

APPENDIX A

Examination Procedure Outlines (EPOs)

For Liquefied Petroleum Gas

Motor-Fuel Dispensers & Liquid-Measuring Devices

EPO 26

Examination Procedure Outline for
Liquefied Petroleum Gas Motor-Fuel Dispensers

It is recommended that this outline be followed for all LP gas motor-fuel dispensers. Examination procedures for other types of LP gas liquid meters are given in EPO No. 27.

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.

Clothing	Material Safety Data Sheets (MSDS)
Electrical Hazards	Nature of Product
Emergency Procedures	Personal Protection Equipment e.g., Safety Shoes
Eye Protection	Safety Aprons, Respirators, Gloves, Barrier Cream, Etc., if deemed necessary.
Fire Extinguisher	Hard Hat -- for protection from overhang in rear of vehicle tank truck
First Aid Kit	Safety Cones/Warning Signs
Grounding	Static Discharge
Ignition Sources	Support -- for prover
Lifting	Switch Loading
Location	Traffic
also: Wet/Slick Conditions	Transportation of Equipment
Chemicals, Petroleum Products, And Hazardous Materials	
Obstructions	

EPO No. 26

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) and 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. General considerations.

Selection	G-S.3., G-UR.1.1., G-UR.1.2., G-UR.1.3.
Use and maintenance	G-UR.3.1., G-UR.4.1., G-UR.4.2.
Installation	G-UR.2.1., G-UR.2.2., UR.1.1., G-S.2.
Accessibility	G-UR.2.3.
Assistance	G-UR.4.4.
Testing devices at a central location	G-UR.4.6.(a)

2. Indicating and recording elements.

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DesignS.1.1.
 ReadabilityG-S.5., G-UR.3.3., S.1.2.,
 S.1.3.
 Unit price and product identity.....S.1.5.1.

Inspection (cont.):

Advancement and return to zero.....S.1.1.4., S.1.4.1., S.1.4.2.,
 UR.2.1.
 Provision for sealing.....G-S.8. (1/1/90), G-UR.4.5.

3. 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.

4. Marking requirementsG-S.1., G-S.6.(1/1/77),
 G-S.7., S.4.

5. Discharge line and valvesS.2.3., S.3., UR.1.2.,
 UR.2.2., UR.2.3.
 Facilitation of fraud.....G-S.2.

Pretest Determinations:

1. Determine that the test liquid is similar in character to the liquid to be measured
 commerciallyN.1.

2. Tolerances.
 Applicable requirements.....G-T., T.1.
 Tolerance values.....T.2.
 RepeatabilityT.3.
 Automatic temperature-compensating systemsT.4.

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.

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

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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 and make appropriate corrections to the test results..... N.5.

Test Notes (cont.):

3. If dispenser is equipped with a recording element, print ticket after each test run..... G-S.5.2.2., G-S.5.6., S.1.1.6., UR.2.5.
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:

<p>Use proper lifting techniques to lift and move equipment !</p> <p>Be aware of and attempt to eliminate potential ignition sources in or near the inspection site.</p> <p>Be aware of vehicular and pedestrian traffic in the area.</p>
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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.4.2.1., N.5., T.2.

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 the 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.
3. Special test--slow flow, special tolerance..... N.2., N.4.2.1., N.5., T.2.

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

Reactivate the temperature compensator.

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Security seal. Apply security seals to secure meter and temperature adjusting mechanisms. Also seal the register to the meter.

Record audit trail information (if applicable) on the official report.

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

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.

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

EPO No. 27

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) and 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. General considerations.
 - Selection G-S.3., G-UR.1.1.,
G-UR.1.2., G-UR.1.3.
 - Use and maintenance G-UR.3.1., G-UR.4.1.,
G-UR.4.2.
 - Installation G-UR.2.1., G-UR.2.2.,
UR.1.1., G-S.2.
 - Accessibility G-UR.2.3.
 - Assistance G-UR.4.4.
 - Testing devices at a central location G-UR.4.6.(a)

- 2. 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.
- 3. 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.
- 4. Marking requirements G-S.1., G-S.6.(1/1/77),
G-S.7., S.4.
- 5. Piping.
 - Discharge line and valves..... S-2.3., S.3., UR.2.2.,
UR.2.3.
 - Facilitation of fraud..... G-S.2.

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.

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.

EPO No. 27

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 and make appropriate corrections to the test results.....N.5.
3. If dispenser is equipped with a recording element, print a ticket after each test run G-S.5.2.2., 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:

<p style="text-align: center;">Use proper lifting techniques to lift and move equipment !</p> <p style="text-align: center;">Be aware of and attempt to eliminate potential ignition sources in or near the inspection site.</p> <p style="text-align: center;">Be aware of vehicular and pedestrian traffic in the area.</p>
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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 the 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.

EPO No. 27

Test (cont.):

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

Reactivate temperature compensator.

Security seal. Apply security seals to secure meter and temperature adjusting mechanisms. Also seal the register to the meter.

Record audit trail information (if applicable) on the official test report.

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