

**Vital Signs Monitor 52000 Series (VSM) Outline  
Train the Trainer**

**A. Light Weight and Durable**

1. Weighs approximately 6 pounds
2. Made of heavy plastic

**B. Battery**

1. Sealed lead acid battery 6 V
2. Battery life provides approximately 10-12 hours of continuous monitoring of B/P, temperature and SpO<sub>2</sub>.
3. The battery charges to 90% of capacity in 12 hours.
4. The VSM should be charging when not in use.

**Low Battery Warning**

1. Battery indicator is located on front panel when the unit is turned on.
2. When battery is LOW, a warning tone sounds and the low battery indicator flashes. (To avoid shutdown, plug in and connect the AC power.)

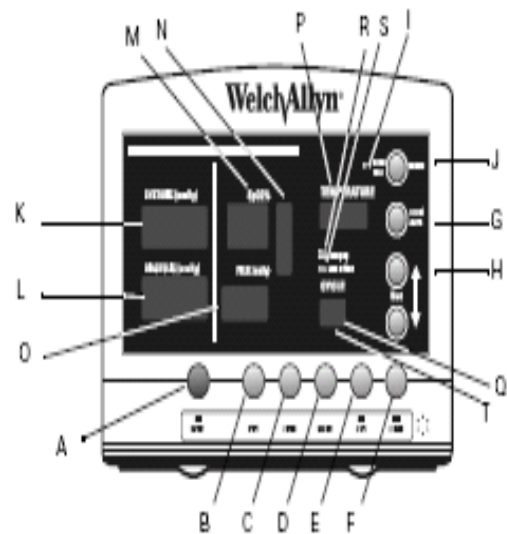
**C. Transport Handle**

**D. Start Up**

The VSM runs a self-check upon power up. (All LED segments in each display turn on briefly and an audible tone sounds.)

VSM 5200 front panel functions:

- A. Power Button & Indicator Light
- B. Start Button
- C. Cancel Button
- D. Review Button
- E. Auto Button & Indicator
- F. Silence Button & Indicator
- G. Select Alarm Button
- H. Set Buttons (Arrow Up or Arrow Down)
- I. Pulse Tone Indicator
- J. Pulse Tone Button
- K. Systolic Display
- L. Diastolic Display
- M. SpO<sub>2</sub> Display
- N. Pulse Signal Bar Graph
- O. Pulse Display
- P. Temperature Display & Indicator
- Q. Cycle Display
- R. Charging Indicator
- S. Low Battery Indicator
- T. Memory Indicator



## F. Intended Use

The Welch Allyn VSM 5200 is intended to be used on adult and pediatric patients.

- Adult: 12 years and over
- Pediatric: 29 days to 12 years

**\*\*NOTE\*\* The Welch Allyn VSM 5200 is not designed to be used on Neonatal Patients.**

## G. Limits

1. This feature allows you to make changes to the high and low alarm limits for the following vital signs.
  - a. Systolic HIGH and Systolic LOW
  - b. Diastolic HIGH and Diastolic LOW
  - c. Pulse Rate HIGH and Pulse Rate LOW
  - d. SpO<sub>2</sub> LOW
2. To make changes to the limits:
  - a. Press Select Alarm button
  - b. For the selected vital:
    - Press Set Buttons, Up/Down Arrows, as needed to change the limit **or** (---) to disable the alarm.
  - c. The alarm parameter you are changing, such as HR HIGH, will be displayed in the appropriate display.
  - d. Press Select Alarm Button to accept alarm limit and advance to next vital sign.
  - e. To return to normal operation, do nothing for 10 seconds.
3. Silence Button and Indicator
  - When an alarm sounds, pressing the Silence button will silence it for 30 seconds. You will see a flashing display to indicate the alarming parameter.

## H. NIBP

1. Before starting the NIBP measurement, always perform the steps described below:
  - a. Select appropriate cuff. The cuff is the appropriate size when the artery index marker lies somewhere between the range markings on the NIBP cuff.
  - b. Position the cuff. The cuff should always be positioned on a bare arm, midway between the shoulder and the elbow, with the artery index marker over the brachial artery. It should fit comfortably to allow no more than 1-2 fingers space between the cuff and the arm. During the NIBP measurement cycle, the patient should have no movement to the extremity and should remain quiet.

**NOTE:** If the cuff is not level with the heart, there is a 1.8 mmHg drop to the systolic and diastolic pressures for every inch the arm is raised above the heart. For every inch the arm is lowered below the heart there is a 1.8 mmHg rise in the systolic and diastolic pressures.
2. Manual NIBP measurements
  - a. Attach the appropriate cuff to the patient's arm.
  - b. Press Start button
  - c. When the B/P cycle is completed, a tone sounds and the NIBP results are displayed in the SYSTOLIC, DIASTOLIC and PULSE rate displays.
  - d. The results are displayed for 2 minutes or until another NIBP cycle is initiated.

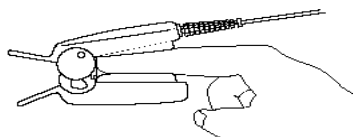
**NOTE:** If the SpO<sub>2</sub> sensor is attached and generating valid pulse data, the displayed PULSE rate is derived from the SpO<sub>2</sub> sensor reading.

3. Automatic NIBP—Interval measurements
  - a. Attach the appropriate cuff to the patient's arm.
  - b. Press Auto button to set the measurement interval which includes: ST (Stat), 1, 3, 4, 5, 10, 15, 30, 45, 60 and 90 minutes. The three dashes (---) in the display indicate that the automatic mode for NIBP is turned OFF.
  - c. Within ten seconds after you select an interval and assuming that safe venous return pressure has been maintained for at least 30 seconds, the monitor automatically starts the first automatic NIBP cycle.
  - d. When the cycle ends, a tone sounds and the monitor displays the reading. The measurement will remain on the screen until the next measurement cycle begins, 2 minutes pass, or the Start button is pressed again.
4. ST/ STAT Measurement

If the selected interval is STAT, the monitor takes repeated NIBP measurements for up to 15 minutes, starting a new cycle each time the cuff deflates below 10 mmHg.

#### **I. SpO<sub>2</sub> Monitoring** (if applicable)

1. Verify that the SpO<sub>2</sub> sensor is connected to the monitor.
2. Attach the SpO<sub>2</sub> sensor to the patient's index finger. Do not attach the SpO<sub>2</sub> sensor to the same limb as B/P cuff.



3. Within a few seconds, the pulse signal bar graph reflects the strength and quality of the pulse.
4. Within approximately 10 seconds, the initial measurement is displayed and a numeric pulse rate value appears in the PULSE display.
5. SpO<sub>2</sub>/Pulse Tone Volume
  - a. Press Pulse Tone button to control volume of SpO<sub>2</sub> pulse tone.
  - b. The pulse tone can be adjusted to any of 5 volume settings from silent to high.
  - c. To set the displayed new values, do nothing for 3 seconds.

**NOTE:** Changing the volume of the pulse tone has no effect on the volume of alarm tones.

#### **J. Temperature Monitoring** (if applicable)

If configured with the temperature option, the monitor can obtain predictive or monitored temperature measurements.

**NOTE:** Temperature range (Low--80°F and High--110°F)

Predictive measurements: a one-time temperature reading which takes only a few seconds. Results are obtained in:

Oral: approximately 4 seconds

Axillary (ages less than 4 years): approximately 10 seconds

Rectal: approximately 15 seconds

Readings will be displayed as: **F** Fahrenheit or **C** Celsius.

Monitored measurements: continuous temperature monitoring used when the situation prevents an accurate predictive measurement. Results are obtained in:

Oral: 3 minutes

Axillary: 5 minutes

Rectal: 3 minutes

Readings will be displayed as: **FM** Fahrenheit Monitored or **CM** Celsius Monitored

### 1. Prep Thermometer Probe

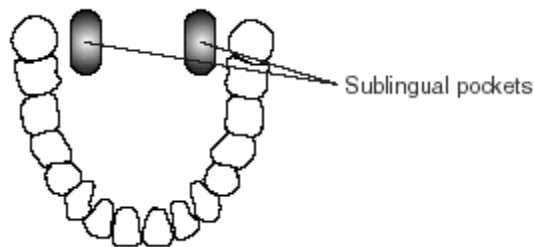
**NOTE:** Tip of Probe is preheated to 93°F

- a. Hold the probe collar with the blue ejection button with your thumb and forefinger and withdraw the probe from the probe holder.
- b. Wait for the “OrL” to appear in the temperature display.
- c. Insert the probe into a new probe cover and press down firmly until a new probe cover engages onto the probe.

### 2. Taking Oral Temperatures

It is **IMPORTANT** while taking an Oral predictive temperature to:

- a. Instruct the patient not to talk or move during the temperature reading process.
- b. Place the probe deep into the patient’s posterior sublingual pocket.
- c. Have the nurse hold the probe in place maintaining tissue contact until the temperature is complete.
- d. The predictive temperature reading will be displayed for 1 minute in the temperature display.

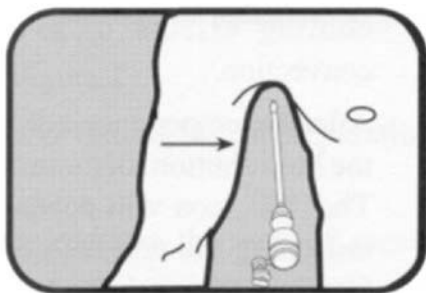


- e. Interferences with oral measurements for up to 20 minutes include:
  1. Ingesting hot or cold liquids
  2. Talking
  3. Eating food
  4. Chewing gum or mints
  5. Brushing teeth
  6. Mouth care
  7. Smoking
  8. Performing strenuous exercises

### 3. Taking Axillary Temperatures

- a. Hold the probe collar with your thumb and forefinger and withdraw the probe from the probe holder.
- b. Wait for the “OrL” to appear in the temperature display.
- c. Press the Set-Arrow Up button once to change the display to “ALY”.
- d. Insert the probe into a new probe cover and press down firmly until a new probe cover engages onto the probe.
- e. Lift the patient’s arm to fully expose the axilla. Place the probe tip as high as possible in the axilla, aligning the probe vertically with the spine. Next, lower the patient’s arm down to make maximum contact with the probe tip. The patient should always remain still, maintaining good tissue contact throughout the process.

- f. The predictive temperature reading will be displayed for 1 minute in the temperature display.



**NOTE:** Quick predictive axillary temperature readings are accurate only for children under the age of four years old. If an axillary reading is desired for a patient age four and older, the **Blue** probe must be used in Monitor Mode.

#### 4. Taking Rectal Temperatures

For rectal temperatures, use only the **RECTAL PROBE with the RED** ejection button.

- Hold the probe collar with your thumb and forefinger and withdraw the probe from the probe holder.
- Wait for the “**REC**” to appear in the temperature display.
- Load the probe cover onto the probe.
- Apply a thin coat of water-based lubricant to the tip of the probe cover (optional).
- Insert the probe tip 5/8 inch inside the rectal sphincter for adults and approximately 1/2 inch for children.
- Tilt the probe slightly to ensure good tissue contact.
- The predictive temperature reading will be displayed for 1 minute in the temperature display

**\*\*WARNING\*\*** Use extreme care to avoid risk of bowel perforation.

**\*\*NEVER\*\*** Reuse probe covers; reusing covers will give inaccurate temperature readings.

#### 5. Taking Monitor Mode Temperatures

- Continuous monitoring mode is not recommended for use over 5 minutes.
- Measurements are not stored in memory.
- 3-5 minute thermometer reading is equivalent to using a glass thermometer.
- Useful for double-checking fast predictive readings; i.e. an infant exposed to cool ambient temperatures or hypothermic patient.
- To use Monitor Mode:
  - Select the correct probe and remove from probe holder.
  - Load probe cover and wait one minute; the Monitor will automatically switch to Monitor Mode.
  - Determine the site for the Temperature reading: Oral, Axillary, or Rectal
  - Take the patient's reading in appropriate site. Continue to hold the probe in position for the required duration:

Oral	3 minutes
Axillary	5 minutes
Rectal	3 minutes

5. Record the temperature before removing the probe from the site. Monitor Mode temperatures **are not** stored in memory.

6. Discard the probe cover. Upon returning the probe to the holder, the thermometer will revert back to default mode. Change as needed.

**NOTE:** The thermometer enters Monitor Mode automatically if the probe is removed from the holder and not used for 60 seconds or if the patient's temperature is too low to allow the device to predict a reading.

#### **K. Review Button**

1. Press Review button to display most recent set of vital signs.
2. The Monitor stores 99 sets of data.
3. The data will appear in appropriate displays and the Cycle display will show total number of data sets currently in memory.

#### **L. Erasing Data**

1. All patient vital sign data is erased when the Monitor is powered Off.
  - a. To erase patient data during normal operation, press and hold the Cancel button for 3 seconds until a confirmatory beep is heard.

#### **M. Nurse Call (if applicable)**

When the cable is connected and operational, the Monitor immediately notifies the Nurse Call system when a patient alarm occurs.

#### **N. Error Codes**

1. The VSM 5200 is equipped with the technology to detect an error when calculating a patient's vital sign. The codes will display on the parameter that has the error.
2. The error code references are located on the right side of the VSM 5200 and also in the VSM 5200 Operator's Manual.

#### **O. Cleaning**

1. Wipe the **Monitor** with a damp cloth with one of the following:
  - a. Warm water and a mild detergent
  - b. Hospital disinfectant that is non-staining
2. Wipe the **Temperature Probe** with a damp cloth with one of the following:
  - a. Alcohol
  - b. Warm water
  - c. Hospital disinfectant that is non-staining
3. Wipe the **SpO2 Sensor** with a damp cloth with one of the following:
  - a. < 70% isopropyl Alcohol
  - b. 10% or less Bleach Solution

#### **P. Replacing Printer Paper (if applicable)**

1. Press Printer button to open the printer door.
2. Insert new roll of paper; use only WA thermal paper.
3. Thread end of roll over the roller and through slot in printer door.
4. Pull slightly on paper to take up any slack, then close printer door.