CORKEN PUMPING SOLUTIONS FOR AUTO LPG DISPENSING STATIONS (ALDS)

Your Partner for High-Efficiency Liquid Gas Transfer and Vehicle Refueling

Reliable fluid logistics are at the core of every commercial Auto LPG Dispensing Station (ALDS). Corken delivers high-performance pumping systems engineered to handle the volatile physical properties of liquefied gases, enhance system throughput, and ensure operational safety across both road tanker unloading and vehicle cylinder filling operations.

The Evolving Auto LPG Infrastructure

The downstream auto-gas distribution and retail refueling market demands clear objective: maximum operational uptime through safe, high-efficiency, and continuous fluid transfer.

As fleet infrastructure and retail auto-gas networks expand to meet regional energy demands, fueling stations must maintain uninterrupted service lanes.
Managing liquefied petroleum gas (LPG) requires highly specialized pumping systems capable of handling extreme differential pressures while preventing vapor formation, ensuring consistent dispensing volume and absolute system reliability.

Why Volumetric Stability Matters in ALDS

Maintaining a stable, high-pressure liquid flow plays a fundamental role in commercial refueling operations. It directly impacts:

01. Refueling Speed and Efficiency:

Sustains optimal flow rates at the dispenser nozzle, reducing vehicle fill times and minimizing lane congestion.

02. Vapor Handling Performance:

Effectively processes entrained vapors on the suction side, preventing mechanical disruptions or vapor locking during hot weather or high-traffic cycles.

03. Equipment Durability:

Minimizes **structural** vibration and cavitation, extending the service life of seals, bearings.

Market Needs and Application Challenges

Auto LPG Dispensing Stations operate under demanding hydraulic conditions that place severe physical stress on standard pumping technologies:

NEGATIVE NPSH IN UNDERGROUND TANKS:

ALDS networks utilize underground storage tanks where the net positive suction head (NPSH) is negative. Submersible or standard pumps frequently struggle to lift liquid gas from these depths, resulting in poor suction performance.

CAVITATION AND VOLATILE VAPORIZATION:

Liquefied gases vaporize easily when subjected to localized pressure drops or high temperatures. This vaporization triggers severe cavitation risk under vaporizing liquids, leading to premature mechanical breakdown, loud operational noise, and heavy vibration.

HIGH DIFFERENTIAL REFUELING PRESSURES:

Vehicle cylinder filling demands steady, continuous pressure to overcome tank backpressures. Insufficient hydraulic force causes sluggish dispensing rates and erratic flow.

Difficult Maintenance Access:

Servicing pumps installed deep within underground containment sumps or complex piping manifolds is labor-intensive, creating long station downtimes during standard component overhauls.

CORKEN ALDS PUMPING PORTFOLIO:

Engineered for Real-World Conditions

Corken resolves these systemic industry bottlenecks by deploying two distinct, field-proven positive displacement and regenerative turbine technologies—each optimized for specific stages of the ALDS fluid path.

Z-SERIES CORO VANE® PUMPS:

Engineered for Road Tanker Unloading

The Corken Z-Series features positive displacement sliding vane pumps specifically optimized for high-volume bulk liquid transfer and bulk storage tank unloading.

VAPOR HANDLING CAPACITY

The Coro-Vane® architecture is unique because it can handle small amounts of vapor formed at the suction side, entirely avoiding vapor locks during high-volume transfers.

SELF-ADJUSTING VANE DURABILITY:

Utilizes a six-blade, non-metallic vane design with integrated blade drivers. The vanes self-adjust for wear automatically, maintaining high pumping efficiencies throughout the entire lifecycle of the pump.

CAVITATION-SUPPRESSION CAM DESIGN

Features an innovative cam layout that virtually eliminates cavitation by smoothing internal fluid transitions, extending internal component life under fluctuating suction pressures.

ROBUST SEALING RELIABILITY:

Sturdy mechanical seal construction that enhances structural sealing integrity while simplifying routine maintenance.

INTEGRATED OVERPRESSURE PROTECTION:

A factory-set internal relief valve eliminates downstream system overpressurization.

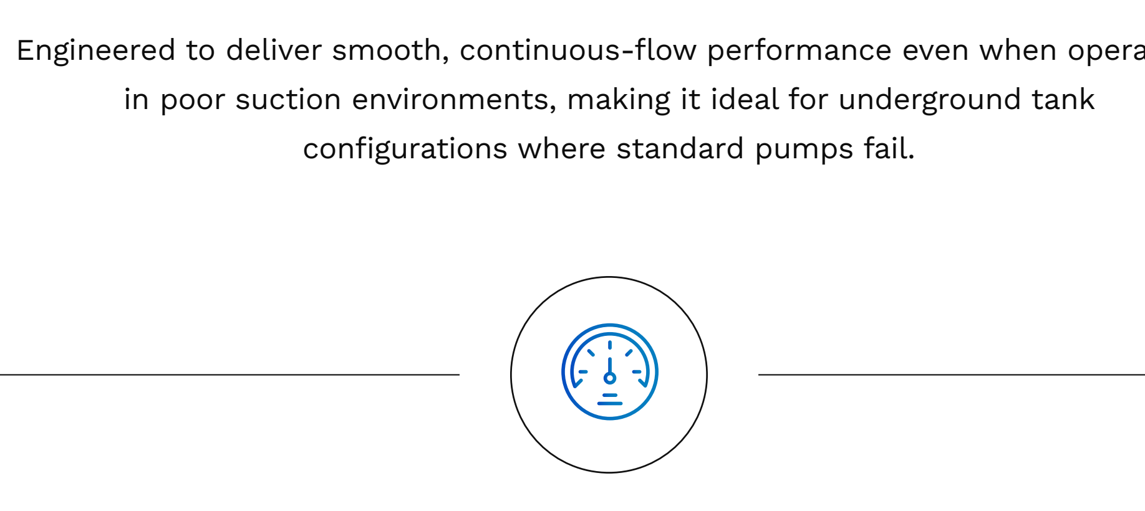
HIGH-VAPOR BYPASS VALVES:

Regulate pump differential pressures, returning excess vapor or liquid back to the storage tank to stabilize the dispensing line.

FF-SERIES CORO-FLO® PUMPS:

Engineered for Vehicle Cylinder Filling

The Corken Coro-Flo® Autogas series utilizes advanced regenerative turbine technology designed specifically for continuous-duty, high-differential pressure applications like vehicle refueling.



OVERCOMING POOR SUCTION CONDITIONS:

Engineered to deliver smooth, continuous-flow performance even when operating in poor suction environments, making it ideal for underground tank configurations where standard pumps fail.

HIGH-DIFFERENTIAL PRESSURE EXECUTION:

Effortlessly sustains the high discharge pressures required to fill vehicle cylinders swiftly, maintaining linear volumetric consistency regardless of tank backpressures.

FLOATING IMPELLER MECHANICS:

Incorporates a free-floating impeller design that eliminates metal-to-metal contact, drastically reducing mechanical wear while eradicating frictional ignition hazards.

QUIET OPERATION:

Lower operational noise and mechanical vibration even when handling dual-phase liquid-vapor compositions.

HIGH-VAPOR BYPASS VALVES

Regulate pump differential pressures, returning excess vapor or liquid back to the storage tank to stabilize the dispensing line.

Complete ALDS System Integration

Corken pumps operate as the high-efficiency hydraulic heart of an integrated refueling loop. To maximize site automation, safety, and operational control, they coordinate seamlessly with:

Enhancing Station Performance
Corken ALDS pumping solutions help deliver:

01. Maximized Operational Uptime

By isolating abrasive vapor dynamics and eliminating cavitation risks, Corken pumps dramatically reduce unexpected component failures, keeping refueling lanes open.

02. Lower Total Cost of Ownership (TCO)

The self-adjusting sliding vanes and free-floating turbine impellers minimize frictional wear, reducing spare parts overhead and lengthening preventative maintenance cycles.

03. Energy-Efficient Transfer Profiles

High volumetric efficiency curves ensure that the electric motors draw minimal current to sustain target flow velocities, lowering a facility's monthly power consumption.

Conclusion
Performance You Can Rely On

In commercial Auto LPG dispensing, station profitability relies entirely on pumping speed, mechanical durability and absolute operational safety.

Corken enables all three through:

- Field-proven sliding vane bulk transfer technology
- High-pressure regenerative turbine vehicle dispensing pumps
- Unrivaled local technical service and global application expertise

Proven in the field. Built for evolving regional demands.
One trusted system. One seamless solution.

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