

# CHECKLIST: PROPANE AUTOGAS DISPENSER SPECIFICATIONS

## PURPOSE:

**U**se this checklist to make sure the dispenser system you install complies with recommended minimum specifications from the Propane Education and Research Council (PERC), and to ensure positive end-user experiences with operation of the equipment.

Read this list carefully, and check off an item only after you are confident that you have given it due consideration.

## SYSTEM PERFORMANCE REQUIREMENTS:

- Location of dispensing station and proximity to the pump package has been considered.
- Vehicle fueling area [ground where vehicle is parked] is reasonably level to allow for complete fuel fills.
- Pump package [motor, pump, bypass, piping, system sizing and electrical] provides adequate differential pressure based on vehicle type, geographic location and climate conditions.
- System dispenses at a minimum rate of 8 gallons per minute [GPM].

## EQUIPMENT REQUIREMENTS:

### DISPENSER CABINET:

- Is constructed of nonflammable, noncombustible materials; including but not limited to powder coat steel, stainless steel, aluminum or equivalent materials.
- Meets all federal, state and local codes and regulations applicable at the installation location.
- Is constructed with lockable access panels to prevent tampering.

- Provides separation of the base classified area from the non-classified area [above 48"] by a permanent seal.

### DISPENSER METERING:

- Has a digital display capable of providing gross or net volumes.
- Where required, temperature compensation is provided which meets all federal, state and local codes and regulations. Dispenser meter is provided with secondary temperature thermometer well for testing and proving [checking the accuracy/calibrating] the meter.
- Has a minimum capacity sufficient to meet the performance standard listed in the System Performance Requirements section.
- If you are using an electronic dispensing system, it is equipped with a pulse transmitter providing a minimum of 100 pulses per gallon [PPG] for retail sales and/or custody transfer.
- Mechanical temperature compensation without pulse output is acceptable.

- Meter accuracy is in accordance with federal, state and local codes and regulations, with a minimum accuracy of  $\pm 0.6\%$  [.006] linearity and  $\pm 0.24\%$  [.0024] repeatability when dispenser is used for retail sales and/or custody transfer.
- The meter has been inspected prior to operation to ensure compliance with state weights and measure standards applicable at the location of installation when dispenser is used for retail sales and/or custody transfer.

### DISPENSER DISPLAY:

- Indicates gallons dispensed with mechanical or electronic register.
- If equipment is mechanical, it indicates gallons dispensed and totalizer display.
- If equipment is electronic, it indicates net or gross gallons dispensed. Dispenser may include display with an alpha-numeric keypad for ease of entering data.

### ELECTRICAL REQUIREMENTS:

- All electrical installations are performed by a licensed, bonded electrician with motor control experience to ensure compliance with all federal, state and local codes and regulations at the location of installation.
- Dispenser and all internal electrical components are wired in full compliance with the manufacturer's specifications. Electrical components contained within the dispenser cabinet, where required, are Class 1 Group D Division 1 or Division 2, and all required seal off devices are provided.

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- Distance has been considered when selecting service wire sizing to meet necessary voltage and amperage requirements of the motor manufacturer.

### PIPING, VALVES, AND FITTINGS:

- All piping within the dispenser cabinet are A53 Grade B or better, schedule 80 or approved equivalent materials.
- All threaded fittings are forged steel, brass or other materials approved for use with liquid propane.
- All threaded fittings and valves are minimum 400 PSIG water, oil or gas [WOG] rated.
- Ball valves are full port for liquid service.
- Internal valves, excess flow valves, and backflow check valves are installed in appropriate locations in accordance with federal, state and local codes and regulations.

### HOSE ASSEMBLY:

- UL and CGA propane delivery hose is continuously marked "LP-GAS 350 PSI WP, 1750 burst pressure," maximum 18' length per NFPA 58 code.
- Hose assembly has a UL 567 compliant hose breakaway device.
- Fueling nozzle is gas pump style 1<sup>3</sup>/<sub>4</sub>" ACME with quick-acting shutoff, low emission release, and fail-safe discharge feature [example: GG 20 low emission Gasguard™ or equivalent].
- Compatible with the dispensing device locking mechanism.

### PUMP SYSTEM AND PUMP ASSEMBLY:

- Dispenser provider has evaluated the filling requirements and provided the appropriate pump to meet these requirements. Vendor provided minimum pump curves showing flow, differential pressure, and horsepower required to meet system needs.

- Most vehicles require a minimum differential pressure of 125 PSIG.
- Pump inlet strainer (minimum 80 mesh) or any restrictions is minimum of 10 pipe-diameters from the pump inlet. Pump manufacturer's installation instructions are followed.
- Pump inlet and outlet have isolation full port ball valves.

### IN-LINE FUEL FILTER:

- Is capable of filtering particles measuring 5 microns.
- Filter is placed after the propane autogas pump to filter the stored fuel before it enters the vehicle.

### TANK ASSEMBLY:

- The selected tank is suited for the application intended.
- A new tank or a thoroughly cleaned tank is used to prevent foreign material from entering the vehicle system.
- The provided container is equipped with a bottom liquid connection sufficient to supply the pump at the pump manufacturer's recommended volume.
- The container is equipped with a suitable vapor connection for the pump bypass.
- The container is equipped with suitable connection for the vapor eliminator from the meter to operate properly.
- All other tank openings comply with federal, state and local codes and regulations.

### INSTALLATION FOUNDATION:

- Tank and dispensing unit is mounted on a concrete or masonry foundation, unless it is part of a complete storage and dispensing unit supported on a common base to prevent uneven settling and stress on piping.

### ADDITIONAL CONSIDERATIONS:

- Any compatible fuel management system may be used. Fuel management systems may include, but are not limited to the vehicle fuel usage, vehicle number, driver ID, mileage, gallons delivered, or any other information suitable to the customer's needs.
- If the dispenser is used for retail sales it must be an approved device for its intended purpose.

### OPTIONAL EQUIPMENT AND UPGRADES MAY INCLUDE, BUT ARE NOT LIMITED TO:

- Dispenser display with an alpha numeric key pad for ease of entering data.
- Painted surface of dispenser is protected from damage from the breakaway system with an aluminum 12" x 14" wear plate.

### RESOURCES FOR MORE INFORMATION:

- UL 495: Power-Operated Dispensing Devices for LP-Gas
- Handbook 44, National Conference on Weights and Measures
- International Fire Code [IFC]
- NFPA 58, 30A, 70 [NEC]
- Applicable federal, state and local codes and regulations.

### FOR MORE INFORMATION

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