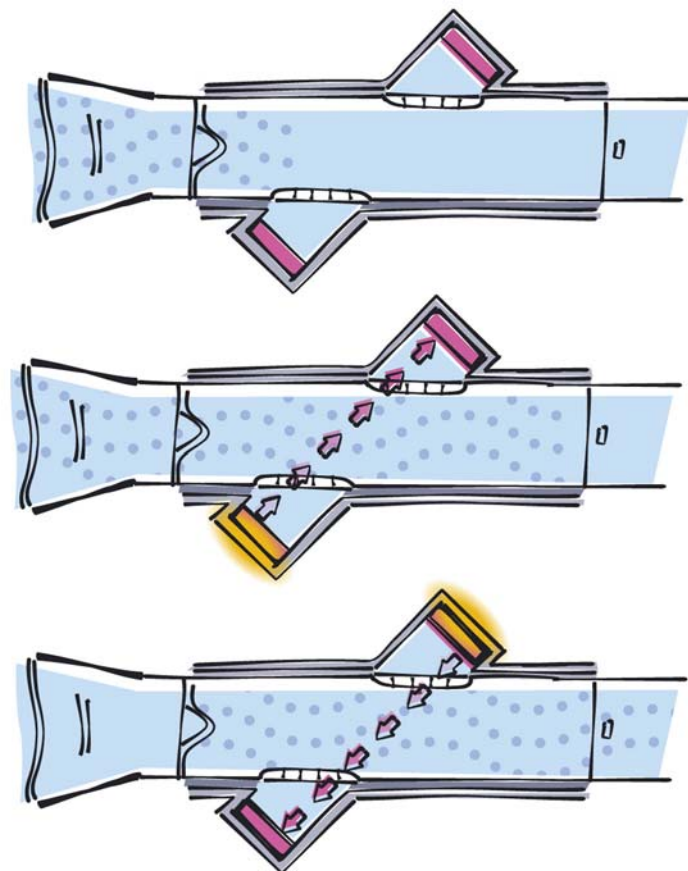


EasyOne Sensor Technology

The EasyOne™ Spirometer incorporates an ultrasonic flow sensor to measure the flow of air in and out of the patients lungs.

Ultrasonic flow measurement eliminates problems associated with traditional methods of flow measurement and helps make the EasyOne™ spirometer is extraordinarily fast, reliable, accurate, and mistake proof. There are no moving parts, no codes to enter, no screens to catch sputum, and no disposables to calibrate. Ultrasonic flow measurement is independent of gas composition, pressure, temperature, and humidity; and eliminates errors due to these variables.

The following pictures illustrate how ultrasonic flow measurement works:



Transducers located on either side of the spirette cavity emit and receive sound in alternating directions. When gas flow is present in the tube, a pulse that travels against the flow (traveling upstream) is slowed down and takes a longer time to reach the opposite transducer. Conversely, a pulse traveling with the flow (traveling downstream) is sped up and takes a shorter time to reach the opposite transducer.

The transit time of the sound pulses is precisely measured with a digital dock. The gas flow through the spirette™ is then calculated from the upstream and downstream transit times. This calculation is independent of gas composition, pressure, temperature, and humidity; and eliminates errors due to these variables.

The disposable spirette™ acts only as a hygienic shield and is transparent to the ultrasonic pulses traveling between the measurement transducers. Since the disposable spirette™ has no sensor elements, it does not perform a measurement function and does not require calibration.