temperatures are closest to core body temperature, probes should not be used in the esophagus during dental or oral procedures to prevent damage.

Blood Pressure

Connect blood pressure inflation hose.

A) Connect black BP inflation hose to connector post on side of monitor.

B) Connect cuff to inflation hose.

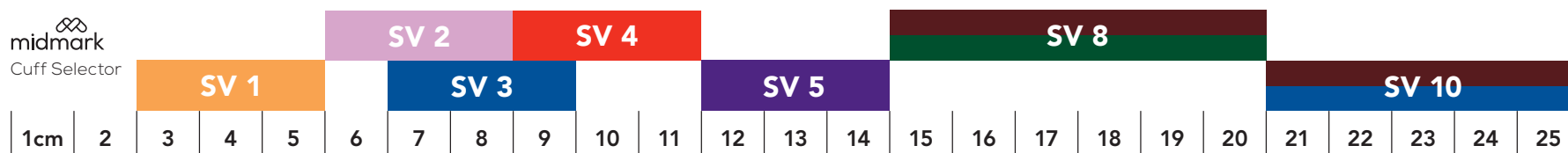**Small Animal Cuffs**   **Large Animal Cuffs**

NIBP Best Practices

(1) Find a quiet environment.

(2) Choose appropriate cuff location with bladder portion of the cuff over an artery, e.g., metacarpus, metatarsus.
- The cuff position should be on a horizontal plane with the heart.

(3) Determine appropriate cuff size using the Midmark Cuff Selector as guideline with cuff width approximately 40% of limb circumference.

(4) Wrap the cuff snugly.

(5) Select appropriate cuff size in NIBP Setup Menu.

(6) Limit patient movement during reading.

(7) Take 5 readings, discard outlier, and calculate average or activate Screening Mode when taking readings on awake patients.

midmark
Cuff Selector

| SV 2 | SV 4 | | SV 8 | | |
| SV 1 | | SV 3 | | SV 5 | | SV 10 |

| 1cm | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |

Note
Never use cuff on the same limb where a catheter is placed or on an injured limb.
Do not use the tail site for monitoring BP under anesthesia.
Do not use tape and other wraps to secure the cuff.
Blood pressure cuffs are disposable and need to be discarded when leaking or the Velcro is worn out.

SpO2

Sensor • Lock • Unlock • Cable

VA1841i

Small • Large
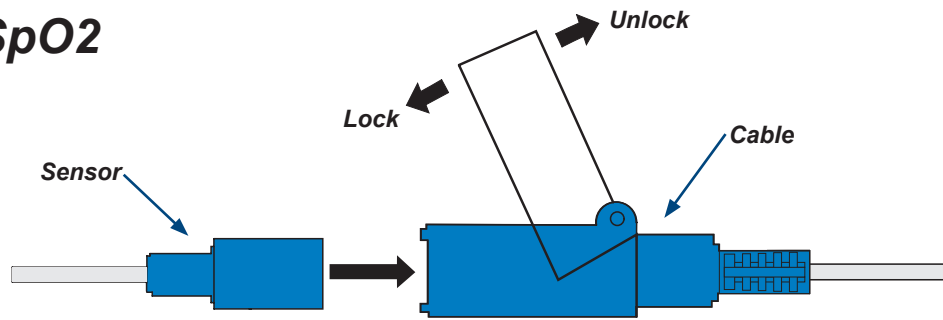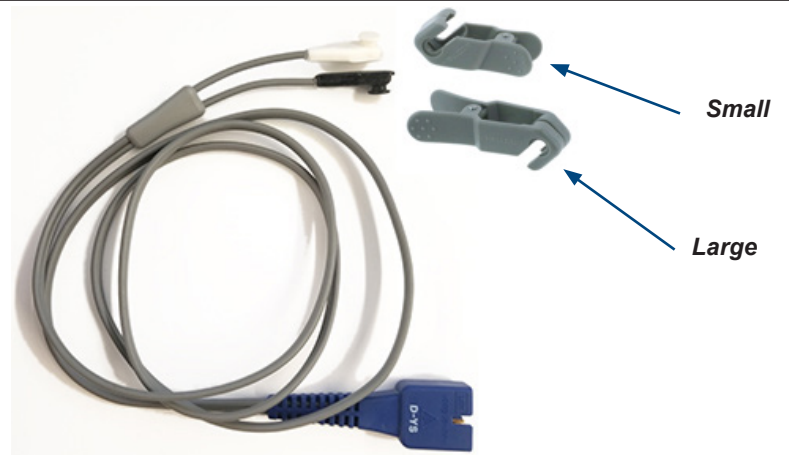
Connect SpO2 sensor.

A) Select small or large clip size that is appropriate for the patient site keeping the black and white pads parallel to each other. Light technology from one pad is picked up by a photodiode on the other pad.

B) Slide sensors into groove of clips. The optical components of each sensor must be directly opposite each other.

C) Lift the clear plastic cover on the cable, plug sensor into cable and close cover.

D) Plug the cable into the SpO2 port on the side panel of the monitor by pinching the sides of the connector and pushing until it clicks into place.

E) To remove the cable from the monitor, pinch the sides of the connector and pull.

Note

In small patients, values may drop below 90% due to restriction of blood flow to the measuring site by the probe. Reposition the sensor periodically to avoid this problem.

Use only a cuff/catheter-free extremity.

Sensor is a lingual sensor with preferred application on the tongue. See chart for alternative sites. Pigmentation of the skin may impact sensor performance.
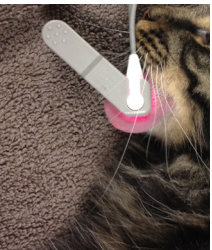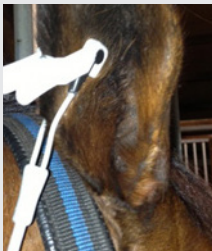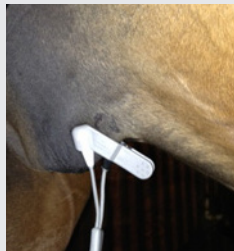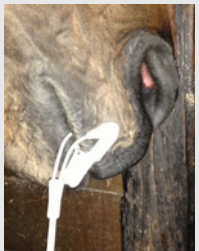
The light technology should be constant and never blinking.

Cover the site with a towel or opaque material to minimize interference from strong ambient light sources such as surgical lights, ceiling lights and direct sunlight.

If slippage occurs on the tongue, use one layer of gauze around the tongue and then replace the sensor.

Sensor performance is dependent on adequate perfusion to the tissue. Hypotension, hypothermia, hypovolemia and drugs are some factors that will affect perfusion.

Remove the sensor from the patient by unclipping vs. pulling on it.

⚠ Caution

Sensor may be used on the same site for a maximum of 10 minutes provided the site is inspected routinely to ensure skin integrity and correct positioning. Because individual skin condition affects the ability of the skin to tolerate sensor placement, it may be necessary to change the sensor site more frequently with some patients.

Lip	Tongue	Vulva	**Canine Sites:** • Tongue • Lip • Prepuce/Vulva • Paw/Toe Webbing • Ear
Tongue	Paw	Ear	**Feline Sites:** • Tongue • Lip • Prepuce/Vulva • Paw/Toe Webbing • Ear
Ear	Sheath	Lip	**Equine Sites:** • Tongue • Lip • Sheath/Vulva • Ear • Nostril

⚠ Caution

Sensor and cable should be loosely coiled or hung for storage to prevent damage.

003-2422-00