

Bio-Med Devices

The Mystery of Blender Bleeds Unraveled

Simply put, the blender requires a minimum flow of gas passing through it to ensure its accuracy. This minimum flow rate varies depending on the series of blender and it is accomplished by "bleeding" gas to atmosphere. Our Low Flow series requires this bleed for flows below 3 lpm, the Mid-Flow for flows below 6 lpm, and High/Low Flow below 15 lpm. So any time the blender is being used below these flows, the bleed must be used.

The bleed is controlled by whatever is on the right side of our blenders. This may be a DISS fitting, a knob or a flowmeter. In the case of the DISS fitting, the bleed is turned on any time something is connected to this fitting. When a knob is present, the bleed is turned on by setting the knob to the <3 LPM, <6 LPM or <15 LPM depending on the series. With a flowmeter on the right side, the bleed is turned on by rotating the flowmeter into its vertical position. Whether it is a knob or a flowmeter, it must be pushed in to turn, so when it is in either the on or off position, it is locked in place.

Knob- Low Flow Blender



Flowmeter



So why do you need to know about bleeds? There are two main reasons. First, it helps in the decision process when choosing which blender is best for your needs and secondly, it helps you to understand when you need to turn the bleed on and when you don't.

When purchasing a blender, you need to consider what your flow requirements will be, both high and low. This determines which series, Low, Mid, High or High/Low flow, will best suit your usage. For instance, if you will need flow above 30 lpm, but less than 50 lpm, the Mid-Flow series is probably your best choice. Although the High Flow can also meet your needs since it also will go to 50 lpm (and well above), this is where you want to consider the other end of the flow range, i.e. how low will you need to go and how often. If you need to go below 15 lpm, the High Flow series will not work because 15 lpm is its lowest flow limit. With the High/Low Flow blender, you can go down to 2 lpm, but any time you go below 15 lpm, you will need to activate the bleed. With the Mid Flow you can go down to 6 lpm before you need the bleed. And the bleed in the Mid-Flow is half that of the High Flow. So in this instance, the Mid-Flow offers the best balance for using below 50 lpm. It gives a flow "window" of 44 lpm (6-50 lpm) without the need of a bleed whereas the high flow in this application has a "window" of 35 lpm (15-50) without the bleed.

When do you need to turn on the bleed? That's easy. Whenever the flow through the blender is less than 3, 6 or 15 lpm for the Low Flow, Mid-Flow and High/Low Flow series respectively. This does not mean per port, but rather total flow. So in other words, as long as the flow is above the minimum using any combination of ports, you don't need the bleed. When below, turn on the bleed.