

ME9101 Series Service Valve

Instruction Manual

Warning:

Failure to follow these instructions or to properly install and maintain this equipment could result in an explosion and/or fire causing property damage and personal injury or death.

Use the Marshall Excelsior Co. ME9101 series brass service valves only in liquid propane based applications.

Install, operate and maintain Marshall Excelsior Co. equipment in accordance with federal, state, and local codes and these instructions. The installation in most states must also comply with NFPA #58, code and DOT standards.

Only personnel trained in the proper procedures, codes, standards and regulations of the LP-Gas industry should install and service this equipment.

General Warning:

Marshall Excelsior products are mechanical devices that are subject to wear, contaminants, corrosion, and aging of components made of materials such as rubber and metal. Over time these devices will eventually become inoperative. The safe service life of these products will reflect the environment and conditions of use that they are subjected to. Regular inspection and maintenance is essential. Marshall Excelsior products have a long record of quality and service, so LP-Gas dealers may forget hazards that can arise from using aging devices that have outlived their safe service life. The length of a device's life reflects the environment in which it is used, and the LP-Gas dealer knows better than anyone about this environment.

Forklift Cylinder & Motor Fuel Valves

Application:

Intended for vapor or liquid withdrawal service on DOT forklift or motor fuel containers. Two closing flow rates are offered - 1.5 GPM for medium to light duty vehicles and 2.6 GPM for those with greater fuel demands.

Note: These valves **do not** incorporate an integral pressure relief valve and are intended for use in containers that have a separate pressure relief valve to adequately handle the container's capacity. Each of these valves incorporate an excess flow valve at the tanks inlet end to prevent excessive product loss in the event of a downstream fuel line failure. **For the excess flow device to perform properly the service valve must be in the full open and back seated position.**



ME9101P5H

Part #	Description	Excess Flow GPM
ME9101P5	3/4" MNPT X 3/8" MNPT Forklift Service Valve	1.5 GPM
ME9101P5H	3/4" MNPT X 3/8" MNPT Forklift Service Valve	2.6 GPM
ME9101H4	3/4" MNPT X 3/8" M. Flare Motor Fuel Service Valve	1.5 GPM
ME9101H6	3/4" MNPT X 3/8" M. Flare Motor Fuel Service Valve	2.6 GPM
ME9101C5	3/4" MNPT X F. POL ASME/ DOT Container Service Valve	2.6 GPM
Accessories		
Part #	Description	
ME9101P5BRK	Complete Forklift Service Valve Replacement Bonnet Assembly w/ Handwheel	
ME9101P5-105	Forklift Service Valve Universal Replacement Handwheel - Zinc	
ME9101P5-109	Universal Replacement Handwheel Retaining Screw #10-32	
ME9101P5-113	Forklift Service Valve Replacement Handwheel Name Plate	
ME9101P5-114	Universal Replacement Service Valve Bonnet Seal	
ME9101BRK	Replacement Universal Bonnet Assembly - Less Handwheel - Fits All  Service Valves	

ASME/ DOT Container Service Valves

Application:

Intended for use in vapor withdrawal service for ASME and DOT containers or as fuel line shutoff valves.

Note: These valves **do not** incorporate an integral pressure relief valve and are intended for use in containers that have a separate stand alone pressure relief valve sized to properly handle the container's capacity.



ME9101D-11.7

Part #	Description	Dip Tube Length
ME9101C1*	3/4" MNPT X F. POL ASME/ DOT Service Valve	N/A
ME9101D-11.1	3/4" MNPT X F. POL ASME/ DOT Service Valve	11.1"
ME9101D-11.7	3/4" MNPT X F. POL ASME/ DOT Service Valve	11.7"
Accessories		
Part #	Description	
ME9101C1BRK	Complete ASME/ DOT Valve Replacement Bonnet Assembly w/ Handwheel	
ME9101BRK	Replacement Universal Bonnet Assembly, Less Handwheel - Fits All  Service Valves	
ME9101C1-102	ASME/ DOT Replacement Service Valve Handwheel - Zinc	
ME9101P5-109	Universal Replacement Handwheel Retaining Screw #10-32	
ME9101P5-114	Universal Replacement Service Valve Bonnet Seal	

* Model ME9101C1 does not include a fixed maximum liquid level gauge.

INSTALLATION

Warning:

Release all system pressure prior to installation of valve. Failure to do so could result in personal injury. Use proper safety equipment at all times. Completely purge the system of all LP-Gas.

If installing a valve with a fixed maximum liquid level gauge, ensure the dip tube is the correct length for the container to prevent over filling.

- Apply a suitable thread sealant compound, such as Loctite 565PST, to Male NPT thread of the service valve.
- Install into container opening.
- Tighten connection by placing a suitable wrench onto the wrench flats provided.
- Pressurize the system after all plumbing is complete to a pressure of at least 150 PSI and check all joints for leakage using a suitable leak detector solution such as "Marshall Excelsior" leak detector.

INSPECTION/ MAINTENANCE

- All valves should be inspected at least once a month to ensure that the handwheel is tight and not damaged, the stem is not bent and that there is no "play" in the threads in the bonnet. "Play" will normally not be noticed if the valve is under pressure.
- The seating area should be smooth and clean, and the threads should be checked for wear, dents, or nicks.
- If provided, check that the fixed maximum liquid level gauge is functioning properly.
- Check the valve and connection joints for leaks using a suitable leak detector solution such as "Marshall Excelsior" leak detector.



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Excess Flow Warning

An excess flow valve is a protective device to help control the discharge of product in the event of complete breakage of transfer lines or hose rupture. However, an excess flow valve can only offer limited protection from gas discharge, because it will only close under those conditions which cause the flow through the valve to exceed its rated closing flow, and even when closed it necessarily allows some "bleed" past the valve.

Excess flow check valves have helped minimize gas loss in many incidents involving breakage of hoses and transfer piping. Thus, they do provide a useful safety function in LP-Gas systems. However, there have also been transfer system accidents where excess flow valves have been ineffective in controlling gas loss due to a variety of conditions and to the inherent limitations of these valves. This bulletin explains the protection excess flow valves can offer, points out conditions which can interfere with that protection, and offers suggestions for effective excess flow valve installation.

If any of the following conditions are present, an excess flow valve is not designed to close and may not provide protection:

1. The piping system restrictions (due to pipe length, branches, reduction in line size, or number of other valves) decrease the flow rate to less than the valve's closing flow. (Valve should be selected by closing flow rating—not just by pipe size).
2. The break or damage to the downstream line is not large enough to allow enough flow to close the valve.
3. A shutoff valve in the line is only partially open and will not allow enough flow to close the excess flow valve.
4. LP-Gas pressure upstream of the excess flow valve, particularly due to low temperature, is not high enough to produce a closing flow rate.
5. Foreign matter is lodged in the valve and prevents closing.
6. A build-up of process material, which may be found in LP-Gas, may occur over a period of time causing the valve to stick open and prevent proper operation.
7. The piping break or damage occurs upstream of an in-line excess flow valve, so the escaping product is not passing through the valve.
8. The flow through the valve is in the wrong direction. (Excess flow valves only respond to flow in one direction.)
9. The excess flow valve has been damaged, or is otherwise not in operating condition.

Excess flow valves have numerous conditions where the valve may not operate correctly and should not be the sole means in the event a line is damaged and product needs to be controlled. It is recommended that another shutoff protection device be installed in addition to or instead of an excess flow valve to control the escape of product when a line is damaged.

Where excess flow valves are installed, they should be checked to see that:

1. They are installed in the correct direction—the arrow on the valve indicates the shutoff direction. (Excess flow valves only respond to flow in one direction.)
2. The flow rating on the valve is proper for the installation. The rating must be above the normal system flow, but no higher than necessary, to prevent "nuisance" closing in normal conditions. If the manufacturer's catalog information is not sufficient, the valve suppliers can provide sizing assistance.

When the excess flow valves can be examined separate from the line (before the installation or if removed for system maintenance), they should be checked to see that the parts are in good condition and that the poppet can be pushed fully closed.

Testing of Excess Flow Valves

In order to test an excess flow valve in a LPG transfer system, the flow through the valve must exceed the valve's closing rating. This test should only be attempted by trained personnel familiar with the process. If no one at the facility has experience in proper testing, outside expert help should be obtained. The exact procedure used may vary with the installation, gas discharge exposure, and availability of equipment.

In general, most testing makes use of the fact that excess flow valves are "surge sensitive" and will close quicker under a sudden flow surge than under steady flow. A sufficient surge can often be created by using a quick closing valve to control sudden, momentary flow into a tank or piping section containing very low pressure. An audible click from the excess flow valve (and corresponding stoppage of flow) indicates its closure.

A test involving venting gas to the atmosphere is hazardous and may be impractical or illegal.

Any test of any excess flow valve will not prove that the valve will close in an emergency situation, due to reasons cited before. This test will only check the valve's condition, and the flow rate sizing for those test conditions.

For additional information on excess flow valves contact your local distributor, Marshall Excelsior and refer to NFPA 58.

For Your Local Marshall Excelsior Distributor Call 269-789-6700,
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