

Pressure Control

Sprayers generally come with one of two different pressure controls. The most common is a pressure relief or bypass valve. The other type is known as a throttling valve.

Pressure relief valves are spring loaded valves used with positive displacement pumps. Diaphragm, Roller, Piston and Plunger pumps are examples of positive displacement pumps. These designs of pumps cannot be dead-headed, meaning that the fluid has to have somewhere to go. If they are not properly plumbed with a PRV the system will continue to build pressure until something bursts.

Throttling valves are used with non-positive displacement pumps. Centrifugal and Turbine pumps are examples of non-positive displacement. They can internally bypass and can be dead-headed, at least for a short amount of time, without damage occurring. Although some models look similar to PRVs the absence of the spring makes them different. Throttling valves are usually used in conjunction with a second valve for bypass.



Pressure Relief Valve



Throttling Valve

Note: Some models of PRVs have a Dump Valve built in. Dump valves have a pressure or operating position and a dump position which diverts all fluid back to the tank.

When plumbing a pressure relief valve the port that comes out the side of the valve directs fluid back to the tank. The port facing right on the throttling valve is usually delivering the fluid to a manifold or the spray accessory. You can refer to Hypro's [Pump Selection Guide](#) for illustrations of various plumbing schemes and more plumbing information. The link is to a PDF file and will take a moment or two to load depending on your connection. [Click here to download Acrobat Reader](#) if you don't already have it to view the PDF file.

Another way we witness people controlling pressure is by engine or motor speed. Is this a problem? In most cases, no. Say, for instance, PTO driven pumps aren't a problem as long as you have the RPM's up high enough to provide sufficient pressure and volume to the accessory. However, the lifespan of air-cooled gas engines can be compromised if allowed to run for excessive amounts of time at low RPM,s. Since most small engines do not lubricate the engine via an oil pump, getting proper lubrication to the motor requires RPM,s in the top third of their range. Although using engine speed is acceptable it's best to know your sprayers controls. This will prove to be beneficial as your spraying needs change.

If you happen to be using a 12-Volt system and notice a loss of pressure, check the battery first. This can save you a great deal of time and expense.

Need help figuring out your sprayer? The staff at PBM is here to help. Bring your sprayer by or e-mail us some photographs, let us know what you need assistance with and we'll do what we can to help.

If you have any questions, concerns or would like to share something that you have found helpful in your spraying practices e-mail to: pbm@pbmsprayers.com.

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