

LPG Freeze Valve

MODEL AT-1000



PORTABLE MOISTURE TESTING FOR LPG

GENERAL INFORMATION

The Dynisco Model AT-1000 Freeze Valve was developed to indicate the presence or absence of liquefied propane gas (LPG). The AT-1000 is designed to be compliant to the ASTM Valve Freeze Method (ASTM D 2713). The Valve Freeze Method was published for information only by the American Society for Testing Materials in the "ASTM 1963 Standards-Volume 18". The use of this valve and test method provides a relative measure of the tendency of propane type liquefied petroleum gases containing moisture to freeze in pressure reducing regulators which may interrupt the normal flow of gas. The test method is applicable to all propane type LP gases where antifreeze is not present.

FUNCTIONAL DESCRIPTION

The freeze valve has two operating positions, a full flow position for chilling and/or purging and a restricted flow position for testing. A liquid-phase sample is allowed to flow through the valve under the full flow condition to chill the valve housing by the cooling effect of the change from a liquid to the gaseous state. A spring loaded valve stem and cam action actuator provide instantaneous switching from the full flow condition to the testing condition.

After the housing has been chilled, the opening of the valve is switched to the closed testing condition. The valve features included four (4) independent restricted flow passages acting as flow smoothers to maintain a pressure drop which will result in increased expansion of the fluids and increased cooling effect when entering the testing zone. The outlet of the valve has internal threads to assist the operator in determining when the flow has been interrupted or shut off as a result of ice having formed in the aperture of the valve. The instant the LP gas stops flowing over the threads, a frost line rolls over the lip of the valve outlet. The time required for the freezing moisture to block the valve opening is measured. This time is recorded as the freeze time of the sample.

The valve and test method are designed for use outside the laboratory. Therefore, they may be used by comparatively unskilled labor and under existing conditions at commercial terminals with sufficient accuracy to determine if the moisture content of the product meets specifications. The valve incorporates a filter to exclude foreign particles from the testing zone.

The Dynisco Model AT-1000 Freeze Valve is a portable field-tested device that indicates the presence of moisture in liquefied propane gas (LPG).

FEATURES

- Indicates presence or absence of moisture in LPG
- Designed to meet ASTM D 2713 and JLPGA-S-10T Freeze Valve Method
- Portable device, includes a rugged carrying case
- Rugged stainless steel construction

TYPICAL APPLICATIONS

- LPG commercial custody transfer lines
- Propane tanks and trucks
- Not applicable to ASTM if antifreeze is present



For product availability, or to order please call 1-800-Dynisco

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Model AT-1000 LPG FREEZE VALVE

SPECIFICATIONS

SIZE: 8" Long x 1" Diameter
(203 mm long x 25 mm diameter)

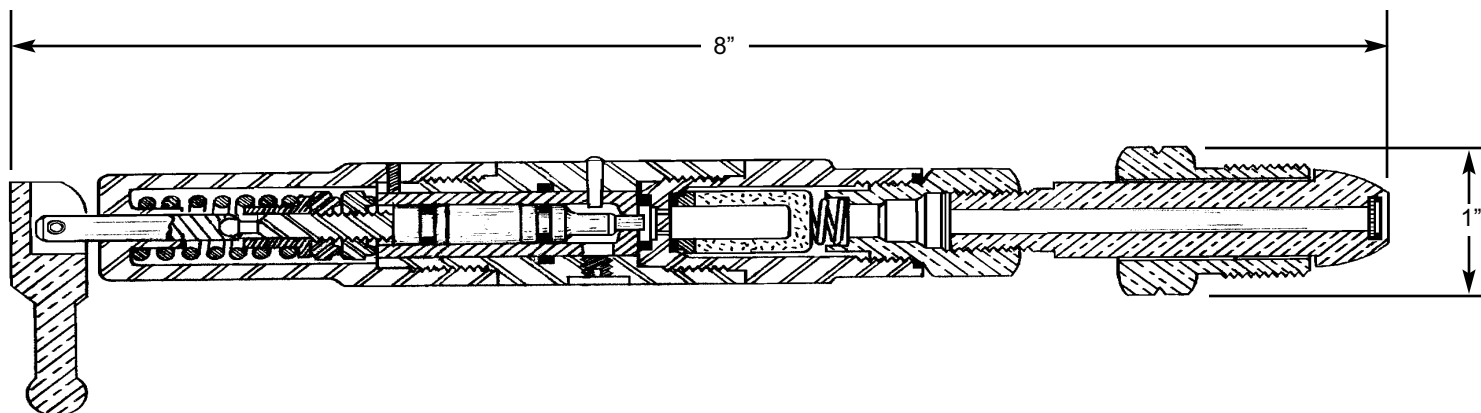
WEIGHT: 1.1 pounds (510 grams)

CONNECTION: 0.880 - 14 NGO Left hand External Thread

MATERIAL OF CONSTRUCTION: Stainless Steel

OPERATING PRESSURE: Less Than 100 pounds/in² (7.03 Kg/cm²g),
plus vapor pressure of product at test temperature.

MEETS STANDARDS: ATSM D 2713, JLPGA-S-10T



Valve Applied to Transfer Line



Valve Application on Tank

