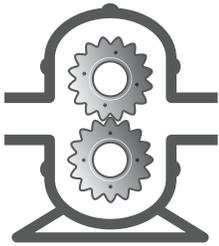




# Types of Pumps

## For Spray Foam & Polyurea Applications

Spray foam insulation is ideal for both commercial and residential applications. Typical applications include air sealing and insulating attics, rim joists, roofs and walls. Polyurea is used to protect wood, concrete and steel from abrasion, cracking, deterioration and corrosion damage. Due to its resistance to scratches, chemicals, oils and salts in commercial and industrial floor applications, polyurea is an ideal protective coating system. When deciding on the best equipment for spraying and dispensing these materials, there are primarily two types of pumps being used for this equipment to choose from - piston pumps or gear pumps.

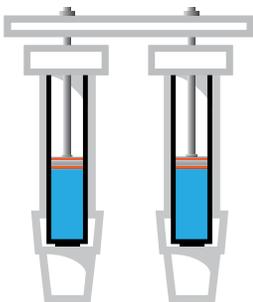


### What is a Gear Pump?

A gear pump is a type of positive displacement pump that moves fluid repeatedly, enclosing a fixed volume of fluid using interlocking gears and transferring it mechanically using a cyclic pumping action.

The rotating element develops a liquid seal with the pump casing and creates suction at the pump inlet. Fluid, drawn into the pump, is enclosed within the cavities of its rotating gears and transferred to the discharge.

Gear pumps are not new. They have been around for hundreds of years. Equipment manufacturers have used, and continue to use, gear pumps in their proportioner designs. From the 1970's through the 1990's, gear pumps were commonly used for low pressure dispensing of foams and polyureas, as well as in large, OEM Reaction Injection Molding (RIM) applications. Since then, companies have switched their pump technology away from gear pumps because of the risks, costs, and other issues inherent with gear pumps.



### What is a Piston Pump?

A piston pump is a type of reciprocating positive-displacement pump that uses a piston and plunger to displace and pressurize fluids. The pistons are driven by a motor, crankshaft or connecting rod. Either single or double acting, piston pumps operate by using the force of the pumping mechanism to expand and contract an internal movable volume of fluid.

The input and output valves in a piston pump are check valves, which function to limit flow in a system to one direction. These pumps can be driven manually or automatically, and there are a number of devices that can be used to drive the piston in order to deliver a high-pressure flow.

Piston pumps are used as hydraulic pumps to power heavy machinery, but they are also useful in smaller machines, such as paint sprayers. Piston pumps can be upsized for use in oil production and other harsh industrial applications as well.

Piston pumps are among the most efficient pump types for a variety of applications and projects due to their reliability, accuracy, and minimal service and maintenance. Today, piston pumps are considered the ideal choice for pumping spray foams and polyureas.