

**EPO No. 27**

**Examination Procedure Outline for**

**Liquefied Petroleum Gas  
Liquid-Measuring Devices**

It is recommended that this outline be followed for all LP gas liquid meters except motor-fuel dispensers.

**SAFETY NOTES**

*When excerpting this Examination Procedure Outline for duplication, the "Safety Considerations" section and the "Glossary of Safety Key Phrases" should be duplicated and included with the outline.*

The inspector is reminded of the importance of evaluating potential safety hazards prior to an inspection and taking adequate precautions to avoid personal injury or damage to the device. The inspector should read and be familiar with the introductory section on safety found at the beginning of this publication. As a minimum, the following safety precautions should be noted and followed during the inspection. Definitions of each reminder are found in the "Glossary of Safety Key Phrases" at the back of this publication.

*Safety policies and regulations vary among jurisdictions. It is essential that inspectors or servicepersons be aware of all safety regulations and policies in place at the inspection site and to practice their employer's safety policies. The safety reminders included in this EPO contain general guidelines useful in alerting inspectors and servicepersons to the importance of taking adequate precautions to avoid personal injury. These guidelines can only be effective in improving safety when coupled with training in hazard recognition and control.*

<b>Clothing</b>	<b>Material Safety Data Sheets (MSDS)</b>
<b>Electrical Hazard</b>	<b>Nature of Product</b>
<b>Emergency Procedures</b>	<b>Personal Protection Equipment</b> e.g., <b>Safety Shoes</b>
<b>Eye Protection</b>	<b>Safety Aprons, Respirators, Gloves,</b> <b>Barrier Cream, etc. if deemed necessary</b>
<b>Fire Extinguisher</b>	<b>Hard Hat – for protection from overhead</b> <b>hazards</b>
<b>First Aid Kit</b>	<b>Safety Cones/Warning Signs</b>
<b>Grounding</b>	<b>Static Discharge</b>
<b>Ignition Sources</b>	<b>Support – for prover</b>
<b>Lifting</b>	<b>Switch Loading</b>
<b>Location</b>	<b>Traffic</b>
	<b>Transportation of Equipment</b>
also: <b>Wet/Slick Conditions</b>	
<b>Chemicals, Petroleum Products, and Hazardous Materials</b>	
<b>Obstructions and Overhead Hazards</b>	

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**Inspection:**

**Safety First !!!**

**Check the inspection site carefully for safety hazards and take appropriate precautions pay particular attention to the condition of the product storage tank and valves.**

**Check to be certain that the ground surface of the inspection site is sufficiently strong and rigid to support the prover when it is filled with product don't forget to chock the wheels of the prover.**

**Learn the nature of hazardous products used at or near the inspection site obtain and read copies of MSDS.**

**Know emergency procedures (particularly for this location); post safety cones/warning signs and be aware of the location and operation of fire extinguisher and emergency shut-offs.**

**Be sure that a constant supply of water is available for cooling tanks in an emergency.**

**Post safety cones/warning signs and be aware of vehicular and pedestrian traffic patterns.**

**Use caution moving around in wet, slippery areas and in climbing on prover, storage tanks, and vehicles.**

**Use personal protection equipment and clothing appropriate for the inspection site.**

**If exposed wiring or other factors cause hazardous testing conditions, it is recommended that the testing be discontinued until the unsafe conditions are corrected.**

**Be sure that a first aid kit is available and that the kit is appropriate for the type of inspection activity.**

**H-44 General Code and LPG  
and AA Liquid-Measuring  
Devices Code References**

1. Indicating and recording elements.	
Design .....	S.1.1.
Readability .....	G-S.5., G-UR.3.3., S.1.2., S.1.3.
Ticket Printer (vehicle-mounted systems).....	UR.2.6.
Unit price and product identity.....	S.1.5.1.

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**Inspection (cont.):**

Advancement and return to zero.....	S.1.1.4., S.1.4.1., S.1.4.2., UR.2.1., S.1.6.1.
Provision for sealing.....	G-S.8. (1/1/90), G-UR.4.5.
2. Measuring elements.	
Vapor elimination.....	S.2.1., S.2.4.
Security seals.....	G-UR.4.5., S.2.2., S.2.6.2.
Thermometer well.....	S.2.5.
Automatic temperature compensation.....	S.2.6., S.2.6.1., UR.2.4.
3. Marking requirements .....	
	G-S.1., G-S.6.(1/1/77), G-S.7., S.4.
4. Piping.	
Discharge line and valves.....	S-2.3., S.3., UR.2.2., UR.2.3.
Facilitation of fraud.....	G-S.2.
5. General considerations.	
Selection.....	G-UR.1.1.
Use and maintenance.....	G-UR.3.1., G-UR.4.1.
Installation.....	G-UR.2.1., G-UR.2.2., UR.1.1., G-S.3.
Accessibility.....	G-UR.2.3.
Assistance.....	G-UR.4.4.
Testing devices at a central location.....	G-UR.4.6.(a)

**Pretest Determinations:**

1. Determine that the test liquid is similar in character to the liquid to be measured commercially.....		N.1.
2. Tolerances.		
Applicable requirements.....	G-T., T.1.	
Tolerance values.....	T.2.	
Repeatability .....	T.3.	
Automatic temperature-compensating system.....	T.4.	

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**Test Notes:**

**Wear appropriate personal protection equipment such as static-resistant, nonskid safety shoes (to avoid potential ignition source and to prevent possible injury from slipping on slick surfaces), protective clothing, eye protection (to prevent injury from product), and a hard hat (to prevent injury from overhangs and projections on the prover and at the test site).**

**Use proper grounding procedures!**

**Be sure that prover is equipped with an explosion-proof motor.**

**Carefully inspect electrical supply lines for test equipment for wear or damage; correct potentially hazardous conditions before use; protect lines from damage during use.**

**Device operator should be present at all times during testing  
the operator (not the inspector) should operate the device under test.**

**Remove fire extinguisher from storage receptacle and set out for easy access.**

1. Wet prover (fill to nominal capacity). Allow 30-second drain period each time prover is emptied.
2. Read temperature and pressure of product in prover immediately following each test draft ..... N.5.
3. If dispenser is equipped with a recording element, print ticket after each test run ..... G-S.5.6., S.1.1.6., UR.2.5., UR.2.6.
4. If computing type, check computation ..... G-S.5.5., S.1.1.5., S.1.5.2.
5. To determine proper operation of totalizers, observe and record the totalizer indication before and after all test drafts.

**Test:**

**Use proper lifting techniques to lift and move equipment !**

**Be aware of and attempt to eliminate potential ignition sources in or near the inspection site.**

**Be aware of vehicular and pedestrian traffic in the area.**

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**Test (cont.):**

Nontemperature-compensated meters

Read temperature of product at meter at one-third and two-thirds prover capacity..... N.5.

1. Normal test--full flow, normal tolerance ..... N.2., N.3., N.4.1., N.5., T.2.
2. Repeat normal test.
3. Special test--slow flow, special tolerance ..... N.2., N.4.2.2., N.5., T.2., N.4.2.3.

If the result of any test is close to or outside the applicable tolerance, repeat that test.

Temperature-compensated meters

1. Normal test--full flow, normal tolerance. (Do not deactivate temperature compensator.) ..... N.2., N.3., N.4.1.1., N.5., T.2.
2. Deactivate temperature compensator and repeat normal test ..... N.2., N.3., N.4.1., N.5., T.2., T.4., N.4.2.3.
3. Special test--slow flow, special tolerance ..... N.2., N.4.2.2., N.5., T.2., N.4.2.3.

If the result of any test is close to or outside the applicable tolerance, repeat that test.

Reactivate temperature compensator.

Security seal. Apply lead-and-wire seals to secure meter and temperature adjusting mechanisms. Also seal register to the meter.

Note audit trail information, if applicable.

Note final totalizer reading and record on official report the number of gallons of product dispensed during test.