

Blackmer®



Where Innovation Flows

LPG Dispensers

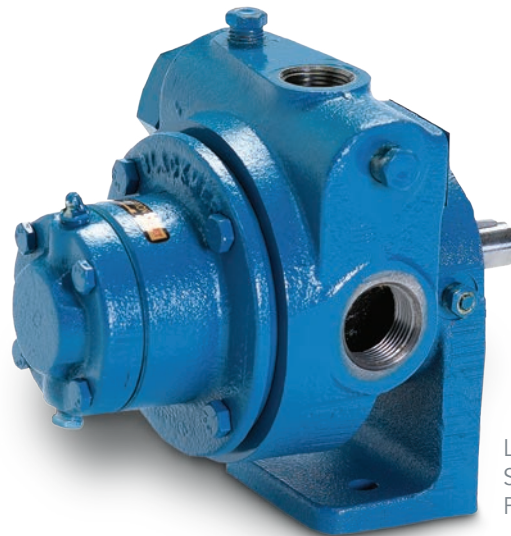
APPLICATION DOCUMENT

Liquefied petroleum gas, or LPG, has been the fuel of choice for many years in the refillable tanks that are used to power BBQ grills, forklifts, food trucks, recreational vehicles and campers.

No matter how it is used, though, in its liquid form LPG fights to return to a gaseous state, meaning it cannot be allowed to lose pressure and expand when transported and handled, which requires that the proper equipment and care be used in its handling.

No matter the application, critical to the operation of LPG dispensers are the pumps that are used to transfer the fuel from storage vessels into and through the dispenser. Two types of pump technologies have become popular choices in LPG-dispensing activities: sliding vane and gear. However, while gear pumps are able to handle LPG, the fuel's non-lubricating properties create metal-to-metal contact between the pump's gears, which decreases flow rates over time while reducing efficiency and service life that can result in a lower mean time between repair or replacement.

Sliding vane pumps are the best choice for use on LPG dispensers, with the Blackmer® LG1 Sliding Vane Pump, which is part of the Blackmer Cavitation Line, the ideal choice. For more than 50 years, the Blackmer LG1 pump, which is UL-listed for use with LPG, has been the industry standard pump for LPG dispensers. The leading advantage of sliding vane pumps is that the pump features no metal-to-metal contact due to the use of non-metallic vanes and locknuts on the rotor, both of which prevent this from happening. The LG1 pump's self-adjusting non-metallic duravanes provide consistent volumetric performance by wearing evenly and are easily replaced when needed. The LG1



LG1
Sliding Vane
Pump

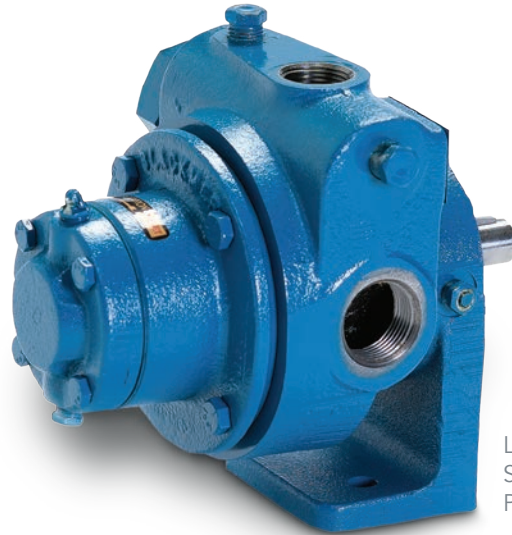
pumps have cavitation-suppression features that enable them to better handle any LPG vaporization that may occur within the pump. Finally, the LG1 pump incorporates a combined relief/bypass valve which limits discharge pressure. The combined valve also protects the pump from over-pressurization where both the downstream connection and the back to tank bypass connections are blocked.

The LG1 pumps have 1-inch (26 mm) NPT tapped ports and can produce flow rates between 5 and 13 gpm (18-49 L/min) at temperatures from -25°F to 240°F (-32°C-115°C) and working pressures up to 350 psi (24.1 bar). They offer two mounting styles: integral foot and coupling for direct mounting to a NEMA C-face motor, and bracket/coupling for mounting to a conventional base. The LG1 pumps can also be quickly and easily rebuilt, unlike gear pumps, which are typically disposed of and replaced when they fail.

All of these advantages, along with a more than 50-year history Blackmer has of serving the LPG market, have made the LG1 pumps the most popular option, with more than 50,000 units sold to date.



LPG Dispensers



LG1
Sliding Vane
Pump

COMPETITION

• Gear Pumps

Gear pumps have a simple design that makes them well-equipped to transfer lubricating liquids, but LPG is non-lubricating. This creates metal-to-metal contact between the pump's gears, which will lead to performance degradation over time. The metal-to-metal contact will also create and enlarge cavities in the flow path, which will lead to efficiency-robbing product slippage.

• Regenerative Turbine Pumps

These pumps are less efficient in LPG-handling applications which means that they require larger motors. The technology does work well in high-differential applications where the lower efficiency is accepted.

FROM THE FIELD

As noted, the most common uses for LPG dispensers are to fill cylinders (also known as bottles) for use in BBQ, forklift, patio heater, food truck and RV/camper applications. The cylinders are available in an array of sizes, ranging from 20 to 100 pounds, with the acquisition cost to the purchaser based on the total weight of the LPG that is dispensed during the filling process.

The versatility of Blackmer® LG1 Sliding Vane Pump makes them ideal for use in the full array of cylinder-filling applications. For example, since the LG1 pump is more than capable of filling all sizes of LPG cylinders, an LPG supplier can typically fill an empty 20-pound (9 kilogram) BBQ cylinder in about 90 seconds at a differential pressure of 85 psi (4.9 bar).

The same LG1 pump can just as easily fill a 33-pound tank (15 kg) that is used to power a forklift or the 40- to 100-pound (18-45 kg) tanks that a food-truck operator may be using to fuel his LPG-powered flattop cooking surface or grill.

On top of that versatility, the LG1 pumps are very robust, with a typical service life that can exceed 10 years.

For more information on these additional solutions, visit us at blackmer.com.

atk0120-082 10/21

Copyright 2021 PSG®, a Dover company

Authorized PSG® Partner:

Where Innovation Flows 



PSG
1809 Century Avenue SW
Grand Rapids, MI 49503-1530 USA
P: +1 (616) 241-1611 • F: +1 (616) 241-3752
info@blackmer.com
blackmer.com