

“V”-Ring Seal Globe and Angle Valves

General Information

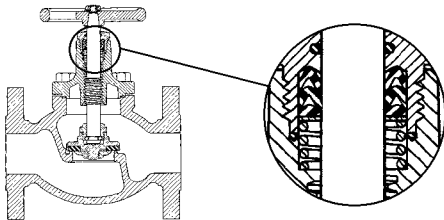
RegO® Globe and Angle Valves are designed and manufactured especially to meet the rigid requirements of the LP-Gas industry. The high quality construction and wide variety of sizes and styles also make them highly suited to many other industries such as anhydrous ammonia, chemical and petrochemical.

These ductile iron valves are available in both threaded and flanged connections. Threaded connections are available in ½” F. NPT to 3” F. NPT sizes. Flanged connections are available in 1½”, 2” and 3” pipe sizes.

The ductile iron used in these valves has a 60,000 PSIG tensile strength which closely approaches that of steel castings. Its yield strength of 45,000 PSIG and elongation of 15% is also comparable to that of steel castings. These material features assure the ability of the valve body to withstand impact, wrenching stresses and thermal shock. This ductile iron conforms to ASTM specification A395.

RegO® globe and angle valves are designed for working pressures up to 400 PSIG WOG and for operating temperatures from -40° F. to +160° F.

“V”-Ring Stem Seal



The “V”-ring spring-loaded pressure seal used in these RegO® globe and angle valves is the most effective stem seal yet developed. It should not be confused with conventional valve stem packing where the seal is obtained by compressing the packing around the stem by means of a packing gland with resultant hard operation and frequent packing replacement.

The wax like surface of the teflon “V”-ring seal and consequent low friction assures leak-tight performance for an indefinite period where periodic retightening of the packing is not required and the seal provides extra long service life.

In the RegO® “V”-ring design, the seal is effected by the pressure expanding the “V”-shape of the seal, forcing it against the stem and bonnet surfaces to prevent leakage. The higher the pressure within the valve, the more effective the seal becomes. A spring loaded washer under the “V”-rings keeps them in an expanded position to assure an effective seal under low pressure conditions. A wiper ring,

located above the seal, keeps the seal free from grit, and/or other foreign material that may hamper operation.

Installation and Operation Note

Containers and pipe lines should be thoroughly cleaned before globe and angle valves are installed. Large particles of solid foreign matter can permanently damage the seating surface in the valve body, causing the valve to leak. Use a minimum amount of a suitable pipe dope on the male connecting threads as excess amounts may fall off and be carried into the valve, causing damage to the seat or other operating parts.

It is totally unnecessary to use excess force in opening or closing RegO® valves. The type of seat disc material used and the general design of these valves permits them to be opened and closed easily. Proper valve operation insures unusually long life.

Wrenches must never be used to operate valves equipped with handwheels and designed for hand operation.

Downstream Accessory Boss

These RegO® valves incorporate a plugged ¼” F. NPT boss on the downstream side of the body for attaching either a hydrostatic relief valve or vent valve. Boss size on the 2” and 3” valves has been increased to allow a ¾” drilling for accommodation of a standard by-pass valve or jumper lines.

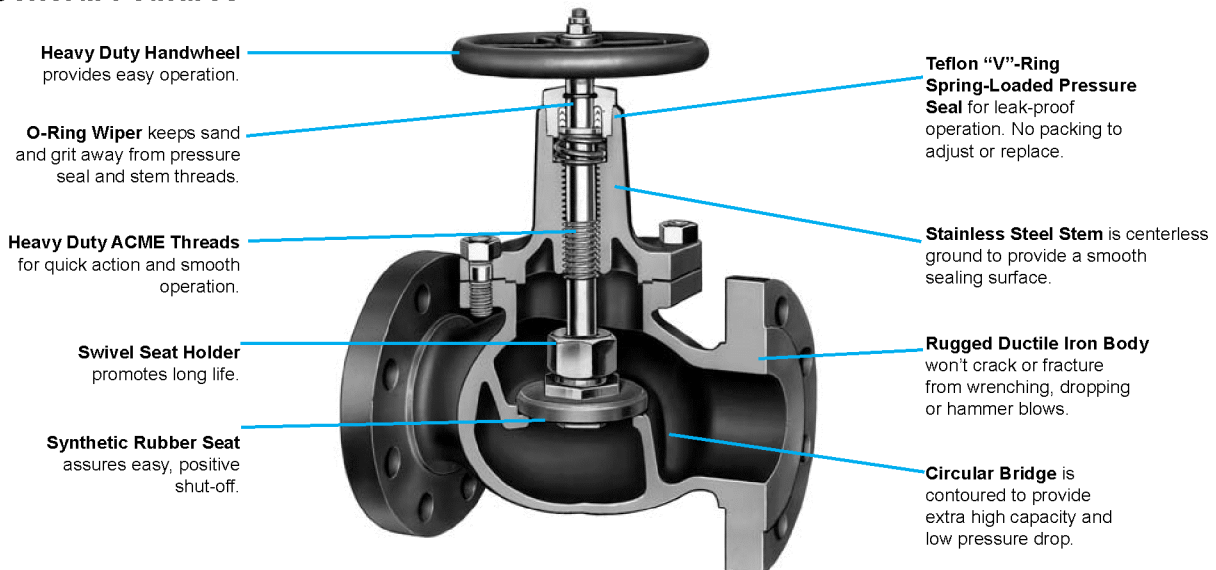
Hydrostatic Relief—When the design of the piping installation is such that liquid may be locked between two shut-off valves, a hydrostatic relief valve should be installed in the lines between the valves. The pressures which can develop due to temperature increase in a liquid-full line are tremendous and can easily damage the valves or piping unless a hydrostatic relief valve is installed.

Vent Valve—If the globe or angle valve is used as a shut-off valve on a loading hose, a vent valve should be installed in the downstream boss to allow liquid trapped beyond the shut-off valve to be vented before disconnecting the hose coupling.

Replace Gate Valves with Flanged Valves

Except for standard flange sizes, RegO® Flanged Globe and Angle Valves are smaller and lighter than contemporary valves, thus reducing price and shipping costs and making them far easier to install. RegO® face to face flange dimensions conform to gate valve dimensions, making replacement of most gate or plug valves with RegO® valves simple and easy.

General Features



REGO® Globe & Angle Valves

“V”-Ring Seal Globe and Angle Valves for Bulk Storage Containers, Transports, Bobtails and Plant Piping

Specifically designed to assure positive shut-off and long, maintenance-free service life in liquid or vapor service on bulk storage containers, transports, bobtails, cylinder filling plants and plant piping.

The high quality construction and wide variety of sizes make them highly suited for use with LP-Gas, anhydrous ammonia and in the chemical and petrochemical industries.



TA7034



A7505AP



A7513AP



A7517FP



A7514AP



A7517A



A7518FP

Part Number				Inlet and Outlet Connection	Port Diameter	Flow at 1 PSIG Pressure Drop (Cv) (GPM/Propane) ^{***}		Accessories	
Buna N Seat Discs		Teflon Seat Discs*				Globe	Angle	Hydrostatic Relief Valve	Vent Valve
Globe	Angle	Globe	Angle						
-	-	TA7034P	TA7034LP	½" F. NPT	¾"	10.0	14.8	SS8001U	TSS3169
A7505AP	A7506AP	TA7505AP	TA7506AP	¾" F. NPT	1"	12.0	17.7		
A7507AP	A7508AP	TA7507AP	-	1" F. NPT	1½"	17.8	22.0		
A7509BP	A7510BP	TA7509BP	TA7510BP	1¼" F. NPT	1"	36.5	54.0		
A7511AP	A7512AP	TA7511AP	TA7512AP	1½" F. NPT	1½"	43.0	55.5		
A7511FP	-	-	-	1½" Flange**	2"	46.0	-		
A7513AP	A7514AP	TA7513AP	-	2" F. NPT	2"	75.0	88.5		
A7513FP	A7514FP	TA7513FP	TA7614FP	2" Flange**	3"	78.0	133.0		
A7517AP	A7518AP	TA7517AP	TA7518AP	3" F. NPT	3"	197.0	303.0		
A7517AP	A7518FP	TA7517FP	-	3" Flange**					

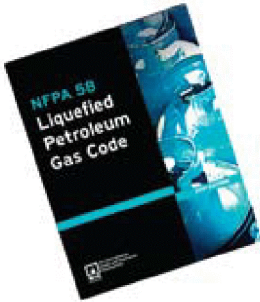
* Teflon seat discs on valves built to order.

** 300# ANSI R.F. Flange.

*** To obtain approximate flow at other than 1 PSIG pressure drop, multiply flow in chart by square root of pressure drop. Example: 7514FP @ 9 PSIG = 133 x√9 = 399 GPM/propane. For NH₃ flow, multiple propane flow by .90.

LP-Gas Hose-End Filling Valves (With ACME Connectors)

ECII® Safety Warning



Purpose

In its continuing quest for safety, Engineered Controls International, Inc. publishes a series of bulletins explaining the hazards associated with the use, misuse, and aging of LP-Gas valves and regulators. It is hoped that these factual bulletins will make clear to LP-Gas dealer managers and service personnel, that the utmost care and attention must be used in the installation, inspection, and maintenance of these products, or problems could occur which would result in injuries and property damage.

The National Fire Protection Association Pamphlet #58, "Storage and Handling Of Liquefied Petroleum Gases" states in Section 1-6 that "In the interest of safety, all persons employed in handling LP-Gases shall be trained in proper handling and operating procedures." These "ECII® Safety Warnings" may be useful in training new employees and reminding older employees of hazards that can occur.

It is recommended that all employees be furnished with a copy of NPGA Safety Pamphlet 306-88 "LP-Gas Regulator and Valve Inspection and Maintenance."

Nature of Warnings

It is recognized that warnings should be as brief as possible, but factors involved in filler valve and filling valves failure are not simple. They need to be fully understood so that proper procedures and maintenance can be used to prevent accidents. If there is a simple warning, it would be:

Loosen filling valve from filler valve very slowly. If there is a leak, know procedure to follow.

This bulletin is not intended to be an exhaustive treatment of the subject of filler valves and certainly does not cover all safety practices that should be followed in the installation, operation and maintenance of LP-Gas systems, which include filler and filling valves.

Hose-End Filling Valves With ACME Connectors

Hose-end valves must never be dragged over the ground or dropped or banged into the truck when the hose is reeled in.

They could open accidentally or they could be damaged. Dragging will cause abnormal wear and eventual valve failure. Foreign material will lodge in the connector which can cause failure of the filler valve.

To prevent hazardous conditions, operators should follow this procedure on every filling application:

- Always wear gloves and eye protection.
- Check for foreign material in hose-end valve and the filler valve, and if present, remove with extreme care. If material cannot be safely removed, do not proceed with filling and replace valve.
- Make sure the ACME connector spins on easily by hand.
- If leak is noticed when filling is started, stop the operation and correct the leaking condition.
- After filling, bleed the gas trapped between the filler valve and hose-end valve by using the vent on the hose-end valve or by slightly loosening coupling nut to vent the gas before disconnecting.

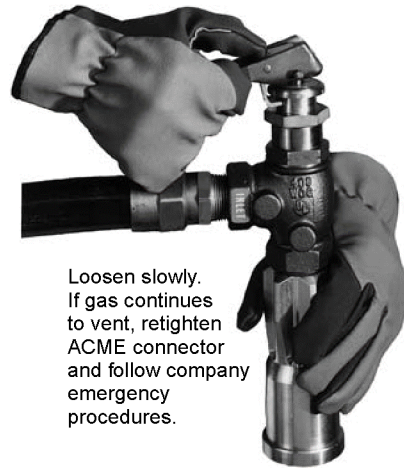
If gas does not stop venting, then filler valve or hose-end valve is leaking. Do not disconnect filling connector. This is a hazardous situation and your company procedure for handling this problem must be carefully followed. Make sure your company has such a procedure.

Inspection of Filling Valves with Handwheel

- Valves should be inspected at least once a month to be sure the valve handle is tight and not damaged, that 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 ACME threads should be examined for wear, dents or nicks and the seating area should be clean and smooth.

Inspection of Quick Acting Filling Valves

- Valves should be inspected daily to make sure locking mechanism functions properly.
- The ACME threads should be examined for wear, dents or nicks



Loosen slowly. If gas continues to vent, retighten ACME connector and follow company emergency procedures.

and the seating area should be clean and smooth.

- The retaining ring on the filler connection should be examined to make sure it is properly holding the female ACME rotating nut or handle so as to keep the surface that seats on the filler valve gasket protected.
- If any problems are evident, valves should be immediately replaced or repaired.

Larger Filler and Filling Valves

For 2¼" and 3¼" valves with ACME connections, use only the special wrenches designed for the purpose.

Do not use pipe wrenches or hammers to tighten the connections. All

of the previous warnings about the smaller valves also apply here.
General Warning

All ECII® products are mechanical devices that will eventually become inoperative due to wear, contaminants, corrosion and aging components made of materials such as rubber and metal. The environment and conditions of use will determine the safe service life of these products. Periodic inspection and maintenance are essential. Because ECII® products have a long and proven record of quality and service, LP-Gas dealers may forget the hazards that can occur because a filler valve or a filling valve is used beyond its safe service life. Life of these valves is determined by the environment in which they "live." The LP-Gas dealer knows better than anyone what this environment is.

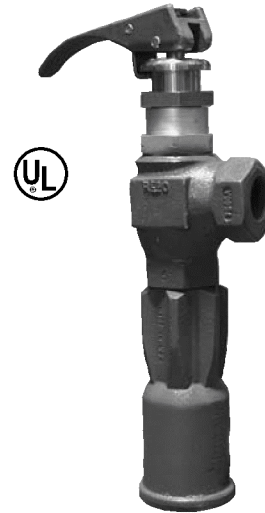
Note: There is a developing trend in state legislation and in proposed national legislation to make the owner of products responsible for replacing products before they reach the end of their safe useful life. LP-Gas dealers should be aware of the legislation which could affect them.

Quick-Acting Minimum Loss Hose-End Valves for Bobtail Delivery Trucks and Dispensing Stations

Designed to vastly reduce the amount of product vented when disconnecting bobtail delivery trucks, dispensing systems and anhydrous ammonia nurse tanks.

These valves provide instant, full-on flow at the flip of a handle. Shut-off is instant and the handle locks for added protection.

This "top of the line" hose-end valve is a fully contained unit that does not require additional filling adapters or connectors.



Part Number	Inlet Connection (F. NPT)	Outlet Connection (F. ACME)	Locking Handle	Flow at 1 PSIG (Cv) Pressure Drop* (GPM/Propane)
A7793A	3/4"	1 3/4"	Yes	16.0
A7797A	1"	1 3/4"	Yes	16.0

* To obtain approximate flow at other than 1 PSIG pressure drop, multiply flow in table by square root of pressure drop. Example: A7797 @ 9 PSIG $\sqrt{9} = 3$ x 16.0 = 48.0 GPM/propane. For NH₃ flow, multiply propane flow by .90.

Quick-Acting Hose-End Valves for Bobtail Delivery Trucks and Dispensing Stations

Designed especially for safe operator handling of LP-Gas in bobtail delivery truck, dispensing systems and anhydrous ammonia nurse tank service.

These valves provide instant, full-on flow at the flip of the handle and provide instant positive shut-off with a handle lock for added protection.



A7707L



A7708L

Part Number	Body Design	Inlet & Outlet Connection (F. NPT)	Locking Handle	Flow at 1 PSIG Pressure Drop (Cv) (GPM/Propane)**	Accessories		
					Filling Connectors**		
					Extended	Compact	
					Steel	Brass	Steel
A7707L	Globe	1"	Yes	18.0	A7575L4	3175A	A3175A
A7708L	Angle						

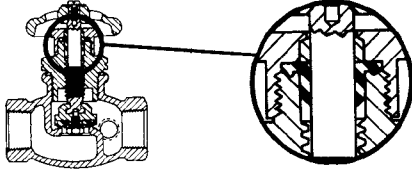
* To obtain approximate flow at other than 1 PSIG pressure drop, multiply flow in table by square root of pressure drop. Example: A7708L @ 9 PSIG = 22.0 $\sqrt{9} = 3$ x 66.0 = 198.0 GPM/propane. For NH₃ flow, multiply propane flow by .90.

** See appropriate catalog section for additional information.

Flange Seal Globe and Angle Valves

General Information

Globe and Angle Valves, incorporating the synthetic rubber flange seal design, operate on the same principle as the "V"-ring valves. Gas pressure in the valve is exerted against the synthetic rubber flange, forcing it tightly against the stem.



Leak-tight performance is assured and periodic adjustment is not required. The synthetic rubber construction provides smooth operating performance with long service life.

These valves all incorporate a plugged 1/4" NPT side boss on the downstream side of the valve that can be equipped with a hydrostatic relief valve or vent valve.

Please be familiar with the "Installation and Operation Note" and "Downstream Accessory Boss" section of the "V"-ring valve design general information before ordering these valves.

General Features

Rugged quick-acting ACME threads on stem. Threads are under flange ring . . . dust, sand and grit can't reach them.

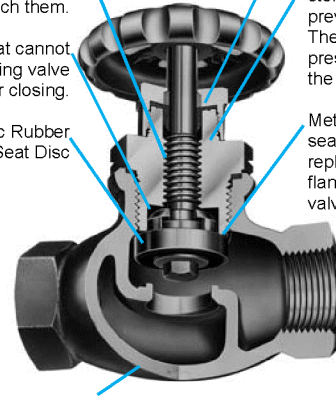
Swivel seat cannot grind during valve opening or closing.

Synthetic Rubber Seat Disc

Nylon bearing surrounds stem to prevent galling.

Rubber flange ring stem seal effectively prevents gas escape. The higher the pressure, the tighter the seal.

Metal to metal back seat permits replacement of flange ring with valve in service.



Valve body made of shell molded ductile iron. Highly resistant to cracking or fracturing from wrenching, dropping or hammer blows. Bonnet and seal cap are steel on "A" prefix valves.

Flange Seal Globe and Angle Valves for Bulk Storage Containers, Filling Hoses and Plant Piping

Designed to assure positive shut-off and long maintenance-free service life in liquid or vapor service. Ideally suited for use on cylinder charging manifolds, truck filling hoses, bulk storage containers and plant piping.

The high quality construction and wide variety of sizes make them highly suited for use with LP-Gas, anhydrous ammonia and in the chemical and petrochemical industries.

Part Number		Inlet & Outlet Connection (F. NPT)	Flow at 1 PSIG Pressure Drop (Cv) (GPM/Propane)*		Accessories	
			Globe	Angle	Hydrostatic Relief Valve	Vent Valve
7704P	7704LP	1/2"	7.3	12.3	SS8001J or SS8001L	TSS3169
A7704P	A7704LP					
7705P	7706P	3/4"	11.5	17.7	SS8001J or SS8001L	TSS3169
A7705P	A7706P					

* To obtain approximate flow at other than 1 PSIG pressure drop, multiply flow in table by square root of pressure drop. Example: A7704LP @ 9 PSIG = 12.3 x $\sqrt{9}$ = 36.9 GPM/propane. For NH₃ flow, multiply propane flow by .90.



A7704P



A7706 P

Flange Seal Liquid Transfer Angle Valves for Bulk Storage Containers

Designed especially for liquid transfer of LP-Gas from consumer bulk storage containers when used with a Chek-Lok® or equipped with an integral excess flow valve. May also be used for vapor LP-Gas service.

In NH₃ applicator tanks they may be used as a vapor bleeder valve or as a liquid withdrawal valve when installed in a coupling with a dip pipe.

These liquid transfer valves are equipped with an integral excess flow valve for liquid transfer directly from the tank fitting, or without an integral excess flow for LP-Gas transfer through a Check-Lok®.

When equipped with an integral excess flow valve (7550PX), the valve should be mounted in a forged steel 3000 lb. half coupling. When mounted in a 1¼" x ¾" NPT reducing coupling, the ¾" female thread in this coupling must be full length — equivalent to a forged steel 3000 lb. half coupling.

The excess flow valve will not function properly if these specifications are not met.



7550P



A7550PX

Part Number	Inlet Connection (F. NPT)	Outlet Connection (F. NPT)	Integral Excess Flow	Flow at 1 PSIG (Cv) Pressure Drop* (GPM/Propane)	Excess Flow Approximate Closing Flow** (GPM/Propane)	Accessories	
						Hydrostatic Relief Valve	Vent Valve
7550P	¾"	¾"	No	13.3	-	3127U	3165
A7550P			SS8001J			TSS3169	
7550PX		Yes	16.0	3127U	3165		
A7550PX		SS8001J		TSS3169			
7551P	½"	½"	No	8.9	-	3127U	3165
A7551P			SS8001J			TSS3169	

* To obtain approximate flow at other than 1 PSIG pressure drop, multiply flow in table by square root of pressure drop. Example: 7550P @ 9 PSIG = 13.3 x √9 = 39.9 GPM/propane. For NH₃ flow, multiple propane flow by .90.

** For NH₃ flow, multiply propane flow by .90.

Quick-Acting Valves for Cylinder Charging Hoses

Designed primarily for use on cylinder charging hoses to provide fast, convenient shut-off and fast opening.

These valves must be installed so that flow through the valve is in the opposite direction to that of a conventional globe valve. This allows the inlet flow to assist in closing the valve, and even more important, helps prevent the valve from being forced open by high pump pressure.



A7553A

Part Number	Inlet Connection (F. NPT)	Outlet Connection (F. NPT)	Body Material	Flow At 1 PSIG (CV) Pressure Drop* (GPM/Propane)
7901T	¼"	¼"	Brass	1.95
A7553A			Ductile Iron	
7901TA	⅜"	⅜"	Brass	
7901TB				
7901TC	½"	½"		
7053T				

* To obtain approximate flow at other than 1 PSIG pressure drop, multiply flow in table by square root of pressure drop. Example: 7901T @ 9 PSIG = √1.95 x 9 = 5.85 GPM/propane. For NH₃ flow, multiply propane flow by .90.



7901TA

Quick-Acting Valves for Crop Driers and Charging Manifold Hoses

7554S Series valves provide instant shut-off and fast opening control on LP-Gas crop driers. They are also ideal for charging manifold hoses, stationary fuel transfer hoses and other applications requiring quick, positive shut-off. They are not for use with delivery truck hoses because the handle could snag on the ground and open the valve as the hose is reeled back to the truck.

7554L Series valves feature a locking handle device to help prevent accidental opening of the valve. It is ideal for all the same applications as the 7554S Series and may be used on delivery trucks as it incorporates the locking handle design.

Both valve series must be installed so that flow through the valve is opposite to that of a conventional globe valve. This allows the inlet flow to assist in closing the valve and prevents the valve from being opened by high pump pressures.



7554S



7554LV



Part Number	Inlet & Outlet Connection (F. NPT)	Locking Handle	Flow At 1 PSIG (Cv) Pressure Drop* (GPM/Propane)
7554SAV	1/2"	No	7.3
7554LAV		Yes	
7554SV	3/4"	No	11.3
7554LV		Yes	

* To obtain approximate flow at other than 1 PSIG pressure drop, multiply flow in table by square root of pressure drop. Example: 7554LV @ 9 PSIG = 11.5 X $\sqrt{9}$ = 34.5 GPM/propane.

Tank Car Angle Valves for Railroad Tank Cars

Designed especially for transfer of LP-Gas and anhydrous ammonia in railroad tank car service.

The combined heavyweight ductile iron castings and precision machining provide ruggedness and superior performance in working pressures up to 400 PSIG.

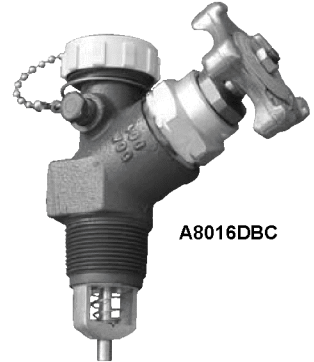


Part Number	Inlet Connection	Outlet Connection	Flow at 1 PSIG (CV) Pressure Drop (GPM/ Propane)	Accessories	
				Hydrostatic Relief Valve	Vent Valve
TA7894P	Tank Car Flange	2"	112	SS8001U	TSS3169

* To obtain approximate flow at other than 1 PSIG pressure drop, multiply flow in table by square root of pressure drop. Example: TA7894P @ 9 PSIG = 112 x $\sqrt{9}$ = 336 GPM/propane. For NH₃ flow, multiply propane flow by .90.

Multipurpose Valve for Filling of NH₃ Containers

Designed specifically for use as a manual filler valve on anhydrous ammonia applicator and nurse tanks. This valve incorporates an integral back check valve.



A8016DBC

Part Number	Inlet Connection	Filling Connection	Filling Capacity at 20 PSIG Pressure Drop GPM/NH ₃	Accessories	
				Hydrostatic Relief Valve	Vent Valve
A8016DBC	1 1/4"	1 3/4"	95	SS8001J	TSS3169

Multipurpose Valve for NH₃ Containers

Designed specifically for use on anhydrous ammonia applicator and nurse tanks.

This valve incorporates an integral excess flow valve. When product is required, the valve must be completely open and backseated to allow the excess flow valve to function properly as explained in the excess flow valve section of this catalog.



A8016DP

Part Number	Inlet Connection (M. NPT)	Filling Connection (M. ACME)	Filling Capacity At 20 PSIG Pressure Drop GPM/NH ₃	Approximate Excess Flow Closing Flows		Accessories	
				Liquid* GPM/NH ₃	Vapor** CFH/NH ₃	Hydrostatic Relief Valve	Vent Valve
A8016DP	1 1/4"	1 3/4"	95	44	24,000	SS8001J	TSS3169

* Determined at 9.5 to 12 PSIG differential.

** Determined at 100 PSIG inlet.

Multipurpose Valves for Liquid Withdrawal of LP-Gas and NH₃ Containers

Designed especially for use as a high capacity liquid withdrawal valve on LP-Gas and anhydrous ammonia containers.

These valves incorporate an integral excess flow valve. When product is required, the valve must be completely open and backseated to allow the excess flow valve to function properly as explained in the excess flow valve section of this catalog.

The A8017DH is equipped with a soft seated automatic differential back pressure check valve in the seat disc assembly. This allows any pressure build up in the liquid transfer line in excess of 10-15 psig above the container pressure to flow back into the container. The transfer hose is protected against excessive liquid or vapor pressure entrapment, which adds materially to the useful life of flexible hose. In addition to increasing hose service life, the equalizing valve adds substantially to the operating safety of liquid transfer systems.



Part Number	Inlet Connection (M. NPT)	Outlet Connection (F. NPT)	Approximate Excess Flow Liquid Closing Flow** (GPM/Propane)	Accessories	
				Hydrostatic Relief Valve	Vent Valve
A8017DH	1 1/4"	1"	49	Not Required	TSS3169
A8017DP			55	SS8001J	
A8017DLP		3/4"	49		

* Built-in back pressure check valve incorporated into shut-off valve.

** Determined at 11.5 to 13.5 PSIG differential for 3/4" outlet and 9 to 12 PSIG differential for 1" outlet. For NH₃ flow, multiply by .90.

Multipurpose Valve for Filling and Liquid Transfer of NH₃ Containers

Designed primarily for use as a combination filler and liquid withdrawal valve on three-opening applicator tanks or on nurse tanks.

This valve incorporates an integral excess flow valve. When product is required, the valve must be completely open and backseated to allow the excess flow valve to function properly as explained in the excess flow valve section of this catalog.



Part Number	Inlet Connection (M. NPT)	Outlet Connection (F. NPT)	Filling Connection (M.ACME)	Filling Capacity At 20 PSIG Pressure Drop GPM/NH ₃	Approximate Excess Flow Liquid Closing Flow GPM/NH ₃	Accessories	
						Hydrostatic Relief Valve	Vent Valve
A8018DP	1 1/4"	1"	1 3/4"	74	50	SS8001J	TSS3169

* Determined at 9 to 12 PSIG differential.

Multipurpose Right Angle Valve for Liquid or Vapor Service In LP-Gas and NH₃ Systems

Designed especially for use as a high capacity liquid withdrawal valve in LP-Gas and NH₃ systems.

Valve may be mounted directly in nurse tank load-out risers eliminating the need for a separate excess flow valve and angle valve.

This valve incorporates an integral excess flow valve. When product is required, the valve must be completely open and backseated to allow the excess flow valve to function properly as explained in the excess flow valve section of this catalog.



Part Number	Inlet Connection (M. NPT)	Outlet Connection (F. NPT)	Approximate Excess Flow Liquid Closing Flow*		Accessories	
			GPM/Propane	GPM/NH ₃	Hydrostatic Relief Valve	Vent Valve
A8020D	1 1/4"	1"	78	70	SS8001J	TSS3169

* Determined at 13 PSIG differential.