

Piston vs Diaphragm Pumps

There has been a recent debate about the types of paint sprayer pumps on the market, especially since this is the most important component of a sprayer. Contractors often refer to the entire unit as "the pump". There are two general types of pumps offered for airless sprayers: diaphragm and piston. The following section describes the advantages and disadvantages of each type of pump for airless applications. All Graco airless sprayer use piston style pumps.

Piston Pumps vs. Diaphragm		
	Advantages	Disadvantages
Diaphragm Pump	<ul style="list-style-type: none"> • Tight pressure control when spraying at both low and high pressures • High free-flow rates - good for a high volume transfer of fluids for texture applications and water • Usually cheaper at initial purchase 	<ul style="list-style-type: none"> • Pump runs continuously • Higher maintenance costs • Difficult to prime • Easily allows air into the paint flow - can create an erratic flow and spitting • Poor performance with higher viscosity fluids • All moving parts will need to be kept clean and requires constant maintenance • Hydraulic fluid may leak into the paint
Piston Pump	<ul style="list-style-type: none"> • Pumps higher viscosity coatings with ease • Is able to produce higher pressures at common tip sizes • Better atomization of paint - results in less spitting • Ability to use longer hoses • Able to withstand harder uses on the job - great for professional contractors • Easy to repair • Easy to prime - faster start-up • Runs only when needed - does not run constantly 	<ul style="list-style-type: none"> • Usually results in a higher initial purchase price - however cheaper to maintain • Some pressure fluctuations when spraying at lower pressures (Graco's SmartControl will help to reduce this problem) <p>*According to Graco, 85% of professional painting contractors prefer piston pumps.</p>