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RPT-102 Catalog

Regulators and Presto-Tap®



By RegO®

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Limited 10 Year Warranty and Limitation Of Liability

LIMITED 10 YEAR WARRANTY

RegO warrants to the original purchasers the products and repair kits manufactured by it to be free from defects in materials and workmanship under normal use and service for a period of 10 years from the date of manufacture. If within thirty days after buyer's discovery of what buyer believes is a defect, buyer notifies in writing and ships the product to RegO at 100 RegO Drive, Elon, NC 27244, RegO, at its option, and within forty-five days of receipt, will repair, replace F.O.B. point of manufacture, or refund the purchase price of that part or product found by RegO to be defective. Failure of buyer to give such written notice and ship the product within thirty days shall be deemed an absolute and unconditional waiver of any and all claims of buyer arising out of such defect.

This warranty does not extend to any product or part that is not installed and used after installation in accordance with RegO's printed instructions, all applicable state and local regulations, and all applicable national standards, such as those promulgated by NFPA, DOT and ANSI. This warranty does not extend to any product or part that has been damaged by accident, misuse, abuse, failure to maintain, or neglect, nor does it extend to any product or part which has been modified, altered, disassembled, or repaired in the field. This warranty does not cover any cosmetic issues, such as scratches, dents, marring, fading of colors or discoloration.

Except as expressly set forth above, and subject to the limitation of liability below, RegO MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, with respect to its products and parts, whether used alone or in combination with others. RegO disclaims all warranties not stated herein.

LIMITATION OF LIABILITY

RegO's total liability for any and all losses and damages arising out of any cause whatsoever shall in no event exceed the purchase price of the products or parts in respect of which such cause arises, whether such cause be based on theories of contract, negligence, strict liability, tort or otherwise.

RegO shall not be liable for incidental, consequential or punitive damages or other losses. RegO shall not be liable for, and buyer assumes any liability for, all personal injury and property damage connected with the handling, transportation, possession, further manufacture, other use or resale of products, whether used alone or in combination with any other products or materials.

From time to time buyers might call to ask RegO for technical advice based upon limited facts disclosed to RegO. If RegO furnishes technical advice to buyer, whether or not at buyer's request, with respect to application, further manufacture or other use of the products and parts, RegO shall not be liable for such technical advice or any such advice provided to buyer by any third party and buyer assumes all risks of such advice and the results thereof.

NOTE: Some states do not allow the exclusion or limitation of incidental, consequential or punitive damages, so the above limitation or exclusion may not apply to you. The warranty gives you specific legal rights, and you may have other rights that vary from State to State. The portions of this limited warranty and limitation of liability shall be considered severable and all portions which are not disallowed by applicable law shall remain in full force and effect.

WARNING

All RegO products are mechanical devices that will eventually become inoperative due to wear, corrosion and aging of components made of material such as rubber, etc. The environment and conditions of use will determine the safe service life of these products. Periodic inspection and maintenance are essential to avoid serious injury and property damage.

Many RegO products are manufactured components which are incorporated by others on or in other products or systems used for storage, transport, transfer and otherwise for use of toxic, flammable and dangerous liquids and gases. Such substances must be handled by experienced and trained personnel only, using accepted governmental and industrial safety procedures.

NOTICE TO USERS OF PRODUCTS

The Limited Warranty stated above is a factory warranty to the first purchasers of RegO products. Since most users have purchased these products from RegO distributors, the user must within thirty (30) days after the user's discovery of what user believes is a defect, notify in writing and return the product to the distributor from whom he purchased the product/part. The distributor may or may not at the distributor's option choose to submit the product/parts to RegO, pursuant to this Limited Warranty. Failure by buyer to give such written notice within thirty (30) days shall be deemed an absolute and unconditional waiver of buyer's claim for such defects. Acceptance of any alleged defective product/parts by RegO's distributor for replacement or repairs under the terms of RegO's Limited Warranty in no way determines RegO's obligations under this Limited Warranty.

Because of a policy of continuous product improvement, RegO reserves the right to change designs, materials or specifications without notice.

Foreword

This catalog describes a complete line of equipment available from RegO® for use with Liquid Propane (LP)-Gas and anhydrous ammonia (NH₃). The following points are important to know for proper use of the catalog:

1. Illustrations and drawings of individual products are representative of “product groups” and all products within a product group are similar in construction.
2. Materials used for construction of products in this catalog are suitable for rated service pressure at temperatures of -40°F to +165°F(-40°C to +73°C), unless otherwise specified.
3. Products in this catalog are only intended for use in LP-Gas and/or anhydrous ammonia service as follows.
 - a. “A” or “AA” prefix — Products with this prefix are suitable for NH₃ service (i.e., contain no brass parts).
 - b. “AA” prefix on relief valves — These valves are NOT suitable for use with LP-Gas service. These are of partial aluminum materials and are listed by Underwriters Laboratories (UL) for NH₃ service only.
 - c. All other products including “A” prefix are suitable for use with LP-Gas & NH₃ service.
 - d. “SS” prefix—Hydrostatic relief valve with this prefix are suitable for NH₃ and LP-Gas service (i.e., they have stainless steel materials).
4. We manufacture valves and adapters designed to be used on LP-Gas and Anhydrous Ammonia systems, we do not design systems or consult in system design. For this type of information consult a professional Engineer.

Caution

Do not use any product contained in this catalog with any service commodity other than LP-Gas or NH₃. If you have a need for use of another application, contact RegO, 100 RegO Drive, Elon, NC 27244, (336) 449-7707 ecii@regoproducts.com before proceeding.

Proper application, installation and maintenance of products in this catalog are essential. Users of these products should obtain further information if there are any doubts or questions.

Warning

All RegO products are mechanical devices that will eventually become inoperative due to wear, corrosion and aging of components made of materials such as rubber. The environment and conditions of use will determine the safe service life of these products. Periodic inspection and maintenance are essential to avoid serious injury and property damage.

Many RegO products are manufactured for storage, transport, transfer and use of toxic flammable and dangerous liquids and gases. Such substances should be handled by experienced and trained personnel only, using accepted governmental and industrial safety procedures. Never vent LP-Gas near any possible source of ignition.

Notice

Installation, usage, and maintenance of all RegO products must be in compliance with all RegO instructions as well as requirements and provisions of NFPA #54, NFPA#58, DOT, ANSI, and all applicable federal, state, provincial and local standards, codes, regulations, and laws.

Inspection and maintenance on a periodic basis is essential. Installation and maintenance should be performed only by qualified personnel.

Be sure all instructions are read and understood before installation, operation and service.

Filters

RegO LP-Gas equipment is designed to operate in a system free from contamination. A variety of in-line filters are commercially available to the LP-Gas industry for installation in domestic systems.

The use of an in-line filter should be considered when other system components may be unclean and the system contaminated by rust, scale, dirt, debris or other foreign material.

RegO Regulator Dependability

When RegO LP-Gas Regulators are properly installed, safe, precise, trouble-free service is the result.

Dependability is built into every regulator ... the result of rigid standards of quality control and close tolerance machining. And this has been true for more than 90 years.

RegO Products are manufactured from the finest materials, and assembled and tested using procedures second to none.

RegO Regulator Selection

In order to properly size the RegO Regulator, find the total load of the installation. The total load is calculated by adding up the input ratings (BTU or CFH) of all appliances in the installation. Input ratings may be obtained from the nameplates on the appliances or from the manufacturers' literature.

Determine the type of regulation needed referring to the chart below.

Type of System	Maximum Load	Suggested Regulator
First Stage in a Two Stage System	1,500,000	LV3403TR
	2,500,000	LV4403SR Series LV4403TR Series
Second Stage in a Two Stage System	450,000	LV3403B Series
		LV3403BR Series
	935,000	LV4403B Series
		LV4403BD Series
1,600,000	LV5503B4/B6	
2,300,000	LV5503B8	
Second Stage in a 2 PSIG System	1,000,000	LV4403Y4/Y46R
	2,200,000	LV5503Y6/Y8
Integral Twin Stage	450,000	LV404B34/39 Series
	600,000	LV404B4/B9 Series
Integral Twin Stage 2 PSIG Delivery	650,000	LV404Y39
	800,000	LV404Y9
Automatic Changeover	400,000	7525B34 Series
	450,000	7525B4 Series

* See catalog page for inlet and delivery specifications.

Now determine which regulator in the Series would be most suitable. Turn to the individual product pages and refer to the Performance Curves. Check the performance of the regulator with your actual load conditions at the minimum LP-Gas inlet pressure for the regulator. Use the pressure corresponding to your lowest winter temperatures shown in the chart below or refer to the delivery pressure of your first stage regulator.

Temperature		Approx. Pressure (PSIG)		Temperature		Approx. Pressure (PSIG)	
°F	°C	Propane	Butane	°F	°C	Propane	Butane
-40	-40	3.6		40	4	72	3.0
-30	-34	8		50	10	86	6.9
-20	-29	13.5		60	16	102	12
-10	-23	23.3		70	21	127	17
0	-18	28		80	27	140	23
10	-12	37		90	32	165	29
20	-7	47		100	38	196	36
30	-1	58		110	43	220	45

Example for a First Stage Regulator

1. Assume a load of 500,000 BTU's per hour.
2. Assume a minimum delivery pressure of 9.5 PSIG.
3. Assume a minimum tank pressure of 15 PSIG.
4. For these conditions, refer to chart for the LV4403TR Series, First Stage Regulator, shown below.

All give you a product that provides accurate gas delivery under varying pressure ranges and load conditions.

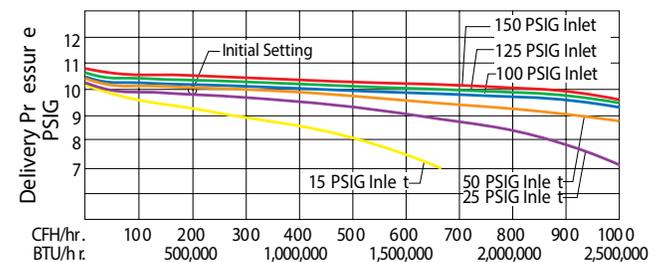
RegO LP-Gas Regulators are UL listed and comply with applicable code requirements.

RegO Products offer a complete line of LP-Gas Regulators with capacities for almost every application.

5. Find the line on the chart corresponding to the lowest anticipated winter tank pressure (note that each performance line corresponds to and is marked with a different inlet pressure in PSIG).
6. Draw a vertical line upward from the point of assumed load (500,000 BTU's per hour) to intersect with the line corresponding to the lowest tank pressure.
7. Read horizontally from the intersection of these lines to the delivery pressure at the left side of the chart. In this example the delivery pressure will be 9.2 PSIG. Since the delivery pressure will be 9.2 PSIG at the maximum load conditions and lowest anticipated tank pressure, the regulator will be sized properly for the demand.

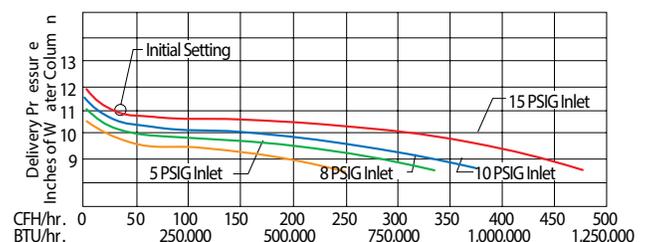
Example for a Second Stage Regulator

LV4403TR Series First Stage Regulator

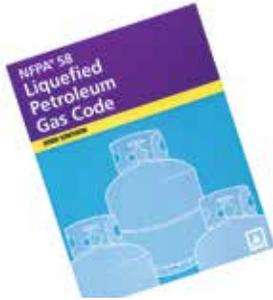


1. Assume load of 250,000 BTU's per hour.
2. Assume a minimum delivery pressure of 10" w.c.
3. Assume a minimum inlet pressure of 10 PSIG.
4. For these conditions, refer to chart for the LV4403B Series, Second Stage Regulator, shown below.
5. Find the line on the chart corresponding to the anticipated inlet pressure.
6. Draw a vertical line upward from the point of assumed load (250,000 BTU's per hour) to intersect with the line corresponding to the lowest inlet pressure.
7. Read horizontally from the intersection of these lines to the delivery pressure at the left side of the chart. In this example the delivery pressure will read 10.1" w.c. Since the delivery pressure will be 10.1" w.c. at the maximum load condition and lowest anticipated inlet pressure, the regulator is sized properly for the demand.

LV4403B Series Second Stage Regulator



Safety Warnings



Purpose

In its continuing quest for safety, RegO 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 NFPA 58 Liquefied Petroleum Gas Code - 2017 Edition states in Section 4.4 Qualification of Personnel; "Persons whose duties fall within the scope of this code shall be provided with training that is consistent with the scope of their job activities and that includes proper handling and emergency response procedures... Refresher training shall be provided at least every 3 years, initial and subsequent training shall be documented". These "RegO Safety Warnings" may be useful in training new employees and reminding older employees of hazards that can occur. It is recommended that all employees complete the Propane Education Research Council's Certified Employee Training Program.

Nature of Warnings

It is recognized that warnings should be as brief as possible, but the factors involved in regulator failures are not simple. They need to be fully understood so that proper maintenance programs can be established. If there is a simple warning, it would be:

Inspect regulators regularly as outlined in this safety warning and replace as required per these recommendations. When all of these recommendations are followed, the recommended service life of an RegO regulator (except single stage) manufactured after 1995 is 25 years. The recommended service life of all other RegO regulators is 15 years.

LP-Gas Regulators

This bulletin applies most particularly to permanent LP-Gas installations of cylinders and tanks. The warnings also apply in most cases to portable installations of recreational vehicles, barbecue grills, etc. This bulletin is not intended to be an exhaustive treatment of the subject of regulators and certainly does not cover all safety practices that should be followed in the installation and maintenance of LP-Gas systems.

It should not be necessary to remind readers of this bulletin that regulators must be installed in strict conformance with NFPA Pamphlets 54 and 58, and all other applicable codes and regulations. Codes, regulations and manufacturer's recommendations have been developed by experts with many years of experience in the LP-Gas industry.

Failure to fully follow these codes, regulations and recommendations could result in hazardous installations.

Pamphlet 58 states "All regulators for outdoor installations, except regulators used for portable industrial applications, shall be designed, installed or protected so their operation will not be affected by the elements (freezing rain, sleet, snow, ice, mud or debris). This protection may be integral with the regulator."

Failed and/or Inoperative Regulators

Failed regulators can cause three kinds of hazards:

- High pressure LP-Gas in a system downstream of the regulator; and
- Leaks of LP-Gas to atmosphere from the regulator itself.
- Loss of pressure due to a "freeze-up" in the orifice.

High Pressure LP-Gas in a System

Anything that prevents a regulator from regulating properly could result in high pressure gas at the regulator outlet and thus in a system.

High pressure gas into piping and appliances could cause piping leaks and damage to appliance burner controls with the potential for fires and explosions.

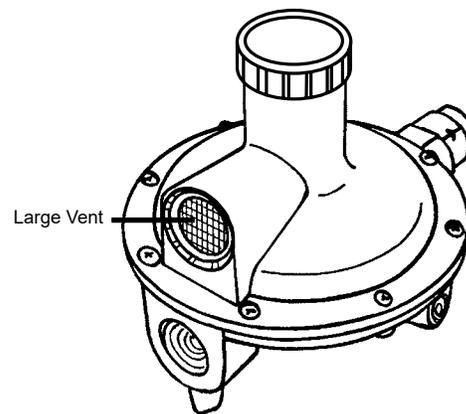
The Causes of High Pressure Gas in a System are:

1. Regulator vents that are clogged or obstructed.

Vents must be clear and fully open at all times.

Many regulators are equipped with a pressure relief valve which discharges to atmosphere through the vent. Ice, snow drifts, dirt, bugs, paint, or other foreign material can clog the vents.

An obstructed vent may prevent the pressure relief valve from operating properly.



Regulators should be installed with the vent facing down or protected so their operation will not be affected by the elements. In cases where the regulator vent is equipped with a discharge tube, the outlet of this tube must be facing down. The vents and/or discharge tubes must be protected from the elements and must be equipped with a screen to prevent bugs from obstructing the opening.

Action Required: Regulators should be properly installed and regularly inspected when tanks or cylinders are filled. If vents are clogged or the screen is missing, they must be cleaned or replaced. If the vent screen is missing and there is evidence of foreign material around the vent, the regulator should be replaced.

2. Foreign material lodging between the regulator nozzle and seat disc:

When this occurs, the regulator can remain open, allowing high pressure gas into the system.

Safety Warnings

This material can come from system piping between the container shut-off valve and the regulator. Chips created during piping installation or dirty piping can create this hazard. Corrosion inside of copper pigtails and piping can cause problems. This can occur particularly when LP-Gas contains high sulphur or excessive moisture.

Action Required: Make sure regulator inlet piping is clean at the time of installation. Periodic checks should be made to ensure piping remains clean without corrosion. Never use old pigtails on new LP-Gas installations. Old pigtails can also work harden and crack if they have been bent and twisted several times.

3. Wrong regulator installed for the application:

The proper regulator must be used for each system.

For example, installation of high pressure regulators not designed to reduce gas pressure to an appliance requirement of 11" w.c. will cause a hazard. Installing a regulator undersized for the load can cause improper combustion at the appliance burner with a potential for carbon monoxide poisoning.

Action Required: Make sure the regulator is correct for each application and test the system with a pressure gauge or a manometer.

4. Failure to external mechanical parts due to corrosion:

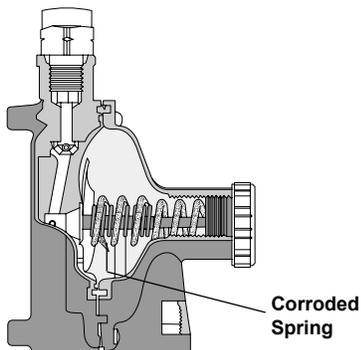
Adjusting springs and relief valve springs can rapidly corrode if exposed to salt air or industrial pollution. Even moisture condensation on these springs can cause them to rust and fail.

Failure of these springs will result in failure of the regulator to control the pressure.

With the vent of a regulator facing down, corrosion products from the springs could clog the regulator vent screen blocking the vent.

Action Required: Regulator inspection for corrosion should be made according to the guidelines listed below:

- For underground installations subject to submersion, the regulator should be inspected **every** time the container is filled.
- For known corrosive atmospheres of salt air or chemical pollution, the regulator should be inspected at least once a year.

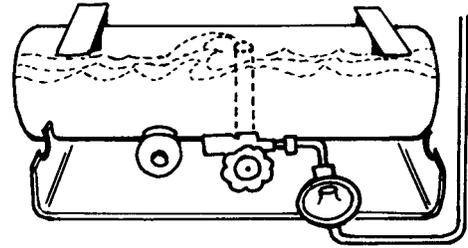


- For other applications, the regulator should be inspected every 3 years. **If any corrosion is evident, replace the regulator.**

It is essential that the regulator bonnet cap be tightly in place at all times to prevent the entrance of water, bugs, dirt, etc. Foreign material can cause the regulator to function improperly with potentially hazardous results.

5. Liquid propane in the regulator:

This can occur on recreational vehicles, unless the regulator is installed substantially higher than the container shut-off valve. Here, sloshing propane could get into the regulator with the resulting high pressure downstream of the regulator. It could also occur on stationary installations if the regulator is installed below the shut-off valve and the container is over-filled.



Action Required: Be careful of regulator installation and never overfill any LP-Gas container.

Leaks of LP-Gas to Atmosphere

While the occurrences of leaking regulators are rare, they can and do occur with a potential for fires and explosions.

These leaks can be caused by:

1. Corrosion of the relief valve spring or foreign material on the seat disc which causes the relief valve to open, will cause LP-Gas to escape through the regulator vent, as well as permitting high pressure into the system.

Action Required: Regulator inspection for corrosion should be made according to the guidelines listed below:

- For underground installations subject to submersion, the regulator should be inspected **every** time the container is filled.
- For known corrosive atmospheres of salt air or chemical pollution, the regulator should be inspected at least once a year.
- For other applications, the regulator should be inspected every 3 years.

If any corrosion is evident, replace the regulator.

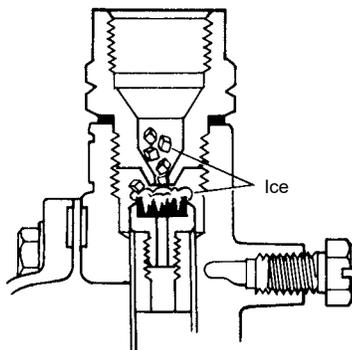
2. Bad piping connections at the regulator inlet and outlet. This can occur at the time of installation where connections are loose or the regulator may have been overstressed by excessive wrenching. It is important that proper wrenches, both on the piping and on the regulator inlet and outlet, be used when connecting the system piping, and that the regulator die cast body is not cracked by wrenching the pipe too deeply into the body.

Action Required: Always test for leaks at time of installation and inspect for leaks if there is reason to believe that pipe connections could cause a hazard.

Safety Warnings

Loss of Pressure

Freeze-up inside the regulator.



This will prevent the regulator from regulating properly.

Regulator freeze-ups occur because there is excessive moisture in the gas. Freeze-ups can also occur in pigtails that are kinked or bent where free flow of the LP-Gas is restricted. These freeze-ups can occur when the moisture, gas flow and temperature combine to create a hazardous condition. Freeze-ups can occur at temperatures above 32° F.

Action Required: All LP-Gas should be checked for moisture content prior to delivery to consumers and proper amounts of anhydrous methanol added if the gas cannot be returned to the supplier. Any container suspected of having excessive moisture should be treated with the proper amount of methanol.

Customer Safety

Since regulators are often used by consumers without previous knowledge of the hazards of LP-Gas, and the LP-Gas dealers are the only ones who have direct contact with the consumers,

It is the dealer's responsibility to make sure that his customers are properly instructed in safety matters relating to their installation.

At the very minimum, it is desirable that these customers:

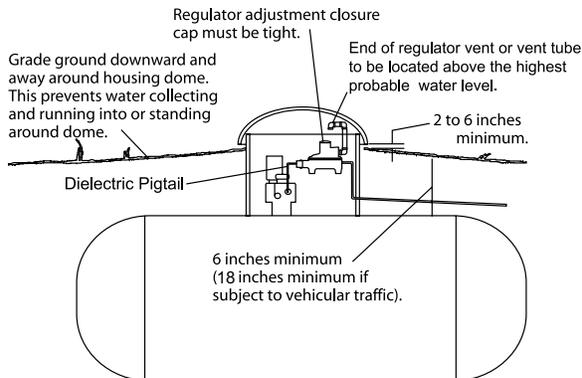
1. Know the odor of LP-Gas and what to do in case they smell gas. Use the NPGA "Scratch 'n Sniff" leaflet.
2. Are instructed to never tamper with the system.
3. Know that when protective hoods are used to enclose regulators and/or valves, that these hoods must be closed, but not locked.
4. Keep snow drifts from covering regulators.
5. Know the location of the cylinder or tank shut-off valve in emergencies.

Underground Installations

Special hazards can occur if regulators are not properly installed in underground systems. Water, dirt, mud and insects can get into the regulator if the bonnet cap is not tightly in place and the vent is not protected with a proper vent tube, opening above any potential water level.

Most problems occur because the waterproof dome on the buried storage tank does not extend above the ground level sufficiently to keep out water and mud.

Refer to NPGA No. 401.



Note: Water mark left in housing dome at level above regulator vent, or end of vent tube requires replacement of regulator. Then correct installation.

General Warning

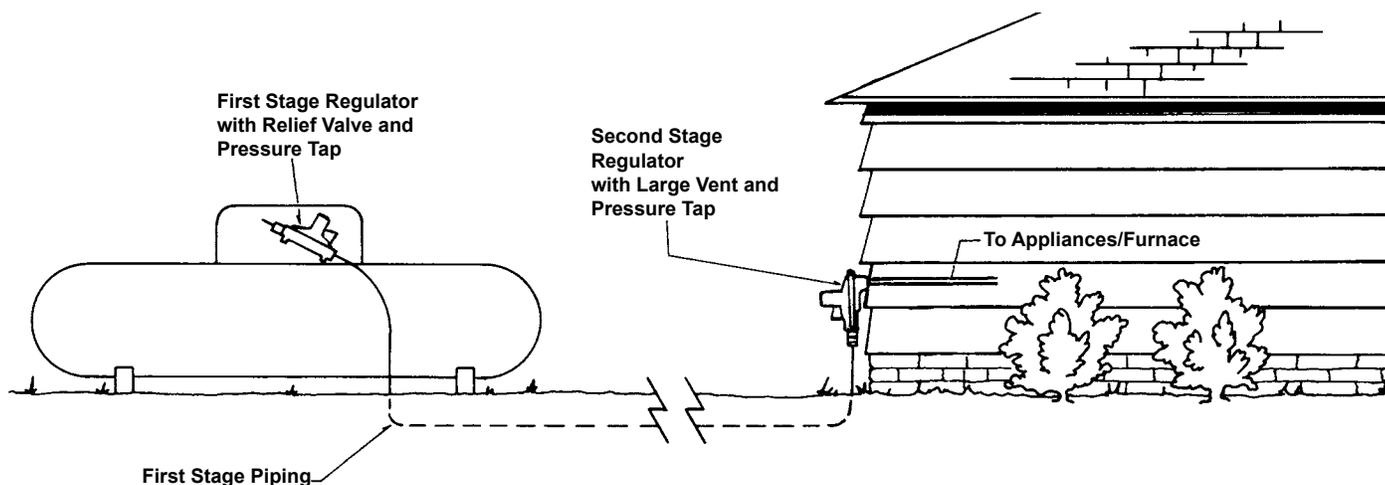
All RegO Products are mechanical devices that will eventually become inoperative due to wear, contaminants, corrosion and aging of components made of materials such as metal and rubber. As a general recommendation, Regulators should be replaced in accordance with all of the recommendations outlined in this safety warning. The recommended service life of a regulator is one of many factors that must be considered in determining when to replace a regulator.

The environment and conditions of use will determine the safe service life of these products. Periodic inspection and maintenance are essential.

Because RegO Products have a long and proven record of quality and service, LP-Gas dealers may forget the hazards that can occur because a regulator is used beyond its safe service life. Life of a regulator is determined by the environment in which it "lives." 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 owners of products responsible for replacing products before they reach the end of their safe useful life. LP-Gas dealers should be aware of legislation which could affect them.

Advantages of Two-Stage Regulation



The regulator is truly the heart of an LP-Gas installation. It must compensate for variations in tank pressure from as low as 8 PSIG to 220 PSIG – and still deliver a steady flow of LP-Gas at 11" w.c. to consuming appliances. The regulator must deliver this pressure

despite a variable load from intermittent use of the appliances. Though a single-stage system may perform adequately in many installations, the use of a two-stage system offers the ultimate in pinpoint regulation. Two-stage regulation can result in a more profitable LP-Gas operation for the dealer resulting from less maintenance and fewer installation callbacks – and there is no better time than now for installing RegO Regulators in two-stage systems.

Uniform Appliance Pressure

The installation of a two-stage system – one high pressure regulator at the container to compensate for varied inlet pressures, and one low pressure regulator at the building to supply a constant delivery pressure to the appliances – helps ensure maximum efficiency and trouble-free operation year-round. It is important to note that while pressure at the appliances can vary up to 4" w.c. using single-stage systems, two-stage systems keep pressure variations within 1" w.c. New high-efficiency appliances require this closer pressure control for proper ignition and stable, efficient operation. In fact, one major manufacturer requires the use of two-stage systems with their appliances.

Reduced Freeze-ups/Service Calls

Regulator freeze-up occurs when moisture in the gas condenses and freezes on cold surfaces of the regulator nozzle. The nozzle becomes chilled when high pressure gas expands across it into the regulator body. This chilling action is more severe in single-stage systems as gas expands from tank pressure to 11" w.c. through a single regulator nozzle.

Size The System Correctly

Prior to installing your two-stage system, be sure the system pipe and tubing is properly sized. Proper sizing will help ensure constant delivery pressure to the appliances during fluctuating loads at all times. Just as important, be sure the RegO Regulators you choose are capable of handling the desired load. This is another advantage of two-stage systems – they are capable of handling much more BTU's/hr. than single-stage systems. The RegO "LP-Gas Serviceman's Manual" provides complete information on pipe sizing and proper regulator selection.

Two-stage systems can greatly reduce the possibility of freeze-ups and resulting service calls as the expansion of gas from tank pressure to 11" w.c. is divided into two steps, with less chilling effect at each regulator. In addition, after the gas exits the first-stage regulator and enters the first-stage transmission line, it picks up heat from the line, further reducing the possibility of second-stage freeze-up.

Service calls for pilot outages and electronic ignition system failures are also reduced as a result of more uniform appliance pressure from two-stage systems.

Economy of Installation

In a single-stage system, transmission line piping between the container and the appliances must be large enough to accommodate the required volume of gas at 11" w.c. In contrast, the line between the first and second stage regulators in two-stage systems can be much smaller as it delivers gas at 10 PSIG to the second-stage regulator. Often the savings in piping cost will pay for the second regulator.

As an additional benefit, single-stage systems can be easily converted to two-stage systems using existing supply lines when they prove inadequate to meet added loads. This is the least expensive and best method of correcting the problem.

Allowance for Future Appliances

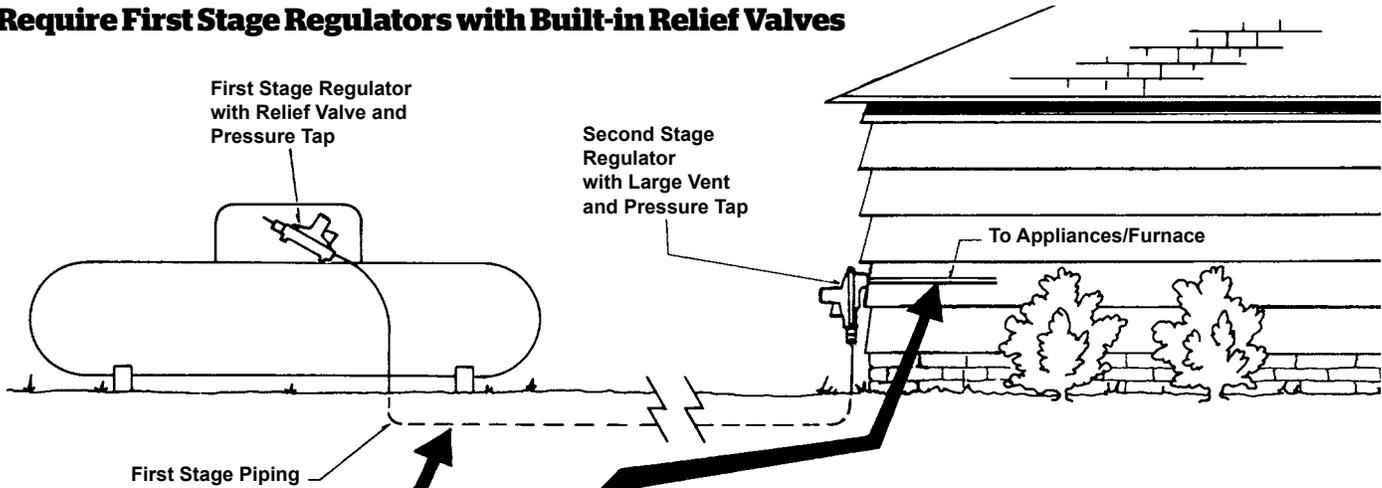
A high degree of flexibility is offered in new installations of two-stage systems. Appliances can be added later to the present load – provided the high pressure regulator can handle the increase – by the addition of a second low pressure regulator. Since appliances can be regulated independently, demands from other parts of the installation will not affect their individual performances.

Replace Pigtails

If you are replacing an old regulator, remember to replace the copper pigtail. The old pigtail may contain corrosion which can restrict flow. In addition, corrosion may flake off and wedge between the regulator orifice and seat disc – preventing proper lock-up.

Two-Stage LP-Gas Systems

Require First Stage Regulators with Built-in Relief Valves



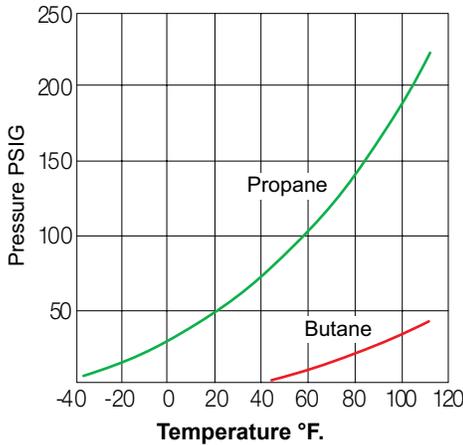
With no first stage relief valve, propane liquid may form here...

Resulting in sudden pressure surge due to flashing into vapor here! First stage relief can prevent liquid from forming in first stage piping during periods with no gas demand!!!

Ambient Temperature	Tank Pressure	Ground Temperature	Pressure at Which liquid will form
70° F.	120 PSIG	40° F.	72 PSIG
80° F.	140 PSIG	50° F.	86 PSIG
90° F.	165 PSIG	60° F.	102 PSIG

Pressure at which liquid can form at various temperatures.

Vapor Pressures of LP-Gases



The Problem

Many modern LP-Gas appliances are equipped with pilotless ignition systems. Water heaters and older appliances use pilot lights, but it has become a common practice for energy conscious homeowners to shut-off the pilot when leaving home for extended periods of time. In each instance, there is **no gas demand at all** for extended periods.

The Consequences

If the first stage regulator fails to lock-up tight, usually as a result of a worn seat disc or foreign material lodged between nozzle and seat disc, pressure will build-up in the first stage piping – possibly to a level that approaches tank pressure. Combining this with warm ambient temperatures and cool ground, **propane liquid may form** in the first stage piping.

When gas demand resumes, this liquid may pass through the second stage regulator into the appliances and furnace. NOTE – the second

stage regulator will not relieve the pressure in first stage piping. The rapid vaporization of the liquid may cause a rapid pressure surge that could seriously damage critical components of the appliance and furnace controls.

A fire or explosion could occur as a consequence.

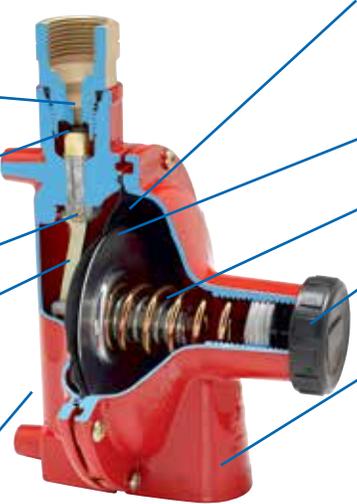
The Solution

RegO LV4403 Series First Stage Regulators with Built-In Relief Valves reduce the possibility of this serious hazard in two stage applications. The built-in relief valve is designed to vent as needed and reduce the possibility of first stage piping pressure from becoming high enough to form liquid.

RegO Regulator Designs

RegO LP-Gas Regulators have been designed to give outstanding performance and dependability with a minimum of maintenance.

- Nozzle Orifice**
Replaceable and precision machined to prevent scoring of the seat disc.
- Seat Disc**
Replaceable, resilient construction gives sure closing at lock up pressure. Straight line seat disc to nozzle operation provides even seat disc wear and positive lock up.
- Pivot Pin**
Fully enclosed in regulator body.
- Control Linkage**
Provides quick response to diaphragm movement; moves directly perpendicular to nozzle orifice to meter gas flow, gives positive closure and reduces seat disc wear.
- Built-In Pressure Tap**
Provides a convenient way to check downstream pressure on both high and low pressure models.
- Body & Bonnet**
Painted, heavy-duty zinc resists corrosion and gives long-life protection, even under "salty air" conditions.



Molded Diaphragm Assembly

Molded synthetic rubber with a tough, flexible fabric gives a super sensitive response in a temperature range of -40° to +165°F. Molded diaphragm seals in a groove between the body and bonnet.

Diaphragm Plate

Rigid diaphragm plate transmits pressure variations to control linkage.

Relief Valve

It is built in and tamper resistant. Large bonnet vent allows high capacity relief on second stage regulators.

Bonnet Cap

Bonnet cap incorporates travel stop to help control downstream pressure in the unlikely event of a regulator malfunction.

Large Bonnet Vent

Large vent is equipped with protective screen and threaded for 3/4" F. NPT vent piping. Large vent helps prevent ice from building up and blocking the vent during inclement weather. The regulator should be installed with vent down and the vent protected against blockage.



Laser Engraved Bonnet

New bonnet design features laser- engraved information that is easy to see and matches available stickers for gas check and record keeping. *Patent Pending

Easy to Turn Adjusting Screw

We redesigned our adjusting screw to be easily turned.

1/8" pressure plug ports

Our 1/8" pressure plug ports conform to 7/16" hex wrenches.

Typical of the 1580™ Industrial High Pressure Regulators

The pounds-to-pounds, industrial regulator gives higher delivery pressure as tank pressure decreases, thus permitting full use of the gas in the tank. Most units are field adjustable to meet changing conditions.

Connections
Machined and threaded into the body forging; also includes 1/4" NPT pressure gauge ports.

Seat Disc
Synthetic rubber assembly attached directly to the diaphragm assembly to ensure proper movement and regulation.

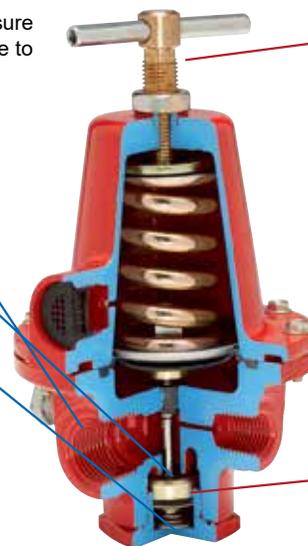
Back Cap Spring
Provides added upward force to help provide a positive lock-up.

Sensitivity

In those cases where there is a choice of delivery pressure ranges, the **lowest** spring range which will fulfill your requirements is recommended because the sensitivity of a regulator decreases as the range of the adjusting spring increases.

Relief Valves

Most high pressure regulators are not equipped with integral relief valves. For certain applications where it is desirable to protect equipment downstream of the regulator, relief valves must be installed in the line.



Adjusting Assembly

Large handle with lock-nut release allows easy resetting of delivery pressure.

Integral O-Ring

Minimizes tendency to vibrate or hum under extreme loads.

RegO Regulators Installation and Service Tips*

Why are the inlet nozzles reverse thread?

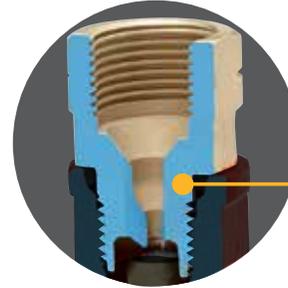
- Inlet nozzles are reverse threaded to allow for removal and service of the seat disc and inlet nozzle, when debris has affected the regulators performance. The seat disc and inlet nozzle can be cleaned and returned back to normal service.

Regulator Installation Tips

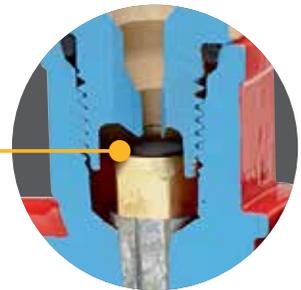
- Ensure your inlet nozzle is tightened securely into the body.
- Use back up wrenches when installing a new regulator to ensure the inlet nozzle does not loosen.
- Install new pigtails when installing a new regulator.
- Do not use excess pipe sealant, as it can move downstream and affect regulator performance.
- Install the regulator 12-18" off the ground and above snow accumulation.
- When regulators are not installed under a protective cover or tank lid.
- Install with the vent pointed vertically downwards.
- If seasonal temperatures periodically reach -20 F, or colder the first stage regulator should not be set higher than 10 PSIG.
- If seasonal temperatures periodically reach -35 F, or colder the first stage regulator should not be set higher than 5 PSIG.
- Regulator must be vented 5 feet from relief discharge, any source of ignition, or mechanical air intake, and 3 feet minimum from any building opening.
- Regulator vent must be above highest probable water level on underground tank installations.
- When installing regulators at a container connection, ensure the regulator is placed above the container connection to ensure any liquid droplets fall back into the container.

Regulator Service Tips

- Check regulator vents for obstructions.
- Make sure the vent screen and suppressor are properly in place.
- Ensure your inlet nozzle is tightened securely into the body.
- For high lock-up, or creep, check the inlet nozzle and seat disc for debris. Clean or replace the inlet nozzle and seat disc, reinstall and recheck your lock-up.
- When available use Presto-Tap® gauges for leak checks to avoid any debris moving from the regulators pigtail into the system.
- Make sure the regulator is properly selected for the BTU load and system demand.



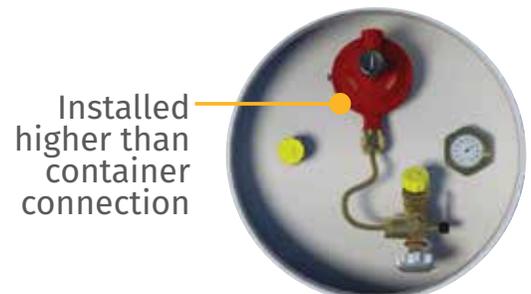
Inlet Nozzle



Seat Disc



Installed above highest probable water level



Installed higher than container connection

*Installation tips and guidelines referenced from NFPA 58 2020 and NFPA 54 2021.

RegO Regulator Selection

Type of System	BTU/hr.	kg/hr.	Suggested Regulator
 First Stage in a Two Stage System	1,500,000	32	LV3403TR Series
	2,500,000	54	LV4403SR Series LV4403TR Series
 Second Stage in a Two Stage System	450,000	10	LV3403B Series LV3403BR Series
	935,000	20	LV4403B Series LV4403BD Series
	1,600,000	34	LV5503B4/B6 LV4403B4D/B6D
	2,300,000	49	LV5503B8 LV5503B8D
 Second Stage in a 2 PSIG System	1,000,000	21	LV4403Y4/Y46R
	2,200,000	47	LV5503Y6/Y8
 Integral Twin Stage	450,000	9	LV404B34/39 Series
	600,000	11	LV404B4/B9 Series
 Integral Twin Stage 2 PSIG Delivery	800,000	17	LV404Y9
	650,000	14	LV404Y39
 Automatic Changeover	400,000	8	7525B34 Series
	450,000	9	7525B4 Series

RegO Regulator Coding Guide

Regulator Application Guide		
Type of System	BTU/HR	Suggested Regulator
First Stage in a Two Stage System	1,500,000	LV3403TR Series
	2,500,000	LV4403SR Series
Second Stage in a Two Stage System	450,000	LV3403B Series
	935,000	LV4403B Series LV4403BD Series
	1,000,000	LV4403BRA Series LV4403BRAD Series
	1,600,000	LV5503B4/B6 LV5503B4D/B6D Series
	2,300,000	LV5503B8 LV5503B8D Series
Second Stage in a 2 PSIG System	1,000,000	LV4403Y Series LV4403YD Series
	2,200,000	LV5503Y Series LV5503YD Series
Integral Twin Stage	450,000	LV404B34/39 Series
	600,000	LV404B4/9 Series
Integral Twin Stage 2 PSIG Delivery	650,000	LV404Y39
	800,000	LV404Y9
Automatic Changeover	400,000	7525B34 Series
	450,000	7525B4 Series

Regulator Coding Guide	
Body Description	
LV	Large Vent
404	Twin Stage Regulator body
3403	Second Stage Regulator body
4403	1st or Second Stage Regulator body
5503	Second Stage Regulator body
7525	Twin Stage Automatic Changeover body
D*	Dielectric inlet
R	Integral Relief Valve (1st Stage Only)
R*	Rear Outlet
RA*	Right Angle
RAB*	Right Angle with Bracket
Outlet Pressure	
B	11' w.c. Outlet Pressure
L	Lower than 11' w.c. Special Setting
H	Higher than 11' w.c. Special Setting
G	15" w.c. Outlet Pressure Agriculture Setting
Y	2 PSIG Outlet Pressure
S	5 PSIG Outlet Pressure
T	10 PSIG Outlet Pressure
Vent Positions**	
VI	Vent Over Inlet
VO	Vent Over Outlet
V3	Vent at 3:00 O'clock Position
V9	Vent at 9:00 O'clock Position
Inlet/Outlet Connection Sizing	
1	½" M. Flare inlet
2	¼" F. NPT
3	¾" M. Flare inlet
34	¼" F. NPT inlet X ½" F. NPT Outlet
39	F. POL Inlet X ½" F. NPT Outlet
4	½" F. NPT
5	¾" M. Flare inlet
6	¾" F. NPT
8	1" F. NPT
9	F. POL Inlet X ½" F. NPT Outlet
96	F. POL Inlet X ¾" F. NPT Outlet

Example 1

First Stage in a Two Stage System
LV4403TR9 – Red color = first stage Regulator
"LV" = large vent
"4403" = 1st Stage Regulator body
"T" = 10 PSIG outlet
"R" = Integral internal relief valve
"9" = F. POL Inlet X ½" F. NPT Outlet
LV4403SR9 has a 5 PSI outlet pressure



Example 2

Second Stage in a Two Stage System
LV4403B46RD – Brown color = second stage regulator
"LV" = large vent
"4403" = 2nd Stage Regulator body
"B" = 11" water column outlet pressure
"4" = ½" F.NPT inlet
"6" = ¾" F.NPT outlet
"R" = rear outlet
"D" = Dielectric Inlet
LV4403B66D has a straight-thru body with a ¾" F.NPT inlet/outlet



Example 3

Second Stage in a Two Stage System
LV5503B6- Brown color = second stage regulator
"LV" = large vent
"5503" = 2nd Stage Regulator body
"B" = 11" water column outlet pressure
"6" = ¾" F.NPT inlet and outlet
"8" = 1" F. NPT outlet
LV5503B8 has a ¾" F.NPT inlet and a 1" F.NPT outlet



Example 4

Second Stage in a 2 PSIG System
LV5503Y6 - Blue color = 2 PSIG regulator
"LV" = large vent
"5503" = 2nd Stage Regulator body
"Y" = 2 PSIG outlet pressure
"6" = ¾" F.NPT inlet and outlet
"8" = 1" F. NPT outlet
LV5503Y8 has a ¾" F.NPT inlet and a 1" F.NPT outlet



Example 5

Integral Twin Stage
LV40B39 – Brown color = Integral Twin stage Regulator
"LV" = large vent
"404" = twin stage regulator body
"B" = 11" water column outlet pressure
"39" = F. POL Inlet X ½" F. NPT Outlet
LV404B34 has a ¼" F.NPT inlet and a ½" F. NPT outlet



Example 6

Integral Twin Stage 2 PSIG
LV40Y9 – Blue color = Integral Twin stage Regulator
"LV" = large vent
"404" = twin stage regulator body
"Y" = 2 psig outlet pressure
"9" = F. POL Inlet X ½" F. NPT Outlet
LV404Y39 has a F. POL Inlet and a ½" F. NPT Outlet



*2nd Stage regulators only.

**Standard vent positions are over the outlet on 1st Stage and Twin-Stage regulators, and vent over the inlet on 2nd stage regulators unless otherwise specified with the corresponding abbreviations.

Regulators

Compact First Stage Regulators LV3403TR

Ideal for use as a first stage regulator on any domestic size ASME or DOT container in propane gas installations requiring up to 1,500,000 BTU's per hour. The regulator is factory set to reduce container pressure to an intermediate pressure of approximately 10 PSIG (0.69 BARG).



LV3403TR

Ordering Information

Part Number	Inlet Connection	Outlet Connection	Orifice Size	Factory Delivery Pressure	Bonnet Vent Position	Vapor Capacity BTU/hr Propane*
LV3403TR	1/4" F. NPT	1/2" F. NPT	#16 Drill (4.49mm)	10 PSIG @ 50 PSIG Inlet (0.69 Bar @ 3.44 Bar inlet)	Over Outlet	1,500,000 BTU/hr (32 KG/hr)
LV3403TRV9					Opposite Gauge Port	
LV3403TR9	Over Outlet					
LV3403TR9V9	Opposite Gauge Port					
	F. POL					

*Maximum flow based on inlet pressure 20 PSIG(1.4 bar) higher than the regulator setting and delivery pressure 20% lower than the regulator setting and delivery pressure 20% lower than the setting.

High Pressure First Stage Regulators LV4403SR & LV4403TR

Provides accurate first stage regulation in two-stage bulk tank systems. Reduce tank pressure to an intermediate pressure of 5 to 10 PSIG (0.34 to 0.69 BARG). Also used to supply high pressure burners for applications like industrial furnaces or boilers. Also incorporated in multiple cylinder installations.



LV4403 Series

Ordering Information

Part Number	Inlet Connection	Outlet Connection	Orifice Size	Factory Delivery Pressure	Adjustment Range	Bonnet Vent Position	Vapor Capacity BTU/hr Propane*	
LV4403SR4	1/2" F. NPT	1/2" F. NPT	1/4" (6.25mm)	5 PSIG @ 50 PSIG inlet (0.34 Bar @ 3.44 Bar inlet)	1-5 PSIG (0.069-0.34 bar)	Over Outlet	2,500,000 BTU/hr (53 KG/hr)	
LV4403SR4VI					Over Inlet			
LV4403TR4					Over Outlet			
LV4403TR4VI					Over Inlet			
LV4403SR9	F. POL			3/4" F. NPT	5 PSIG @ 50 PSIG inlet (0.34 Bar @ 3.44 Bar inlet)	1-5 PSIG (0.069-0.34 bar)		Over Outlet
LV4403TR9						Over Outlet		
LV4403SR96						Over Inlet		
LV4403SR96VI						Over Inlet		
LV4403TR96		Over Outlet						
LV4403SR66	3/4" F. NPT	3/4" F. NPT	5 PSIG @ 50 PSIG inlet (0.34 Bar @ 3.44 Bar inlet)	1-5 PSIG (0.069-0.34 bar)	Over Inlet			
LV4403SR66VI				Over Inlet				
LV4403TR66				Over Outlet				

*Maximum flow based on inlet pressure 20 PSIG(1.4 bar) higher than the regulator setting and delivery pressure 20% lower than the regulator setting and delivery pressure 20% lower than the setting.

Regulators

Low Pressure Second Stage Regulators - Standard Settings LV4403B Series

Designed to reduce first stage pressure of 5 to 20 PSIG (0.34 to 1.38 BARG) down to burner pressure, normally 11" w.c. Ideal for medium commercial installations, multiple cylinder installations and normal domestic loads.



Ordering Information

Part Number	Inlet Connection	Outlet Connection	Orifice Size	Factory Delivery Pressure	Adjustment Range	Bonnet Vent Position	Vapor Capacity BTU/hr Propane****
LV4403B4*	1/2" F. NPT	1/2" F. NPT	#28 Drill (3.57mm)	11" w.c. at 10 PSIG Inlet (27.4 mbar at 0.69 bar)	9" to 13" w.c. (22.4 to 32.3 mbar)	Over Inlet	935,000 BTU/hr (20 KG/hr)
LV4403B46**		3/4" F. NPT					
LV4403B46R***		3/4" F. NPT					
LV4403B66**	3/4" F. NPT	3/4" F. NPT	#28 Drill (3.57mm)	11" w.c. at 10 PSIG Inlet (27.4 mbar at 0.69 bar)	9" to 13" w.c. (22.4 to 32.3 mbar)	Over Inlet	935,000 BTU/hr (20 KG/hr)
LV4403B66R***							



LV4403B Series

*Available in vent over outlet (VO) and vent at 9 O'clock(V9)

**Available in vent over outlet (VO), vent at 3 O'clock(V3) and vent at 9 O'clock(V9)

***Backmount design

****Maximum flow based on 10 PSIG(0.69 bar) inlet and 9" w.c.(22.4 mbar) delivery pressure.

Dielectric Second Stage Regulators LV4403BD Series

RegO's Dielectric second stage regulators are designed to reduce first stage pressure normally 10 PSIG (0.69 BARG) down to burner pressure, normally 11" w.c. and are ideal for medium commercial installations, multiple cylinders installations and normal domestic loads.

RegO Dielectric second stage regulators are engineered to isolate potential electrical current from metallic piping before entering a building. The use of a separate dielectric union is not necessary because the regulator contains a dielectric union as part of the inlet assembly. Available in both SAE Flare and F.NPT inlet connection.



Ordering Information

Part Number	Inlet Connection	Outlet Connection	Inlet Material	Orifice Size	Factory Delivery Pressure	Adjustment Range	Bonnet Vent Position	Vapor Capacity BTU/hr Propane ****			
3/8" M. Flare = 3											
LV4403B3D	3/8" M Flare	1/2" F. NPT	Brass	# 28 Drill (3.57mm)	11" w.c. at 10 PSIG Inlet (27.4 mbar at 0.69 bar)	9" to 13" w.c. (22.4 to 32.3 mbar)	Over Inlet	935,000 BTU/hr (20 KG/hr)			
LV4403B36D		3/4" F. NPT									
LV4403B3RD*		1/2" F. NPT									
LV4403B36RD*		3/4" F. NPT		3/16" (4.78mm)				11" w.c. at 10 PSIG Inlet (27.4 mbar at 0.69 bar)	9" to 13" w.c. (22.4 to 32.3 mbar)	Over Inlet	1,000,000 BTU/hr (21 KG/hr)
LV4403B36RAD**											
LV4403B36RABD***											
1/2" M. Flare = 1											
LV4403B1D	1/2" M Flare	1/2" F. NPT	Brass	# 28 Drill (3.57mm)	11" w.c. at 10 PSIG Inlet (27.4 mbar at 0.69 bar)	9" to 13" w.c. (22.4 to 32.3 mbar)	Over Inlet	935,000 BTU/hr (20 KG/hr)			
LV4403B16D		3/4" F. NPT									
LV4403B16RD*		3/4" F. NPT									
LV4403B16RAD**		3/4" F. NPT		3/16" (4.78mm)				11" w.c. at 10 PSIG Inlet (27.4 mbar at 0.69 bar)	9" to 13" w.c. (22.4 to 32.3 mbar)	Over Inlet	1,000,000 BTU/hr (21 KG/hr)
LV4403B16RABD***											
LV4403B5D											
LV4403B56D	3/4" F. NPT										
LV4403B56RD*	3/4" F. NPT										
LV4403B56RAD**	3/4" F. NPT	3/16" (4.78mm)	11" w.c. at 10 PSIG Inlet (27.4 mbar at 0.69 bar)	9" to 13" w.c. (22.4 to 32.3 mbar)	Over Inlet	1,000,000 BTU/hr (21 KG/hr)					
LV4403B56RABD***											
LV4403B4D							1/2" F.NPT	1/2" F.NPT	Brass	# 28 Drill (3.57mm)	11" w.c. at 10 PSIG Inlet (27.4 mbar at 0.69 bar)
LV4403B46D	3/4" F. NPT										
LV4403B66D	1/2" F. NPT										
LV4403B46RD*	3/4" F. NPT	3/16" (4.78mm)	11" w.c. at 10 PSIG Inlet (27.4 mbar at 0.69 bar)	9" to 13" w.c. (22.4 to 32.3 mbar)	Over Inlet	1,000,000 BTU/hr (21 KG/hr)					
LV4403B66RD*											
LV4403B66RAD**											
LV4403B66RABD***											



LV4403BD Series

* Backmount Design.

** Right Angle Design

*** Right Angle with Bracket

****Maximum flow is based on 10 PSIG (0.69 BARG) inlet and 9" w.c.(22.4 Mbar) delivery pressure.

Regulators

Low Pressure Second Stage Regulators LV4403B66RA Series

Designed to reduce first stage pressure of 5 to 20 PSIG (0.34 to 1.38 BARG) down to burner pressure, normally 11" w.c. Ideal for medium commercial installations, vapor meter installations and normal domestic loads.



Ordering Information

Part Number	Inlet Connection	Outlet Connection	Orifice Size	Factory Delivery Pressure	Adjustment Range	Bonnet Vent Position	Vapor Capacity BTU/hr. Propane*
LV4403B66RA	¾" F. NPT	¾" F. NPT	3/16" (4.78mm)	11" w.c. at 10 PSIG Inlet (27.4 mbar at 0.69 bar)	9" to 13" w.c. (22.4 to 32.3 mbar)	Over Inlet	1,000,000 BTU/hr (21 KG/hr)
LV4403B66RAB**						9 O'clock	
LV4403B66RA9						9 O'clock	



w/ Mounting Bracket

LV4403B66RA Series

* Maximum flow is based on 10 PSIG (0.69 BARG) inlet and 9" w.c.(22.4 Mbar) delivery pressure.

** Mounting Bracket Included.

Low Pressure Second Stage Regulators - Special Settings LV4403H Series

Designed to reduce first stage pressure of 5 to 10 PSIG (0.34 to 0.69 BARG) down to pressure higher than 11" water column, the actual pressure setting is specified in the table below. These regulators are designed for installations where the appliances require pressures greater than 11 inches w.c.



Ordering Information

Part Number	Inlet Connection	Outlet Connection	Orifice Size	Factory Delivery Pressure	Adjustment Range	Bonnet Vent Position	Vapor Capacity BTU/hr. Propane**
LV4403H222	¼" F.NPT	½" F.NPT	7/32" (5.56mm)	22" w.c. at 10 PSIG Inlet (54.7 mbar at 0.69 bar)	15-35 w.c. (37.3-87.1 mbar)	Inlet	700,000 (15 kg/hr)
LV4403H414	½" F.NPT			14" w.c. at 10 PSIG inlet (34.8 mbar at 0.69 bar)	12.5-19 w.c. (31.1-47.3 mbar)		
LV4403H420		20" w.c. at 10 PSIG inlet (49.8 mbar at 0.69 bar)	15-35 w.c. (37.3-87.1 mbar)				
LV4403H4614	¾" F.NPT	#28 (3.57mm)	14" w.c. at 10 PSIG inlet (34.8 mbar at 0.69 bar)	12.5-19 w.c. (31.1-47.3 mbar)			
LV4403H4620			20" w.c. at 10 PSIG inlet (49.8 mbar at 0.69 bar)	15-35 w.c. (37.3-87.1 mbar)			
LV4403H6614	¾" F.NPT		14" w.c. at 10 PSIG inlet (34.8 mbar at 0.69 bar)	12.5-19 w.c. (31.1-47.3 mbar)			



LV4403H Series

* Maximum flow based on 10 PSIG (0.69 BARG) inlet 20% drop in delivery pressure

Compact Second Stage Regulator for LP-Gas LV3403B4

The LV3403B4 is designed to reduce first stage pressure of 5-20 PSIG (0.34 to 1.38 BARG) down to burner pressure normally 11" w.c. Designed as a second stage regulator for smaller applications with flow requirements up to 450,000 BTU's/hr, they are ideal for homes, mobile homes, and cottages.



Ordering Information

Part Number	Inlet Connection	Outlet Connection	Orifice Size	Factory Delivery Pressure	Adjustment Range	Bonnet Vent Position	Vapor Capacity BTU/hr Propane*
LV3403B4	½" F.NPT	½" F.NPT	7/32" (5.56mm)	11" w.c. at 10 PSIG Inlet (27.4 mbar at 0.69 bar)	9" to 13" w.c. (22.4 to 32.3 mbar)	Inlet	450,000 (9.49 kg/hr)
LV3403B4V3						3:00	
LV3403B4V0						Outlet	
LV3403B4V9						9:00	



LV3403B4 Series

* Maximum flow based on 10 PSIG (0.69 BARG) Inlet 9" w.c. (22.4 mbar) delivery pressure

Regulators

Compact “Back-Mount” Regulator LV3403BR Series

The LV3403BR Back Mount Regulator is designed to reduce first stage pressure of 5-10 PSIG (0.34 to 0.69 BARG) down to burner pressure normally 11” w.c. Designed as a second stage regulator for smaller applications with flow requirements up to 450,000 BTU/hr. and are ideal for homes, mobile homes, and cottages.



LV3403BR Series

Ordering Information

Part Number	Inlet Connection	Outlet Connection	Orifice Size	Factory Delivery Pressure	Adjustment Range	Bonnet Vent Position	Vapor Capacity BTU/hr Propane*
LV3403B44R	½" F.NPT	½" F.NPT	7/32" (5.56mm)	11" w.c. at 10 PSIG Inlet (27.4 mbar at 0.69 bar)	9" to 13" w.c. (22.4 to 32.3 mbar)	Over Inlet	450,000 (9.49 kg/hr)
LV3403B46R		¾" F.NPT					
LV3403B66R	¾" F.NPT						

* Maximum flow based on 10 PSIG (0.69 BARG) inlet and 9" w.c. (22.4 mbar) delivery pressure.

Low Pressure Second Stage Regulators - Standard Settings LV5503B Series

Designed to reduce first stage pressure of 5 to 20 PSIG (0.34 to 1.38 BARG) down to burner pressure, normally 11” w.c. Ideal for larger commercial and industrial applications, multiple cylinder installations and large domestic systems.



LV5503B Series

Ordering Information

Part Number	Inlet Connection	Outlet Connection	Orifice Size	Factory Delivery Pressure	Adjustment Range	Bonnet Vent Position	Vapor Capacity BTU/hr. Propane**
LV5503B4*	½" F. NPT	¾" F. NPT	¼" (6.25mm)	11" w.c. at 10 PSIG Inlet (27.4 mbar at 0.69 bar)	9" to 13" w.c. (22.4 to 32.3 mbar)	Over Inlet	1,600,000 (34 kg/hr)
LV5503B6*							
LV5503B8*	1" F. NPT	9/32" (7.14mm)	2,300,000 (48 kg/hr)				

*Available in vent over outlet (VO), vent at 3 O'clock(V3) and vent at 9 O'clock(V9)

** Maximum flow is based on 10 PSIG (0.69 BARG) inlet and 9" w.c. (22.4 mbar) delivery pressure.

Dielectric Second Stage Regulators LV5503BD Series

RegO's Dielectric second stage regulators are designed to reduce first stage pressure normally 10 PSIG (0.69 BARG) down to burner pressure, normally 11” w.c. and are ideal for medium commercial installations, multiple cylinders installations and normal domestic loads.



RegO Dielectric second stage regulators are engineered to isolate potential electrical current from metallic piping before entering a building. The use of a separate dielectric union is not necessary because the regulator contains a dielectric union as part of the inlet assembly. Available in both SAE Flare and F.NPT inlet connection.

Ordering Information

Part Number	Inlet Connection	Outlet Connection	Orifice Size	Factory Delivery Pressure	Adjustment Range	Bonnet Vent Position	Vapor Capacity BTU/hr. Propane*
LV5503B4D	½" F. NPT	¾" F. NPT	¼" (6.25mm)	11" w.c. at 10 PSIG Inlet (27.4 mbar at 0.69 bar)	9" to 13" w.c. (22.4 to 32.3 mbar)	Over Inlet	1,600,000 (34 kg/hr)
LV5503B6D	¾" F. NPT						
LV5503B16D	½" M. Flare						
LV5503B56D	5/8" M. Flare						

* Maximum flow is based on 10 PSIG (0.69 BARG) inlet and 9" w.c. (22.4 mbar) delivery pressure.



LV5503BD Series

Regulators

Low Pressure Second Stage Regulators - Special Settings LV5503H Series

Designed to reduce first stage pressure of 5 to 20 PSIG (0.34 to 1.38 BARG) down to burner pressure, normally 11" w.c. Ideal for larger commercial and industrial applications, multiple cylinder installations and large domestic systems.



LV5503H Series

Ordering Information

Part Number	Inlet Connection	Outlet Connection	Orifice Size	Factory Delivery Pressure	Adjustment Range	Bonnet Vent Position	Vapor Capacity BTU/hr Propane*	
LV5503H414	½" F. NPT	¾" F. NPT	¼" (6.25mm)	14" w.c. @ 10 PSIG Inlet (34.8 mbar @ 0.69 bar)	7-16 w.c. (17.4-39.8 mbar)	Inlet	1,600,000 (34 kg/hr)	
LV5503H614				20" w.c. @ 10 PSIG Inlet (49.8 mbar @ 0.69 bar)	11-28 w.c. (27.4-69.7 mbar)			Outlet
LV5503H620				40" w.c. @ 10 PSIG Inlet (99.5 mbar @ 0.69 bar)	28-84 w.c. (69.7-209 mbar)	Outlet		
LV5503H620V								
LV5503H640								
LV5503H640V								
LV5503H814	¾" F. NPT	1" F. NPT	⅞/32" (7.14mm)	14" w.c. @ 10 PSIG Inlet (34.8 mbar @ 0.69 bar)	7-16 w.c. (17.4-39.8 mbar)	Inlet	2,300,000 (48 kg/hr)	
LV5503H820				20" w.c. @ 10 PSIG Inlet (49.8 mbar @ 0.69 bar)	11-28 w.c. (27.4-69.7 mbar)			
LV5503H840				40" w.c. @ 10 PSIG Inlet (99.5 mbar @ 0.69 bar)	28-84 w.c. (69.7-209 mbar)			

*Maximum flow is based on 10 PSIG (0.69 BARG) inlet 20% drop in delivery pressure

Second Stage Regulators for 2 PSI Systems LV4403Y and LV5503Y Series

Designed to reduce first stage pressure of 10 PSIG (0.69 BARG) down to 2 PSIG (0.14 BARG). A line pressure regulator is required downstream to reduce the 2 PSIG (0.14 BARG) to a nominal 11" w.c.



LV5503Y Series



LV4403Y Series

Ordering Information

Part Number	Inlet Connection	Outlet Connection	Orifice Size	Factory Delivery Pressure	Adjustment Range	Bonnet Vent Position	Vapor Capacity BTU/hr. Propane**
LV4403Y4	½" F. NPT	½" F. NPT	¼" (6.25mm)	2 PSIG @ 10 PSIG Inlet (0.138 bar @ 0.69 bar)	1.6-2.2 psig (0.110-0.151 bar)	Over Inlet	1,000,000 BTU/hr (21 KG/hr)
LV4403Y66	¾" F.NPT	¾" F.NPT					
LV4403Y46R*	½" F. NPT						
LV4403Y66R*	¾" F.NPT						
LV5503Y6	¾" F.NPT						
LV5503Y8	¾" F. NPT	1" F. NPT	⅞/32" (7.14mm)				

* Backmount design

**Maximum flow is based on 10 PSIG (0.69 BARG) inlet pressure and 1.5 PSIG (0.10 BARG) delivery pressure.

Regulators

Dielectric Second Stage Regulators LV4403YD Series

Designed to reduce first stage pressure of 10 PSIG down to 2 PSIG. A line pressure regulator is required downstream to reduce the 2 PSIG to a nominal 11" w.c.



RegO Dielectric second stage regulators for 2 PSI systems are engineered to isolate potential electrical current from metallic piping before entering a building. The use of a separate dielectric union is not necessary because the regulator contains a dielectric union as part of the inlet assembly. Available in both SAE Flare and F.NPT inlet connection.



LV4403Y3D

Ordering Information

Part Number	Inlet Connection	Outlet Connection	Orifice Size	Factory Delivery Pressure	Adjustment Range	Bonnet Vent Position	Vapor Capacity BTU/hr. Propane**	
LV4403Y1D	1/2" M. Flare	1/2" F. NPT	1/4" (6.25mm)	2 PSIG @ 10 PSIG Inlet (0.14 mbar at 0.69 bar)	1.6-2.2 PSIG (0.110-0.151 bar)	Over Inlet	1,000,000 BTU/hr (21 KG/hr)	
LV4403Y3D	3/8" M. Flare							
LV4403Y5D	3/8" M. Flare							
LV4403Y16D	1/2" M. Flare	3/4" F. NPT						
LV4403Y16RD*								3/8" M. Flare
LV4403Y36D								
LV4403Y36RD*	3/8" M. Flare	3/4" F. NPT						
LV4403Y56D	5/8" M. Flare							
LV4403Y56RD*	5/8" M. Flare	3/4" F. NPT						
LV4403Y4D	1/2" F. NPT							
LV4403Y66D	3/4" F. NPT							
LV4403Y46RD	1/2" F. NPT							
LV4403Y66RD	3/4" F. NPT*							

*Backmount design

**Maximum flow is based on 10 PSIG (0.69 BARG) inlet pressure and 1.5 PSIG (0.10 BARG) delivery pressure.

Dielectric Second Stage Regulators LV5503YD Series

Designed to reduce first stage pressure of 10 PSIG down to 2 PSIG. A line pressure regulator is required downstream to reduce the 2 PSIG to a nominal 11" w.c.



RegO Dielectric second stage regulators for 2 PSI systems are engineered to isolate potential electrical current from metallic piping before entering a building. The use of a separate dielectric union is not necessary because the regulator contains a dielectric union as part of the inlet assembly. Available in both SAE Flare and F.NPT inlet connection.



LV5503Y6D

Ordering Information

Part Number	Inlet Connection	Outlet Connection	Orifice Size	Factory Delivery Pressure	Adjustment Range	Bonnet Vent Position	Vapor Capacity BTU/hr. Propane*
LV5503Y16D	1/2" M. Flare	3/4" F.NPT	1/4" (6.25mm)	2 PSIG @ 10 PSIG Inlet (0.138 bar at 0.69 bar)	1.6-2.2 psig (0.110-0.151 bar)	Over Inlet	2,200,000 BTU/hr (46.42 KG/hr)
LV5503Y18D		1" F.NPT					
LV5503Y56D	3/8" M. Flare	3/4" F.NPT	9/32" (7.14mm)				
LV5503Y58D		1" F.NPT					
LV5503Y4D	1/2" F. NPT	3/4" F.NPT	1/4" (6.25mm)				
LV5503Y6D	3/4" F. NPT	3/4" F.NPT					
LV5503Y8D		1" F.NPT	1" F.NPT	9/32" (7.14mm)			

*Maximum flow is based on 10 PSIG inlet pressure and 1.5 PSIG delivery pressure.

Regulators

Low Pressure Second Stage Tobacco Barn Regulator LV5503G4 Series

Especially developed for drying barns in the tobacco industry. The LV5503G4 regulator will supply a steady and constant flow of fuel to as many as 12 to 20 burners throughout the barn.



LV5503G4 Series

Ordering Information

Part Number	Inlet Connection	Outlet Connection	Orifice Size	Factory Delivery Pressure	Adjustment Range	Bonnet Vent Position	Vapor Capacity BTU/hr. Propane*
LV5503G4	½" F. NPT	¾" F. NPT	¼" (6.25mm)	15" w.c. @ 15 PSIG Inlet (37.32mbar @ 1.03 bar)	8" - 18" w.c. (19.91-44.79 mbar)	Above Inlet	1,750,000 (36.92 KG/hr)

*Maximum flow is based on 15 PSIG (1.03 BARG) inlet pressure and 13" w.c.(32.3 Mbar) delivery pressure.

Twin Stage Automatic Changeover Regulators 7525B Series

These combination automatic changeover, two stage regulators are especially suitable for homes, mobile homes, cottages, construction and other portable two cylinder installations. Empty containers may be replaced without interrupting customer's gas service.



7525B34

7525B4

Ordering Information

Automatic Changeover Regulator	Inlet	Outlet	Pigtails	Bracket	Vapor Capacity BTU/hr Propane*	
7525B34	¼" Inverted Flare	½" F. NPT	912FA20	2302-31	400,000 (8.4 KG/hr)	
7525B34			912FS20			
7525B4			912FA20	2503-22		450,000 (9.49 kg/hr)
7525B4			912FS20			

*Maximum flow is based on 25 PSIG (1.72 BARG) inlet pressure and 9" w.c. (22.4 mbar)

Twin Stage Regulators LV404B4 and LV404B9 Series

Compact two-stage regulator is designed to reduce container pressure down to 11" w.c. delivery pressure. It is ideal for "on-site" cylinder applications, mobile homes and average domestic service including small ASME and 100 to 420 pound DOT cylinders.



404PE

LV404B4

LV404B4V9

LV404B9

Ordering Information

Part Number	Inlet Connection	Outlet Connection	Orifice Size	Factory Delivery Pressure	Adjustment Range	Bonnet Vent Position 1st Stage	Bonnet Vent Position 2nd Stage	Vapor Capacity BTU/hr Propane*	Accessories
									1st Stage Vent Pipe-Away
LV404B4	¼" F. NPT	½" F. NPT	¾/16" (4.78mm)	11" w.c. at 100 PSIG Inlet (27.4 mbar at 6.9 bar)	9" to 13" w.c. (22.4 to 32.3 mbar)	Down	Over Outlet	600,000 BTU/hr (13 KG/hr)	404PE
LV404B4V9		¾" F. NPT				9 o'clock	9 o'clock		
LV404B46						½" F. NPT	Down		
LV404B46V9		9 o'clock					9 o'clock		
LV404B9	F. POL	½" F. NPT				Down	Over Outlet		
LV404B9V9						9 o'clock	9 o'clock		
LV404B96		¾" F. NPT	Down	Over Outlet					
LV404B96V9			9 o'clock	9 o'clock					

*Maximum flow is based on 25 PSIG (1.72 BARG) inlet pressure and 9" w.c. (22.4 mbar)

Regulators

Compact Twin Stage Regulators for LP-Gas LV404B34 & LV404B39 Series

The compact twin-stage regulator is designed to reduce container pressure down to 11" w.c. delivery pressure. It is ideal for "on site" container applications such as homes, mobile homes and cottages for average domestic service; including small ASME tanks and 100-420 pound DOT cylinders.



LV404B39

LV404B34

Ordering Information

Part Number	Inlet Connection	Outlet Connection	Orifice Size	Factory Delivery Pressure	Adjustment Range	Bonnet Vent Position 1st stage**	Bonnet Vent Position 2nd stage**	Vapor Capacity BTU/hr Propane*
LV404B34	1/4" F.NPT	1/2" F.NPT	7/32" (5.56mm)	11" w.c. at 100 PSIG Inlet (27.4 mbar at 6.9 bar)	9" to 13" w.c. (22.4 to 32.3 mbar)	Rear	Outlet	450,000 (9.49 kg/hr)
LV404B39	F.POL					Left	9:00	
LV404B34V9	1/4" F.NPT							
LV404B39V9	F.POL							

*Maximum flow is based on 25 PSIG (1.72 BARG) inlet pressure and 9" w.c. (22.4 mbar)

** Other vent positions available upon request

Low Pressure Twin Stage Regulators - Special Settings LV404H Series

This two-stage regulator is designed to reduce container pressure down to pressure higher than 11" water column. The actual pressure setting is specified in the table below. These regulators are designed for installations where the appliances require pressures greater than 11 inches w.c.



Ordering Information

Part Number	Inlet Connection	Outlet Connection	Orifice Size	Factory Delivery Pressure	Adjustment Range	Bonnet Vent Position 1st Stage	Bonnet Vent Position 2nd Stage	Vapor Capacity BTU/hr Propane*	Accessories 1st Stage Vent Pipe-Away
LV404H415	1/2" F. NPT	1/2" F. NPT	3/16" (4.78mm)	15" w.c. @ 100 PSIG Inlet (37.32mbar @ 1.03 bar)	11 - 17.5" w.c. (27.4 - 43.5 mbar)	Rear	Over Outlet	600,000 BTU/hr (13 KG/hr)	404PE
LV404H420				20" w.c. @ 100 PSIG Inlet (49.8 mbar @ 1.03 bar)	13" - 41" w.c. (32.3-102 mbar)				
LV404H440				40" w.c. @ 100 PSIG Inlet (99.5 mbar @ 1.03 bar)	30" - 60" w.c. (74.6 - 149.3 mbar)	9 O'Clock	9 O'Clock		
LV404H440V9									
LV404H4620		3/4" F. NPT		20" w.c. @ 100 PSIG Inlet (49.8 mbar @ 1.03 bar)	13" - 41" w.c. (32.3-102 mbar)	Rear	Over Outlet		

*Maximum flow is based on 25 PSIG (1.72 BARG) inlet 20% drop in delivery pressure.



LV404H

2 PSIG Delivery Pressure Twin-Stage Regulators LV404Y9 & Compact LV404Y39

SPECIAL 2 PSIG (0.14 BARG) DELIVERY pressure twin stage regulator is designed to reduce container pressure down to 2 PSIG (0.14 BARG). A line pressure regulator is required downstream to reduce the 2 PSIG (0.14 BARG) to a nominal 11" w.c.



Ordering Information

Part Number	Inlet Connection	Outlet Connection	Orifice Size	Factory Delivery Pressure	Adjustment Range	Bonnet Vent Position 1st Stage	Bonnet Vent Position 2nd Stage	Vapor Capacity BTU/hr Propane*
LV404Y39	F.POL (CGA 510)	1/2" F.NPT	7/32" (5.56mm)	2 PSIG @ 100 PSIG Inlet (0.14 bar at 6.9 bar)	1.8-2.5 PSIG (0.12-0.17 bar)	Down	Outlet	600,000 BTU/hr (12.66 KG/hr)
LV404Y9								800,000 (16.88 KG/hr)

*Maximum flow is based on 25 PSIG (1.72 BARG) inlet pressure and 1.5 PSIG (0.10 BARG) delivery pressure.



LV404Y39

LV404Y9

Two Stage Regulator Outfits 5807, 5808, 5820 Series

These outfits contain the equipment required to provide two-stage regulation.

Ordering Information

Kit Number	1st Stage Regulator Included		2nd Stage Regulator Included		Bracket Included	Pigtail Included	Vapor Capacity BTU/hr Propane*
	Part Number	Inlet x Outlet Female	Part Number	Inlet x Outlet F. NPT			
5807	LV4403TR9	F.POL x 1/2" NPT	LV4403B4	1/2" x 1/2"	2503-22	913PS12	935,000 BTU/hr (20 KG/hr)
5808			LV4403B46R	1/2" x 3/4"			
5820	LV4403TR96	F.POL x 3/4" NPT	LV4403B66R	3/4" x 3/4"			



913PS12



2503-22



LV4403TR9

LV4403B Series



Regulators

First Stage Regulator Outfit

This outfit contains the equipment required to provide first stage regulation.



Ordering Information

Kit Number	First Stage Regulator Included	Inlet	Outlet F. NPT	Hogtails Included	Vapor Capacity BTU/hr Propane
5824	LV4403TR9	F. POL	½"	913PS12	2,500,000 BTU/hr (53 KG/hr)



LV4403TR9

Twin Stage Regulator Outfits 5828 and 5832

This outfit contains the equipment required to provide twin-stage regulation.



Ordering Information

Kit Number	Twin Stage Regulator Included	Inlet	Outlet F. NPT	Pigtails Included	Vapor Capacity BTU/hr Propane*
5828	LV404B4	¼" F. NPT	½"	912JS12	600,000 (12.66 KG/hr)
5829				912JS20	
5839	LV404B9V9	F. POL		912PS12	450,000 (9.49 kg/hr)
5832	LV404B34V9	¼" F. NPT		912JS12	
5833			912JS20		



LV404B4



LV404B34V9



912JS12



2503-22

Automatic Changeover Regulator Outfits 5726B34, 5727B34, 5754B4, 5755B4

This outfit contains the equipment required to provide twin-stage regulation.



Ordering Information

Kit Number	Automatic Changeover Regulator Included	Inlet	Outlet F. NPT	Pigtails Included-2	Bracket Included	Vapor Capacity BTU/hr Propane
5726B34	7525B34	¼" Inverted Flare	½"	912FA20	2302-31	400,000 BTU/hr (8.4 KG/hr)
5727B34	7525B34			912FS20		
5754B4	7525B4			912FA20	2503-22	450,000 (9.49 kg/hr)
5755B4	7525B4			912FS20		



7525B4

Compact Regulators 302 Series

These compact regulators are designed for smaller outdoor grills and fish cookers. It is intended for use on small portable appliances that use 100,000 BTU's/hr. or less. It may not be used on fixed pipe systems per NFPA 58, 1995 edition.



912FA20

Ordering Information

Part Number	Type	Inlet Connection	Outlet Connection	Orifice Size	Factory Delivery Pressure	Adjustment Range	Bonnet Vent Position	Vapor Capacity BTU/hr. Propane*
302	Single Stage	¼" F. NPT	3/8" F. NPT	#50 Drill (1.77mm)	11" w.c. at 100 PSIG Inlet (27.4 mbar at 6.9 bar)	9" to 13" w.c. (22.4 to 32.3 mbar)	Small Vent Above Inlet	125,000 BTU/hr (2.6 KG/hr)
302V		¼" F. NPT					Drip Lip Above Inlet	
302V9		¼" F. NPT					Drip Lip at 9 o'clock	
302V9LS		Soft POL w/o orifice						

Maximum flow is based on 25 PSIG (1.72 BARG) inlet pressure and 9" w.c. delivery pressure.



302



302V

Regulators

High Pressure Industrial / Commercial Pounds-to-Pounds Regulators 597F Series

Designed to reduce propane gas container pressure down to between 3 and 100 PSIG (0.21 and 6.89 BARG). Ideal for liquid or vapor service, they can be used in a variety of applications including salamander heaters, weed burning torches, fish cookers, tar pot heaters, and other industrial type services.



597F

Ordering Information

Part Number	Adjustment Method	Inlet Connection	Outlet Connection	Adjustment Range	Capacity Determined at Set Pressure of PSIG*	Vapor Capacity BTU/hr Propane**
597FA	Tee Handle	1/4" NPT	1/4" NPT	1 to 15 PSIG (0.07 to 1.0 bar)	10 PSIG (0.7 bar)	1,750,000 BTU/hr (37 KG.hr)
597FB				10 to 30 PSIG (0.69 to 2.0 bar)	20 PSIG (1.4 bar)	3,000,000 BTU/hr (63 KG/hr)
597FC				20 to 45 PSIG (1.4 to 3.1 bar)	30 PSIG (2.0 bar)	3,500,000 BTU/hr (74 KG/hr)
597FD				40 to 100 PSIG (2.75 to 6.9 bar)	40 PSIG (2.75 bar)	4,500,000 BTU/hr (95 KG/hr)

* Set pressure established at 100 PSIG(6.9 BARG) inlet and a flow of 250,000 BTU/hr.

** Capacity determined at actual delivery pressure 20% less than set pressure with inlet pressure 20 PSIG higher than the set pressure.

NOTE: Care must be taken to prevent re-liquefaction of propane at normal temperatures by heat tracing or other effective means. Use of a relief valve upstream or downstream of these regulators is recommended in accordance with NFPA 58.

High Pressure Industrial / Commercial Pounds-to-Pounds Regulators 1580V and AA1580V Series

Designed to reduce LP-Gas and anhydrous ammonia container pressures to between 3 and 125 PSIG (0.21 and 8.62 BARG). Precision-built with a multi-million BTU capacity, the 1580V series is perfect for such big, tough jobs as crop dryers, asphalt batch mixing plants, road building "tar wagons", heat treating and other large industrial and commercial loads. It's also ideal as a first stage regulator in large multiple operations. The AA1580V series is ideal for use in anhydrous ammonia applications such as blue print machines and heat treating.



1580V

Ordering Information

Part Number	Service	Adjustment Method	Inlet & Outlet Connections	Recommended Delivery Pressure Range (PSIG)	A Width	B Height (max.)	Capacity Determined at Set Pressure of PSIG*	Vapor Capacity BTU/hr Propane**
1584VN	LP-Gas	Tee Handle	1/2" F. NPT	3 to 30 PSIG (0.2 to 2.0 bar)	2 15/16"	4 3/8"	20 PSIG (1.4 bar)	7,000,000 BTU/hr (148 KG/hr)
1584VL				25 to 50 PSIG (1.7 to 3.4 bar)			30 PSIG (2.0 bar)	7,500,000 BTU/hr (158 KG/hr)
1584VH				45 to 125 PSIG (3.1 to 8.6 bar)			60 PSIG (4.1 bar)	8,000,000 BTU/hr (169 KG/hr)
1586VN	LP-Gas	Tee Handle	3/4" F. NPT	3 to 30 PSIG (0.2 to 2.0 bar)	3 1/2"	7"	20 PSIG (1.4 bar)	11,000,000 BTU/hr (232 KG/hr)
1586VL				25 to 50 PSIG (1.7 to 3.4 bar)			30 PSIG (2.0 bar)	12,000,000 BTU/hr (253 KG/hr)
1586VH				45 to 125 PSIG (3.1 to 8.6 bar)			60 PSIG (4.1 bar)	14,000,000 BTU/hr (295 KG/hr)
1588VN	LP-Gas	Tee Handle	1" F. NPT	3 to 30 PSIG (0.2 to 2.0 bar)	3 1/2"	7"	20 PSIG (1.4 bar)	11,000,000 BTU/hr (232 KG/hr)
1588VL				25 to 50 PSIG (1.7 to 3.4 bar)			30 PSIG (2.0 bar)	12,000,000 BTU/hr (253 KG/hr)
1588VH				45 to 125 PSIG (3.1 to 8.6 bar)			60 PSIG (4.1 bar)	14,000,000 BTU/hr (295 KG/hr)

*Set pressure is established with 100 PSIG(6.9 BARG) inlet pressure and a flow of 500,000 BTU/hr.

**Capacity determined at 100 PSIG inlet, set pressure noted on chart at 20% drop.

NOTE: Care must be taken to prevent re-liquefaction of propane at normal temperatures by heat tracing or other effective means. Use of a relief valve upstream or downstream of these regulators is recommended in accordance with NFPA 58.

Regulators

High Pressure / High Temperature Industrial / Commercial Pounds-to-Pounds Regulators X1584V, X1586V, and X1588V Series

Designed to reduce LP-Gas container pressures to between 3 and 50 PSIG (0.21 and 3.45 BARG). Ideal for crop drying, heat treating, asphalt batch mixing and other large industrial and commercial load application utilizing high temperature LP-Gas or high temperature atmosphere under conditions up to 300°F. (148°C) Also ideal as a first stage regulator in large multiple operations.



X1584

Ordering Information

Part Number	Service	Adjustment Method	Width	Height	Inlet & Outlet Connections	Adjustment Range	Capacity Determined at Set Pressure of PSIG*	Vapor Capacity BTU/hr Propane**
X1584VN	LP-Gas	Tee Handle	2 7/8"	8 3/8"	1/2" F. NPT	3 to 30 PSIG (0.2 to 2.0 bar)	20 PSIG (1.37 bar)	7,000,000 BTU/hr (148 KG/hr)
X1584VL						25 to 50 PSIG (1.7 to 3.4 bar)	30 PSIG (2.06 bar)	7,500,000 BTU/hr (158 KG/hr)
X1584VH						45 to 125 PSIG (3.1 to 8.6 bar)	60 PSIG (4.1 bar)	8,000,000 BTU/hr (169 KG/hr)
X1586VN			3 5/16"	6 3/8"	3/4" F. NPT	3 to 30 PSIG (0.2 to 2.0 bar)	20 PSIG (1.37 bar)	11,000,000 BTU/hr (232 KG/hr)
X1586VL						25 to 50 PSIG (1.7 to 3.4 bar)	30 PSIG (2.06 bar)	12,000,000 BTU/hr (253 KG/hr)
X1586VH						45 to 125 PSIG (3.1 to 8.6 bar)	60 PSIG (4.1 bar)	14,000,000 BTU/hr (295 KG/hr)
X1588VN					1" F. NPT	3 to 30 PSIG (0.2 to 2.0 bar)	20 PSIG (1.37 bar)	11,000,000 BTU/hr (232 KG/hr)
X1588VL						25 to 50 PSIG (1.7 to 3.4 bar)	30 PSIG (2.06 bar)	12,000,000 BTU/hr (253 KG/hr)
X1588VH						45 to 125 PSIG (3.1 to 8.6 bar)	60 PSIG (4.1 bar)	14,000,000 BTU/hr (295 KG/hr)

* Set pressure is established with 100 PSIG (6.89 BARG) inlet pressure and a flow of 500,000 BTU/hr. propane.

** Capacity determined at 100 PSIG (6.89 BARG) inlet, set pressure noted on chart at 20% drop.

NOTE: Care must be taken to prevent re-liquefaction of propane at normal temperatures by heat tracing or other effective means. Use of a relief valve upstream or downstream of these regulators is recommended in accordance with NFPA 58.

Accessories

Designed for use as a relief valve on high pressure regulators to comply with NFPA 58 5.1.1 "High-pressure regulators with a rated capacity of more than 500,000 BTU/hr where permitted to be used on two stage systems shall incorporate an integral relief valve or shall have a separate relief valve."



3139-18

3139-26

3139-38

Ordering Information

Part Number	Set Pressure	Set Pressure	Regulator Settings	Connection Size	Height	Width	Flow Capacity at 120% of Set Pressure (SCFH Propane)	Pipe Away Adapter
3139-18	18 PSIG	1.24 BARG	10 PSIG (0.69 bar)	1/4" M. NPT	2 27/32"	1 1/16"	1357*	B-009412-2B
3139-26	26 PSIG	1.79 BARG	15 PSIG (1.03 bar)				1725**	
3139-38	38 PSIG	2.62 BARG	20 PSIG (1.38 bar)				2304***	

* Flow recorded at 21.6 PSIG (1.49 BARG) inlet pressure for this valve.

** Flow recorded at 31.2 PSIG (2.15 BARG) inlet pressure for this valve.

*** Flow recorded at 45.6 PSIG (3.14) inlet pressure for this valve.



Brackets

RegO Brackets are especially designed for use in installing RegO Regulators in applications requiring the use of a bracket.

Part Number	Material	For Use With Regulator Model:
2302-31	Cadmium Plated Steel	LV3403, LV404B34, LV404B39, LV404Y39
2503-22	Aluminum	LV404B4 LV404B9, LV404Y9 Series, LV5503 Series LV4403 Series
2503-19		

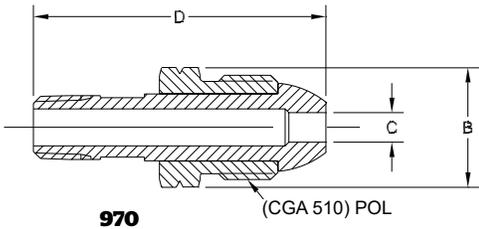


2503-19

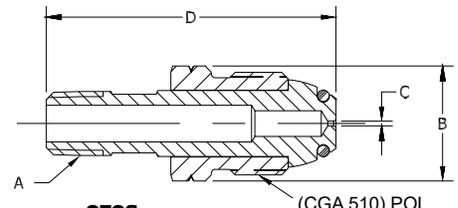
2503-22

2302-31

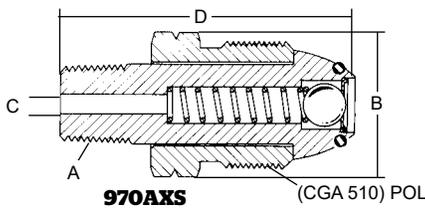
POL Adapters



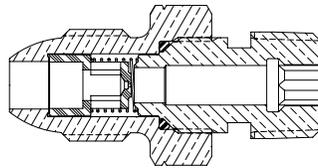
970
Hard Nose POL



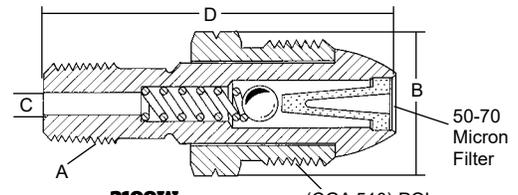
970S
Soft Nose POL w/60 DMS Orifice



970AXS
Soft Nose POL w/Excess Flow

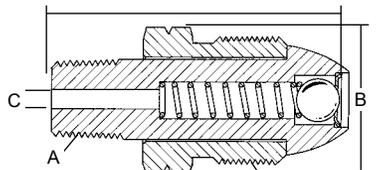


3188 Series

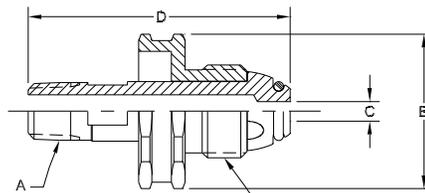


3199W
Heavy Duty Hard Nose POL w/Excess Flow

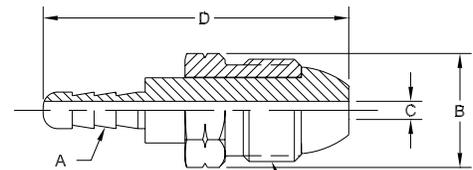
D



970AX
Hard Nose POL w/Excess Flow



970AW
970HT
Soft Nose POL w/Handwheel



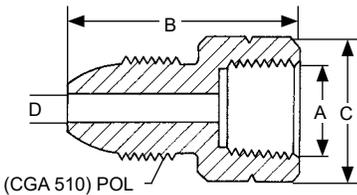
970JR
Hard Nose POL w/Hose Barb Connection

Ordering Information

Part Number	Material	A Outlet Thread	B Hex	C Drill	D Overall Length	Vapor at 100 PSIG Inlet (SCFH)	Liquid (GPM)	
970	Brass	1/4" M. NPT	7/8"	1/4"	2 1/2"	-	-	
970S				.040" orifice				
970AS				0.188" orifice				
970AX			7/8"	1/8"	5/32"	2 7/16"	404	1.10
970AXS								
970WXS			1 1/8"	3/16"	.040" orifice	2 1/2"	-	-
3199W								
970AW			1/4" Hose Barb	7/8"	5/32"	2 5/8"	-	-
970HT								
970JR			1/2" M. NPT	1 1/8"	5/32"	2 1/2"	350	.95
3188A	700	1.9						
3188B	1180	2.9						
3188C								

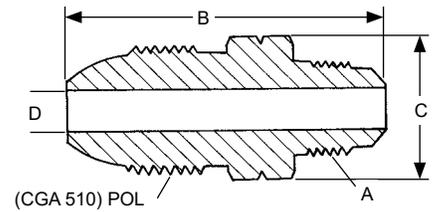
Note: All nipples incorporate wrench hex section.

POL Adapters



(CGA 510) POL

Male POL x Female NPT



(CGA 510) POL

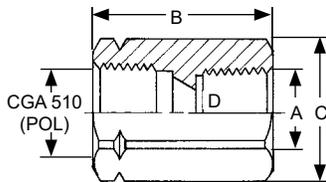
Male POL x Male NPT and SAE Flare

Ordering Information

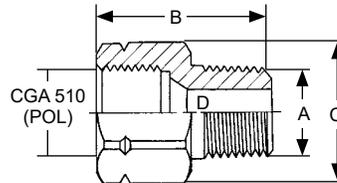
Part Number	Material	A F.NPT	B	C Hex	D Diameter
2906A	Brass	1/4"	1 1/2"	7/8"	9/32"
2906G		1/2"	2"	1 1/8"	
2906D					

Ordering Information

Part Number	Material	A	B	C Hex	D Diameter
2906D	Brass	3/8" M. NPT	2 5/64"	7/8"	1 1/32"
2906F		3/8" SAE Flare	2 3/32"		
2906E		1/2" SAE Flare	2 9/32"		



Female POL x Female NPT and Female POL



Female POL x Male NPT

Ordering Information

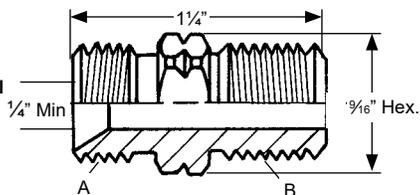
Part Number	Material	A	B	C Hex	D Diameter
5760A	Brass	1/4" F.NPT	1 1/8"	1 1/8"	1 1/32"
5760B		3/8" F.NPT			1 3/32"
5760C		1/2" F.NPT			7/16"
5760D		3/4" F.NPT	1 1/8"	1 1/8"	1 1/32"
5760S		POL (CGA 510)	2 1/8"	1 1/8"	

Ordering Information

Part Number	Material	A	B	C Hex	D Diameter
5761A	Brass	1/4" M.NPT	1 5/8"	1 1/8"	3/16"
5761B		3/8" M.NPT			1 3/32"
5761C		1/2" M.NPT			7/16"
5761D		3/4" M.NPT			

Hose Adapter

For use with fuel gases (LP-Gas, Acetylene).

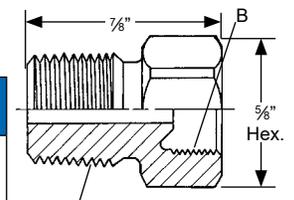


Ordering Information

Part Number	Material	A	B
1300	Brass	3/8"-18UNF (L.H.)	1/4" M. NPT

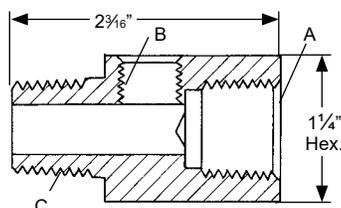
Ordering Information

Part Number	Material	A	B
15774-1	Brass	1/4" M. NPT	1/4" Female Inverted Flare



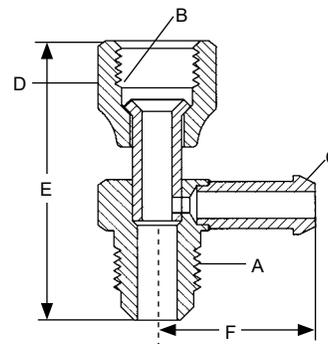
Female Inverted Flare x Male NPT

Pressure Gauge Adapter



Ordering Information

Part Number	Material	A	B	C	D	E	F
1328	Brass	3/8" SAE Male Flare	3/8" SAE Female Flare	3/8" Hose Barb	1 1/16"	2"	1 1/8"
1331		1/2" SAE Male Flare	1/2" SAE Female Flare		1"	2 1/8"	1 1/4"
1332		5/8" SAE Male Flare	5/8" SAE Female Flare		1 1/8"	2 1/2"	



Copper Pigtails 912 and 913 Series

Pigtails are available in a variety of connections, sizes and styles. Care should always be taken in selecting the proper pigtail for a particular application.



Note: RegO recommends a new pigtail be installed with every new and replaced regulator.



Straight Pigtails Ordering Information

Connections	Approximate Length	Part Number		
		¼" Tube		⅜" Tube
		⅝" Hex Short Nipple	1½" Hex Long Nipple	⅝" Hex Short Nipple
M.POL x M.POL	5"	-	-	913PS05
	8"	-	-	913PS08
	10"	-	-	913PS10
	12"	912PS12	-	913PS12
	20"	912PS20	912PA20	913PS20
	30"	912PS30	912PA30	913PS30
	36"	912PS36	912PA36	913PS36
	48"	912PS48	912PA48	913PS48
	60"	912PS60	912PA60	913PS48
¼" Inverted Flare x M.POL	12"	912FS12	-	-
	15"	912FS15	-	-
	20"	912FS20	912FA20	-
	30"	912FS30	912FA30	-
	36"	912FS36	912FA36	-
	48"	912FS48	912FA48	-
¼" M.NPT x M.POL	5"	-	-	913JS05
	12"	912JS12	-	913JS12
	20"	912JS20	912JA20	913JS20
	30"	912JS30	-	913JS30
	36"	912JS36	-	-
½" M.NPT x M.POL	12"	-	-	913LS12
½" M.NPT x ⅝" M.NPT	12"	-	-	913KL12

Dielectric Pigtails Ordering Information

Connections	Approximate Length	Part Number	
		¼" Tube	⅜" Tube
		⅝" Hex Short Nipple	⅝" Hex Short Nipple
M.POL x M.POL	12"	D912P12	D913P12
	20"	D912P20	D913P20
	30"	D912P30	D913P30
	48"	-	D913P48
¼" M.NPT x M.POL	12"	D912J12	-
	20"	D912J20	-
	30"	D912J30	-



Presto-Tap® Pigtails Ordering Information

Connections	Approximate Length	Part Number	
		¼" Tube	⅜" Tube
		⅝" Hex Short Nipple	⅝" Hex Short Nipple
M.POL x M.POL	12"	PT912PS12	PT913PS12
	20"	PT912PS20	-
	48"	PT912PS48	-
¼" Inverted Flare x M.POL	20"	PT912FS20	-
¼" M.NPT x M.POL	12"	PT912JS12	PT913JS12
	20"	PT912JS20	-



913PS12G



913PS12H

Bent Pigtails Ordering Information

Connections	Approximate Length	Part Number		Type/Degree of Bend
		⅜" Tube		
		⅝" Hex Short Nipple		
¼" M. NPT x M. POL	5"	913JS05A		90°
M. POL x M. POL		913PS05A		
	12"	913PS12G		270° Right Hand
		913PS12H		270° Left Hand

Accessories

Tee Check Manifolds

1350R and 1450R

For use in systems that require uninterrupted gas service during cylinder exchange. Especially for summer cottages, mobile homes and single appliance loads.

Part Number	Inlet Connections	Outlet Connection
1350R	F. POL	M. POL
1450R	¼" Inverted Flare	¼" M. NPT



1350R



1450R

Multiple Cylinder Manifolds

1350E and 1450E

Use with suitable pigtails to connect multiple cylinders together. Ideal for loads that require more than one cylinder to be in service at a time.

Part Number	Inlet Connections	Outlet Connection
1350E	F. POL	M. POL
1450E	¼" Inverted Flare	¼" M. NPT



1450E



1350E

Adjustable Flexible Vent Kit

Part Number	Flex Tubing Length	Reusable End Connectors	90° Elbow	Mounting Bracket
LV960-48	48" (4 feet)	2	1	3
LV960-72	72" (6 feet)			4
LV960-120	120" (10 feet)			5
LV960-80*	NA	NA	NA	NA

*90° Elbow only



LV960

Replacement Vent Screens

Part Number	Regulator Outlet Connection
4403-30	¾" F. NPT
2302-43	¾" F. NPT



4403-30

Test Kits

Low Pressure Test Set

2434A Series

This kit provides the equipment necessary for checking regulator delivery pressure (low pressure) at the appliances. The basic set contains a 2424A-2 low pressure gauge and a 3 foot — ¾" O.D. flexible synthetic rubber tube. Adapters are also available.

Part Number	Contents	Adapters	Adapter size
2434A	Test Kit	1328	¾" OD
		1331	½" OD
		1332	⅝" OD



2434A



1328 Adapter

Water Manometer Kit

1212 Kit

The water manometer kit is especially suited for use with low pressure LP-Gas systems. It is ideal for pressure checks downstream of the low pressure regulator and at the appliances.

Part Number	Description
1212 KIT	Flexible Tube Water Manometer Kit



1212 KIT

Accessories

High Pressure Gauge Adapter

2962

Designed for testing high pressure lines. Adapter has 0 to 300 PSIG (0 to 20.68 BARG) gauge. A bleeder valve allows you to bleed down to correct pressure during pressure tests.

Part Number	Inlet Connection	Outlet Connection	Pressure Gauge Range (PSIG)	Pressure Gauge Range (BARG)
2962	Soft Nose M. POL	F. POL	0 - 300	0 - 20.68



Adhesive Warning Labels

These adhesive warning labels are intended for application as close as possible to the LP-Gas regulator once the regulator has been installed.

Part Number	Description
LV4403-400	Adhesive Warning Label

DANGER	READ THIS FIRST	WARNING
LP-GAS IS EXTREMELY FLAMMABLE AND EXPLOSIVE		
<p>AVOID SERIOUS INJURY AND PROPERTY DAMAGE. IF YOU SEE, SMELL OR HEAR ESCAPING GAS...EVACUATE AREA IMMEDIATELY! CALL YOUR LOCAL FIRE DEPARTMENT! DO NOT ATTEMPT TO REPAIR. DO NOT STORE IN BUILDING OR ENCLOSED AREA. DO NOT USE ON HOT AIR BALLOONS OR AIRCRAFT.</p> <p>Make sure you are thoroughly trained before you attempt any regulator installation or maintenance. Improper conditions or procedures can cause accidents resulting in property damage and personal injury.</p> <p>Become thoroughly familiar with NPGA Safety Pamphlet 306 "LP-Gas Regulator and Valve Inspections & Maintenance" and RegO Safety Warning "LP-Gas Regulators" found in the regulator section of the L-500 & L-102 Catalogs. Follow its recommendations.</p> <p>Know and understand NFPA Pamphlet 58 "Liquefied Petroleum Gas Code", which is the law in many states. This publication is available from NFPA, Batterymarch Park, Quincy, MA 02269. Following its requirements is essential in the safe use of LP-Gas. Section 4.4 states: "Persons who transfer liquid LP-Gas, who are employed to transport LP-Gas, or whose primary duties fall within the scope of this code shall be trained in proper handling procedures. Refresher training shall be provided at least every three years and shall be documented."</p> <p>Pamphlet 58 also states that "All regulators for outdoor installations, except regulators used for portable industrial applications, shall be designed, installed or protected so their operation will not be affected by the elements (freezing rain, sleet, snow, ice, mud or debris). This protection may be integral with the regulator."</p> <p>Vents must be clear and fully open at all times. An obstructed vent will prevent the regulator from functioning properly and may result in property damage and personal injury.</p> <p>Regulators should be installed with the vent facing down or otherwise covered for protection.</p> <p>Twin-Stage Regulators should be installed completely under cover and/or with screened vent pipe away adapters that position both vents in a down position without obstructing flow through the vents.</p> <p>Make sure piping is clean and free from foreign material (such as dirt, corrosion, chips, pipe joint compound, etc.) Always replace the pigtail when replacing a regulator. Thread sealant used on piping must be compatible with LP-Gas.</p> <p>Make sure the use and location of the regulator(s) as a component(s) of the LP-Gas system to be installed is proper. (Avoid missing LP-Gas equipment.) See the following RegO publications: L-500 & L-102 Catalogs and the LP-Gas Serviceman's manual.</p> <p>For underground installations, make sure that water, mud, dirt, and insects cannot get into the regulator, and that the regulator is easily accessible for regulator maintenance. Follow NPGA Bulletin 401. See RegO Safety Warning "LP-Gas Regulators" found in the regulator section of the L-500 & L-102 Catalogs.</p> <p>Check regulator and installation for leaks following NFPA #54 and NPGA Bulletin 403 "Pressure Testing and Leak Checking LP-Gas Piping Systems".</p> <p>In selecting a label for posting at the installation site, consider RegO part number 2403-400 along with your own, NPGA's and others.</p> <p>Remember to instruct the owner/user/customer in safety matters concerning LP-Gas and this equipment. See RegO Safety Warning "LP-Gas Regulators" found in the regulator section of the L-500 & L-102 Catalogs.</p> <p>RegO requests that this information be forwarded to your customers. Additional copies are available from RegO and your authorized RegO Distributor.</p>		
<p>REGO <small>Printed in USA 08A-0910-0390 Part number LV4403-500</small></p> <p>Elon, N.C. 27244 U.S.A. Phone (336) 449-7707 Fax (336) 449-6594 www.regoproducts.com</p>		

LV4403-500

DANGER WARNING

LP-GAS IS EXTREMELY
FLAMMABLE AND EXPLOSIVE

AVOID SERIOUS INJURY AND PROPERTY DAMAGE. IF YOU SEE, SMELL, OR HEAR ESCAPING GAS... EVACUATE AREA IMMEDIATELY! CALL YOUR LOCAL FIRE DEPARTMENT! DO NOT ATTEMPT TO REPAIR. DO NOT STORE IN BUILDING OR ENCLOSED AREA. DO NOT USE ON HOT AIR BALLOONS OR AIRCRAFT.

Insist that your LP-Gas dealer regularly inspect and maintain this installation and properly instruct you in safety matters.

Make sure ice, snow drifts, dirt, bugs and other foreign material do not obstruct vent passage-ways and openings. The vent opening must have a screen installed. If screen is missing, call your gas dealer for immediate examination and replacement.

DO NOT REMOVE, DEFACE OR OBLITERATE THIS LABEL.
DO NOT FILL CONTAINER UNLESS THIS LABEL IS READABLE.

ADDITIONAL SAFETY INFORMATION IS AVAILABLE FROM

ECII *Engineer ed Contr ols*
International, Inc.

Printed in U.S.A. 04-0994-1189
Part Number LV4403-400

100 RegO Drive PO Box 247 Elon College, NC 27244 USA Phone (336) 449-7707 Fax (336) 449-6594 www.regoproducts.com

LV4403-400

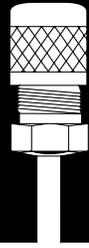
Warning Notice

The following warning information, Part Number LV4403-500, is included with each shipment of regulators to the first purchaser of the product from the factory.

This information is intended to be forwarded throughout the product distribution chain. Additional copies are available from RegO and Authorized Product Distributors.

TM

PRESTO-TAP®



About Presto-Tap® Leak Detection System

Presto-Tap® LLC, founded in 1998 and formerly headquartered in Greenville Mississippi, is committed to developing and marketing safety focused, user friendly products to serve the propane gas industry. These patented UL Listed products save time and money while adhering to long standing recommended NFPA 54 & 58 methods.

When used at tank pressure locations Presto-Tap® products allow a reduction of fugitive emissions by up to 90 percent without the necessity of wrenches or breaking the system for leak testing and / or obtaining vapor pressure readings.

Presto-Tap®, brand of products are now part of the RegO portfolio, offers UL Listed leak testing products including the LDS2000/RV factory installed and tested in the "READY to GO" series line of valves as an OEM feature. The LDS2000/RV is also sold separately for installation into valves with 1/8" test ports not previously equipped.

Additionally, leak testing at tank pressure can be achieved in older systems not having the 1/8" test port in the valve with UL Listed PT912 pigtailed or PT913 Hogtailed along with the TPF (tank Pressure fitting).

The PT6800 series (300 pound) line of gauges featuring the patented ambient temperature faceplate is designed for use with permanently installed Presto-Tap® tank pressure testing products providing an indication of the presence of liquid propane in the container.

For leak testing and obtaining lock up and flow readings downstream of first stage regulators, installing the Presto-Tap® LDS2000/RV into the 1/8" regulator port as a permanent fixture in the system and utilizing a PT30 series gauge is recommended.

For leak testing, obtaining lock up and flow readings downstream of second stage regulators, installing the LDS2000/RV in the 1/8" regulator port as a permanent fixture in the system and utilizing a PT-OZ series gauge is recommended. The LDS2000/RV installed into appliance ports will provide easy access for diagnostics and troubleshooting with water or mechanical manometers.



LDS2000/RV Presto-Tap® Leak Detection System

Installation And Operation

NOTE: When installing the LDS2000/RV (UL Listed Test Fitting) relocate the UL tag over the 1/8" MNPT threads below the wrench flats and apply LP Gas approved thread tape or thread sealant if everseal is not present, tighten securely and check for leaks.

Leak Testing Applications At Tank Pressure

The Presto-Tap® fittings can be accessed at tank pressure points to determine out-of-gas situations by observing the 300 pound ambient temperature gauge. The LDS2000/RV fitting is designed to be installed into RegO tank service valves and Multivalve® assemblies with 1/8" ports that do not already have the LDS2000/RV pre-installed. If the service valve does not have the 1/8" port tank pressure may be obtained for leak testing with either a Presto-Tap® pigtail installed between the service valve and first stage regulator or TPF fitting and POL X 1/4 RegO pigtail into a 1/4" regulator inlet. This will eliminate the necessity of breaking into the system by removing the pigtail from the service valve and installing test equipment only to be removed after testing.

Tank pressure leak testing with the patented Presto-Tap® PT6800 series 300 pound gauge.

To determine if the system is leaking connect the PT6800 series 300 pound gauge to the Presto-Tap® LDS2000/RV product and turn the service valve on administering full container pressure to the system, then close the valve and release approximately 10 pounds of pressure with the gauge bleeder to ensure the integrity of the service valve and to determine the system is not being fed from container pressure. Observe the pressure reading for a period of 3 minutes.

There should be no increase or decrease in the pressure reading for three minutes. If the gauge rises, the service valve is leaking through and needs repair. If the gauge falls the system is leaking. If found to be leaking the tank service valve must be closed and the customer and service personnel informed of the test results and recorded. The system must then be repaired and re- tested to be leak free before being placed back into service.

Leak Testing Downstream Of First Stage Regulator Locations

The 1/8" plug may be removed from the regulator port and the LDS2000/RV installed in the downstream side of the first stage regulator as a permanent fixture in the regulator port. The black UV resistant cap should remain intact until pressure readings are taken and / or leak testing is done.

To acquire pressure readings, attach a 30 pound gauge (Presto-Tap® PT-30 SERIES) fitted with gauge bleeder and Presto-Tap® RV/QA quick adapter to the LDS2000/RV installed into the first stage regulator port. Leak testing can be performed at this point by opening the service valve admitting full container pressure to the system and then closing the service valve and reducing the pressure by 2 pounds with the gauge bleeder, unlocking the regulator so the gauge communicates with the entire system. There should be no increase or decrease in pressure for three minutes.

If the gauge rises, the service valve is leaking through. If the gauge falls the system is leaking. If found to be leaking the tank service valve must be closed and the customer and service personnel informed of the test results and the recorded. The system must then be repaired and re- tested to be leak free before being placed back into service.

NOTE: Testing at this location does not provide tank vapor pressure readings or indicate "out of gas" situations.

Leak Testing Downstream Of Second Stage Regulator Locations

The 1/8" plug may be removed from the regulator port and the LDS2000/RV installed in the downstream 1/8" tap of the second stage regulator as a permanent fixture. The black UV resistant cap should remain intact until pressure readings are taken and / or leak testing is done.

To acquire pressure readings, attach a water manometer or mechanical manometer (Presto-Tap® PT-OZ series gauge) fitted with a RV/QA adapter or (Presto-Tap® MHA-SP) for other gauging devices to the LDS2000/RV installed in the downstream side of the regulator. Admit full container pressure to the system and observe the pressure reading for the regulator lock up and record findings.

To perform a leak test, close the service valve and bleed off enough gas with the gauge bleeder to reduce the pressure to 9" water column + or - 1/2" ensuring that both first stage and second stage regulators are unlocked, ensuring the gauging device is communicating with the entire system. There should be no increase or decrease in the pressure reading for 3 minutes and the test results recorded. An increase in pressure indicates a faulty service valve and a decrease in pressure indicates a leak in the system in which case customer and service technician must be informed and the system must be turned off and removed from service until repairs are made. If no leakage is determined the system can be purged and put back into service.

Downstream Installation (Appliance Testing) Leak Testing

The 1/8" MNPT end of the LDS2000/RV may be installed into pressure tap openings in appliance control valves and left as a permanent part of the system. Control valve pressure readings can be obtained for diagnostics and appliance leak testing can be obtained by attaching the appropriate gauging device (water manometer or mechanical manometer) to the installed Presto-Tap® LDS2000/RV and closing the upstream valve isolating the appliance from the system.

A system leak test may be performed at this point by determining that there are no appliance pilots and the turning the system on and then back off.

Then release enough pressure to drop the pressure to 9" wc + or - 1/2" ensuring all system regulators are unlocked. The gauging device should be observed for a period of 3 minutes with no gain or loss of pressure.

If the system is found to be leaking it must be turned off and the customer and service personnel informed and put back into service after the leak has been corrected. As with any pressure valve located in a structure. **"BE SURE TO REPLACE THE BLACK UV RESISTANT CAP"**.

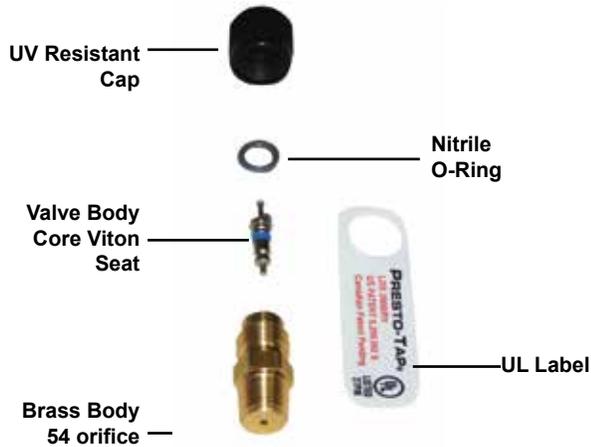
External Service Line Shut Off Valve

The Presto-Tap® LDS2000/RV is also designed to be installed into service line shut off valves with 1/8" pressure taps at both first stage and second stage locations. It is particularly helpful installed just upstream of the second stage regulator prior to entering the structure. If a downstream leak has been detected at the tank location (tank pressure or first stage test), the source of the leak can be isolated and determined to be either inside or outside the structure.

Presto-Tap® valves With The LDS2000/RV Pre-Installed Part Number LDS LPV.

Presto-Tap® Leak Testing System

Patented LDS200RV Design Features



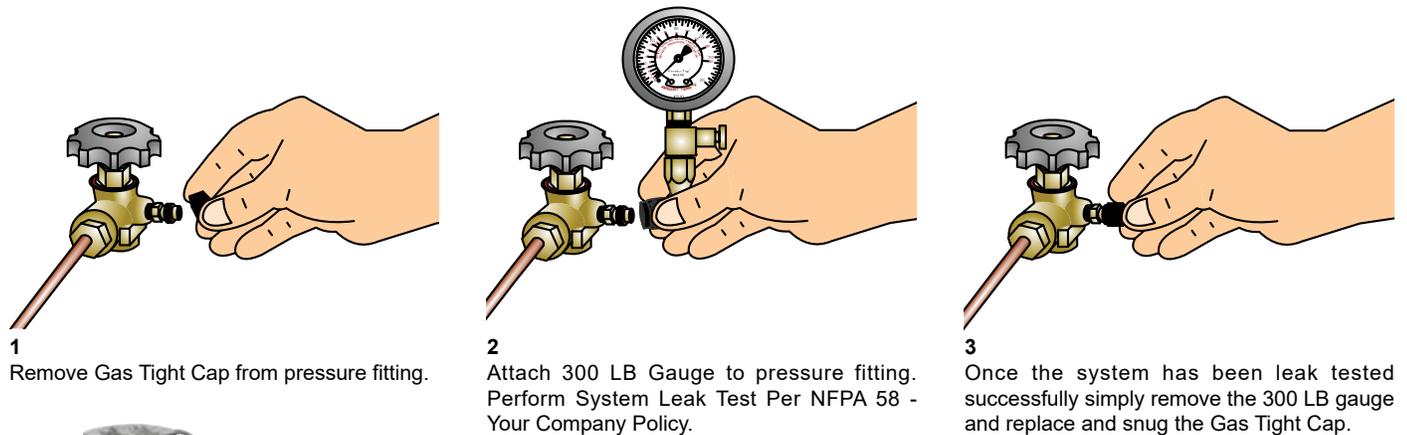
US Patent # 6,209,562

The Patented Presto-Tap® LDS200RV pressure fitting is designed to be one of the most cost efficient and simplest methods to quickly and easily perform system pressure checks.

- Patented & UL Listed.
- Provides instant ROI after only one use.
- Will reduce fugitive emissions by up to 90%.
- Can be installed into valves, regulators & appliances.
- Eliminates the need to break the system to perform a leak test.

Presto-Tap® Leak Detection System Leak Test Procedure

The Presto-Tap® fitting installed into the test port located on the downstream side of the service valve is designed to allow quick and easy access when performing a system leak test. It eliminates the need to break the system to install expensive test block apparatus. The following PT9102R series service valve shown here, illustrates how to use the Presto-Tap® fitting to perform a high-pressure system leak test. This same procedure applies to the PT7556R, PG8475, PT6542 and PT6543 series valves not shown here that carry the same feature.



1 Remove Gas Tight Cap from pressure fitting.

2 Attach 300 LB Gauge to pressure fitting. Perform System Leak Test Per NFPA 58 - Your Company Policy.

3 Once the system has been leak tested successfully simply remove the 300 LB gauge and replace and snug the Gas Tight Cap.



PG8475RL Series



PT7556 Series



PT9102R Series



**PT6543 Series
PT6542 Series**

Only trained qualified personnel should perform leak testing. As for any LP-Gas installation, service or repair it is required that time be taken to ensure safety and all federal, state and local regulations are met.

Presto-Tap® Cylinder Valves & Multivalve® Assemblies

9102 Series

Application

Designed for vapor withdrawal service on ASME and DOT containers or in fuel line applications. Since none of these valves have an integral pressure relief valve, they may only be used as an accessory valve on containers that have an independent pressure relief valve sufficient for that container's capacity. The Fixed liquid level gauge is provided with a #72 low Emission fixed liquid level vent valve.



PT9102

Ordering Information

Part Number	Bonnet Style	Container Connection	Service Connection	Fixed Liquid Level Vent Valve	Dip Tube Length w/ Deflector
PT9101R1	MultiBonnet®	3/4" M NGT	F. POL (CGA 510)	NA	NA
PT9102D11.1	Standard			#54 Standard	11.1"
PT9102D11.7					11.7"
PT9102R11.1	MultiBonnet®			#54 Standard	11.1"
PT9102R11.7					11.7"
DPT9102D11.1*	Standard			#72 Low Emission	11.1"
DPT9102D11.7*					11.7"
DPT9102R11.1*	MultiBonnet®			#72 Low Emission	11.1"
DPT9102R11.7*					11.7"

*Presto-Tap® fitting Installed in Gauge Port

G8475RL Series

Application

These Multivalve® assemblies are designed for use in single opening ASME containers equipped with a 2 1/2" M. NPT riser. They can be used with underground ASME containers up to 639 sq. ft. surface area, and above ground ASME containers up to 192 sq. ft. surface area. A separate opening is required for liquid withdrawal. The MultiBonnet® assembly is standard on this valve.



PG8575RL

Ordering Information

Part Number	Container Connection	Service Connection	Filling Connection	Vapor Equalizing Connection	Fixed Liquid Level Vent Valve	Diptube Length	Fixed Liquid Level Vent Valve	Pressure Relief Valve			
								Setting	Part Number	Flow Capacity in SCFM AIR	
										UL	ASME
PG8475RL	2 1/2" F. NPT	F. POL (CGA 510)	1 3/4" M. ACME Low Emission	1 1/4" M. ACME	#54 Standard	30"	Yes	250 PSIG	M3131G	2,020	1,939
DPG8475RL					#72 Low Emission					2,020	1,939

* Dip tube not installed, may be cut by customer to desired length.

Presto-Tap® Cylinder Valves & Multivalve® Assemblies

PT6542, PT6543 Series

Application

These Multivalve® assemblies permit vapor withdrawal from ASME containers up to 50 sq. ft. surface area and DOT containers up to 420 lbs. propane capacity. They allow on-site cylinder filling without interrupting gas service.



PT6543R

Ordering Information

Part Number	Bonnet Style	Application	Container Connection	Service Connection	Filling Connection	Dip Tube Length with Deflector	Pressure Relief Valve Setting	For Use In Cylinders w/ Propane Capacity Up To.**	UL Flow Capacity @ 120% of set pressure SCFM (air)
PT6542A12.0	Standard	ASME*	1" M. NGT	F. POL (CGA 510)	1¼" M. ACME	12.0"	250 PSIG	-	1530
PT6542R12.0	MultiBonnet® assembly								
PT6543A11.1	Standard	DOT	1" M. NGT			11.1"	375 PSIG	420 lbs. Propane	
PT6543R11.1	MultiBonnet® assembly								
PT6543A11.7	Standard								
PT6543R11.7	MultiBonnet® assembly								

** Per CGA Pamphlet S-1.1.

PT7556R Series

Application

These compact Multivalve® assemblies are especially suited for vapor withdrawal of ASME containers where compact groupings of components are necessary. Separate filler valves and pressure relief valves are required.



PT7556R

Ordering Information

Part Number*	Container Connection	Service Connection	Vapor Equalizing Connection	Diptube Length	Fixed Liquid Level Vent Valve	Read to Go™
PT7556R12.0	3/4" M. NGT	F. POL (CGA 510)	1¼" M. ACME	12"	#54 Standard	Plugged
DPT7556R12.0**					#72 Low Emission	Yes

* Other tube lengths available.

** Equipped with Presto-Tap® fitting in gauge port

Presto-Tap® to RegO Part Number Cheat Sheet

Item	Description
14FMH12	Black Rubber Hose ,12" X 14" M.NPT X 1/4 F.NPT
14MHB	Hose barb Adapter 1/4 M.NPT X 1/4 Hose Barb
14MMXH36	Flex Hose 36" X 1/4 M.MNP X 1/4 M.NPT (Hose Only)
AHW316	Allen Wrench 3/16 Hex Key
KGA-P	1/4" F.NPT X 1/4 Male Flare Access with 1/4 Black Plastic Cap with Lanyard
LDS2000RV	1/8" M.NPT X 1/4" Male Flare Tank and Regulator Test Fitting
MHA-90P	Manometer Hose Adapter With 90Degree Quick Adapter Gauge Bleeder and 1/4" Hose Barb
MHA-KITP	1/4 Male Flare with Black Plastic Cap and Lanyard X 1/4" Hose Barb
MHA-SP	Manometer Hose Adapter With Straight Quick Adapter Gauge Bleeder and 1/4" Hose Barb
PT30CA-KGAP	Gauge 30 Pound with 4" Luminescent Dial, 1/4 Male Flare Adapter and Magnet on Back
PT30LP	30 Pound Gauge (gauge Only)
PT30LP-B90	30# Gauge With Bleeder Valve, 90 Degree Quick Adapter and Protective Plastic Case
PT30LP-BH90	30# Gauge With Bleeder Valve, 12" Black Rubber Hose, 90 Degree Quick Adapter and Protective Plastic Case
PT30LP-BHX	30# Gauge With Bleeder Valve, 36" Flex Hose, Straight Quick Adapter and Black Plastic Protective Case
PT30LP-BS	30# Gauge With Bleeder Valve, Straight Quick Adapter and Black Plastic Protective Case
PT30LP-KGAP	30# Gauge with 1/4" male Flare Adapter, Magnet and Black Plastic Cap with Lanyard
PT5	5# Gauge (Gauge Only)
PT5-B90	5# Gauge With Bleeder Valve, 90 Degree Quick Adapter and Black Plastic Protective Case
PT5-KGAP	5# Gauge With 1/4" Male Flare Adapter, Blue Rubber Cover, Magnet and Black Plastic Cap with Lanyard
PT6800	300# Ambient Temperature Gauge (Has Temperature Scale With Correlating LPG Vapor Pressure) (Gauge Only)
PT6800-90	300# Ambient Temperature Gauge, 90 Degree Quick Adapter and Black Plastic Protective Case
TPF	Tank Pressure Fitting, 1/4" F.NPT X 1/4" M.NPT (Tee) with 1/4" Test Fitting

Item	Description
PT6800 -KGAP	300# Ambient Temperature Gauge 1/4" Male Flare Adapter and Magnet
PT6800-B90	300# Ambient Temperature Gauge, Bleeder Valve, 90 Degree Quick Adapter with Black Plastic Protective Case
PT6800-BH90	300# Ambient Temperature Gauge, Bleeder Valve, 12" Black Rubber Hose, 90 Degree Quick Adapter
PT6800-BHS	300# Ambient Temperature Gauge, Bleeder Valve, 12" Black Rubber Hose, Straight Quick Adapter
PT6800-BHX	300# Ambient Temperature Gauge, Magnet, Bleeder Valve, 36 Inch Flex Hose, Straight Quick Adapter
PT6800-S	300# Ambient Temperature Gauge, Straight Quick Adapter and Plastic Protective Case
PT-AF14	1/4" M.NPT X 1/4 Flare Pressure Access Fitting
PTFLEX-KITP	36" Flex Hose, Bleeder Valve, with Straight Quick Adapters (Used With Kit Gauges)
PT-OZ	0-35 inch wc 0-20 OZ (Gauge Only)
PTOZ-B90	0-35 inch wc 0-20 OZ Gauge, Gauge Bleeder, 90 Degree Quick Adapter With Black Plastic Protective Case
PTOZ-BH90	0-35 Inch wc 0-20 OZ Gauge, Bleeder Valve, 12 inch black Rubber Hose, 90 Degree Quick Adapter
PTOZ-BHX	0-35 Inch wc 0-20 OZ Gauge, Bleeder Valve, 36 inch Flex Hose, Straight Quick Adapter
PTOZ-BS	0-35 Inch wc 0-20 OZ Gauge, Bleeder Valve, Straight Quick Adapter and Black Plastic Protective Case
PTOZ-KGAP	0-35 inch wc 0-20 OZ Gauge, 1/4 Male Flare Adapter, Black Rubber Cover and Magnet
PTU-KIT	Universal Service Tech Diagnostic / Leak Test Kit for All Stages of the System
RCW716	7/16" 12 Point Ratcheting / Combo Wrench
RVL	1/8" M.NPT X 1/4 Flare Low Pressure Regulator Valve
RVQA-90	1/4" F.NPT X 1/4 F. Flare Adapter 90 Degree
RVQA-S	1/4" F.NPT X 1/4 F. Flare Adapter Straight
RVQA-G	Replacement Gasket For Quick Adapters
RVQA-P	Replacement Actuator Pin For Quick Adapters

ATTENTION

This gauge has a pressure relief vent. After shipment, pointer may not rest at zero due to internal case pressure buildup caused by temperature variations.

To restore gauge to operating condition, move yellow lever of fill plug to the "Open" position and return to the "Closed" position.

DO NOT REMOVE THE PLUG.



Open Position Results in Liquid Leak



Closed Position



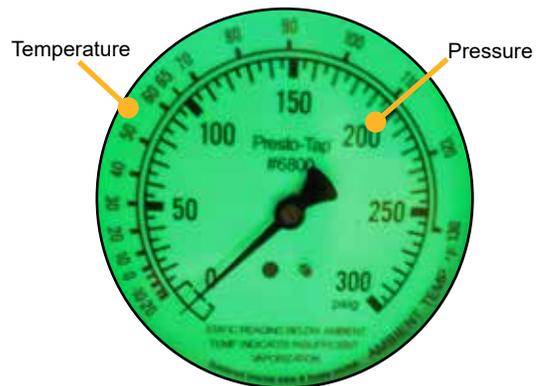
PT6800-KGA



PT30LP-KGA

PT6800 Pressure Gauges

Ambient pressure temperature gauges are designed to indicate the container vapor pressure. If the Ambient temperature on the gauge (indicated by pressure reading on the gauge) is close to the outside surrounding ambient temperature, there is liquid in the tank. If the pressure reading is materially lower, there is vapor in the tank and an interruption of service may have occurred or the tank is too small to supply the BTU load downstream. If there is any doubt of indicated vapor pressure in a system during a system inspection a leak check must be conducted.



Presto-Tap® LDS2000/RV Fitting

Application

The patented, UL Listed Presto-Tap® LDS2000/RV is designed to obtain pressure readings and perform leak test without breaking into the system by utilizing the proper Presto-Tap® gauge for the selected testing location. Legal installed at any point in the system.

Features

- Brass 1/8" MNPT X 1/4" Flare Housing with #54 Orifice and Everseal
- Valve Core with Viton Seat
- UV Resistant Cap with Nitrile "O" Ring
- UL Label

Materials

Valve Body..... Brass
 Core..... Stainless Steel w/Nylon Seal & Viton seat
 Cap..... UV Resistant Plastic w/Nitril "O" Ring
 Label..... UV resistant Plastic w/Marking



LDS2000RV

Ordering Information - Tank Pressure Application (UL Listed)

Part Number	Thread	Core	Body Wrench Flat	Cap Material	#54 Orifice	Application
LDS2000RV	1/8" M. NPT	Viton	7/16"	UV Resistant Plastic	YES	Tank Pressure

Presto-Tap® RVL & PT-AF14 Fitting

Application

The RVL & PT-AF14 is designed to obtain pressure readings and perform leak test without breaking into the system by utilizing the proper Presto-Tap® gauge installed at the regulator gauge port location.



RVL

Ordering Information - Low Pressure Application (Non UL Listed)

Part Number	Thread	Core	Body Wrench Flat	Cap Material	#54 Orifice	Application
RVL	1/8" M. NPT	Viton	7/16"	Brass	NO	Regulator Installation
PT-AF14	1/4" M. NPT					

Patented Tank Pressure Fitting TPF Series

Application

Low cost, permanently installed fitting between tank service valve and first stage regulator providing leak test capability without the use of tools. Eliminates the need to discard pigtail to access tank pressure.

Features

- Easily installed with an adapter such as male POL x 1/4" F.NPT and 1/4" female POL x 1/4" M.NPT



TPF

Ordering Information

Tank Pressure Fitting			
Part Number	Inlet	Outlet	Reduces Emissions
TPF	1/4" F. NPT	1/4" M. NPT	Up to 90%

Presto-Tap® Pigtails

Application

Presto-Tap® pigtails are fitted with the patented LDS2000-RV fitting for leak check purposes. These pigtails are available in a variety of sizes and styles. Care should always be taken in selecting the proper pigtail for a particular application.

Features

- UI listed
- Utilizes tried and true long-standing suggested leak test methods
- Saves time and money
- Never break the system to perform a system leak test
- Avoids contaminating regulator seats with debris causing high lock up pressures
- Reduces fugitive emissions by up to 90%



Ordering Information

% Hex Short Nipple	Patented Presto-Tap® Pigtail Part Numbers ¼" Tube		Fugitive Emission Reduction		
	Connections	Approximate Length	Pigtail Length	¼" Tube	⅜" Tube
PT912PS12	M.POL x M.POL	12"	12"	80%	91%
PT912PS20		20"	20"	82%	NA
PT912PS48		48"	48"	88%	NA
PT912FS20	¼" Inverted Flare x M. POL	20"			
PT912JS12	¼" M.NPT x M.POL	12"			
PT912JS20		20"			
⅜" Tube					
% Hex Short Nipple	Connections	Approximate Length			
PT913PS12	M. POL x M. POL	12"			
PT913JS12	¼" M. NPT x M. POL	12"			

United States Patents 5,787,916 and 5,992,438 and 6,209,560
6,209,562 apply. Canadian Patent Approved

Universal Service Tech Diagnostic & Leak Test Kit for All Stages of the Gas System PTU-KIT

Application

Kit with gauges for obtaining pressure readings and leak testing at tank pressure, first stage, two pound and low pressure (0-20 OZ) locations.

Features

- 12" Gate Mouth Bag W/6 Outer Pockets & 15 Inner Pockets
- Presto-Tap® 300 lb psi/Ambient Temperature gauge w/1/4" FPT x 1/4" M Flare Access, 1/4" Flare Cap w/Retainer strap & Black Magnet
- Presto-Tap® 30 lb psi gauge w/1/4" FPT x 1/4" M Flare Access, 1/4" Flare Cap w/Retainer strap & Red Magnet
- Presto-Tap® 5 lb gauge w/1/4" FPT x 1/4" M Flare Access, 1/4" Flare Cap w/Retainer strap & Blue Protective Rubber Cover with Magnet
- Presto-Tap® 0-20 OZ (0-35" wc) Gauge w/1/4" FPT X 1/4" M Flare Access & 1/4" Flare Cap w/retainer Strap & Black Protective Rubber Cover with Magnet
- 1/4" Flare Adapter x 1/4" Hose Barb
- 36" Universal Flex Hose w/Gauge Bleeder & (2) RV-QA Straight
- Tank & Regulator Fitting w/54 Orifice
- Quick Adapter Gaskets
- 7/16" 12 Point Open Face Ratcheting Combo Wrench
- 3/16" Allen Wrench / Hex Key



Materials

PT6800 KGAP w/adapter	Stainless Steel- Brass
PT30- KGAP w/adapter	Stainless Steel- Brass
PT5-KGAP - w/adapter	Steel- Brass
PTOZ-KGAP w/adapter	Steel- Brass
MHA-KITP	Brass
3/16 Allen/ Hex key	Steel
7/16 Ratcheting wrench	Steel
PTFLEX-KITP	Brass/Composite
LDS2000/RV	Brass
KIT BAG	Denier Nylon

Ordering Information

Part Number	Description
PTU-KIT	Universal Service Tech Diagnostic & Leak Test Kit for All Stages of the Gas System

Universal Service Tech Diagnostic & Leak Test Kit for All Stages of the Gas System Replacement Parts



PTU-KIT Replacement Part Numbers	PTU-KIT Part Descriptions
KITBAG	12" Gate Mouth Bag W/6 Outer Pockets & 15 Inner Pockets
PT6800-KGAP	Presto-Tap® 300 lb psi/Ambient Temperature gauge w/1/4" FPT x 1/4" M Flare Access, 1/4" Flare Cap w/Retainer strap & Black Magnet
PT30LP-KGAP	Presto-Tap® 30 lb psi gauge w/1/4" FPT x 1/4" M Flare Access, 1/4" Flare Cap w/Retainer strap & Red Magnet
PT5-KGAP	Presto-Tap® 5 lb gauge w/1/4" FPT x 1/4" M Flare Access, 1/4" Flare Cap w/Retainer strap & Blue Protective Rubber Cover with Magnet
PTOZ-KGAP	Presto-Tap® 0-20 OZ (0-35" wc) Gauge w/1/4" FPT X 1/4" M Flare Access & 1/4" Flare Cap w/retainer Strap & Black Protective Rubber Cover with Magnet
MHA-KIT	1/4" Flare Adapter x 1/4" Hose Barb
PTFLEX-KIT	36" Universal Flex Hose w/Gauge Bleeder & (2) RV-QA Straight
LDS2000RV	Tank & Regulator Fitting w54 Orifice
RVQA-G	Quick Adapter Gaskets
RCW716	7/16" 12 Point Open Face Ratcheting Combo Wrench
316AHW	3/16" Allen Wrench / Hex Key

Diagnostic & Leak Test Accessories



Ordering Information

Part Number	Description
MHA-KITP	1/4" Flare Adapter x 1/4" Hose Barb
RVQA-GP	Rubber gaskets for RVQA adapters
SMALLCASE	Plastic protective case with foam padding
RCW716	7/16" Ratcheting combo wrench
AHW316	3/16" Allen / hex key

Pressure Gauge w/ Bleeder Valve, 36" Flexible hose & Quick Adapter PTBHX Series

Application

36" Flexible hose assembly fitted with gauge and bleeder assembly for obtaining pressure readings and leak testing at tank pressure, first stage, two pound and low pressure (0-20 OZ) locations.

Features

- 2.5" Pressure Gauge w/ Magnet
- Bleeder Valve
- 36" Flexible Hose
- Quick Adapter Assembly

Materials

Gauge..... Stainless Steel
 Bleeder Valve Brass
 36" FLEX Hose Extension Reinforced Polyamide
 Straight Quick Coupler Connector..... Brass



PT5-BHX



Ordering Information

Part Number	Pressure Range	Connection	Angle	Bleeder	Hose Length	Rubber Cover
PT6800-BHX	0-300 PSIG	Female	Straight	Yes	36"	No
PT30LP-BHX	0-30 PSIG					
PT5-BHX	0-5 PSIG					
PT0Z-BHX	0-35" w.c.					

Pressure Gauge w/ Bleeder valve, 12" Flexible Rubber hose & Quick Adapter PTBH Series

Application

12" rubber hose assembly fitted with gauge and bleeder assembly for obtaining pressure readings and leak testing at tank pressure, first stage, two pound and low pressure (0-20 OZ) locations.

Features

- 2.5" Pressure Gauge
- Bleeder Valve
- 12" Flexible Rubber Hose
- Quick Adapter Assembly

Materials

Gauge Stainless Steel
 Bleeder Valve Brass
 12" Hose Rubber
 Quick Adapter Brass



PT30LP-BH90



Ordering Information

Part Number	Pressure Range	Connection	Angle	Bleeder	Hose Length	Rubber Cover
PT6800-BHS	0-300 PSIG	Female	Straight	Yes	12"	No
PT6800-BH90			90°			
PT30LP-BHS	0-30 PSIG		Straight			
PT30LP-BH90			90°			
PT5-BHS	0-5 PSIG		Straight			
PT5-BH90			90°			
PT0Z-BHS	0-35" w.c.		Straight			
PT0Z-BH90			90°			

Pressure Gauge w/ Bleeder Valve & Quick Adapter PTB Series

Application

Bleeder assembly fitted with gauge for obtaining pressure readings and leak testing at tank pressure, first stage, two pound and low pressure (0-20 OZ) locations.

Features

- 2.5" Pressure Gauge
- Bleeder Valve
- Quick Adapter Assembly

Materials

Gauge..... Stainless Steel
 Bleeder Valve Brass
 90° Quick Connector Brass



PT5-B90



PT5-BS

Packaged in Smallcase



Ordering Information

Part Number	Connection	Quick Adapter	Bleeder	Rubber Cover
PT6800-B90	0-300 PSIG	90	Yes	No
PT6800-BS		Straight		
PT30LP-B90	0-30 PSIG	90		
PT30LP-BS		Straight		
PT5-B90	0-5 PSIG	90		
PT5-BS		Straight		
PTOZ-B90	0-35" w.c.	90		
PTOZ-BS		Straight		

Pressure Gauge w/ Quick Adapter PTKGA Series

Application

Quick adapter assembly fitted with gauge for obtaining pressure readings and leak testing at tank pressure, first stage, two pound and low pressure (0-20 OZ) locations.

Designed specifically for replacement gauge assembly to the PTU-KIT. In addition creating you own kit with the pressure gauge flexible hose assembly ordered separately.

Features

- 2.5" Pressure Gauge w/ Magnet
- Quick Adapter Assembly

Materials

Gauge..... Stainless Steel
 Straight Quick Coupler Connector..... Brass



PT5-KGA



PTFLEX-KITP



Ordering Information

Part Number	Pressure Range	Quick Adapter	Accessories*(must be ordered separately)	
			36" Flexible Rubber Hose Assembly with 90° Adapter	36" Flexible Hose Assembly with Straight Adapter
PT6800-KGAP	0-300 PSIG	Straight	PTH-KITP	PTFLEX-KITP
PT30LP-KGAP	0-30 PSIG			
PT5-KGAP	0-5 PSIG			
PTOZ-KGA	0-35" w.c.			

Presto-Tap® Pressure Gauge with Glow in the Dark 3.5" Display PTCA-KGA Series

Application

These larger gauges with glow-in-the-dark display are designed for use with our Presto-Tap® leak detection system for better visibility in low light areas and after hours service calls.

Features & Benefits

- 3.5" pressure gauge w/ magnet
- 40% larger face is easier to read and more accurate due to larger spacing between the graduations
- The luminescent, glow-in-the-dark face is easier to read in low light conditions.
- Includes protective cover and a magnet for attaching directly to the tanks while you conduct the leak test.



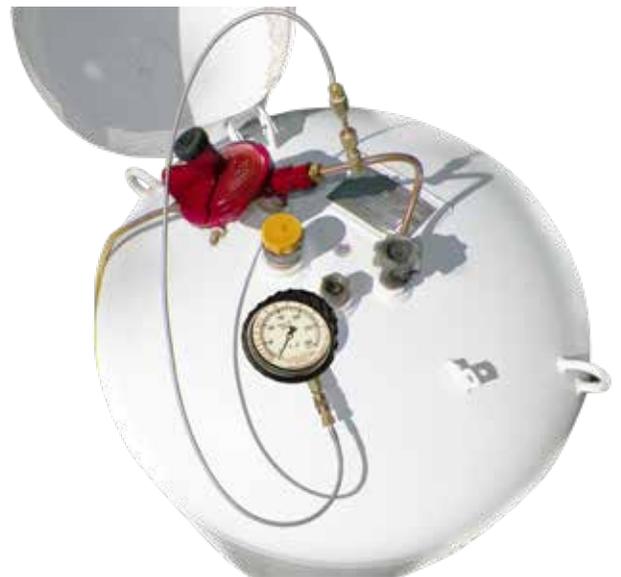
PTCA-KGA Series



Glow in the Dark Display



PTFLEX-KITP



Ordering Information

Part Number	Pressure Range	Connection	Magnet	Rubber Cover	Accessories (must be ordered separately)	
					36" Flexible Hose w/ straight quick connect adapter	36" Flexible Hose w/ 90° quick connect adapter
PT30CA-KGA	0 to 30 PSIG	¼" M. Flare	Yes	Yes	PTFLEX-KITP	PTH-KITP
PT6800CA-KGA	0 to 300 PSIG					

Pressure Gauge w/ Bleeder Valve, 36" Flexible hose & Quick Adapter PTBHX Series

Application

36" Flexible hose assembly fitted with gauge and bleeder assembly for obtaining pressure readings and leak testing.

Features

- Pressure Gauge w/ Magnet
- Bleeder Valve
- 36" Flexible Hose
- Quick Adapter Assembly

Materials

Gauge..... Stainless Steel
 Bleeder Valve Brass
 36" FLEX Hose Extension Reinforced Polyamide
 Straight Quick Coupler Connector..... Brass



PT5-BHX



Ordering Information

Part Number	Pressure Range	Gauge Face	Connection	Angle	Bleeder	Hose Length
PTNG30SB3.5-X	0-30 PSIG	3.5"	Female	Straight	Yes	36"
PTNG5SB3.5-X	0-5 PSIG					
PTNG15SB3.5-X	0-15" w.c.					
PT10-BHX	0-10" w.c.	2.5"				

FOR NATURAL GAS APPLICATION ONLY

Pressure Gauge w/ Bleeder valve, 12" Flexible Rubber hose & Quick Adapter PTBH Series

Application

12" rubber hose assembly fitted with gauge and bleeder assembly for obtaining pressure readings and leak testing.

Features

- Pressure Gauge
- Bleeder Valve
- 12" Flexible Rubber Hose
- Quick Adapter Assembly

Materials

Gauge Stainless Steel
 Bleeder Valve Brass
 12" Hose Rubber
 Quick Adapter Brass



PT30LP-BH90



Ordering Information

Part Number	Pressure Range	Gauge Face	Connection	Angle	Bleeder	Hose Length	Rubber Cover
PT30LP-BHS	0-30 PSIG	2.5"	Female	Straight	Yes	12"	No
PT30LP-BH90				90°			
PT5-BHS	0-5 PSIG			Straight			
PT5-BH90				90°			
PT10-BHS	0-10" w.c.			Straight			
PT10-BH90				90°			

FOR NATURAL GAS APPLICATION ONLY

Pressure Gauge w/ Bleeder Valve & Quick Adapter PTB Series

Application

Bleeder assembly fitted with gauge for obtaining pressure readings and leak testing.

Features

- Pressure Gauge
- Bleeder Valve
- Quick Adapter Assembly

Materials

Gauge Stainless Steel
 Bleeder Valve Brass
 90° Quick Connector Brass



PT5-B90



Ordering Information

Part Number	Pressure Range	Gauge Face	Connection	Quick Adapter	Bleeder
PTNG30SB3.5-90	0-30 PSIG	3.5"	Female	90	Yes
PTNG30SB3.5-S				Straight	
PT30LP-B90		2.5"		90	
PT30LP-BS				Straight	
PTNG5SB3.5-90	0-5 PSIG	3.5"		90	
PTNG5SB3.5-S				Straight	
PT5-B90		2.5"		90	
PT5-BS				Straight	
PTNG15SB3.5-90	0-15" w.c.	3.5"		90	
PTNG15SB3.5-S				Straight	
PT10-B90	0-10" w.c.	2.5"		90	
PT10-BS				Straight	

FOR NATURAL GAS APPLICATION ONLY

Pressure Gauge w/ Quick Adapter PTKGA Series

Application

Quick adapter assembly fitted with gauge for obtaining pressure readings and leak testing.

Designed specifically for creating you own kit with the pressure gauge flexible hose assembly ordered separately.

Features

- Pressure Gauge w/ Magnet
- Quick Adapter Assembly

Materials

Gauge..... Stainless Steel
 Straight Quick Coupler Connector..... Brass



PT5-KGA



PTFLEX-KITP



Ordering Information

Part Number	Pressure Range	Gauge Face	Quick Adapter	Accessories*(must be ordered separately)	
				36" Flexible Rubber Hose Assembly with 90° Adapter	36" Flexible Hose Assembly with Straight Adapter
PT30CA-KGA	0-30 PSIG	3.5"	Straight	PTH-KITP	PTFLEX-KITP
PT30LP-KGAP		2.5"			
PTNG5-KGAP	0-5 PSIG	3.5"			
PT5-KGAP		2.5"			
PTNG15-KGA	0-15" w.c.	3.5"			



Tools and Guides

- The RegO App
- Presto-Tap® Application Guide
- Pipe and Tubing Selection Guide
- Regulator Performance Selection Guide
- Determining Propane Vaporization Capacity



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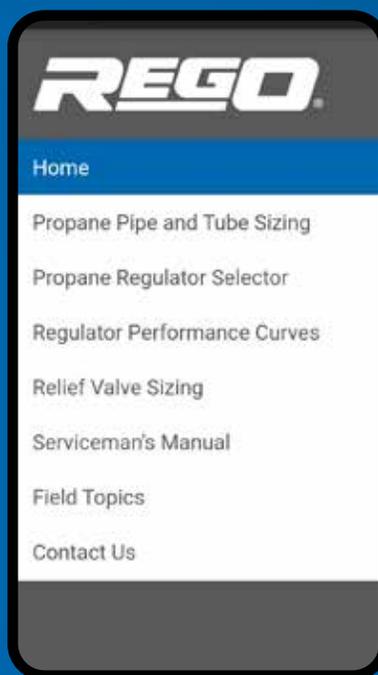
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Presto-Tap® Application Guide

PT6800 Series 0-300 PSIG



LDS2000RV
(Fitted in high pressure side of Multivalve® assembly, Regulator and etc)



PT6543
PT6542



PG8475RL



TPF



PT7556



PT9102R



PT912/913

PT30 Series 0-30 PSIG



Pressure Gauge Port of 1st Stage Regulator Port on outlet side

Pressure Gauge Port of Compact 2nd Stage Regulator Port on inlet side



Pressure Gauge Port of 1st Stage Regulator Port on outlet side



PT5 Series 0-5 PSIG



Pressure Gauge Port of Twin Stage 2 PSIG Regulator Port on inlet side

Pressure Gauge Port of 2nd Stage 2 PSIG Regulator Port on outlet side



PTOZ Series 0-35 Inches w.c.



Pressure Gauge Port of Twin Stage Regulator Port on outlet side

Pressure Gauge Port of 2nd Stage Regulator Port on outlet side



Pipe and Tubing Selection Guide

Table 1 - First Stage Copper Tubing or Pipe Sizing

10 PSIG Inlet with a 1 PSIG Pressure Drop (Between First and Second Stage Regulators)
 Maximum capacity of pipe or tubing in thousands of BTU/hr of undiluted LP-Gases (Propane)
 (Based on 1.50 Specific Gravity Gas)

Size of Pipe or Copper Tubing in Inches	Length of Pipe or Tubing in Feet*													
	10	20	30	40	50	60	70	80	90	100	125	150	175	
Copper Tubing (O.D.)**	3/8	513	352	283	242	215	194	179	166	156	147	131	118	109
	1/2	1,060	727	584	500	443	401	369	343	322	304	270	244	225
	5/8	2,150	1,480	1,190	1,020	901	816	751	699	655	619	549	497	457
	3/4	3,760	2,580	2,080	1,780	1,570	1,430	1,310	1,220	1,150	1,080	959	869	799
Pipe Size***	1/2	3,320	2,280	1,830	1,570	1,390	1,260	1,160	1,080	1,010	956	848	768	706
	3/4	6,950	4,780	3,840	3,280	2,910	2,640	2,430	2,260	2,120	2,000	1,770	1,610	1,480
	1	13,100	9,000	7,220	6,180	5,480	4,970	4,570	4,250	3,990	3,770	3,340	3,020	2,780
	1 1/4	26,900	18,500	14,800	12,700	11,300	10,200	9,380	8,730	8,190	7,730	6,850	6,210	5,710
	1 1/2	40,300	27,700	22,200	19,000	16,900	15,300	14,100	13,100	12,300	11,600	10,300	9,300	8,560
	2	77,600	53,300	42,800	36,600	32,500	29,400	27,100	25,200	23,600	22,300	19,800	17,900	16,500
	2 1/2	124,000	85,000	68,200	58,400	51,700	46,900	43,100	40,100	37,700	35,600	31,500	28,600	26,300
	3	219,000	150,000	121,000	103,000	91,500	82,900	76,300	70,900	66,600	62,900	55,700	50,500	46,500
	446,000	306,000	246,000	211,000	187,000	169,000	156,000	145,000	136,000	128,000	114,000	103,000	94,700	
	200	250	300	350	400	450	500	550	600	700	750	800	850	
Copper Tubing (O.D.)**	3/8	101	90	81	75	70	65	62	59	56	51	50	48	46
	1/2	209	185	168	155	144	135	127	121	115	106	102	99	96
	5/8	426	377	342	314	292	274	259	246	235	216	208	201	195
	3/4	744	659	597	549	511	480	453	430	410	378	364	351	340
Pipe Size***	1/2	657	582	528	486	452	424	400	380	363	334	321	310	300
	3/4	1,370	1,220	1,100	1,020	945	886	837	795	759	698	672	649	628
	1	2,590	2,290	2,080	1,910	1,780	1,670	1,580	1,500	1,430	1,310	1,270	1,220	1,180
	1 1/4	5,320	4,710	4,270	3,930	3,650	3,430	3,240	3,070	2,930	2,700	2,600	2,510	2,430
	1 1/2	7,960	7,060	6,400	5,880	5,470	5,140	4,850	4,610	4,400	4,040	3,900	3,760	3,640
	2	15,300	13,600	12,300	11,300	10,500	9,890	9,340	8,870	8,460	7,790	7,500	7,240	7,010
	2 1/2	24,400	21,700	19,600	18,100	16,800	15,800	14,900	14,100	13,500	12,400	12,000	11,500	11,200
	3	43,200	38,300	34,700	31,900	29,700	27,900	26,300	25,000	23,900	21,900	21,100	20,400	19,800
	88,100	78,100	70,800	65,100	60,600	56,800	53,700	51,000	48,600	44,800	43,100	41,600	40,300	
	900	950	1,000	1,100	1,200	1,300	1,400	1,500	1,600	1,700	1,800	1,900	2,000	
Copper Tubing (O.D.)**	3/8	45	44	42	40	38	37	35	34	33	32	31	30	29
	1/2	93	90	88	83	79	76	73	70	68	66	64	62	60
	5/8	189	183	178	169	161	155	148	143	138	134	130	126	122
	3/4	330	320	311	296	282	270	260	250	241	234	227	220	214
Pipe Size***	1/2	291	283	275	261	249	239	229	221	213	206	200	194	189
	3/4	609	592	575	546	521	499	480	462	446	432	419	407	395
	1	1,150	1,110	1,080	1,030	982	940	903	870	840	813	789	766	745
	1 1/4	2,360	2,290	2,230	2,110	2,020	1,930	1,850	1,790	1,730	1,670	1,620	1,570	1,530
	1 1/2	3,530	3,430	3,330	3,170	3,020	2,890	2,780	2,680	2,590	2,500	2,430	2,360	2,290
	2	6,800	6,600	6,420	6,100	5,820	5,570	5,350	5,160	4,980	4,820	4,670	4,540	4,410
	2 1/2	10,800	10,500	10,200	9,720	9,270	8,880	8,530	8,220	7,940	7,680	7,450	7,230	7,030
	3	19,200	18,600	18,100	17,200	16,400	15,700	15,100	14,500	14,000	13,600	13,200	12,800	12,400
	39,100	37,900	36,900	35,000	33,400	32,000	30,800	29,600	28,600	27,700	26,900	26,100	25,400	

*Total length of piping from outlet of first stage regulator to inlet of second stage regulator (or to inlet of second stage regulator furthest away)

**Data referenced from NFPA 58 2020 table 16.1(f)

***Data referenced from NFPA 58 2020 Table 16.1(a)

Notes:

- To allow for 2 PSIG pressure drop, multiply total gas demand by 0.707 and use capacities from table.
- For different first stage pressures, multiply total gas demand by the following factor and use capacities from table below

First Stage Pressure PSIG	Multiple By
20	0.844
15	0.912
5	1.120

Pipe and Tubing Selection Guide

Table 2 - First Stage Polyethylene Plastic Tubing or Pipe Sizing

10 PSIG Inlet with a 1 PSIG Pressure Drop (Between First and Second Stage Regulators)

Maximum capacity of polyethylene pipe or tubing in thousands of BTU/hr of undiluted LP-Gases (Propane)

(Based on 1.50 Specific Gravity Gas)

Size of Plastic Tubing in Inches		Length of Pipe or Tubing in Feet*										
NPS	SDR	10	20	30	40	50	60	70	80	90	100	125
½ T**	7	N/A	N/A	762	653	578	524	482	448	421	397	352
½***	9.33	N/A	N/A	2,140	1,840	1,630	1,470	1,360	1,260	1,180	1,120	990
¾***	11	N/A	N/A	4290	3670	3260	2950	2710	2530	2370	2240	1980
1 T**	11	N/A	N/A	5,230	4,470	3,960	3,590	3,300	3,070	2,880	2,720	2,410
1***	11	N/A	N/A	7,740	6,630	5,870	5,320	4,900	4,560	4,270	4,040	3,580
1 ¼***	11	N/A	N/A	13,420	11,480	10,180	9,220	8,480	7,890	7,400	6,990	6,200
1 ½***	11	N/A	N/A	20,300	17,300	15,400	13,900	12,800	11,900	11,200	10,600	9,360
2***	11	N/A	N/A	36,400	31,200	27,600	25,000	23,000	21,400	20,100	19,000	16,800
		150	175	200	225	250	275	300	350	400	450	500
½ T**	7	319	294	273	256	242	230	219	202	188	176	166
½***	9.33	897	826	778	721	681	646	617	567	528	495	468
¾***	11	1800	1650	1540	1440	1360	1290	1240	1140	1060	992	937
1 T**	11	2,190	2,010	1,870	1,760	1,660	1,580	1,500	1,380	1,290	1,210	1,140
1***	11	3,240	2,980	2,780	2,600	2,460	2,340	2,230	2,050	1,910	1,790	1,690
1 ¼***	11	5,620	5,170	4,810	4,510	4,260	4,050	3,860	3,550	3,300	3,100	2,930
1 ½***	11	8,480	7,800	7,260	6,810	6,430	6,110	5,830	5,360	4,990	4,680	4,420
2***	11	15,200	14,000	13,000	12,200	11,600	11,000	10,470	9,640	8,970	8,410	7,950
		600	700	800	900	1000	1500	2000				
½ T**	7	151	139	129	273	114	92	79	N/A			
½***	9.33	424	390	363	778	322	258	221				
¾***	11	849	781	726	1540	644	517	443				
1 T**	11	1,030	951	884	1,870	784	629	539				
1***	11	1,530	1,410	1,310	2,780	1,160	933	798				
1 ¼***	11	2,650	2,440	2,270	4,810	2,010	1,620	1,380				
1 ½***	11	4,010	3,690	3,430	7,260	3,040	2,440	2,090				
2***	11	7,200	6,620	6,160	13,000	5,460	4,390	3,750				

*Total length of piping from outlet of first stage regulator to inlet of second stage regulator (or to inlet of second stage regulator furthest away)

**Data referenced from NFPA 58 2020 Table 16.1(o)

***Data referenced from NFPA 58 2020 TIA 20-4

Notes:

1. T = Tube Size
2. To allow for 2 PSIG pressure drop, multiply total gas demand by 0.707 and use capacities from table.
3. For different first stage pressures, multiply total gas demand by the following factor and use capacities from table below

First Stage Pressure PSIG	Multiple By
20	0.844
15	0.912
5	1.120

Pipe and Tubing Selection Guide

Table 3 - Second Stage or Integral Twin Stage Tubing or Pipe Sizing

11-In. Water Column Inlet with a 0.05-In. Water Column Drop

Maximum capacity of pipe or tubing in thousands of BTU/hr of undiluted LP-Gases (Propane)

(Based on 1.50 Specific Gravity Gas)

Size of Pipe or Copper Tubing in Inches		Length of Pipe or Tubing in Feet*												
		10	20	30	40	50	60	70	80	90	100	125	150	175
Copper Tubing (O.D.)**	3/8	45	31	25	21	19	17	16	15	14	13	11	10	NA
	1/2	93	64	51	44	39	35	32	30	28	27	24	21	20
	5/8	188	129	104	89	79	71	66	61	57	54	48	44	40
	3/4	329	226	182	155	138	125	115	107	100	95	84	76	70
Pipe Size***	1/2	291	200	160	137	122	110	101	94	89	84	74	67	62
	3/4	608	418	336	287	255	231	212	197	185	175	155	140	129
	1	1,150	787	632	541	480	434	400	372	349	330	292	265	243
	1 1/4	2,350	1,620	1,300	1,110	985	892	821	763	716	677	600	543	500
	1 1/2	3,520	2,420	1,940	1,660	1,480	1,340	1,230	1,140	1,070	1,010	899	814	749
	2	6,790	4,660	3,750	3,210	2,840	2,570	2,370	2,200	2,070	1,950	1,730	1,570	1,440
	2 1/2	10,800	7,430	5,970	5,110	4,530	4,100	3,770	3,510	3,290	3,110	2,760	2,500	2,300
	3	19,100	13,100	10,600	9,030	8,000	7,250	6,670	6,210	5,820	5,500	4,420	4,420	4,060
	4	39,000	26,800	21,500	18,400	16,300	14,800	13,600	12,700	11,900	11,200	9,019	9,010	8,290
		200	250	300	350	400	450	500	550	600	700	750	800	850
Copper Tubing (O.D.)**	3/8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1/2	18	16	15	14	13	12	11	11	10	NA	NA	NA	NA
	5/8	37	33	30	28	26	24	23	22	21	20	19	18	18
	3/4	65	58	52	48	45	42	40	38	36	34	33	32	31
Pipe Size***	1/2	58	51	46	42	40	37	35	33	32	30	29	28	27
	3/4	120	107	97	89	83	78	73	70	66	64	61	59	57
	1	227	201	182	167	156	146	138	131	125	120	115	111	107
	1 1/4	465	412	373	344	320	300	283	269	257	246	236	227	220
	1 1/2	697	618	560	515	479	449	424	403	385	368	354	341	329
	2	1,340	1,190	1,080	991	922	865	817	776	741	709	681	656	634
	2 1/2	2,140	1,900	1,720	1,580	1,470	1,380	1,300	1,240	1,180	1,130	1,090	1,050	1,010
	3	3,780	3,350	3,040	2,790	2,600	2,440	2,300	2,190	2,090	2,000	1,920	1,850	1,790
	4	7,710	6,840	6,190	5,700	5,300	4,970	4,700	4,460	4,260	4,080	3,920	3,770	3,640
		900	950	1,000	1,100	1,200	1,300	1,400	1,500	1,600	1,700	1,800	1,900	2,000
Copper Tubing (O.D.)**	3/8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1/2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/8	17	16	16	15	14	14	13	13	12	12	11	11	11
	3/4	29	28	28	26	25	24	23	22	21	20	20	19	19
Pipe Size***	1/2	25	25	24	23	22	21	20	19	19	18	18	17	17
	3/4	53	52	50	48	46	44	42	40	39	38	37	36	35
	1	100	97	95	90	86	82	79	76	74	71	69	67	65
	1 1/4	206	200	195	185	176	169	162	156	151	146	142	138	134
	1 1/2	309	300	292	277	264	253	243	234	226	219	212	206	200
	2	595	578	562	534	509	487	468	451	436	422	409	397	386
	2 1/2	948	921	895	850	811	777	746	719	694	672	652	633	615
	3	1,680	1,630	1,580	1,500	1,430	1,370	1,320	1,270	1,230	1,190	1,150	1,120	1,090
	4	3,420	3,320	3,230	3,070	2,930	2,800	2,690	2,590	2,500	2,420	2,350	2,280	2,220

*Total length of piping from outlet of regulator to appliance furthest away.

**Data referenced from NFPA 58 2020 Table 16.1(g)

***Data referenced from NFPA 58 2020 TIA 20-2

Pipe and Tubing Selection Guide

Table 4 - Maximum Capacity of CSST

2 PSIG and a Pressure Drop of 1 PSIG (Between 2 psig Service and Line Pressure Regulator)
 In Thousands of BTU/hr of undiluted LP-Gases (Propane)
 (Based on 1.50 Specific Gravity Gas)

Size of CSST Tubing in Inches**		Length of Pipe or Tubing in Feet*													
Size	EHD Flow Designation ***	10	25	30	40	50	75	80	100	150	200	250	300	400	500
¾	13	426	262	238	203	181	147	140	124	101	86	77	69	60	53
	15	558	347	316	271	243	196	189	169	137	118	105	96	82	72
½	18	927	591	540	469	420	344	333	298	245	213	191	173	151	135
	19	1,110	701	640	554	496	406	393	350	287	248	222	203	175	158
¾	23	1,740	1,120	1,030	896	806	663	643	578	477	415	373	343	298	268
	25	2,170	1,380	1,270	1,100	986	809	768	703	575	501	448	411	355	319
1	30	4,100	2,560	2,330	2,010	1,790	1,460	1,410	1,260	1,020	880	785	716	616	550
	31	4,720	2,950	2,690	2,320	2,070	1,690	1,630	1,450	1,180	1,020	910	829	716	638
1 ¼	37	7,130	4,560	4,180	3,630	3,260	2,680	2,590	2,330	1,910	1,660	1,490	1,360	1,160	1,030
	39	7,958	5,147	4,719	4,116	3,702	3,053	2,961	2,662	2,195	1,915	1,722	1,578	1,376	1,237
1 ½	46	15,200	9,550	8,710	7,530	6,730	5,480	5,300	4,740	3,860	3,340	2,980	2,720	2,350	2,100
	48	16,800	10,700	9,790	8,500	7,610	6,230	6,040	5,410	4,430	3,840	3,440	3,150	2,730	2,450
2	60	29,400	18,800	17,200	14,900	13,400	11,000	10,600	9,530	7,810	6,780	6,080	5,560	4,830	4,330
	62	34,200	21,700	19,800	17,200	15,400	12,600	12,200	10,900	8,890	7,710	6,900	6,300	5,460	4,880

*Total length of piping from outlet of regulator to inlet of 2 psig Service/Line Pressure Regulator (or to inlet of regulator furthest away)

**Data referenced from NFPA 58 2020 Table 16.1(j)

***EHD - Equivalent Hydraulic Diameter - A measure of the relative hydraulic efficiency between different tubing sizes. The greater the value of EHD, the greater the gas capacity of the tubing.

Notes:

1. Table does not include effect of pressure drop across the line regulator. If regulator loss exceeds ½ psi (based on 13-in. water column outlet pressure).
2. DO NOT USE THIS TABLE. Consult with regulator manufacturer for pressure drops and capacity factors. Pressure drops across a regulator may vary with flow rate.
3. CAUTION: Capacities shown in table can exceed maximum capacity for a selected regulator. Consult with regulator or tubing manufacturer for guidance.
4. Table includes losses for four 90-degree bends and two end fittings. Tubing runs with a larger number of bends and/or fittings shall be increased by an equivalent length of tubing according to the following equation; L-1.3n where L is additional length (ft) of tubing and n is the number of additional fittings and/or bends.
5. All entries are rounded to 3 significant digits

Pipe and Tubing Selection Guide

Table 5 - Maximum Capacity of CSST

11-in. Water Column and a Pressure Drop of 0.05-in. Water Column (Between Second Stage (Low Pressure) Regulator and Appliance Shutoff Valve)
 In Thousands of BTU/hr of undiluted LP-Gases (Propane)
 (Based on 1.50 Specific Gravity Gas)

Size of CSST Tubing in Inches**		Length of Pipe or Tubing in Feet*										
Size	EHD Flow Designation ***	5	10	15	20	25	30	40	50	60	70	80
3/8	13	72	50	39	34	30	28	23	20	19	17	15
	15	99	69	55	49	42	39	33	30	26	25	23
1/2	18	181	129	104	91	82	74	64	58	53	49	45
	19	211	150	121	106	94	87	74	66	60	57	52
3/4	23	355	254	208	183	164	151	131	118	107	99	94
	25	426	303	248	216	192	177	153	137	126	117	109
1	30	744	521	422	365	325	297	265	241	222	208	197
	31	863	605	490	425	379	344	297	265	241	222	208
1 1/4	37	1,420	971	775	661	528	583	449	397	359	330	307
	39	1,638	1,179	972	847	762	698	610	548	502	466	438
1 1/2	46	2,830	1,990	1,620	1,400	1,250	1,140	988	884	805	745	696
	48	3,270	2,320	1,900	1,650	1,480	1,350	1,170	1,050	961	890	833
2	60	5,780	4,110	3,370	2,930	2,630	2,400	2,090	1,870	1,710	1,590	1,490
	62	6,550	4,640	3,790	3,290	2,94	2,680	2,330	2,080	1,900	1,760	1,650
		90	100	150	200	250	300					
3/8	13	15	14	11	9	8	8	N/A				
	15	22	20	15	14	12	11					
1/2	18	44	41	31	28	25	23					
	19	50	47	36	33	30	26					
3/4	23	90	85	66	60	53	50					
	25	102	98	75	69	61	57					
1	30	169	159	123	112	99	90					
	31	197	186	143	129	117	107					
1 1/4	37	286	270	217	183	163	147					
	39	414	393	324	283	254	234					
1 1/2	46	656	621	506	438	390	357					
	48	787	746	611	531	476	434					
2	60	1,400	1,330	1,090	948	850	777					
	62	1,550	1,480	1,210	1,050	934	854					

*Total length of piping from outlet of regulator to appliance furthest away.

**Data referenced from NFPA 58 2020 Table 16.1(k)

***EHD - Equivalent Hydraulic Diameter - A measure of the relative hydraulic efficiency between different tubing sizes. The greater the value of EHD, the greater the gas capacity of the tubing.

Notes:

1. Table includes losses for four 90-degree bends and two end fittings. Tubing runs with a larger number of bends and/ or fittings shall be increased by an equivalent length of tubing according to the following equation; $L-1.3n$ where L is additional length (ft) of tubing and n is the number of additional fittings and/or bends.
2. All entries are rounded to 3 significant digits.

Pipe and Tubing Selection Guide

Table 6 - Copper Tubing or Schedule 40 Pipe Sizing

2 PSIG Inlet with a 1 PSIG Pressure Drop (Between 2 PSIG Service and Line Pressure Regulator)
 In Thousands of BTU/hr of undiluted LP-Gases (Propane)
 (Based on 1.50 Specific Gravity Gas)

Size of Pipe or Copper Tubing in Inches		Length of Pipe or Tubing in Feet*												
		10	20	30	40	50	60	70	80	90	100	125	150	175
Copper Tubing (O.D.)**	3/8	413	284	228	195	173	157	144	134	126	119	105	95	88
	1/2	852	585	470	402	356	323	297	276	259	245	217	197	181
	5/8	1,730	1,190	956	818	725	657	605	562	528	498	442	400	368
	3/4	3,030	2,080	1,670	1,430	1,270	1,150	1,060	983	922	871	772	700	644
Pipe Size***	1/2	2,680	1,840	1,480	1,260	1,120	1,010	934	869	815	770	682	618	569
	3/4	5,590	3,850	3,090	2,640	2,340	2,120	1,950	1,820	1,700	1,610	1,430	1,290	1,190
	1	10,500	7,240	5,820	4,980	4,410	4,000	3,680	3,420	3,210	3,030	2,690	2,440	2,240
	1 1/4	21,600	14,900	11,900	10,200	9,060	8,210	7,550	7,020	6,590	6,230	5,520	5,000	4,600
	1 1/2	32,400	22,300	17,900	15,300	13,600	12,300	11,300	10,500	9,880	9,330	8,270	7,490	6,890
	2	62,400	42,900	34,500	29,500	26,100	23,700	21,800	20,300	19,000	18,000	15,900	14,400	13,300
	2 1/2	99,500	68,400	54,900	47,000	41,700	37,700	34,700	32,300	30,300	28,600	25,400	23,000	21,200
	3	176,000	121,000	97,100	83,100	73,700	66,700	61,400	57,100	53,600	50,600	44,900	40,700	37,400
4	359,000	247,000	198,000	170,000	150,000	136,000	125,000	116,000	109,000	103,000	91,500	82,900	76,300	
		200	250	300	350	400	450	500	550	600	700	750	800	850
Copper Tubing (O.D.)**	3/8	82	72	66	60	56	53	50	47	45	43	41	40	39
	1/2	168	149	135	124	116	109	103	97	93	89	86	82	80
	5/8	343	304	275	253	235	221	209	198	189	181	174	168	162
	3/4	599	531	481	442	411	386	365	346	330	316	304	293	283
Pipe Size***	1/2	529	469	425	391	364	341	322	306	292	280	269	259	250
	3/4	1,110	981	889	817	760	714	674	640	611	585	562	541	523
	1	2,080	1,850	1,670	1,540	1,430	1,340	1,270	1,210	1,150	1,100	1,060	1,020	985
	1 1/4	4,600	3,790	3,440	3,160	2,940	2,760	2,610	2,480	2,360	2,260	2,170	2,090	2,020
	1 1/2	6,890	5,680	5,150	4,740	4,410	4,130	3,910	3,710	3,540	3,390	3,260	3,140	3,030
	2	13,300	10,900	9,920	9,120	8,490	7,960	7,520	7,140	6,820	6,530	6,270	6,040	5,830
	2 1/2	21,200	17,400	15,800	14,500	13,500	12,700	12,000	11,400	10,900	10,400	9,900	9,630	9,300
	3	37,400	30,800	27,900	25,700	23,900	22,400	21,200	20,100	19,200	18,400	17,700	17,000	16,400
4	76,300	62,900	57,000	52,400	48,800	45,800	43,200	41,100	39,200	37,500	36,000	34,700	33,500	
		900	950	1,000	1,100	1,200	1,300	1,400	1,500	1,600	1,700	1,800	1,900	2,000
Copper Tubing (O.D.)**	3/8	36	35	34	32	31	30	28	27	26	26	25	24	23
	1/2	75	72	71	67	64	61	59	57	55	53	51	50	48
	5/8	152	147	143	136	130	124	120	115	111	108	104	101	99
	3/4	265	258	251	238	227	217	209	201	194	188	182	177	172
Pipe Size***	1/2	235	228	222	210	201	192	185	178	172	166	161	157	152
	3/4	490	476	463	440	420	402	386	372	359	348	337	327	318
	1	924	807	873	829	791	757	727	701	677	655	635	617	600
	1 1/4	1,900	1,840	1,790	1,700	1,620	1,550	1,490	1,440	1,390	1,340	1,300	1,270	1,230
	1 1/2	2,840	2,760	2,680	2,550	2,430	2,330	2,240	2,160	2,080	2,010	1,950	1,900	1,840
	2	5,470	5,310	5,170	4,910	4,680	4,490	4,310	4,150	4,010	3,880	3,760	3,650	3,550
	2 1/2	8,720	8,470	8,240	7,830	7,470	7,150	6,870	6,620	6,390	6,180	6,000	5,820	5,660
	3	15,400	15,000	14,600	13,800	13,200	12,600	12,100	11,700	11,300	10,900	10,600	10,300	10,000
4	31,500	30,500	29,700	28,200	26,900	25,800	24,800	23,900	23,000	22,300	21,600	21,000	20,400	

*Total length of piping from outlet of regulator to inlet of 2 psig Service/Line Pressure Regulator (or to inlet of regulator furthest away)

**Data referenced from NFPA 58 2020 Table 16.1(h)

***Data referenced from NFPA 58 2020 Table 16.1(b)

Pipe and Tubing Selection Guide

Table 7: Second stage or Integral Twin Stage Polyethylene Tubing or Pipe Sizing

11 in Water Column Inlet w/ a 0.5 -in Water Column Drop
 Tubing in thousand of BTU/hr of undiluted LP-Gases (Propane)
 (Based on 1.50 Specific Gravity Gas)

Size of Plastic Tubing in Inches		Length of Pipe or Tubing in Feet*									
NPS	SDR	10	20	30	40	50	60	70	80	90	100
½ T**	7	121	83	67	57	51	46	42	39	37	35
½***	9.33	340	233	187	160	142	129	119	110	103	98
¾***	11	680	486	375	321	285	258	237	221	207	196
1 T**	11	828	569	457	391	347	314	289	269	252	238
1***	11	1,230	844	677	580	514	466	428	398	374	353
1 ¼***	11	2,130	1,460	1,170	1,000	890	807	742	690	648	612
1 ½***	11	3,210	2,210	1,770	1,520	1,340	1,220	1,120	1,040	978	924
2***	11	5,770	3,970	3,180	2,730	2,420	2,190	2,010	1,870	1,760	1,660
3***	11	16,000	11,000	8,810	7,540	6,680	6,050	5,570	5,180	4,860	4,590
4***	11	30,900	21,200	17,000	14,600	12,900	11,700	10,800	10,000	9,400	8,900
		125	150	175	200	250	300	350	400	450	500
½ T**	7	31	28	26	24	21	19	18	16	15	15
½***	9.33	87	78	72	67	60	54	50	46	43	41
¾***	11	173	157	145	135	119	108	99	92	87	82
1 T**	11	211	191	176	164	145	132	121	113	106	100
1***	11	313	284	261	243	215	195	179	167	157	148
1 ¼***	11	542	491	452	420	373	338	311	289	271	256
1 ½***	11	819	742	683	635	563	510	469	436	409	387
2***	11	1,470	1,330	1,230	1,140	1,010	916	843	784	736	695
3***	11	4,070	3,690	3,390	3,160	2,800	2,530	2,330	2,170	2,040	1,920
4***	11	7,900	7,130	6,560	6,100	5,410	4,900	4,510	4,190	3,930	3,720

*Total length of piping from outlet of regulator to appliance furthest away.

**Data referenced from NFPA 58 2020 Table 16.1(p)

***Data referenced from NFPA 54 2018 Table 6.3.1 (k)

Notes:

1. T = Tube Size
2. All entries are rounded to 3 significant digits

Pipe and Tubing Selection Guide

Table 8: Polyethylene Tubing or Pipe Sizing

2 PSIG Inlet with a 1 PSIG Pressure Drop (Between 2 PSIG Service and Line Pressure Regulator)
 Tubing in thousands of BTU/hr of undiluted LP-Gases (Propane)
 (Based on 1.50 Specific Gravity Gas)

Size of Plastic Tubing in Inches**		*Total length of piping from outlet of regulator to appliance furthest away.										
NPS	SDR	10	20	30	40	50	60	70	80	90	100	125
½	9.33	3,130	2,150	1,730	1,480	1,310	1,190	1,090	1,010	952	899	797
¾	11	6,260	4,300	3,450	2,960	2,620	2,370	2,180	2,030	1,910	1,800	1,600
1	11	11,300	7,760	6,230	5,330	4,730	4,280	3,940	3,670	3,440	3,250	2,880
1 ¼	11	19,600	13,400	10,800	9,240	8,190	7,420	6,830	6,350	5,960	5,630	4,990
1 ½	11	29,500	20,300	16,300	14,000	12,400	11,200	10,300	9,590	9,000	8,500	7,530
2	11	53,100	36,500	29,300	25,100	22,200	20,100	18,500	17,200	16,200	15,300	13,500
3	11	147,000	101,000	81,100	69,400	61,500	55,700	51,300	47,700	44,700	42,300	37,500
4	11	284,000	195,000	157,000	134,100	119,000	108,000	99,100	92,200	86,500	81,700	72,400
		150	175	200	250	300	350	400	450	500	550	600
½	9.33	722	664	618	548	496	457	425	399	377	358	341
¾	11	1,450	1,330	1,240	1,100	994	914	851	798	754	716	683
1	11	2,610	2,400	2,230	1,980	1,790	1,650	1,530	1,440	1,360	1,290	1,230
1 ¼	11	4,520	4,160	3,870	3,430	3,110	2,860	2,660	2,500	2,360	2,240	2,140
1 ½	11	6,830	6,280	5,840	5,180	4,690	4,320	4,020	3,770	3,560	3,380	3,220
2	11	12,300	11,300	10,500	9,300	8,430	7,760	7,220	6,770	6,390	6,070	5,790
3	11	33,900	31,200	29,000	25,700	23,300	21,500	20,000	18,700	17,700	16,800	16,000
4	11	65,600	60,300	56,100	49,800	45,100	41,500	38,600	36,200	34,200	32,500	31,000
		650	700	750	800	850	900	950	1,000	1,100	1,200	1,300
½	9.33	327	314	302	292	283	274	266	259	246	234	225
¾	11	654	628	605	585	566	549	533	518	492	470	450
1	11	1,180	1,130	1,090	1,050	1,020	990	961	935	888	847	811
1 ¼	11	2,040	1,960	1,890	1,830	1,770	1,710	1,670	1,620	1,540	1,470	1,410
1 ½	11	3,090	2,970	2,860	2,760	2,670	2,590	2,520	2,450	2,320	2,220	2,120
2	11	5,550	5,330	5,140	4,960	4,800	4,650	4,520	4,400	4,170	3,980	3,810
3	11	15,400	14,700	14,200	13,700	13,300	12,900	12,500	12,200	11,500	11,000	10,600
4	11	29,700	28,500	27,500	26,500	25,700	24,900	24,200	23,500	22,300	21,300	20,400
		1,400	1,500	1,600	1,700	1,800	1,900	2,000				
½	9.33	216	208	201	194	188	183	178	N/A			
¾	11	432	416	402	389	377	366	356				
1	11	779	751	725	702	680	661	643				
1 ¼	11	1,350	1,300	1,260	1,220	1,180	1,140	1,110				
1 ½	11	2,040	1,960	1,900	1,840	1,780	1,730	1,680				
2	11	3,660	3,530	3,410	3,300	3,200	3,110	3,020				
3	11	10,100	9,760	9,430	9,130	8,850	8,590	8,360				
4	11	19,600	18,900	18,200	17,600	17,100	16,600	16,200				

*Total length of piping from outlet of regulator to inlet of 2 psig Service/Line Pressure Regulator (or to inlet of regulator furthest away)

**Data referenced from NFPA 54 2018 Table 6.3.1 (I)

RegO Regulator Selection

In order to properly size the RegO Regulator, find the total load of the installation. The total load is calculated by adding up the input ratings (BTU or CFH) of all appliances in the installation. Input ratings may be obtained from the nameplates on the appliances or from the manufacturers' literature.

Determine the type of regulation needed referring to the chart below.

Type of System	Maximum Load	Suggested Regulator
First Stage in a Two Stage System	1,500,000	LV3403TR
	2,500,000	LV4403SR Series LV4403TR Series
Second Stage in a Two Stage System	450,000	LV3403B Series LV3403BR Series
	935,000	LV4403B Series LV4403BD Series
	1,600,000	LV5503B4/B6
	2,300,000	LV5503B8
	1,000,000	LV4403Y4/Y46R
Second Stage in a 2 PSIG System	2,200,000	LV5503Y6/Y8
	450,000	LV404B34/39 Series
Integral Twin Stage	525,000	LV404B4/B9 Series
	800,000	LV404Y9
Integral Twin Stage 2 PSIG Delivery	650,000	LV404Y39
	400,000	7525B34 Series
Automatic Changeover	450,000	7525B4 Series

* See catalog page for inlet and delivery specifications.

Now determine which regulator in the Series would be most suitable. Turn to the individual product pages and refer to the Performance Curves. Check the performance of the regulator with your actual load conditions at the minimum LP-Gas inlet pressure for the regulator. Use the pressure corresponding to your lowest winter temperatures shown in the chart below or refer to the delivery pressure of your first stage regulator.

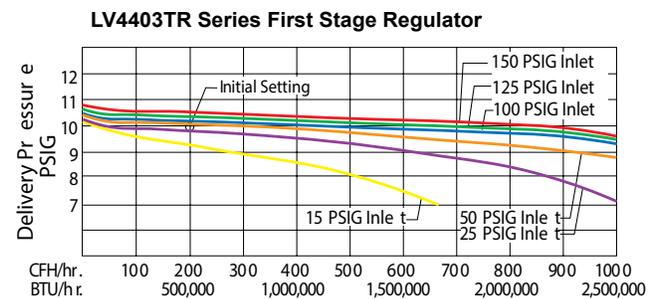
Temperature		Approx. Pressure (PSIG)		Temperature		Approx. Pressure (PSIG)	
°F	°C	Propane	Butane	°F	°C	Propane	Butane
-40	-40	3.6		40	4	72	3.0
-30	-34	8		50	10	86	6.9
-20	-29	13.5		60	16	102	12
-10	-23	23.3		70	21	127	17
0	-18	28		80	27	140	23
10	-12	37		90	32	165	29
20	-7	47		100	38	196	36
30	-1	58		110	43	220	45

Example for a First Stage Regulator

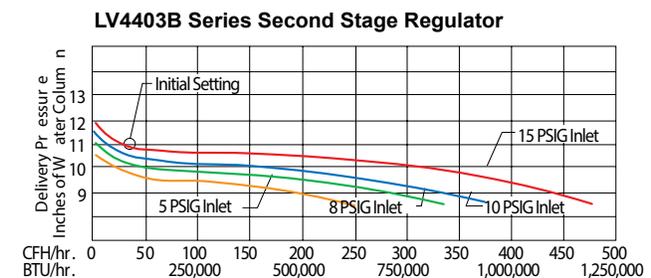
1. Assume a load of 500,000 BTU's per hour.
2. Assume a minimum delivery pressure of 9.5 PSIG.
3. Assume a minimum tank pressure of 15 PSIG.

4. For these conditions, refer to chart for the LV4403TR Series, First Stage Regulator, shown below.
5. Find the line on the chart corresponding to the lowest anticipated winter tank pressure (note that each performance line corresponds to and is marked with a different inlet pressure in PSIG).
6. Draw a vertical line upward from the point of assumed load (500,000 BTU's per hour) to intersect with the line corresponding to the lowest tank pressure.
7. Read horizontally from the intersection of these lines to the delivery pressure at the left side of the chart. In this example the delivery pressure will be 9.2 PSIG. Since the delivery pressure will be 9.2 PSIG at the maximum load conditions and lowest anticipated tank pressure, the regulator will be sized properly for the demand.

Example for a Second Stage Regulator

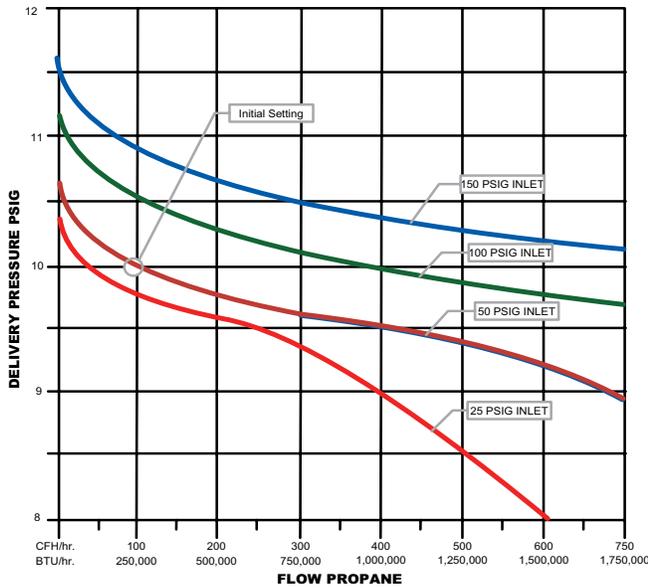


1. Assume load of 250,000 BTU's per hour.
2. Assume a minimum delivery pressure of 10" w.c.
3. Assume a minimum inlet pressure of 10 PSIG.
4. For these conditions, refer to chart for the LV4403B Series, Second Stage Regulator, shown below.
5. Find the line on the chart corresponding to the anticipated inlet pressure.
6. Draw a vertical line upward from the point of assumed load (250,000 BTU's per hour) to intersect with the line corresponding to the lowest inlet pressure.
7. Read horizontally from the intersection of these lines to the delivery pressure at the left side of the chart. In this example the delivery pressure will read 10.1" w.c. Since the delivery pressure will be 10.1" w.c. at the maximum load condition and lowest anticipated inlet pressure, the regulator is sized properly for the demand.



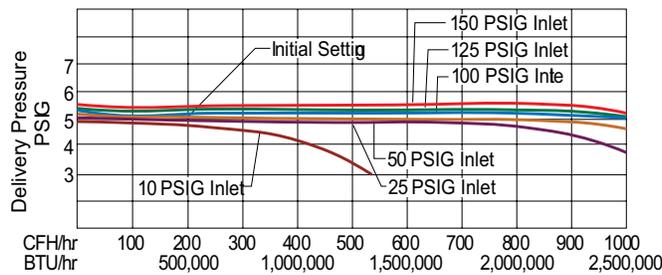
Regulator Performance Curves - 1st Stage & 2nd Stage System

LV3403TR Series



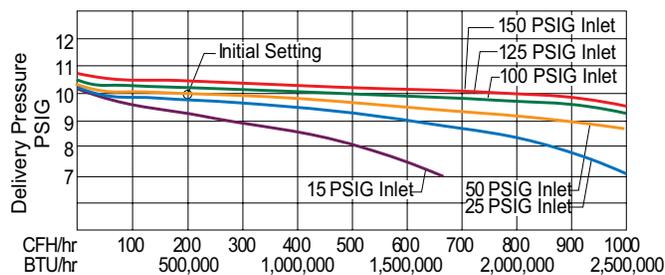
LV3403TR Series

LV4403SR Series



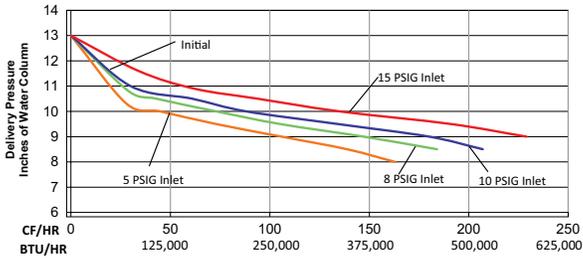
LV4403TR Series

LV4403TR Series



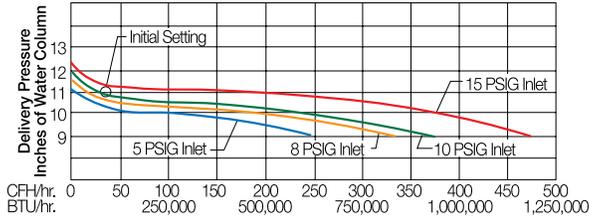
Regulator Performance Curves - 1st Stage & 2nd Stage System

LV3403B Series



LV3403B Series

LV4403B Series

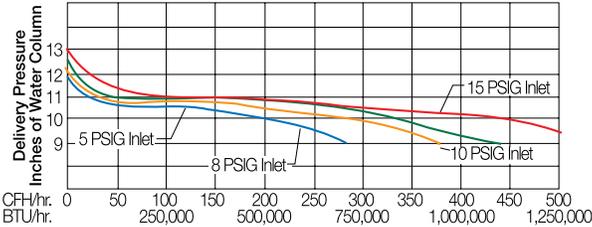


LV4403B4

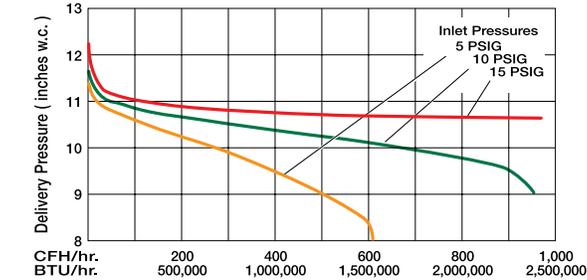


LV4403B66RA Series

LV4403B66RA Series

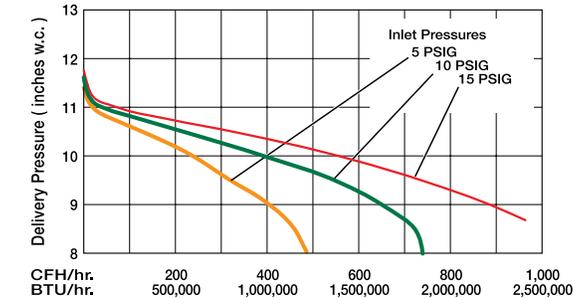


LV5503B8 Series



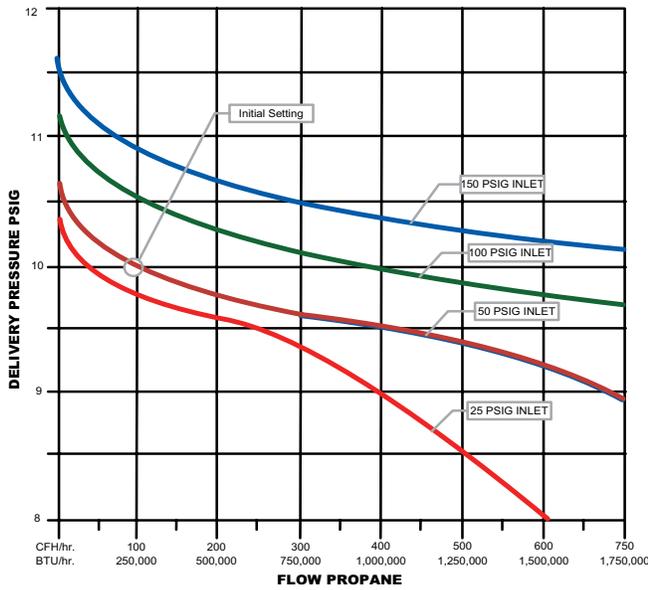
LV5503B Series

LV5503B4, LV5503B6



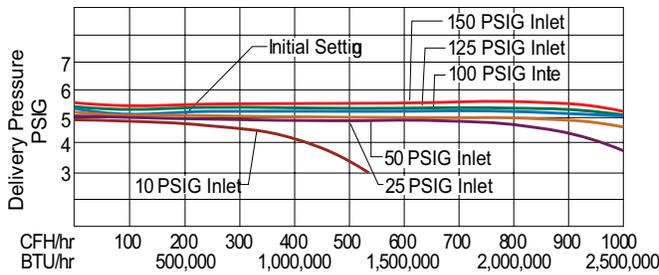
Regulator Performance Curves - 1st Stage & 2nd Stage 2 PSIG System

LV3403TR Series



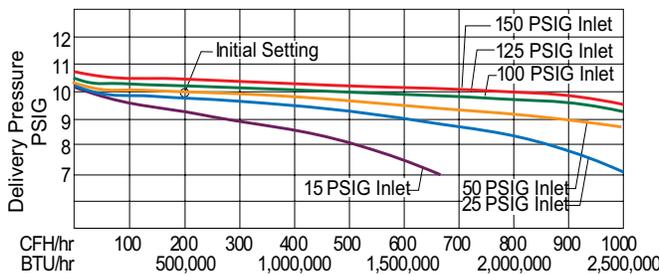
LV3403TR Series

LV4403SR Series



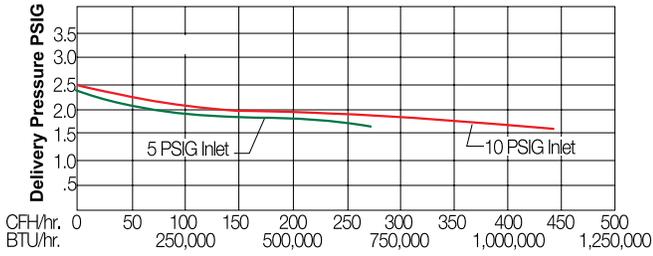
LV4403TR Series

LV4403TR Series



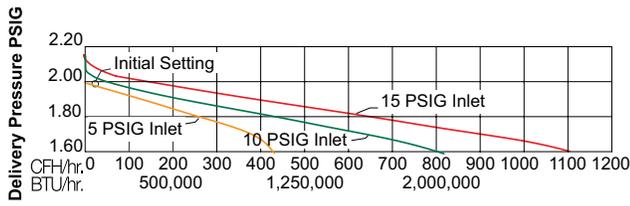
Regulator Performance Curves - 1st Stage & 2nd Stage 2 PSIG System

LV4403Y Series



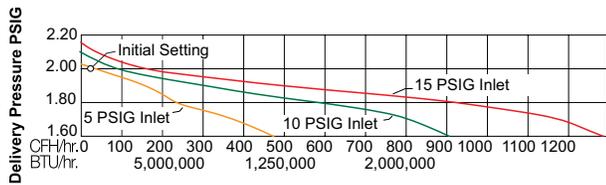
LV4403Y Series

LV5503Y6

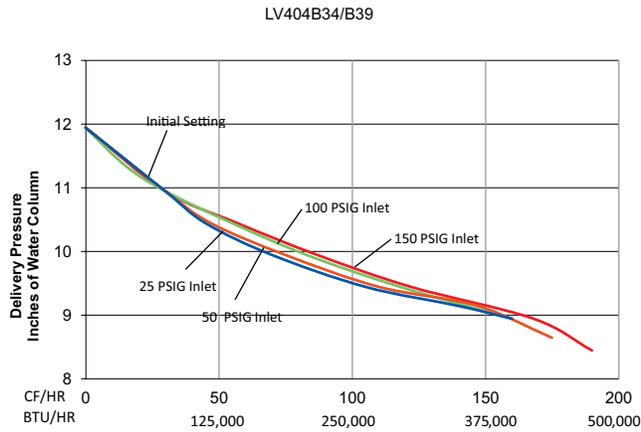


LV5503Y Series

LV5503Y8



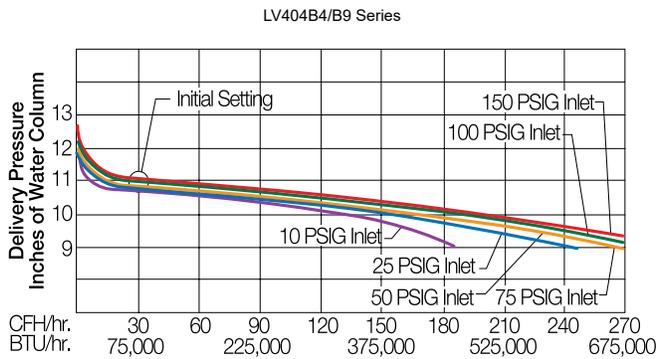
Regulator Performance Curves - Twin Stage System 11" w.c.



LV404B34



LV404B39



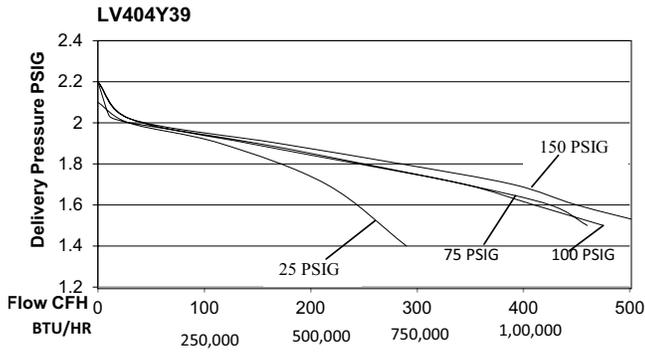
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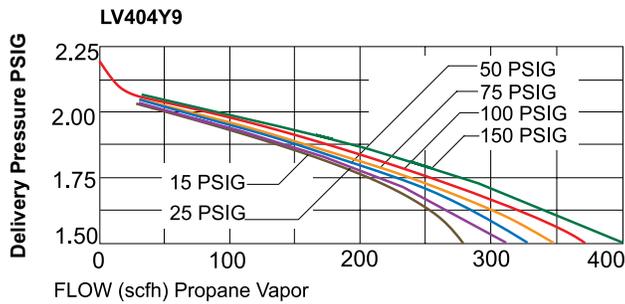
LV404B9



Regulator Performance Curves - Twin Stage System 2 PSIG



LV404Y39

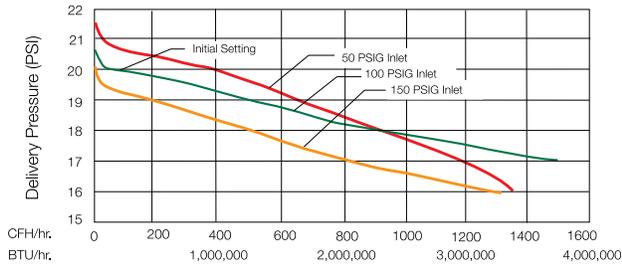


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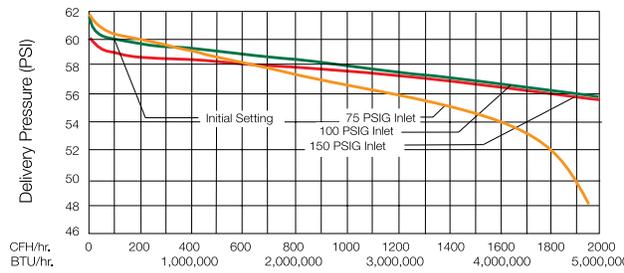


Regulator Performance Curves - High Pressure Regulator 597 Series

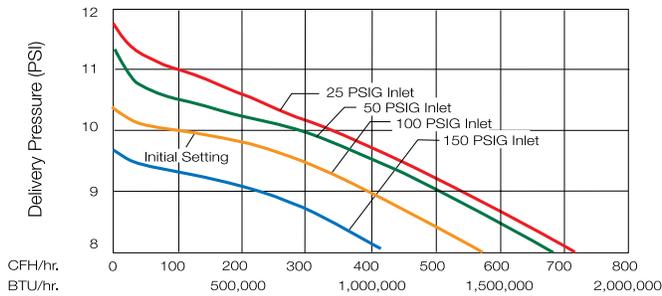
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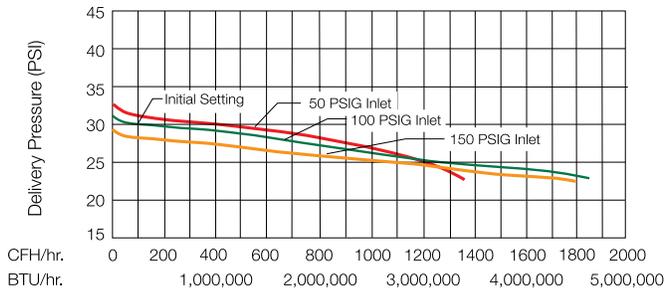
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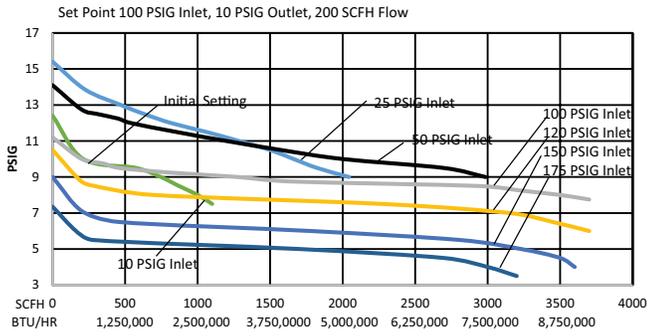


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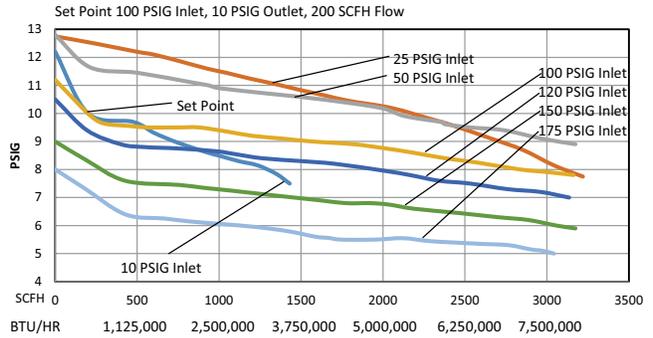


Regulator Performance Curves - High Pressure Regulator 1580 Series

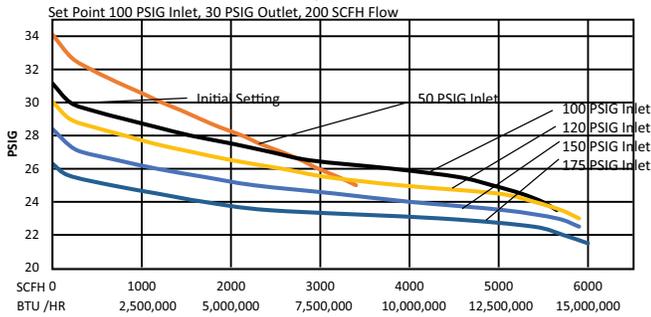
1584™/X1584VN™



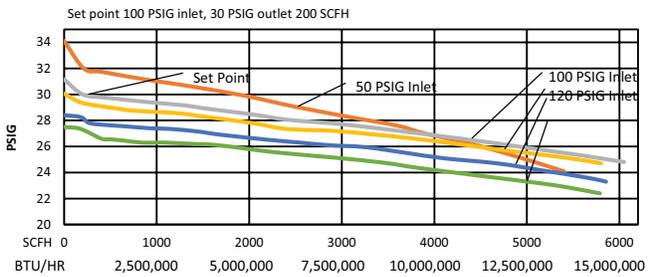
1586™/X1586™/1588VN™



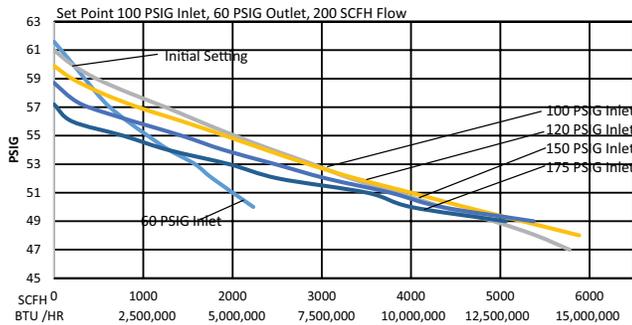
1584™/X1584VL™



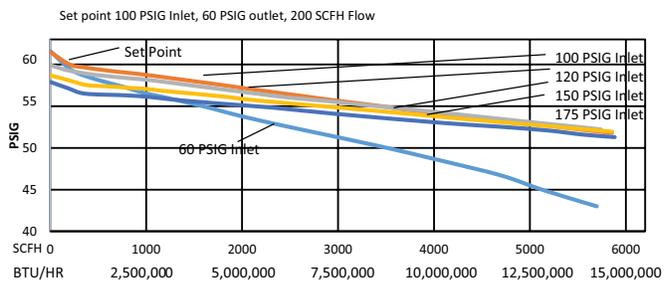
1586™/X1586™/1588VL™



1584™/X1584VH™



1586™/X1586™/1588VH™



1580V™



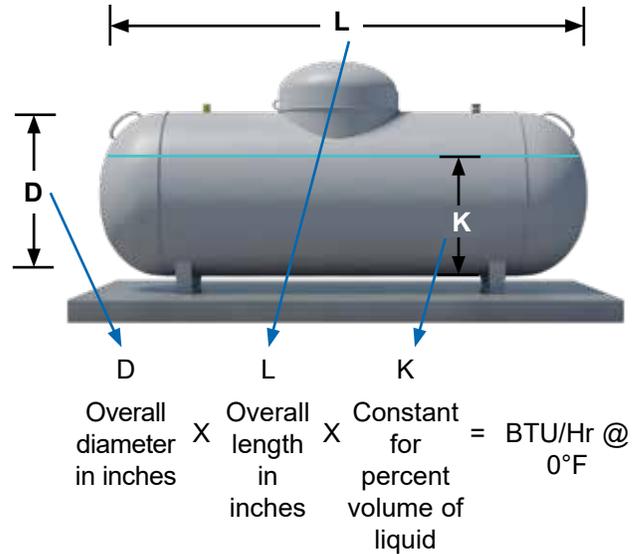
Determining Propane Vaporization Capacity

Guide for ASME LP-Gas Storage Containers

To properly size the storage container, the total BTU load must be determined. The total load is the sum of all gas usage in the installation. Future appliances which may be installed should also be considered when planning the initial installation to eliminate the need for a later revision of piping and storage facilities.

Use the below calculations to determine your propane vapor capacity according to your volume best at refill at 0°F in BTU/Hr:

Percentage in Container when refilled	"K" Factor	Calculation
60	100	D X L X 100
50	90	D X L X 90
40	80	D X L X 80
30	70	D X L X 70
20	60	D X L X 60
10	45	D X L X 45



Examples of sizing at 30% refill @ 0°F							
Container Size	D*	X	L*	X	"K"	=	BTU/hr Capacity of container
120 gals	24"		68"				114,000
250 gals	30"		94"				197,400
320 gals	30"		115"				241,500
500 gals	37½"	X	120"	X	70	=	315,000
1000 gals	41"		192"				551,000

*These dimensions are only for guidance, as tank sizes and dimensions vary by manufacturer

← Try it!

Vaporization rates at various temperatures

Reference the multiplier in the below table and multiply from results at 0°F

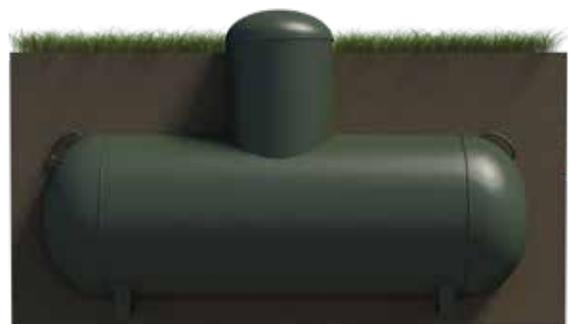
Prevailing Air Temperature	Multiplier
-15°F	0.25
-10°F	0.5
-5°F	0.75
0°F	1
5°F	1.25
10°F	1.5
15°F	1.75
20°F	2

Examples of sizing using the temperature multiplier			
Container Size	Prevailing Air Temperature	Calculation	BTU/hr Capacity of container
500 gals	-15°F	315,000 X 0.25	78,750
	5°F	315,000 X 1.25	393,750
	20°F	315,000 X 2.00	630,000
1000 gals	-15°F	551,000 X 0.25	137,750
	5°F	551,000 X 1.25	688,750
	20°F	551,000 X 2.00	1,102,000

Try it! →

Mounded & Underground containers

Sizing underground ASME containers are slightly different than sizing aboveground ASME tanks. There are two deciding factors to effectively size underground tanks: demand of all existing and future appliances and maximum anticipated frost penetration depth. Please refer to PERC CETP training 4.1 module 2 for underground ASME container sizing.





Phone: 336.449.7707

Fax: 336.449.6594

100 Rego Drive, Elon, NC 27244 USA

regoproducts.com

regolpgh3@regoproducts.com

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