



SHERWOOD VALVE LPG PRODUCTS Catalog

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A History of Quality and Innovation

For nearly a century, Sherwood has been a premier producer of gas control products. We have earned a reputation as a manufacturer that consistently meets the highest industry standards.

Originally located in Buffalo, New York, Sherwood was acquired by the Aluminum & Brass Company of Lockport, New York in 1923. Over the next 60 years, we earned a reputation for products that not only kept pace with customer requirements, but also anticipated their changing needs.

In 1985, Sherwood was acquired by the Harsco Corporation, a merger which greatly enhanced Sherwood's financial position and increased the opportunities for technological development. In 1996, Sherwood merged with the Taylor-Wharton Gas Equipment division of Harsco. Today Sherwood Valve is part of Taylor Wharton, LLC.

Our focus has expanded beyond LPG products to meet the needs of the Energy marketplace. By building on our traditional LPG product lines, Sherwood is focused on being a leading provider for both traditional and emerging fuel technologies.

All Sherwood products are designed to meet the highest standards, and only quality materials are used. Careful assembly and detailed inspection of every part ensure top performance. Sherwood is fully certified to the stringent requirements of ISO 9001, which enables us to compete confidently in the global marketplace.

Sherwood is a totally integrated brass valve manufacturer. We manufacture our own rod and raw forgings at our foundry. These forgings are then machined into the bodies that we use in our valves. Because we manufacture our own brass rod, we can control the alloy components more closely, resulting in a more durable forging. The end result is a high-quality, long-lasting valve that meets or exceeds industry standards.

Expertise

Sherwood's diverse product lines of compressed gas, propane, refrigerant gas, specialty gas, scuba diving and life support equipment have enabled us to develop varied and diverse technical expertise. Careful assembly, detailed inspection and 100% leak test of every valve ensures top performance.

Quality Products for Diverse Markets

Sherwood serves a variety of Energy markets: domestic LPG cylinders, ASME tanks and engine fuel. Our start-to-finish capabilities include:

Design and Engineering

Sherwood's diverse engineering group has many years of experience in the Energy industry. Product development is ongoing, and many of our engineers hold patents related to gas control regulation. Our on-site testing facility is furnished with state-of-the-art equipment that simulates actual environmental conditions for testing, product development and problem solving.

Production enhancements and quality improvements have been undertaken by employee involvement in the industry associations, and the implementation of Material Requirements Planning (MRP) and Capacity Requirements Planning (CRP).

A Focus on Quality

Quality is a primary focus at Sherwood, from material selection to finished product.

Our Quality Assurance Department is staffed by professionals who are highly experienced in LPG containment and usage. Sherwood continues to meet the ongoing requirements of our ISO 9001 certification.

All Sherwood products are manufactured to the highest industry standards. The products represented in this catalog meet or exceed the requirements

of the Compressed Gas Association (CGA), the National Fire Protection Association (NFPA), the Canadian Gas Association, American Society of Mechanical Engineers (ASME), or Underwriters Laboratories, Inc. Energy industry dealers should use this catalog to select the correct Sherwood Energy products for residential, recreational, commercial and industrial applications. These quality products must only be used with liquefied petroleum gas (LPG) and must be used in strict compliance with appropriate industry and government regulations.

Guidelines

To promote the correct handling and use of any Energy-related or LPG equipment, Sherwood has published a series of instruction sheets and repair instructions. These materials provide guidelines for the proper selection and repair of Sherwood products and are available from your local Sherwood distributor. Instruction sheets are provided with all replacement part kits.

NFPA Pamphlets #54 and #58 provide specific safety guidelines. The National Propane Gas Association (NPGA) is also an excellent source for proper safety procedures.

The NPGA Certified Employee Training Program (CETP), along with supporting publications and programs, should be used for proper handling and use of LPG equipment.

Sherwood will be pleased to help you with any questions or problems concerning the selection, installation or maintenance of our equipment. Contact the Sherwood Energy Customer Service Department or your local Sherwood distributor.



Warranty

Exclusive Three-Year Limited Warranty

Limited Warranty

We warrant material manufactured and sold by Sherwood to be free from manufacturing defects for a period of three years from date of shipment. Under this warranty, we will repair or replace defective material at our factory. However, no material should be returned without first obtaining written consent. This warranty covers manufacturing defects only. Items misused, altered, or neglected are not covered. We will not be liable for any loss, cost of repair, or damages of any kind connected with the use, sale, or repair of any of our products. This warranty is applicable when products are installed and used in accordance with all acceptable standards as established by NFPA and ANSI. Except for the limited warranty as stated above, Sherwood makes no claim as to the ability of a particular product used in conjunction with products of other manufacturers.

Model Changes

Sherwood’s engineering personnel are constantly researching new frontiers in gas control equipment. Sherwood reserves the right to change model designs to incorporate new engineering advances, but we shall not be required to modify equipment already sold or in service.

Safety

The Sherwood equipment shown in this catalog is offered for DOT and ASME containers as well as other applications in the LPG system. All of the equipment shown meets the safety requirements of the Compressed Gas Association, ASME, the Canadian Gas Association, the National Fire Protection Association, or Underwriters Laboratories Inc., depending on the type of equipment.

Distributors

Wherever you are, there’s a Sherwood distributor near you! Our distributors are strategically located throughout North America and carry a complete inventory of Sherwood LPG products to ensure optimum availability and fast turnaround time on every order. For high-quality valves, regulators, accessories, and the best customer service in the industry, rely on Sherwood’s world-renowned distributor network!

For more information about our three-year limited warranty, contact your Sherwood distributor today.

The Gas Check™ Way

Sherwood is a member of the NPGA Gas Check Program, established to promote customer safety and satisfaction. The Gas Check Way is a system of inspection and maintenance procedures for servicing LPG installations while promoting optimum safety and efficiency. For information on the Gas Check Program, contact the National Propane Gas Association, 1150 17th St. NW, Suite 310, Washington, DC 20036.


Customer Safety

Since LPG dealers are the primary customer contact, the dealer has an obligation to warn customers of potential hazards of LPG and ensure that they are made aware of the available safety instructions for the use and handling of LPG.

Dealers must warn customers that LPG is flammable and explosive. Instruct customers to leave the area immediately if they should hear, see, or smell gas escaping from a cylinder. All customers should be informed that LPG cylinders should be used and stored outside at all times.

Important

Sherwood LPG products must be used in strict compliance with all Sherwood instructions, the requirements and provisions of the National Fire Protection Association Pamphlets #54 and #58, DOT and ANSI standards, and all applicable federal, state, provincial, and local laws, regulations, codes, and standards. All LPG systems and components must be regularly maintained and inspected by personnel trained in accepted LPG industry procedures.



WARNING

- Leaking gas can cause fires or explosions
- Only trained personnel should work on gas systems
- Inspect gas systems regularly
- Replace equipment as required

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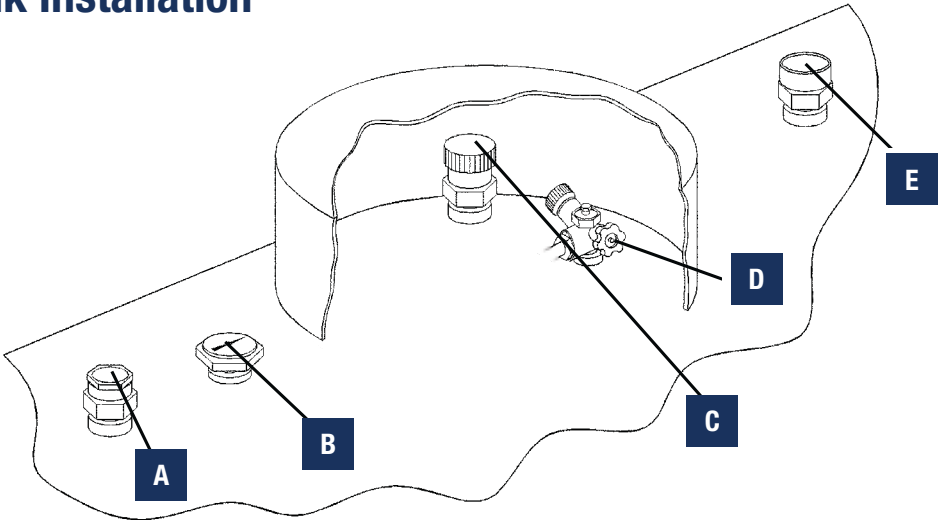
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Applications

Domestic Tank Installation



**A Checkmate™
Liquid Withdrawal
Excess Flow Valve**
PVE5137 or PVE5136 (see Valves
Section, **page 27**)



**D “Gas Check Ready” Multi
Valve (with Vapor Return)**
PVE2033DLDBT* or Multi-Purpose Valve
PVE2034DLT† (no vapor return, not
pictured) (see Valves Section, **page 19**)
*Replaces *PVE2033CLDBT and †PVE2034CLT*



B Float Gauge
FG3981 or FG2281 Series (see Float
Gauges Section, **pages 36 and 38**)

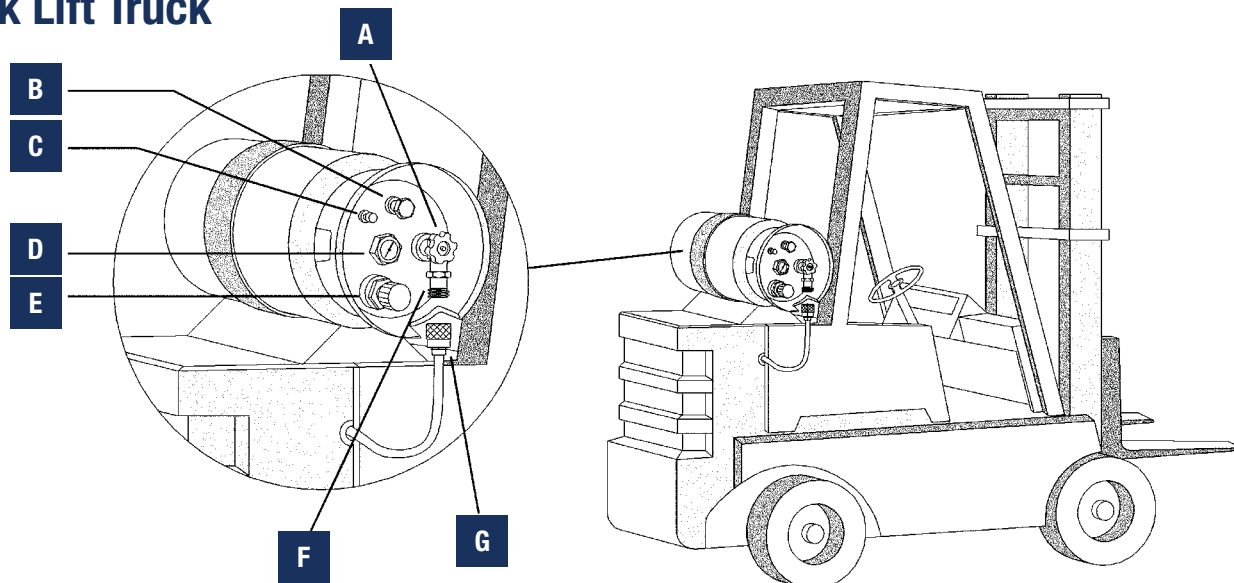


C Filler Valve
AFV10 (see Valves Section, **page 24**)



E Relief Valve
UVE433A Series, UVE443A Series,
or UVE453A Series (see Valves Section,
page 28)

DOT Fork Lift Truck



PVE1449

A Service Valve

PVE1427 Series or PVE1449 Series
(see Valves Section, [page 21](#))

**D Float Gauge**

FG1284 Series or FG2284 Series
(see Float Gauges Section, [page 38](#))

**B Safety Relief Valve**

PVE435B* (see Valves Section, [page 29](#))
Replaces *PVE435A

**E Filler Valve**

AFV6* or AFV6-30*
(see Valves Section, [page 23](#))
Replaces *PVE1855SD and †PVE1855SD-30

**C Liquid Level Gauge**

PVE12A (see Valves Section, [page 33](#))

**F Connector**

PA1428M (see Valves Section, [page 22](#))

**G Connector**

PA1428F (see Valves Section, [page 22](#))

Applications

DOT Cylinder Valves

Four-Hole Design



Full Internal Relief Valve

PVE445AT
Used on multiport 420-lb. DOT containers (see Valves Section, [page 30](#))



Filler Valve

AFV6*
(see Valves Section, [page 23](#))
*Replaces *PVE1855SD*

420-lb. Vertical Container Float Gauge

FG3981-001NR
1" NPT mounting (see Float Gauges Section, [page 36](#))



Fixed Liquid Level Gauge

PVE3250ALG7T-11.0
or PVE3329BLGT-11.0

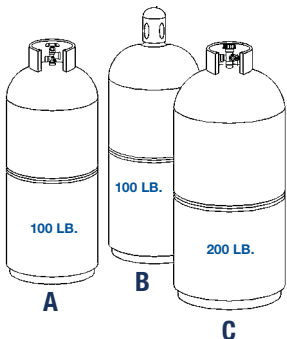
- Use where a separate pressure relief device is provided (such as on a multiport 420-lb. cylinder)
- Comes with 11" dip tube (see Valves Section, [page 16](#))

One-Hole Design



PVE2035AT Series

- Up to 420-lb. LPG capacity
- Combines a service line valve, a back check filler valve, with secondary back check, a relief valve, and a fixed maximum liquid level gauge (must specify liquid level tube length when ordering)
- Lightweight and compact
- Ideal for on-site filling of DOT cylinders up to 420 lb. capacity without interrupting service
- Combines several DOT container components in one tank opening
- Filler connection: 1 3/4" ACME thread
- Inlet: 1"-1 1/2" NGT
- Outlet: POL (CGA510)
- Pressure relief setting: 375 psig (see Valves Section, [page 19](#))



PVE3250CLM-375

Liquid Withdrawal Valve (see Valves Section, [page 18](#)), works with 100-lb. cylinders (A)



PVE3250 Series Valves

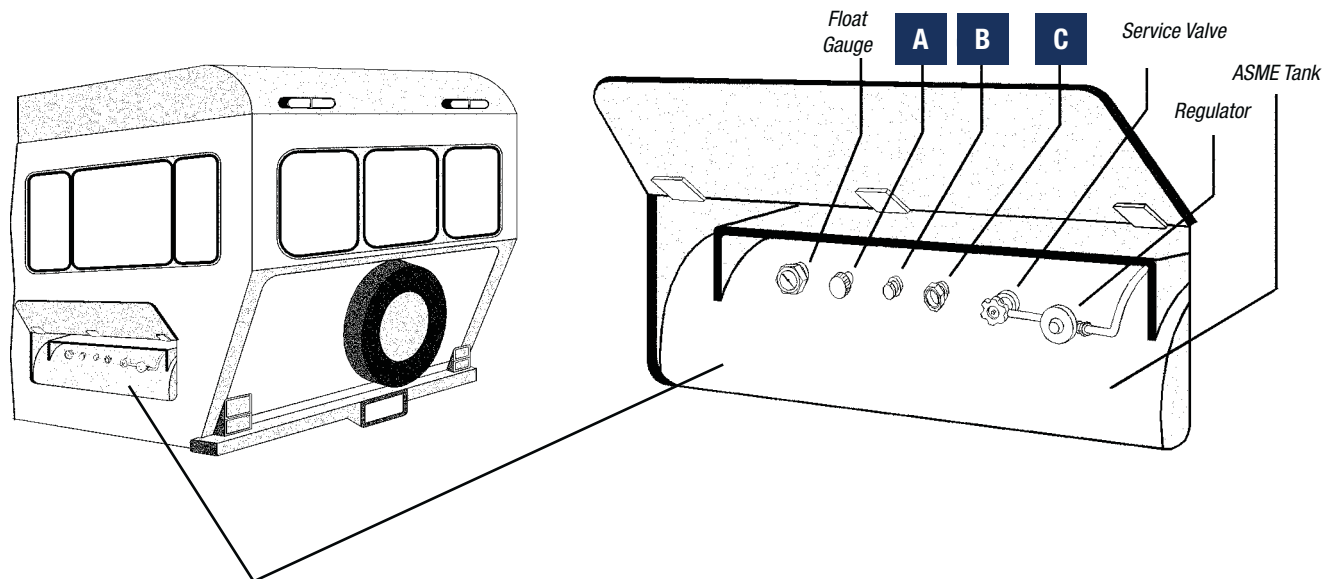
(see Valves Section, [page 18](#)), work with 100-lb. cylinders (A and B)



PVE2030BC

Multi-Purpose Valve with double back-check valve ([page 19](#)), works with 100- and 200-lb. cylinders (A and C)

Recreational Vehicle



A



Filler Valve

AFV6 Series
(see Valves Section, [page 23](#))

B



Liquid Level Gauge

PVE12 Series
(see Valves Section, [page 33](#))

C

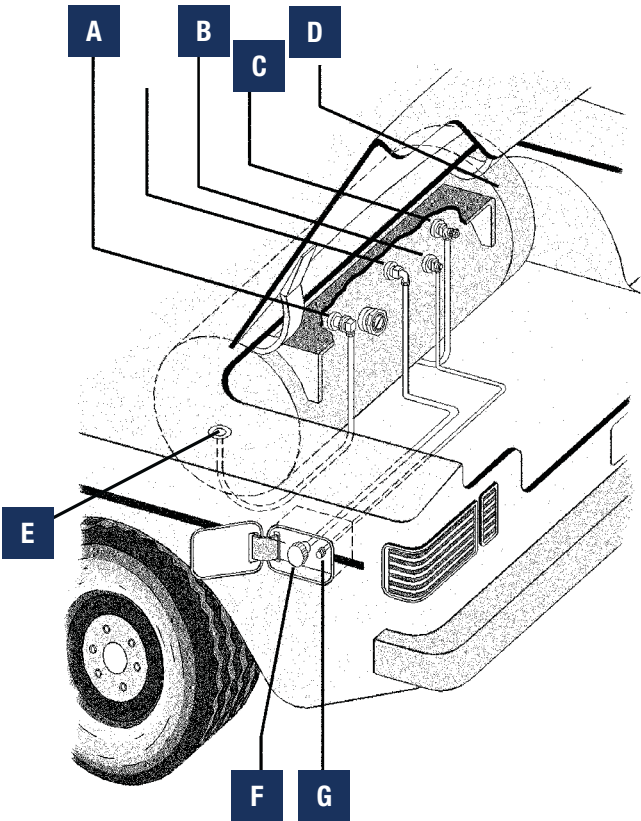


Relief Valve

UVE436BR
(see Valves Section, [page 30](#))

Applications

Engine Fuel Applications



A Relief Valve
UVE436BR Series
(see Valves Section, [page 30](#))



B Shutoff Valve
For remote liquid level gauge
PVE10DRF or PVE10ARF
(see Valves Section, [page 33](#))



C Liquid Service Valve
PVE1447 Series
(see Valves Section, [page 20](#))

D ASME Tank

E Vent and Rain Cap



F Bulk Head
Filler valve AFV6BRCN
(see Valves Section, [page 24](#))



G Liquid Level Gauge
(With dial) PVE12A (see Valves
Section, [page 33](#))

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Overview

General

We engineer and manufacture Sherwood LPG valves to the highest industry standards. Our valves are tested and listed by Underwriters Laboratories Inc. and ASME. Our line of valves includes:

- Cylinder and Service Valves
- Multi-Purpose Valves
- Filler Valves
- Liquid Withdrawal Valves
- Pressure Relief Valves

We make Sherwood valves for a full range of commercial, industrial, and domestic applications, including installations in engine fuel, fork lift trucks, and recreational vehicles as well as domestic tanks.

Pressure Relief Valve Service Life

All pressure relief valves, whether designed as an individual unit or as an integral part of another valve, contain similar design features and have similar functions. They all utilize the same basic operation principles, and the same maintenance guidelines apply.

The life of a Sherwood pressure relief valve is affected by many variables, including climate, air pollution, gas purity, and other factors. Therefore, our valves must be routinely inspected according to industry standards. Sherwood recommends that our valves be replaced after 10 years of use.

This section of our catalog does not cover all aspects of inspection and maintenance of pressure relief valves. For more detailed information on these subjects, please refer to the following:

1. CGA Pamphlet S-1.1, *Pressure Relief Device Standards - Cylinders*, Section 9.1
2. NPGA Certified Employee Training Program (CETP) and other guidelines
3. NFPA Pamphlet #58, *Storage and Handling of Liquefied Petroleum Gases*
4. NFPA Pamphlet #59, *LP Gases at Utility Gas Plants*

Safety Guidelines for Cylinder Valves

Cylinder valves serve many purposes, including vapor withdrawal and shutoff, liquid withdrawal and shutoff, filling cylinders, releasing pressure, and liquid level indication. Because of the hazards involved in possible malfunction of this type of valve, all cylinder valves must be inspected on a regular basis, particularly before filling cylinders, to ensure that no gas escapes. Cylinders must not be overfilled.

Customers using LPG cylinders are not always aware of the hazards of LPG. Since LPG dealers are the primary customer contact, the dealer has an obligation to warn customers of these potential hazards and ensure that they receive proper safety instructions regarding the use and storage of cylinders (see the Customer Safety Section found with the Sherwood warranty, **page 4**).

Manufacturing Date

The manufacturing date is stamped on the wrench flats of most Sherwood valves. Pressure relief valves have this date stamped in the body of the valve. The manufacturing date of all Sherwood valves is coded in one of six ways (see Table 1 on **page 13**).



WARNING

- Leaking gas can cause fires or explosions
- Only trained personnel should work on gas systems
- Inspect gas systems regularly
- Replace equipment as required

TABLE 1 - SHERWOOD VALVE DATE CODE

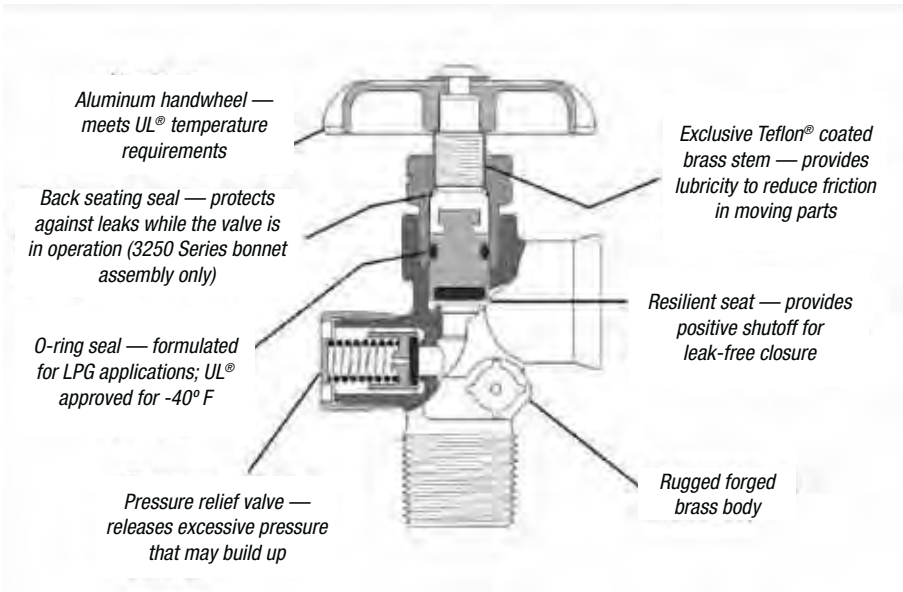
How Most Valves Are Coded	Abbreviations	Example
Month and year (used up to 1976)	Month (alphabetic), Year (single-digit numeric) A - January B - February C - March D - April E - May F - June G - July H - August I - September J - October K - November L - December	D5 could mean: April 1955 April 1965 April 1975
Quarter and year (used 1976–1982)	Quarter (alphabetic), Year (double-digit numeric) A - 1st quarter D - 2nd quarter G - 3rd quarter J - 4th quarter	G80 means: 3rd quarter 1980
Month and year (used 1982–1988)	Month (alphabetic), Year (single-digit numeric)	F84 means: June 1984
Week and year (used 1988–present)	Week (double-digit numeric), Year (double-digit numeric) 01 - 1st week of calendar year 02 - 2nd week of calendar year	01-89 means: First week of 1989; 10-03 means: Tenth week of 2003
Relief Valves: Month and year	Month (alphabetic or numeric), Year (double-digit numeric)	3-88 or C-88 both mean: March 1988
Model 3349 OPD Valves Year and day	Year (alphabetic), Day (numeric)	C212 means: 212th day of 1999 or July 31, 1999

Design Features

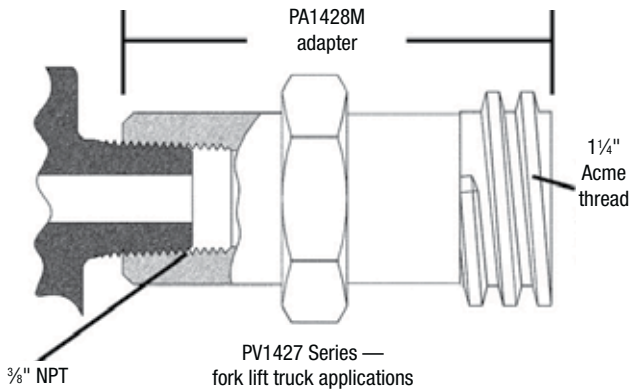
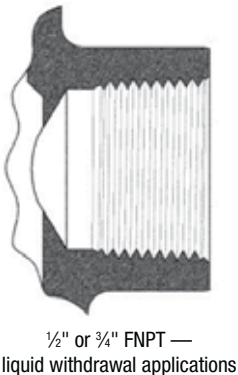
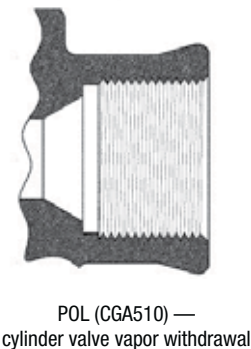
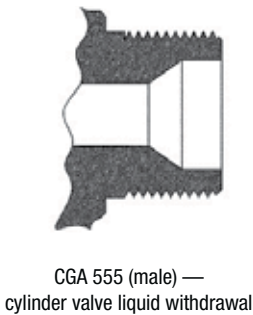
Cylinder Valve Features

Valves and options available

Sherwood manufactures an extensive line of cylinder and service valves for various LPG applications, including fork lift trucks, recreational vehicles, and engine fuel installations as well as domestic and commercial tanks up to and including 1000-gallon water capacity tanks. Available options include liquid level gauges, liquid withdrawal tubes, pressure relief devices, hydrostatic relief devices, various outlet connections, and various bonnet assemblies (see Figs. 1 and 2).



Outlet Connections — Fig. 1



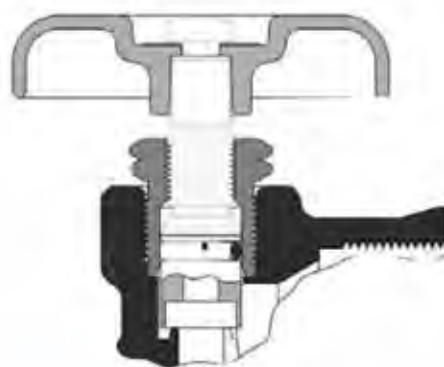
Cylinder Valve Features

Bonnet Assembly Combinations — Fig. 2



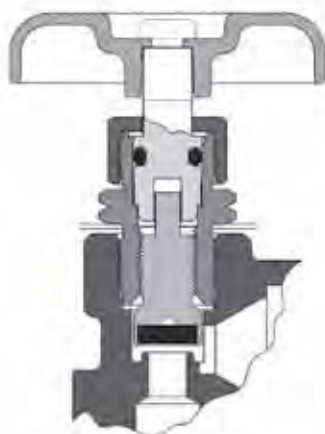
3250-8LH

Bonnet assembly with back seating seal



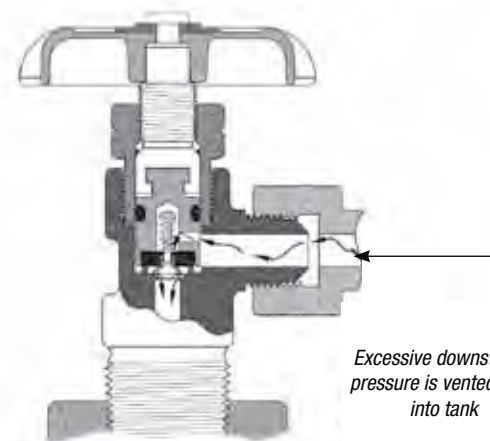
3329-13LH

Used in compact valves



3429-100

Dual bonnet for ASME multi-valve applications



3250D-8LH

Engine fuel applications (internal hydrostatic relief valve allows trapped line pressure to vent back into supply tank with valve in closed position)

DOT Cylinder Valves — 100 lb.

DOT Cylinder Valves for Vapor Withdrawal — Up to 100 lb. LPG Capacity (PVE3250 Series)



PVE3250C-375

PVE3250C-375

- Integral relief device
- Start-to-discharge pressure: PVE3250C-375 — 375 psig
- The PVE3250C-375 valve is designed for cylinders rated at 240 psig

Repair Kit

- 3250-8LH-KIT — see **pages 74–75**



PVE3250CLG-XXX

PVE3250CLG-XXX

- Integral relief device
- Same as the PVE3250 Series but includes a fixed maximum liquid level gauge — specify the liquid level tube length
- Replacement Parts Kit — see **page 40**

Repair Kit

- 3250-8LH-KIT — see **pages 74–75**



PVE3250ALG7T-X.X

PVE3250ALG7T-X.X

- Fixed maximum liquid level gauge — specify liquid level tube length when ordering
- Use where a separate pressure relief device is provided (for example, on a multiport 420-lb. cylinder)
- Replacement Parts Kit — see **page 40**

Repair Kit

- 3250-8LH-KIT — see **pages 74–75**



PVE3250ADT-7

PVE3250ADT-7

- Use where a separate pressure relief device is provided (for example, on a multiport 420-lb. cylinder)

Repair Kit

- 3250-8LH-KIT — see **pages 74–75**



PVE3250BC-312

PVE3250BC-312

- Replacement valve for small ASME engine fuel tanks with 20 sq. ft. or less in surface area that are now obsolete
- Flow rate 705 CFM air

Repair Kit

- 3329-13LH-KIT — see **pages 78–79**

DOT Cylinder Valves for Liquid Withdrawal — Up to 100 lb. LPG Capacity (PVE3329 Series)



PVE3329BDBT

- Used where a separate pressure-relief device is provided for ASME tanks or DOT cylinders
- Dual bonnet
- Side boss is tapped $\frac{1}{8}$ " FNPT and plugged
- Replacement Parts Kit: 6775-60-KIT — see **page 42**

PVE3329BT

- Used where a separate pressure-relief device is provided for ASME tanks or DOT cylinders
- Dual bonnet
- Side boss is tapped $\frac{1}{8}$ " FNPT and plugged
- Replacement Parts Kit: 3329-13LH-KIT — see **pages 78–79**



PVE3329BDBLGT-X.X

- Used where a separate pressure-relief device is provided for ASME tanks or DOT cylinders
- Dual bonnet
- Side boss is tapped $\frac{1}{8}$ " FNPT and plugged
- Replacement Parts Kit: 6775-60-KIT — see **page 42**
- Fixed maximum liquid level gauge — specify liquid level tube length when ordering

PVE3329BLGT-X.X

- Used where a separate pressure-relief device is provided for ASME tanks or DOT cylinders
- Side boss is tapped $\frac{1}{8}$ " FNPT and plugged
- Replacement Parts Kit: 3329-13LH-KIT — see **pages 78–79**
- Fixed maximum liquid level gauge — specify liquid level tube length when ordering

DOT Cylinder Valves — 100 lb.

DOT Cylinder Valves for Liquid Withdrawal —
Up to 100 lb. LPG Capacity (PVE3250 Series)



PVE3250CLM-375

PVE3250CLM-375

- Use in 100-lb. capacity cylinders where liquid withdrawal is required
- Pressure relief device is set to relieve at 375 psig
- Fixed maximum liquid level gauge with 11.6" dip tube for 100-lb. cylinder — specify length for other cylinder sizes
- Integral excess flow check valve:
Closing flow liquid: 1 GPM of LPG
- Inlet: ¾" — 14 NGT
- Outlet: 0.903—14 LH; male CGA 555
- For replacement parts, see **page 40**.

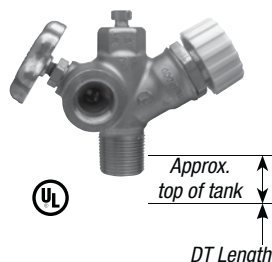
Repair Kit

- 3250-8LH-KIT — see **pages 74–75**

ORDERING INFORMATION					
Part Number	Container Connection	Service Connection	Fixed Maximum Liquid Level Gauge	Valves Start-to-Discharge Setting (psig)	Pressure Excess Flow
PVE3250C-375	¾" — 14 NGT	POL(CGA510)	No	375	No
PVE3250CLG	¾" — 14 NGT	POL(CGA510)	Yes	375	No
PVE3250ALG7*	¾" — 14 NGT	POL(CGA510)	Yes	—*	No
PVE3250AD-7*	¾" — 14 NGT	POL(CGA510)	No	—*	No
PVE3250BC-312	¾" — 14 NGT	POL(CGA510)	No	312	No
PVE3250CLM-375	¾" — 14 NGT	Male CGA555	Yes	375	Yes

* Use where separate pressure relief device is provided.

Multi-Purpose Valves for Bulk Tank Installations



PVE2033DLBT

PVE2033DLBT

- Incorporates a vapor service outlet (POL, CGA510), a vapor equalizing connection, and a fixed maximum liquid level gauge (specify liquid level tube length when ordering; see Replacement Parts Section, **page 41**); a separate filler valve must be used
- Designed for easy installation with a standard wrenching hex that prevents deformation of the valve body
- Compact design allows the use of small hoods and direct connection of the regulator
- Sturdy, simple and economical installation
- Side boss is tapped $\frac{1}{8}$ " FNPT and plugged
- Gauge port equipped to measure change in pressure
- 2033-100-KIT — see **pages 60–61**



PVE2035AT

PVE2035AT Series, up to 420 lb. LPG Capacity

- Combines a service line valve, a back check filler valve with secondary back check, a relief valve, and a fixed maximum liquid level gauge (specify liquid level tube length when ordering; see Replacement Parts Section, **page 41**)
- Lightweight and compact
- Ideal for on-site filling of DOT cylinders up to 420 lb. capacity without interrupting service
- Combines several DOT container components in one tank opening
- Filler connection: $1\frac{3}{4}$ " ACME thread
- Inlet: $1"-1\frac{1}{2}$ " NGT
- Outlet: POL (CGA510)
- Pressure-relief setting: 375 psig
- PVE2035AT-250 — for ASME 100-gallon propane tanks; pressure relief setting is 250 psig
- Gauge port equipped to measure change in pressure
- 2035-100-KIT — see **pages 64–65**
- 3250-8LH-KIT — see **pages 74–75**



PVE2030BC

PVE2030BC with Double Back-Check Valve, up to 200 lb. LPG Capacity

- Multi-purpose valve with double back check filler valve
- Ideal for on-site filling of DOT cylinders up to 200 lb. LPG capacity without interrupting service
- All functions are combined in one valve, permitting its use on cylinders with a $\frac{3}{4}$ " pipe thread opening
- Includes a service valve, pressure relief valve, back check filler valve with secondary backcheck, and a fixed maximum liquid level gauge (specify liquid level tube length when ordering; see Replacement Parts Section, **page 40**)
- Filler connection: $1\frac{3}{4}$ " ACME thread
- Inlet: $\frac{3}{4}$ "–14 NGT
- Outlet: POL (CGA510)
- Pressure-relief setting: 375 psig
- 3329-13LH-KIT — see **pages 78–79**
- 2030-100-KIT — see **pages 60–61**



PVE2033CLDBT

PVE2033CLDBT

- Same as the PVE2033CLT, but incorporates a Dual Bonnet®, one-piece bonnet and stem assembly for easy repair while the valve is fully open, so gas service is not interrupted
- For replacement parts section, see **page 41**
- Gauge port equipped to measure change in pressure
- 2033-100-KIT — see **pages 60–61**
- 6775-60-KIT — see **pages 82–83**



PVE2034CLT

PVE2034CLT

- Same as the PVE2033CLT, but does not include a vapor return valve or a $\frac{1}{4}$ " tapped side boss
- Incorporates a fixed maximum liquid level gauge (specify liquid level tube length when ordering; see Replacement Parts Section, **page 41**)
- Inlet: $\frac{3}{4}$ "–14 NGT
- Outlet: POL (CGA510)
- 3329-13LH-KIT — see **pages 78–79**

Service Valves

Service Valves, PVE1447 Series



PVE1447B

PVE1447C
Low ProfilePVE1447 Series ASME Service Valves
for Engine Fuel Applications

- Integral excess flow check at inlet
- Flow rated at approximately 1.7 or 2.3 GPM LPG
- For liquid or vapor withdrawal from engine fuel containers with a separate relief valve
- PVE1447B — standard full size straight $\frac{3}{8}$ " SAE flare outlet service valve
- PVE1447C — low profile; compact for easy installation

Repair Kit

- For PVE1447B, see 3250-8LH-KIT on **pages 74–75**
- For PVE1447C, see 3329-13LH-KIT on **pages 78–79**



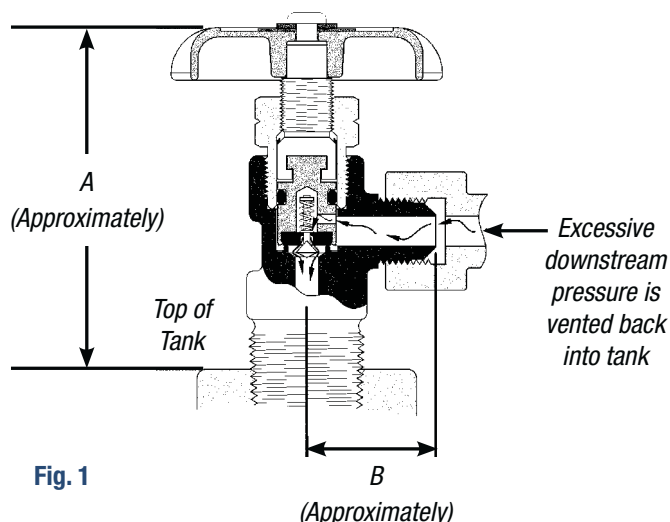
PVE1447D

PVE1447CAH
Low ProfilePVE1447DMF
Angled SAE OutletPVE1447 Series with Hydrostatic Relief
for Engine Fuel Applications

- Incorporates all features of the PVE1447 Series, plus internal hydrostatic relief, which vents trapped liquid with excessive line pressure back to the tank
- PVE1447D — standard full size straight $\frac{3}{8}$ " SAE flare outlet service valve
- PVE1447CAH — Canadian Standards Association (CSA) Certified low profile for easy installation
- PV1447DMF — angled $\frac{3}{8}$ " SAE flare outlet; uses shorter couplings and lower hoods; permits easy connection of flare nuts
- Eliminates the need for an external hydrostatic relief valve for liquid lines where liquid can be trapped between two shutoffs
- To ensure proper functioning of the excess flow feature, these valves should be fully open and backseated when in use

Repair Kit

- 3250D-8LH-KIT — see **pages 76–77**



Service Valves with Hydrostatic Relief

- Recognize a pressure increase in the downstream line of approximately 25 to 50 psig differential
- LPG flows back into the tank and not to the atmosphere (see Fig. 2)
- Eliminate the need for external hydrostatic relief valve between shutoff valves that could vent to the atmosphere; connections are eliminated, reducing the number of potential leak points

Service Valves, PVE1427 and PVE1449 Series (DOT)



PVE1427B
3250-8LH-KIT



PVE1449
3329-13LH-KIT
Tagged for vapor service



PVE1427C
3329-13LH-KIT
Tagged for vapor service

PVE1427 Series Dot Cylinder Service Valves for Fork Lift Truck Applications

- Integral excess flow check at inlet
- Flow rated at approximately 1.7 GPM LPG
- For vapor or liquid withdrawal from fork lift truck containers
- PVE1427B — standard full size straight $\frac{3}{8}$ " NPT outlet service valve
- PVE1449 — smaller body and bonnet assembly, smaller diameter handwheel, and lower profile than the PVE1427B and PVE1427C valves
- PVE1427C — smaller body and bonnet assembly

Internal Excess Flow Valve

- Designed for both ASME engine fuel applications (PVE1447 Series) and DOT fork lift truck applications (PVE1427 and PVE1449 Series)
- Because Sherwood's excess flow device is internal to the valve body, it is unaffected by internal variations in cylinder construction, which can contribute to premature shutoff
- Designed with a low-pressure differential shutoff rated at 1.7 GPM

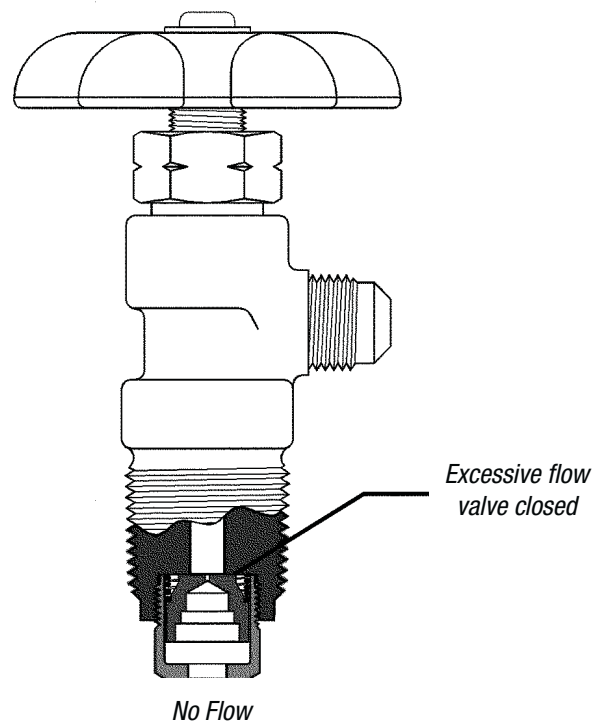


Fig. 2

NOTE: Sherwood's internal excess flow valve has been field tested in both the US and Canada on $\frac{3}{8}$ -cubic inch (5.2-liter) and 400-cubic inch (6.5-liter) displacement engines. Analysis of engine fuel requirements has confirmed that a 550 CID engine would consume less than 1.08 GPM under full load with a 50% safety factor. Restricting flow under 2 GPM minimizes the loss of LPG in the event of a major break, while maintaining adequate flow for the LPG fueled engine application.

ORDERING INFORMATION								
Part Number	Container Connection	Service Connection	Dimensions (See Fig. 1, p. 20)		Excess Flow (GPM)	Component Parts		
			A	B		Bonnet Assembly Kit	Handwheel	Handwheel Screw
PVE1447B	¾" – 14 NGT	¾" SAE	3⅜"	1⅝"	1.7	3250-8LH-KIT	1901S	J12-F10-85AP
PVE1447C	¾" – 14 NGT	¾" SAE	2⅜"	1⅝"	1.7	3329-13LH-65-KIT	3329-7	3740-13
PVE1447D	¾" – 14 NGT	¾" SAE	3⅜"	1⅝"	1.7	3250D-8LH-KIT	1901S	J12-F10-85AP
PVE1447CAH	¾" – 14 NGT	¾" SAE	2⅞"	1⅝"	1.7	3250D-8LH-KIT	1901S	J12-F10-85AP
PVE1427B	¾" – 14 NGT	¾" NPT	3⅜"	1⅝"	1.7	3250-8LH-KIT	1901S	3740-13
PVE1427CV	¾" – 14 NGT	¾" NPT	2⅝⅙"	1⅝"	1.7	3329-13LH-65-KIT	3329-7	3740-13
PVE1449	¾" – 14 NGT	¾" NPT	2½"	1⅝"	1.7	3329-13LH-65-KIT	1449-7	3740-13
PVE1449V	¾" – 14 NGT	¾" NPT	2½"	1⅝"	1.7	3329-13LH-65-KIT	1449-7	3740-13
PVE1447DMF	¾" – 14 NGT	¾" SAE	2⅞"	1⅞"	2.5	3250D-8LH-KIT	1901S	J12-F10-85AP
PVE1427C	¾" – 14 NGT	¾" NPPT	3⅞⁄₆₄	1⅜⁄₆₄	1.7	3329-13LH-65-KIT	3329-7	3740-13



Lift Truck Connectors — PA1428M and PA1428F

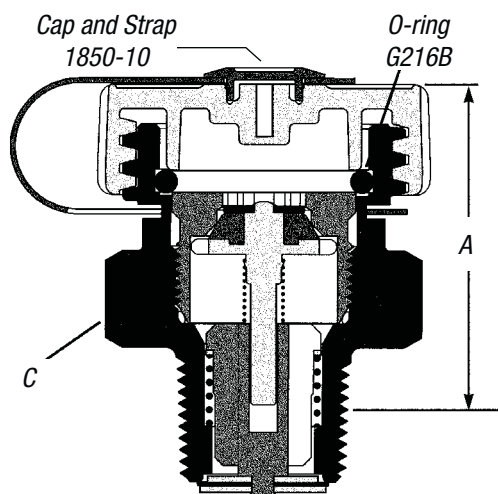
- For installation on LPG engine fuel lift truck systems
- Both connectors automatically close when disconnected
- PA1428M (Male Connector): ¾– 18 NPT x 1¼– 5 ACME
- PA1428F (Female Connector): ¼– 18 NPT x 1¼– 5 ACME

AFV Series: Double Back Check Filler Valves

- Double back check construction
- The large hex lower body allows a socket to be used during installation (except on angled outlet fill valves AFV6-30 and AFV6BRCN)
- All valves are UL® Listed (per UL® 125) and meet NFPA standards
- High filling capacity — see Ordering Information on **page 25** for connection sizes, valve dimensions, and fill rates at various differential pressures
- Equipped with $\frac{3}{4}$ " MNPT outlet connection and $1\frac{3}{4}$ " ACME inlet connection or special $\frac{3}{4}$ " FNPT and $\frac{1}{2}$ " SAE male flare inlet connection



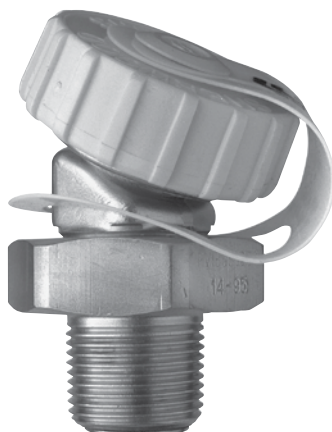
AFV6



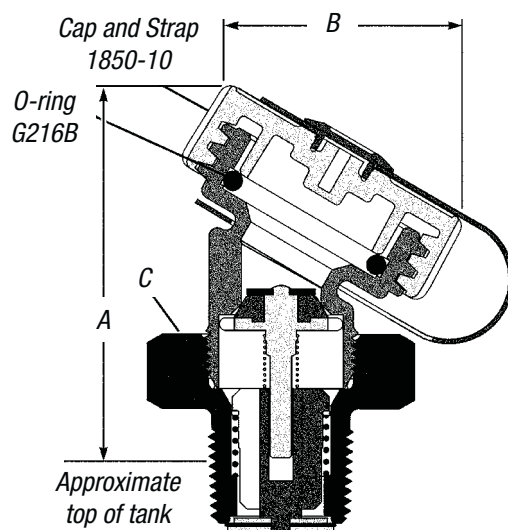
AFV6*

- Machined one-piece body
- Used primarily for ASME engine fuel tanks or lift truck cylinders
- Keeper strap provided
- 1855-100-KIT — see **pages 56–57**

Replaces *PVE1855SD



AFV6-30



AFV6-30*

- 30° angle on the $1\frac{3}{4}$ " ACME filler connection facilitates connecting and disconnecting in certain engine fuel tank applications
- 1855-100-KIT — see **pages 56–57**

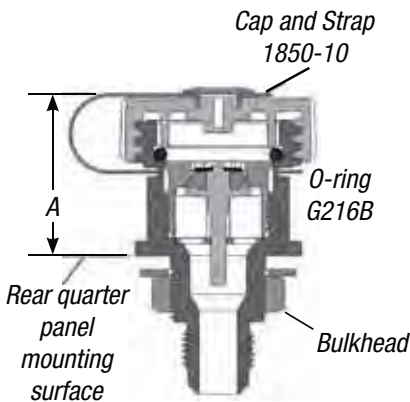
Replaces *PVE1855SD-30

Filler Valves

AFV Series: Back Check Filler Valves



AFV6BRCN



AFV6BRCN*

- Designed for engine fuel application
- Bulkhead mounted (rear quarter panel well)
- Single back check
- Remote filling
- One-piece body
- Bulkhead thread 1-18 UNS-2A
- Inlet: 1 3/4" ACME
- Outlet: 1/2" SAE flare

Replaces *PV1855BRCN



AFV10

AFV10*

- Low-profile design for bulk tank and engine fuel applications
- Optimized fill spray pattern and high filling capacity
- Improved piston alignment and seal
- Durable, mechanically assembled poppet and seal design
- Low differential shutoff
- AFV10-100-KIT

Replaces *PVE623C

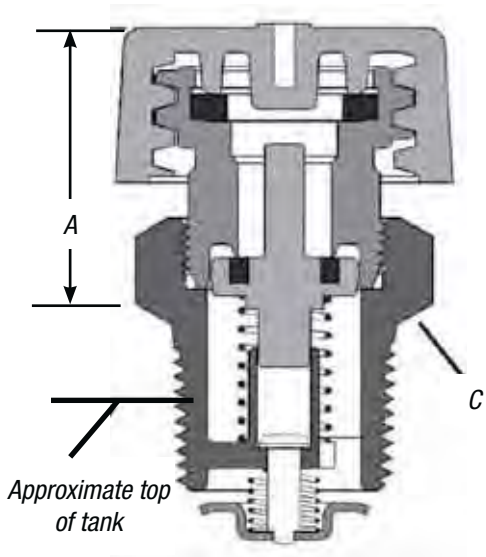
ORDERING INFORMATION									
Part Number	Container Connection	Filler Connection	Dimensions (Inches)			Fill Rate at Various Differential Pressures (GPM Propane)			
			A	B	C Hex	10 psig	25 psig	50 psig	75 psig
AFV6	3/4" NPT	1 3/4" ACME	2 7/64"	—	1 3/4"	19	30	43	60
AFV6-30	3/4" NPT	1 3/4" ACME	2 19/32"	1 1/4"	1 3/4"	19	30	43	60
AFV6BRCN	1/2" SAE flare	1 3/4" ACME	1 5/8"	—	—	19	30	43	60
AFV10	1 1/4" NPT	1 3/4" ACME	2	—	1 5/8"	70	92	144	158

NOTE: For replacement components, please refer to the following chart.

FOR VALVE		
	See Instruction Sheet:	Use Replacement Part Kit:
AFV6 Series	R-1855	1855-100-KIT
AFV10	R-623C	623C-100-KIT



PVE1876



PVE1876 Vapor Return Valve

- Has upper positive back check valve and lower excess flow valve
- Attachment of the vapor hose coupling with its projecting nozzle opens the back check valve to permit flow in both directions
- 1876-100-KIT — see pages 58–59

ORDERING INFORMATION

Part Number	Container Connection	Filler Connection	Dimensions (Inches)			Fill Rate at Various Differential Pressures (GPM Propane)			
			A	B	C Hex	10 psig	25 psig	50 psig	75 psig
PVE1876	¾" NPT	1¾" ACME	1 5⁄₆₄"	—	1 ¼"	At 100 psig inlet pressure, LPG flow is 3100 CFH (vertical), 2970 CFH (horizontal)			

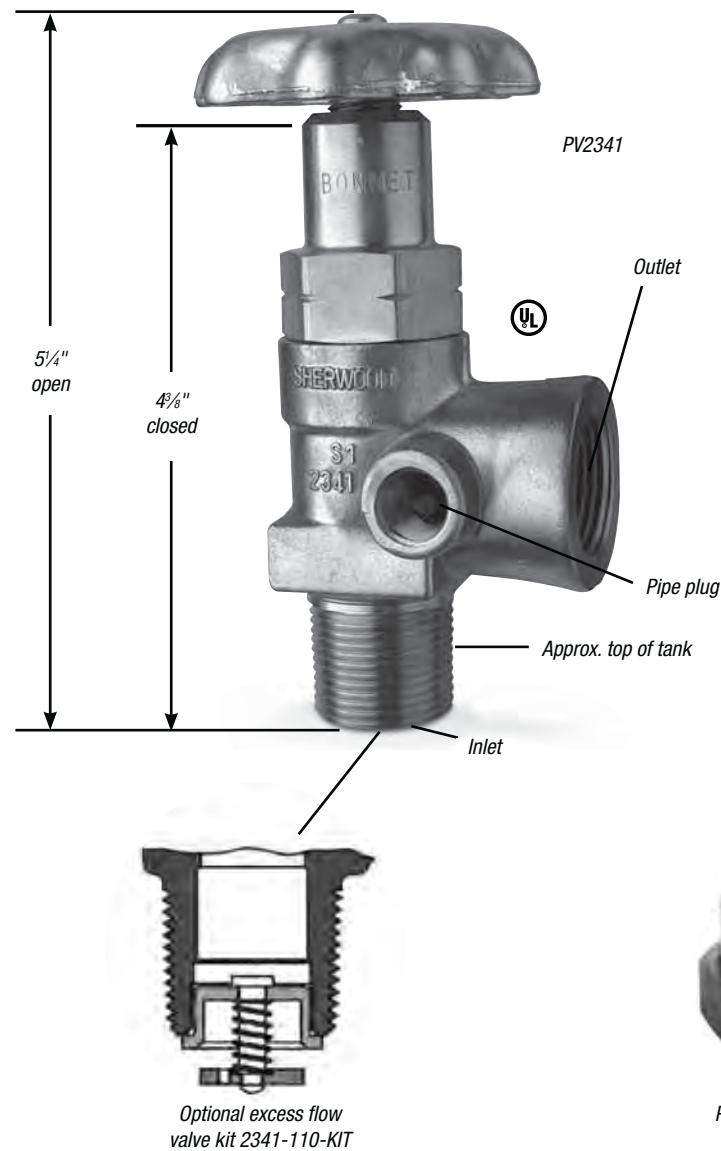
NOTE: For replacement components, please refer to the following chart.

FOR VALVE

	See Instruction Sheet:	Use Replacement Part Kit:
PVE1876	R-1876	1876-100-KIT

Liquid Withdrawal Valves

Liquid Withdrawal Valves for ASME Bulk Tank Installation —
(PV2341 Series)



PV2341 Series Transfer Valve for Liquid Withdrawal

- Withdraw liquid LPG from a stationary tank during an emergency or when relocation of the tank is necessary
- Incorporate an O-ring seal on the lower stem assembly, a back seat feature, and swivel seat construction for durability; the side outlet boss is tapped 1/4" FNPT and plugged
- Available with integral excess flow valves — see Ordering Information **below**
- All tanks using a PV2341 Series transfer valve must be pre-fitted with a Sherwood Checkmate™ liquid excess flow valve
- The PV2341 valve when used with the newer style adapter PA5138 and Checkmate™ valves PVE5136 or PVE5137 is designed for permanent installation
- The PVE valve when used with the older style adapter PA5133 and Checkmate™ valves PVE5133S or PV5135S is not recommended for permanent installation
- For replacement parts, refer to **page 41**
- 2341-100-KIT — see **pages 68–69**
- 2341-110-KIT — see **pages 70–71**

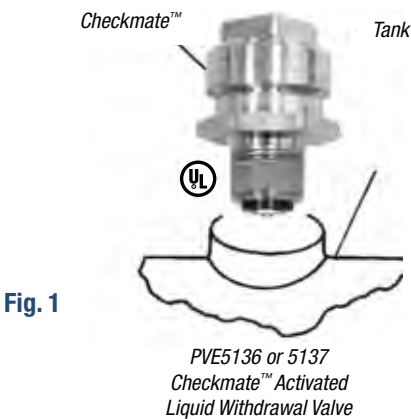


Fig. 1

ORDERING INFORMATION					
Part Number	Inlet Connection (NGT)	Outlet Connection (FNPT)	Flow at 10 psig Differential (GPM)	Excess Flow Valve	Excess Flow — Approx. Closing Flow (GPM)/LPG
PV2341	3/4"	3/4"	46	No	—
PV2341A	3/4"	1/2"	31	No	—
PV2341X	3/4"	3/4"	—	Yes	19.5
PV2341AX	3/4"	1/2"	—	Yes	19.5
PV2341BX	3/4"	—	—	—	19.5

The Checkmate™ Series



PA5138



PVE5136



PVE5137

Checkmate™ Adapter PA5138

- Use with PVE2341 Series transfer valves and PA5138 adapter to evacuate liquid LPG from stationary bulk tanks
- Can be installed directly into any liquid withdrawal outlet location (top, end, or bottom of tank)
- Uses an excess flow valve with a soft rubber seat to minimize leakage when the cap is removed
- Designed for permanent installation when used with PVE5136 or PVE5137

Checkmate™ Activated Liquid Withdrawal Excess Flow Valve PVE5136

- 3/4" inlet
- 1 5/8" 12UN-2A outlet
- Meets UL® 125 Standard
- Use with PA5138 adapter
- Approximate closing flow of the excess flow valve is 22 GPM liquid LPG
- Designed for permanent installation when used with PVE5138

Checkmate™ Activated Liquid Withdrawal Excess Flow Valve PVE5137

- 1 1/4" inlet
- 1 5/8" 12UN-2A outlet
- Leak-free connection
- Use with PA5138 adapter
- Approximate closing flow of the excess flow valve is 30 GPM liquid LPG
- Designed for permanent installation when used with PA5138

ORDERING INFORMATION

Part Number	Inlet Connection (NGT)	Outlet Connection (FNPT)	Excess Flow Valve	Excess Flow — Approx. Closing Flow (GPM)/LPG
PVE5136	3/4"	1 5/8" 12UN-2A	Yes	22
PVE5137	1 1/4"	1 5/8" 12UN-2A	Yes	30
PA5138	—	1 1/8" 12UN-3/4" Adapter	—	—

Relief Valves

Internal Spring-Type Pressure-Relief Valves for ASME Containers



Internal Spring Relief Valves for ASME Containers/Domestic Tanks (UVE433A, UVE443A, and UV453A Series)

- Use as pressure relief devices on ASME containers and domestic tanks
- Sturdy construction; made with non-corrosive materials
- Furnished with rain cap for protection against contamination
- Rain cap can also be ordered separately — see Ordering Information **below**

Rain Cap — Protects against Contamination



Raincap with tether to minimize loss of cap.
NOTE: See Ordering Information below for part numbers.

ORDERING INFORMATION								
Part Number	Container Connection	Start-to-Discharge Setting (psig)	Cu. Ft. / Min. Flow Capacity		Tank Surface Area (Sq. Ft.)		Rain Cap	Relief Area (Sq. Inches)
			UL®	ASME	UL	ASME		
UVE433AM	¾"	250	1930	1709	79	68	433-45A	0.37
UVE433AC*	¾"	250	—	1709	—	68	433-45A	0.37
UVE443AM	1"	250	2755	2436	122	105	443-45A	0.66
UVE443AC*	1"	250	—	2436	—	105	443-45A	0.66
UVE453AM	1¼"	250	4640	4406	230	216	453-45A	1.23
UVE453AC*	1¼"	250	—	4406	—	216	453-45A	1.23

* California setting 275 psig.

Full Internal Pressure-Relief Valves for DOT Fork Lift Cylinders



PVE435A



PV435L

PV435L

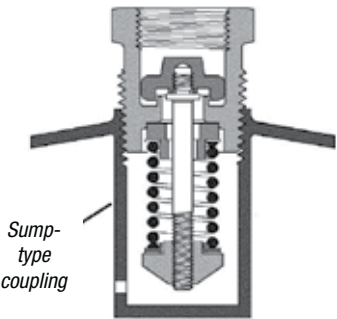


Fig. 1

Full Internal Pressure Relief Valves for DOT Fork Lift Cylinders (PVE435A and PV435L)

- Use on fork lift trucks and other power units with removable DOT cylinders with up to 100 lb. LPG capacity
- Classified by Underwriters Laboratories® in accordance with the Compressed Gas Association Pamphlet S-1.1, *Pressure Relief Device Standard for Cylinders*

NOTE: NFPA Pamphlet #58 states, "All containers used in industrial trucks (including fork lift truck cylinders) service shall have the container pressure relief valve replaced by a new or unused valve within 12 years of the date of manufacture of the container and each 10 years thereafter."

Rain Cap for Pipeaway Adapters




435-45C

Pipeaway Adapters



435-45
For use on
universal cylinder
435-90 also available

**CAUTION**

- The PV435L is intended as a replacement relief valve on cylinders which previously incorporated a relief valve with an external spring
- Do not use the PVE435A for this type of installation since the proper function of the relief valve could be restricted (see Fig. 1 for sump-type coupling)

ORDERING INFORMATION

Part Number	Container Connection	Start-to-Discharge Setting (psig)	Flow Capacity SCFM Air		Tank Surface Area (Sq. Ft.)		Pipeaway Adapter
			UL®	ASME	UL	ASME	
PVE435A	3/4"	375	517	—	17	—	435-90/435-45
PV435L	3/4"	375	517	—	17	—	435-90/435-45

Relief Valves

Full Internal Pressure-Relief Valves

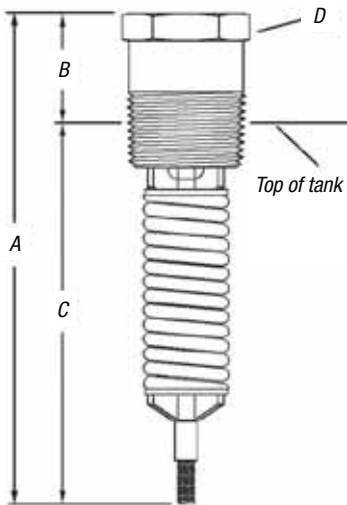


Fig. 1

UVE445A Series

- Use as a pressure relief device on larger ASME engine fuel containers and recreational vehicle containers
- Use PVE445AT on multiport 420-lb. DOT containers
- Protective cap UEP16 included

UVE436BR

- Use as pressure relief devices on smaller ASME engine fuel containers and recreational vehicle containers
- Enable the use of a smaller, more economical 3/4" NPT tank coupling
- Protective cap 436BR-20 included
- Threaded to accept pipeaway adapter 436-21 (5/8" SAE flare outlet), which provides minimum flow restriction

ORDERING INFORMATION											
Part Number	Tank Connection (NPT)	Start-to-Discharge Setting (psig)	Flow Capacity SCFM Air		Tank Surface Area (Sq. Ft.)		Pipeaway Adapter	Dimensions (Approx.) — See Fig. 1			
			UL®	ASME	UL	ASME		A	B	C	D Hex
UVE445AM	1"	250	987	950	35	33	445-21	5 9/16"	1 3/32"	3 15/32"	1 3/8"
PVE445AT*	1"	375	1625	—	64	—	445-21	5 9/16"	1 3/32"	3 15/32"	1 3/8"
UVE436BR	3/4"	312	720	679	23	22	436-21	4 11/32"	1 1/16"	3 5/16"	1 1/16"
PVE436AE**	3/4"	362	783	—	—	—	436-21	4 11/32"	1 1/16"	3 5/16"	1 1/16"

* PVE445AT is classified by Underwriters Laboratories Inc.® in accordance with CGA Pamphlet S-1.1.

** Australian setting — 362 psig.

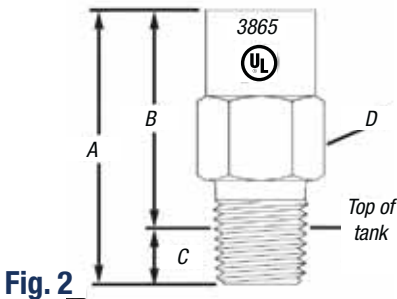


Fig. 2

NOTE: NFPA Pamphlet #58 states, "Hydrostatic relief valves designed to relieve the hydrostatic pressure which might develop in sections of liquid piping between closed shutoff valves shall have pressure settings not less than 400 psig or more than 500 psig unless installed in systems designed to operate above 350 psig. Hydrostatic relief valves for use in systems designed to operate above 350 psig shall have settings not less than 110 percent or more than 125 percent of the system design pressure."

Hydrostatic Relief Valve for Engine Fuel and Other Applications (PVE3865)

- Primarily used in manifolds and carburetion systems
- Start-to-discharge setting is 400 psig
- Small and economical
- Protective cap UAS 10 included
- UL® 132 states that flow capacity tests are not required for this class of valve

ORDERING INFORMATION						
Part Number	NPT Connection	Start-to-Discharge Setting (psig)	Dimensions (Approx.) — See Fig. 2			
			A	B	C	D Hex
PVE3865	1/4"	400	1 1/16"	1 1/16"	1/4"	5/8"

Cluster Valves for ASME Underground Propane Tanks

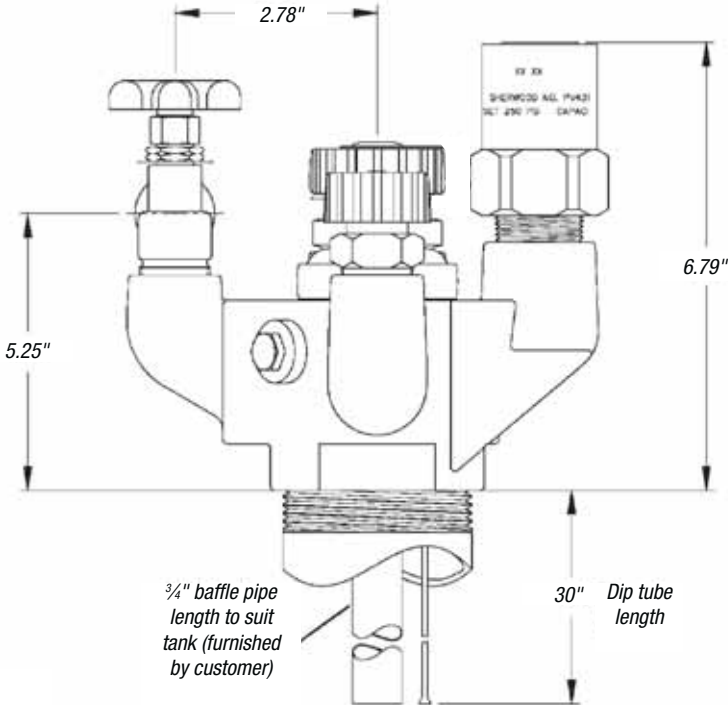


Fig. 1

Application

These multi-purpose valves are designed for use on domestic ASME underground tanks that require a single opening except for a separate opening for liquid withdrawal.

Features

- Combine standard Sherwood components into a compact and convenient system
- Replaceable valves enable retrofitting without replacing the complete unit
- Include a double back-check filler valve suitable for all filling requirements
- Vapor return valve is designed to satisfy the demand required by the system during the filling operation

- Service valve offers the Dual Bonnet® feature
- Gauge flange “junior” size configuration will accommodate a combination of gauges
- Gauge boss provided (contains a 1/4" NPT plug)
- Protective closures are provided for filler valve, vapor return valve, and pressure relief valve
- Economical coated ductile iron head with wrench floats
- 30" dip tube provided but not installed (customer may trim to desired length)
- ASME certified
- UL® approved
- The full complement of domestic tank float gauge sizes is on **pages 36–38**

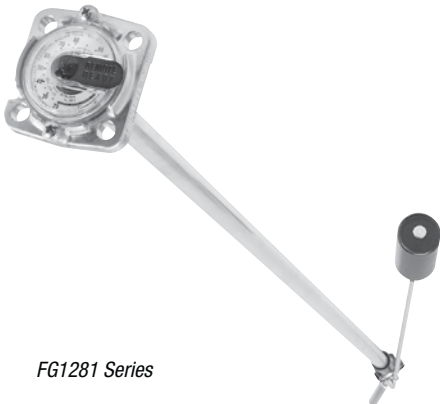
ORDERING INFORMATION

Part Number	Container Connection	Service Connection	Filling Connection	Connection Size	UL® Listed Closing Flow	Gauge Flange Opening	Baffle Pipe Connection	Dip Tube Length	Pressure Relief Valve Setting	UL Listed Relief Valve Capacity	ASME Listed
2098AT 2098PT**	2½" FNPT	POL (CGA 510) 0.855–14 NGO LH	1¼" ACME	1¼" ACME	3100 CFH @ 100 psig	Fits “Junior” Size	¾" FNPT	30"*	250 psig	1740 SCFM/air	300 sq. ft. Underground

* Dip tube not installed; may be cut by customer to desired length.
** Includes 5136 liquid withdrawal valve.
NOTE: For use in containers with surface area up to 300 sq. ft. underground.

Cluster Valves

Cluster Valve (2098AT)



FG1281 Series



PVE431



AFV10



PVE12



PVE3329BDBT



PVE1876

2098A COMPONENTS	
Part Number	Description
FG1281	Float Gauge
PVE431	Relief Valve
PVE623C	Filler Valve
PVE12A	Outage Gauge
PVE3329BDBT	Service Valve
PVE1876	Vapor Return Valve

2098P* COMPONENTS	
Part Number	Description
FG1281	Float Gauge
PVE431	Relief Valve
AFV10	Filler Valve
PVE12A	Outage Gauge
PVE3329BDBT	Service Valve
PVE1876	Vapor Return Valve

* Shipped with 5136 Liquid Withdrawal Valve.

Dual Check T-Connector and Fixed Maximum Liquid Level Gauges



Dual Check T-Connector PV3866

- Use bulkhead-mounted units on two-tank installations
- Complies with UL® and NFPA Pamphlet #58 specifications
- Check valves stop the flow of LPG between two tanks, helping to prevent overfills
- Should the two tank pressures become unequal, this connector will draw LPG from the tank with the higher pressure until both pressures equalize; LPG will then be drawn from both tanks
- Integral hydrostatic relief valve has start-to-discharge setting of 400 psig
- Plastic dust cover UAS 10 on hydrostatic relief valve keeps out contaminants (check regularly to make sure cover is installed)
- Fitting has only three connections, minimizing leak points
- All three connections are $\frac{3}{8}$ " SAE flare for easy installation
- Lock washers and a large nut for bulkhead installation reduce the cost of fittings

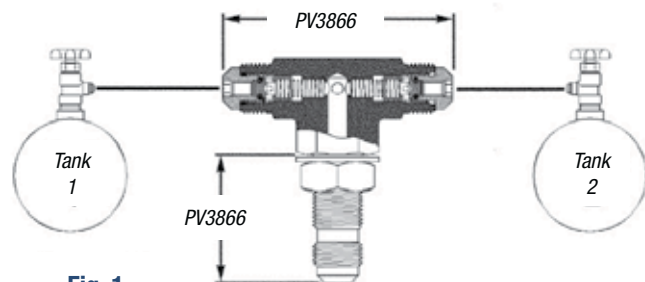
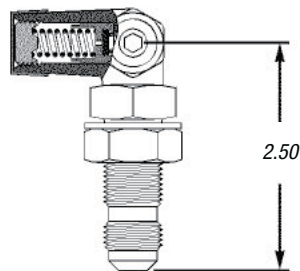
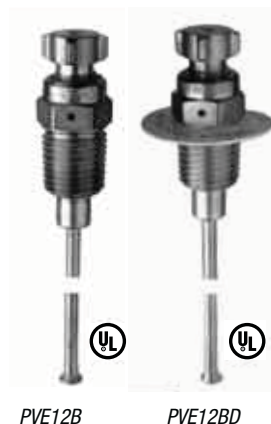


Fig. 1



Fixed Maximum Liquid Level Gauges

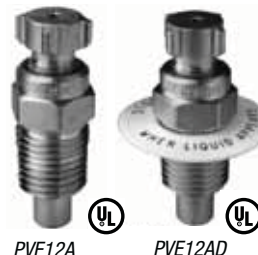
- These gauges indicate maximum filling level as specified in NFPA Pamphlet #58
- All gauges have $\frac{1}{4}$ " NPT inlet threads

PVE12B-XX

- Supplied with dip tube assembled to valve
- Furnished with a standard 12" length of tube, unless otherwise specified
- #54 drill size orifice

PVE12BD-XX

- Identical to the PVE12B, but supplied with a "stop filling" dial (part number 11)
- Furnished with a standard 12" length of tube, unless otherwise specified



PVE12A

- Use where a liquid level tube is welded in the vessel, or where the gauge opening on the container is at the maximum allowable filling level
- #54 drill size orifice

PVE12AD

- Identical to PVE12A, but supplied with a "stop filling" dial (part number 11)



PVE10DRF
PVE10ARF

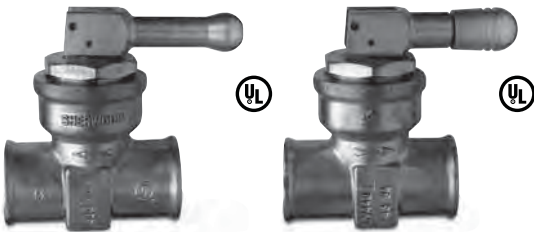
PVE10DRF

- Manually operated shutoff valve; mounts directly on the tank
- Use with a remote liquid level gauge
- Can be manually shut off should repairs in the line become necessary
- $\frac{1}{4}$ " SAE flare outlet connection
- $\frac{1}{4}$ " NPT tank connection
- Does not contain a #54 drill size orifice; install only where a #54 size orifice is built into the tank coupling

PVE10ARF

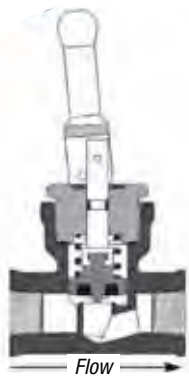
- Identical to the PVE10DRF, but contains a #54 drill size orifice
- Use where no orifice is provided in the tank coupling

Filler and Unloading Valves, Adapters and Accessories



LV440 without locking handle LV440L with locking handle

440 Series



Quick-Acting Valve — LV440 and LV440L Series

- Connects to end of hose used to fill cylinders
- Quickly turns on or shuts off the flow of liquid to the cylinder
- Available with or without a locking device (locking handle on LV440L Series only)
- Replaceable bonnet and stem assembly; refer to Sherwood Instruction Sheets R-440 (pages 44–45) and R-440L (pages 46–47)

ORDERING INFORMATION

Part Number with Lock	Part Number without Lock	Inlet (FNPT)	Outlet (FNPT)	Bonnet & Stem Assembly with Lock	Bonnet & Stem Assembly without Lock
LV440L	LV440	1/4"	1/4"	440-50L-KIT	440-50-KIT
LV440AL	LV440A	3/8"	3/8"	440-50L-KIT	440-50-KIT
LV440BL	LV440B	1/2"	1/4"	440-50L-KIT	440-50-KIT
LV440CL	LV440C	1/2"	1/2"	440-50L-KIT	440-50-KIT

Hose End Adapters for Filler Hoses (PA901 Series)



PA901B

PA901B — Filler Hose Adapter with Check Valve

- Can be attached to the filler hose end valve nozzle or can be carried separately to be used as a temporary check valve for the container filler valve in case of a leak
- Short height allows the protective hood to be closed when the adapter is left on the filler valve



PA901H

PA901H — LPG Motor Fuel Fill Adapter

- Connects a male POL (CGA510) to a male 1 3/4" ACME filler valve
- Adapts a standard POL fitting connection to fill an engine fuel tank
- Inlet: POL (CGA510) (female)
- Outlet: 1 3/4" ACME (female)

Unloading Adapter



PV903A

Unloading Adapter PV903A

- Use when liquid has to be removed from the tank during an emergency or when relocation is necessary
- Smaller projection provides easier connection
- Permits close control of the liquid flow
- For proper use of the PV903A unloading adapters, see pages 54–55
- Inlet: 1 3/4" ACME (female)
- Outlet: 1/2" FNPT



! WARNING

- The PV903A unloading adapters must only be used with Sherwood AFV10 and PVE623C or AFV6 and PV1855SD filler valves
- Use with any other valve may cause damage to the valve, and a proper seal may not be maintained
- An improper seal may cause gas leakage
- Leaking gas can cause fires or explosions

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Float Gauges

LPG Float Gauges for ASME Domestic Tanks and DOT Cylinders



FG3981 Series



Float Gauges for Above-Ground Horizontal Tanks

- 1" NPT mounting
- Remote-ready capability
- Refer to Ordering Information for correct size gauge

Features

- Solid brass mounting head
- Ultra-low friction, smooth-acting, non-jamming gear design
- Hermetically sealed, easily readable dial
- Teflon® coated, free-floating shaft
- Solid float; no metal shell to corrode or leak
- In-service replaceable dial kit available (see chart), which does not require taking float gauge or tank out of service

ORDERING INFORMATION FOR ABOVE-GROUND TANKS				
Gauge Part Number	Container Capacity (Gallons of Water)	Nominal Cylinder Diameter	Gauge Head Style	Replacement Dial & 2 Screws Kit Part Number
FG3981-002R	120	24"	Threaded 1" NPT Brass Head	1284-20-002R-KIT
FG3981-003R	250	30"	Threaded 1" NPT Brass Head	1284-20-002R-KIT
FG3981-004R	500	37"	Threaded 1" NPT Brass Head	1284-20-002R-KIT
FG3981-005R	1000	41"	Threaded 1" NPT Brass Head	1284-20-002R-KIT
FG3981-001R	420# Vertical	30"	Threaded 1" NPT Brass Head	1284-20-003R-KIT (% of Total Volume)

NOTE: Each Kit includes one dial and two mounting screws.

LPG Float Gauges for ASME Domestic Tanks



FG1281 Series

Float Gauges for Underground Horizontal Tanks

- Remote-ready capability
- Brass junior head mounting
- Refer to Ordering Information for correct size gauge

Features

- Solid brass mounting head
- Ultra-low friction, smooth-acting, non-jamming gear design
- Hermetically sealed, easily readable dial
- Teflon® coated, free-floating shaft
- Solid float; no metal shell to corrode or leak
- In-service replaceable dial kit available (see chart)

ORDERING INFORMATION FOR UNDERGROUND TANKS				
Gauge Part Number	Container Capacity (Gallons of Water)	Nominal Cylinder Diameter	Gauge Riser Style	Replacement Dial & 2 Screws Kit Part Number
FG1281-001R	120	24"	8½"	1284-20-005R-KIT
	150			
FG1281-002R	200	30"	8½"	1284-20-005R-KIT
FG1281-003R	500	37"	8½"	1284-20-005R-KIT
FG1281-004R	1000	41"	8½"	1284-20-005R-KIT
FG1281-005R	120	24"	15½"	1284-20-005R-KIT
FG1281-006R	200	30"	15½"	1284-20-005R-KIT
FG1281-007R	500	37"	15½"	1284-20-005R-KIT
FG1281-008R	1000	41"	15½"	1284-20-005R-KIT

NOTE: Each Kit includes one dial and two mounting screws.

Float Gauges

LPG Float Gauges for ASME Domestic Tanks and DOT Cylinders



Float Gauges for DOT Cylinders

FG2281 Series

Float Gauges for Above-Ground Horizontal Tanks

- 1" NPT mounting
- Remote-ready capability
- Refer to Ordering Information for correct size gauge

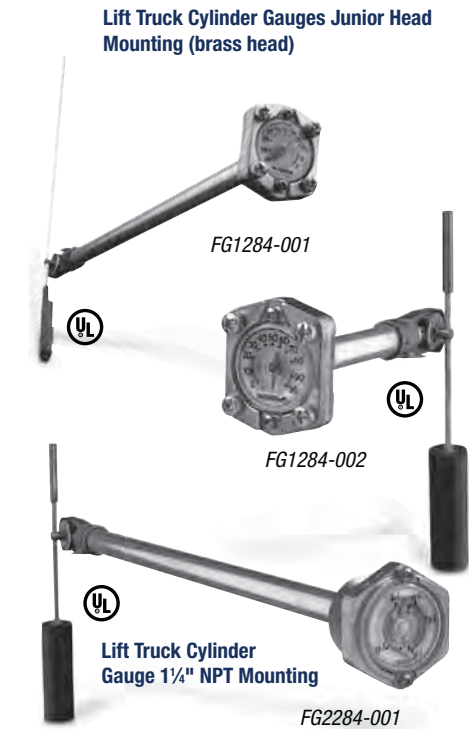
Features

- Solid brass mounting head
- Ultra-low friction, smooth-acting, non-jamming gear design
- Hermetically sealed, easily readable dial
- Teflon® coated, free-floating shaft
- Solid float; no metal shell to corrode or leak

ORDERING INFORMATION FOR ABOVE-GROUND TANKS			
Gauge Part Number	Container Capacity (Gallons of Water)	Nominal Cylinder Diameter	Gauge Head Style
FG2281-001R	120	24"	Threaded 1¼" NPT Brass Head
	150		
FG2281-002R	200	30"	Threaded 1¼" NPT Brass Head
	250		
	325		
FG2281-003R	500	37"	Threaded 1¼" NPT Brass Head
FG2281-004R	1000	41"	Threaded 1¼" NPT Brass Head

NOTE: Each Kit includes one dial and two mounting screws.

LPG Float Gauges for Lift Truck Cylinders



Lift Truck Cylinder Gauges Junior Head Mounting (brass head)

FG1284-001

FG1284-002

Lift Truck Cylinder Gauge 1¼" NPT Mounting

FG2284-001

Float Gauges for Above-Ground Horizontal Tanks

- 1" NPT mounting
- Refer to Ordering Information for correct size gauge

Features

- Solid brass mounting head
- Ultra-low friction, smooth-acting, non-jamming gear design
- Hermetically sealed, easily readable dial
- Teflon® coated, free-floating shaft
- Solid float; no metal shell to corrode or leak

ORDERING INFORMATION FOR LIFT TRUCK CYLINDERS, JUNIOR HEAD			
Gauge Part Number	Propane Capacity and Mounting Style	Nominal Cylinder Diameter	Gauge Head Style
FG1284-001U	33½# Universal	12"	Junior Brass Head
FG1284-002R	33½# Horizontal	12"	Junior Brass Head

NOTE: Each Kit includes one dial and two mounting screws.

ORDERING INFORMATION FOR LIFT TRUCK CYLINDERS, 1¼" NPT				
Gauge Part Number	Propane Capacity and Mounting Style	Nominal Cylinder Diameter	Gauge Head Style	Replacement Dial 1 & 2 Screws Kit Part Number
FG2284-001U	33½# Universal	12"	Threaded 1¼" NPT Brass Head	1284-20-001-KIT (fraction of total volume)

NOTE: Each Kit includes one dial and two mounting screws.

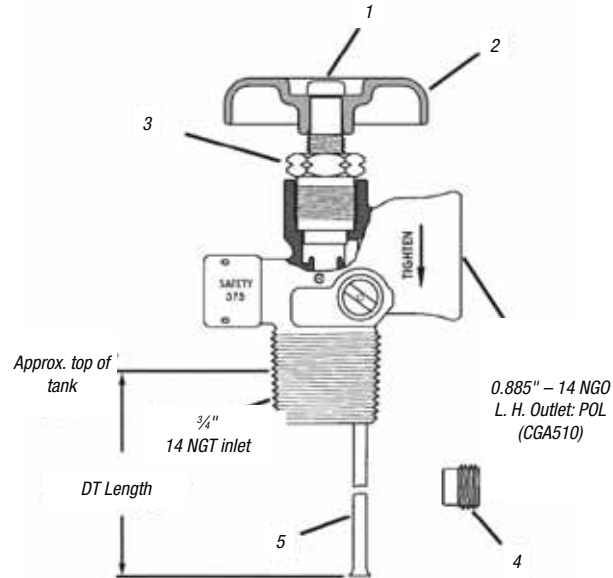
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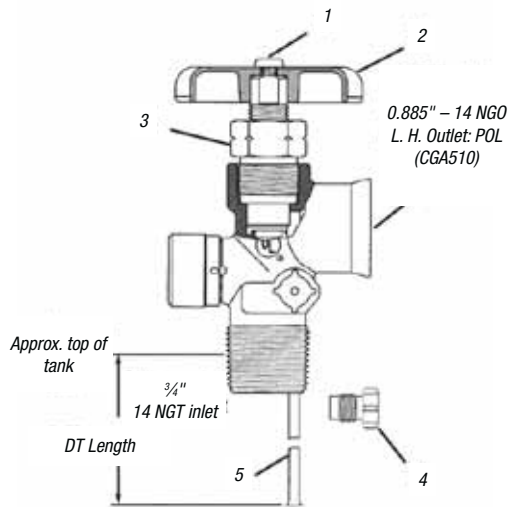
Replacement Parts Kits

Replacement Parts Kits — All Kits Contain Instruction Sheets



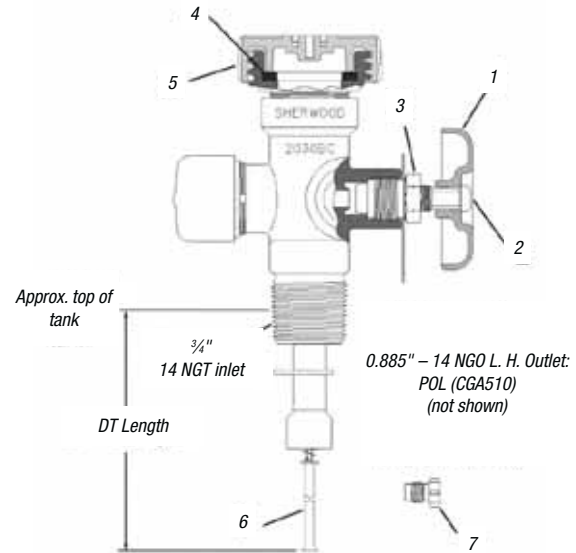
PV3329 Series Valves

- | | |
|--|--|
| 1 - Handwheel Screw – 3740-13 | 4 - Liquid Level Stem and Seat Assembly (Flush) – 1931S-24 |
| 2 - Handwheel – 3329-7 | 5 - Liquid Level Tube – DI1929-23-XX |
| 3 - Bonnet and Stem Assembly – 3329-13LH-KIT | |



PV3250 Series Valves

- | | |
|---|--|
| 1 - Handwheel Screw – 3740-13 | 4 - Liquid Level Stem and Seat Assembly (Flush) – 1931-24A |
| 2 - Handwheel – 1901 | 5 - Liquid Level Tube – DI1929-23-XX |
| 3 - Bonnet and Stem Assembly – 3250-8LH-KIT | |

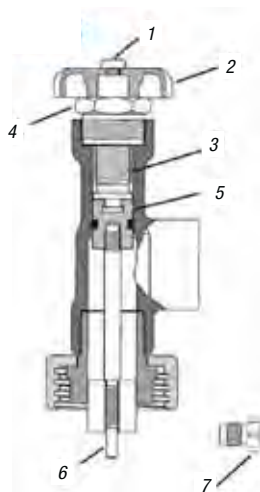


PV2030BC Valve

- | | |
|--|--|
| 1 - Handwheel – 3329-7 | 5 - Cap – 1850-3 |
| 2 - Handwheel Screw – 3740-13 | 6 - Liquid Level Tube – DI1929U23-XX |
| 3 - Bonnet and Stem Assembly – 3329-13LH-KIT | 7 - Liquid Level Stem and Seat Assembly – 1931-24A |
| 4 - Gasket – 697-2 | |

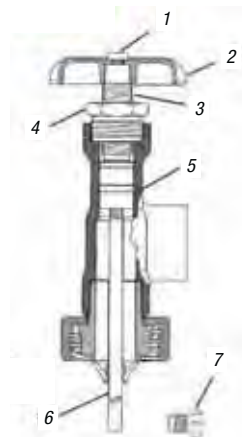
Replacement Parts Kits

All Kits Contain Instruction Sheets



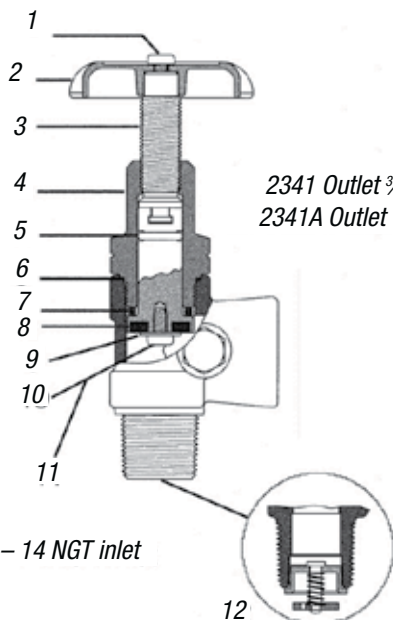
PV903A and PV903B Series Valves

- 1 - Screw – 3740-13
- 2 - Handwheel – 1901
- 3 - Stem
- 4 - Bonnet Nut
- 5 - Lower Stem Assembly
- 6 - Push Rod
- 7 - Valve Stem with Seat Disc – 1931-24A
- XX - Replacement Parts Kit for 903A and B Series Valves – 903-100-KIT (includes parts 5, 6, and 7)
- XX - Replacement Parts Kit for 903A and B Series Valves 903-200-KIT (includes 903-100-KIT and parts 3 and 4)



PV902A and PV902B Series Valves

- 1 - Screw – 3740-13
- 2 - Handwheel – 1901
- 3 - Stem
- 4 - Bonnet Nut
- 5 - Lower Stem Assembly
- 6 - Push Rod
- 7 - Valve Stem with Seat Disc – 1931-24A
- XX - Replacement Parts Kit for 902 Series Valves (902-100-KIT not shown) (includes parts 5, 6, and 7)
- XX - Replacement Parts Kit for 902 Series Valves (902-200-KIT not shown) (includes 902-100-KIT and parts 3 and 4)

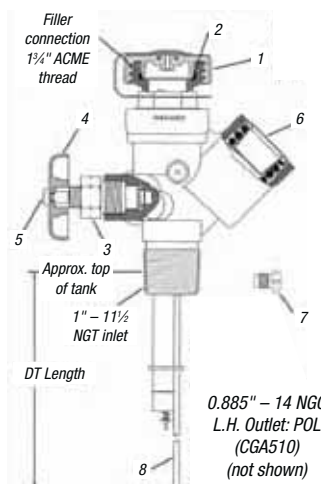


2341 Outlet 3/4" FNPT
2341A Outlet 1/2" FNPT

3/4" – 14 NGT inlet

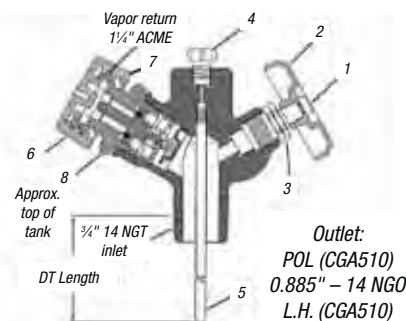
PV2341 Series Valves

- 1 - Handwheel Screw – 3740-13
- 2 - Handwheel – 1901
- 3 - Upper Stem
- 4 - Bonnet
- 5 - O-Ring
- 6 - Lower Stem
- 7 - Gasket
- 8 - Back Seat Washer
- 9 - Seat
- 10 - Washer Seat
- 11 - Screw Seat
- 12 - Excess Flow Check Assembly – 2341-110-KIT
- XX - Pipe Plug (not shown) – 2426B
- XX - Replacement Parts Kit for 2341 Series Valve, lower stem section (not shown) – 2341-100-KIT (includes parts 5, 6, 7, 8, 9, 10, and 11)
- XX - Replacement Parts Kit for 2341 Series Valve (not shown) – 2341-200-KIT (includes 2341-100-KIT and parts 3 and 4)



PV2035AT Series Valves

- 1 - Cap – 1850-10
- 2 - Gasket – 697-2
- 3 - Bonnet and Stem Assembly 3250-8LH-KIT
- 4 - Handwheel – 1901S
- 5 - Screw – 3740-13
- 6 - Rain Cap – UT12X
- 7 - Liquid Level Stem Assembly – 1931-24A
- 8 - Liquid Level Tube – DI1929UM23XX



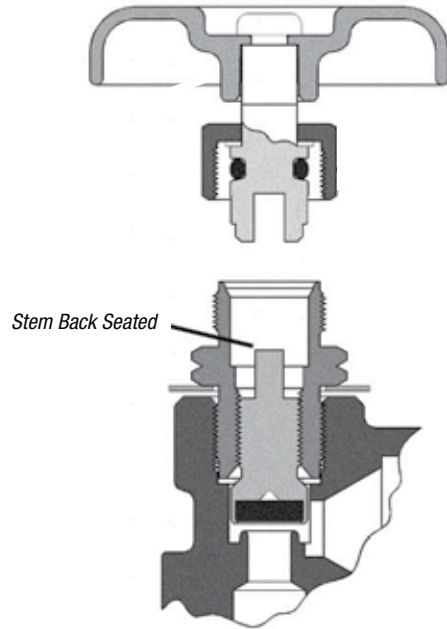
PV2033DLDBT, PV2034CLDBT and PVE2034CLT Valves

- 1 - Handwheel Screw – 3740-13
- 2 - Handwheel – 3329-7
- 3 - Bonnet and Stem Assembly – 3329-13LH-KIT
- 4 - Dual Bonnet and Stem Assembly – 3429-100-KIT
- 5 - Liquid Level Stem and Seat Assembly – 1931-24A
- 6 - Liquid Level Tube – 2033-15-XX
- 7 - Washer (PVE2033DLDBT and PVE2033CLDBT only) – 797-2
- 8 - Cap (PVE2033DLDBT and PVE2033CLDBT only) – 1875-3A
- 9 - Replacement Parts Kit (PVE2033DLDBT and PVE2033CLDBT only) – 2033-100-KIT

Replacement Parts Kits

Replacement Parts Kits —

All Kits Contain Instruction Sheets



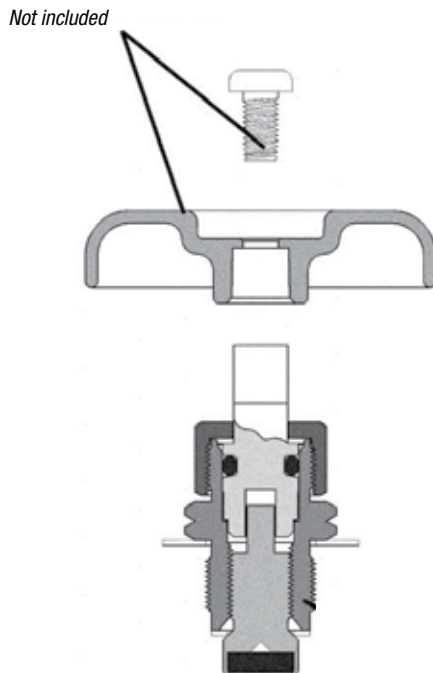
Dual Bonnet® Kit #6775-60

This kit is a partial bonnet replacement assembly for existing Sherwood multi-purpose valves (PV2033CLDB Series). This replacement can be made while the valve is fully opened so gas service is never interrupted. To ensure correct replacement, please refer to Instruction Sheet R-6775-6.

Kit # 3429-100-KIT contains:

- Handwheel
- Bonnet Stem Assembly — 6775-60
- Instruction Sheet — R-6775-60

NOTE: Will not convert existing Sherwood multi-purpose valves with standard bonnets to the dual bonnet configuration.



Dual Bonnet® Kit #3429-100

This kit is a complete bonnet replacement assembly for existing Sherwood multi-purpose valves (PV2033CLDB Series and PV2033CL Series). The tank must be fully evacuated in accordance with Instruction Sheet R-3429 before the bonnet assembly can be replaced.

Kit #3429-100-KIT contains:

- Dual Bonnet Conversion Assembly — 3429-100
- Instruction Sheet — R-3429

NOTE: Will convert existing Sherwood multi-purpose valves with standard bonnets to the dual bonnet configuration.

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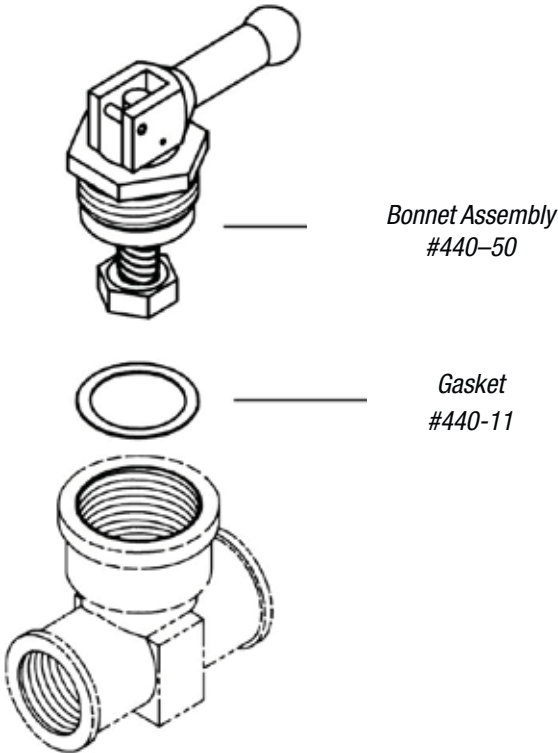
Bonnet Assembly Replacement Instructions for LPG
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Bonnet Assembly Replacement Kit
for Sherwood Model 440 Quick-Acting Valve — 440-50-KIT
Instruction Sheet R-440




Kit # 440-50-KIT Contains:

Part Number	Description
440-50	Bonnet Assembly with Gasket
R-440	Instruction Sheet

READ THIS INSTRUCTION COMPLETELY BEFORE BEGINNING.



**WARNING**

- Leaking gas can cause fires or explosions
- Only trained personnel should work on gas systems
- Inspect gas systems regularly
- Replace equipment as required

General

This instruction is intended for people familiar with LP gas equipment and applications.
IF YOU ARE NOT FAMILIAR WITH THIS EQUIPMENT — STOP.

This instruction covers the bonnet assembly replacement of Sherwood Model 440, 440A, 440B, and 440C Quick-Acting On/Off Valves. The letter “L” at the end of the model number indicates a locking handle. For valves with a locking handle, use Kit #440-50L-KIT. For valves without a locking handle, use Kit #440-50-KIT. If preferred, a non-locking assembly can be replaced with a locking assembly at this time. The bonnet assembly is the same for all valve sizes. Read this instruction completely before beginning.

Do not attempt to repair the bonnet assembly. It must be completely replaced.
Make sure one of the model numbers listed above is stamped into the valve body.

Tools Required

- ❑ A 1¼" box wrench and 1¼" crowfoot adapter
- ❑ Torque wrench, 0–100 foot-pounds
- ❑ Fine wire brush
- ❑ Commercial leak-test solution*

* Must be approved for use on brass and with LP gas.

NOTE: Torque wrench and crowfoot adapter or socket should have the same drive size.

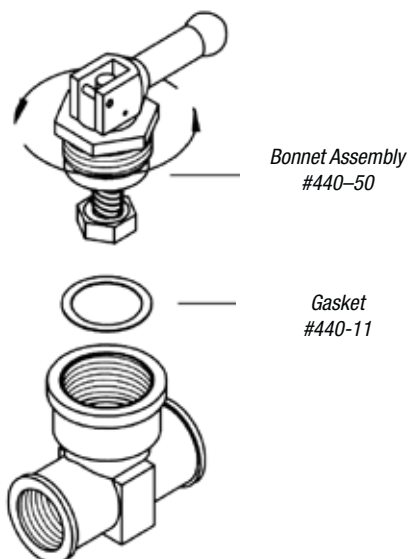
SAFETY INSTRUCTIONS

- Use an accurate torque wrench to tighten the bonnet assembly
- Always destroy a damaged or worn valve and parts so they cannot be reused

Bonnet Assembly Replacement Procedures

Step 1: Disassembly

1. Remove all traces of LP gas from the system using the procedures specified in NFPA Pamphlet #58 and NPGA Installation and Service Guide Book #4003. Remove the valve from the installation and clean it with clean compressed air so dirt does not enter the valve interior.
2. Mount the valve in a vise, holding on flats. Do not overtighten. Overtightening the vise can distort the valve body and the internal sealing seat. Should this occur, the entire valve must be replaced. Destroy the old valve so it cannot be reused.
3. Use the 1¼" box wrench to remove (turn counterclockwise) the bonnet assembly from the valve (see Fig. 1). NOTE: An open-ended crescent wrench may not be able to remove the bonnet nut because the torque requirements are too high.
4. Destroy the entire bonnet assembly and handle so they cannot be reused.
5. Remove the metal gasket where the bonnet and valve mate. Destroy the gasket so it cannot be reused.



Step 2: Inspection

1. Inspect the internal valve shoulder where the metal gasket seats. If the seat is nicked, scratched, or distorted, replace the entire valve. Destroy the old valve so it cannot be reused.
2. Inspect the threaded connection. Replace the entire valve if the internal threads are damaged or worn. Destroy the old valve so it cannot be reused.
3. If necessary, use a fine wire brush to clean the fine female threads of the valve body. Blow out all debris.
4. Below the valve-to-bonnet mating seat is the smaller diameter poppet seat. If this seat is nicked, scratched, or distorted, replace the entire valve. Destroy the old valve so it cannot be reused.

Step 3: Re-Assembly

1. Install a new #440-11 gasket into the valve.
2. Screw the new bonnet assembly into the valve until it bottoms out. Tighten between 50 to 60 foot-pounds of torque. Thread sealant is not necessary since the bonnet gasket provides a positive seal. Do not overtighten the bonnet assembly.

Step 4: Testing

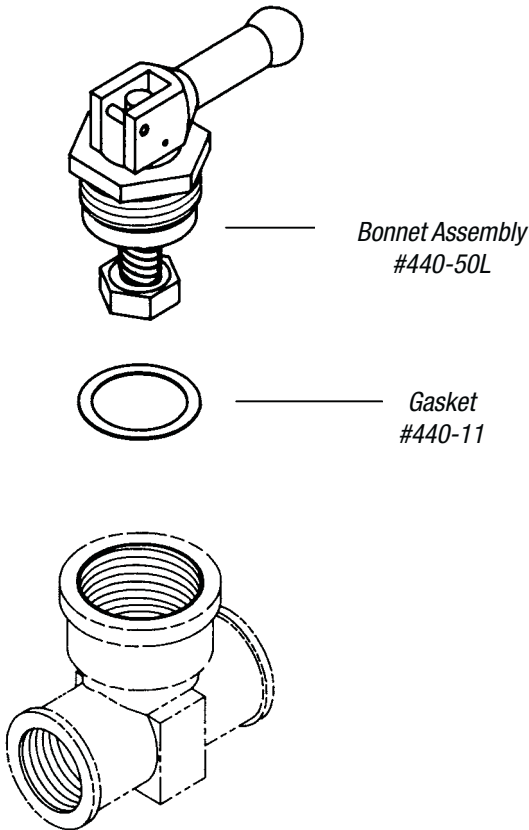
1. Pressurize the system with LP gas at 50 to 150 psig. Using a mild ammonia-free soap-and-water solution, check for leaks where the bonnet screws into the valve body and where the valve stem enters the bonnet. As a precaution, check the piping connections as well.
2. If any leaks are found, evacuate the system according to NFPA Pamphlet #58 and NPGA Installation and Service Guide Book #4003. Remove and destroy the entire valve so it cannot be reused. Install a new valve.
3. If no leaks are found, the valve may now be placed in service.

Warn Your Customer

- Leaking gas can cause fires or explosions
- If you smell gas:
 - Immediately call your gas supplier from a neighbor's phone
 - If you can't reach your gas supplier, call the Fire Department
 - Do not touch electrical switches or telephones
 - Do not light appliances

NOTICE: All Sherwood products must be used in strict compliance with the requirements and provisions of National Fire Protection Association Pamphlets #54 and #58, DOT, ANSI, and all applicable federal, state, provincial, and local standards, codes, regulations, and laws. It is the responsibility of the sellers, installation and maintenance personnel, and end users to remain knowledgeable of and in compliance with all standards, codes, regulations, and laws.

Bonnet Assembly Replacement Kit for Sherwood Model 440
Quick-Acting Valve (with Locking Handle) — 440-50L-KIT
Instruction Sheet R-440L



Kit #440-50L-KIT Contains:

Part Number	Description
440-50L	Bonnet Assembly with Gasket
R-440L	Instruction Sheet

READ THIS INSTRUCTION COMPLETELY BEFORE BEGINNING.

WARNING

- Leaking gas can cause fires or explosions
- Only trained personnel should work on gas systems
- Inspect gas systems regularly
- Replace equipment as required

General

This instruction is intended for people familiar with LP gas equipment and applications. **IF YOU ARE NOT FAMILIAR WITH THIS EQUIPMENT — STOP.**

This instruction covers the bonnet assembly replacement of Sherwood Model 440, 440A, 440B, and 440C Quick-Acting On/Off Valves using Kit #440-50L-KIT. The letter “L” at the end of the model number indicates a locking handle. The bonnet assembly is the same for all valve sizes. Read this instruction completely before beginning.

Do not attempt to repair the bonnet assembly. It must be completely replaced.

Make sure one of the model numbers listed above is stamped into the valve body.

Tools Required

- ☐ A 1¼" box wrench and 1¼" crowfoot adapter
- ☐ Torque wrench, 0–100 foot-pounds
- ☐ Small, fine wire brush
- ☐ Commercial leak-test solution*

* Must be approved for use on brass and with LP gas.

NOTE: Torque wrench and crowfoot adapter or socket should have the same drive size.

SAFETY INSTRUCTIONS

- Use an accurate torque wrench to tighten the bonnet assembly
- Always destroy a damaged or worn valve and parts so they cannot be reused

Replacement Procedures

Step 1: Disassembly

1. Remove all traces of LP gas from the system using the procedures specified in NFPA Pamphlet #58 and NPGA Installation and Service Guide Book #4003. Remove the valve from the installation and clean it with clean compressed air so dirt does not enter the valve interior.
2. Mount the valve in a vise. Do not overtighten. Overtightening the vise can distort the valve body and the internal sealing seat. Should this occur, the entire valve must be replaced. Destroy the old valve so it cannot be reused.
3. Use the 1¼" box wrench to remove (turn counter-clockwise) the bonnet assembly from the valve (see Fig. 1). NOTE: An open-ended crescent wrench may not be able to remove the bonnet nut because the torque requirements are too high.
4. Destroy the entire bonnet assembly and handle so they cannot be reused.
5. Remove the metal gasket where the bonnet and valve mate. Destroy the gasket so it cannot be reused.

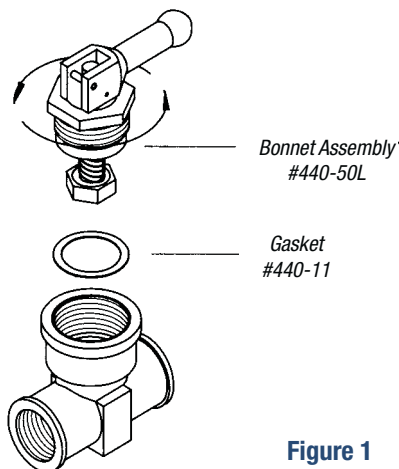


Figure 1

Step 2: Inspection

1. Inspect the internal valve shoulder where the metal gasket seats. If the seat is nicked, scratched, or distorted, replace the entire valve. Destroy the old valve so it cannot be reused.
2. Inspect the threaded connection. Replace the entire valve if the internal threads are damaged or worn. Destroy the old valve so it cannot be reused.
3. If necessary, use a fine wire brush to clean the fine female threads of the valve body.
4. Below the valve-to-bonnet mating seat is the smaller diameter poppet seat. If this seat is nicked, scratched, or distorted, replace the entire valve. Destroy the old valve so it cannot be reused.

Step 3: Re-Assembly

1. Install a new #440-11 gasket into the valve.
2. Screw the new bonnet assembly into the valve until it bottoms out. Tighten between 50 to 60 foot-pounds of torque. Thread sealant is not necessary since the bonnet gasket provides a positive seal. Do not overtighten the bonnet assembly.

Step 4: Testing

1. Pressurize the system with LP gas at 50 to 150 psig. Using a mild ammonia-free soap-and-water solution, check for leaks where the bonnet screws into the valve body and where the valve stem enters the bonnet. As a precaution, check the piping connections as well.
2. If any leaks are found, evacuate the system according to NFPA Pamphlet #58 and NPGA Installation and Service Guide Book #4003. Remove and destroy the entire valve so it cannot be reused. Install a new valve.
3. If no leaks are found, the valve may now be placed in service.

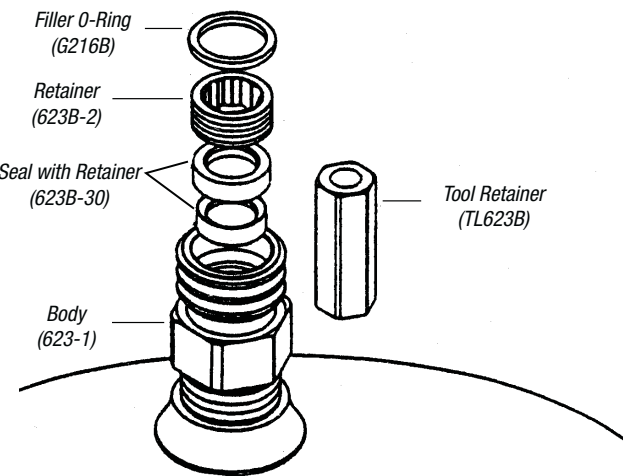
Warn Your Customer

- Leaking gas can cause fires or explosions
- If you smell gas:
 - Immediately call your gas supplier from a neighbor's phone
 - If you can't reach your gas supplier, call the Fire Department
 - Do not touch electrical switches or telephones
 - Do not light appliances

NOTICE: All Sherwood products must be used in strict compliance with the requirements and provisions of National Fire Protection Association Pamphlets #54 and #58, DOT, ANSI, and all applicable federal, state, provincial, and local standards, codes, regulations, and laws. It is the responsibility of the sellers, installation and maintenance personnel, and end users to remain knowledgeable of and in compliance with all standards, codes, regulations, and laws.

Instruction Sheets

Filler-Section Replacement Kit for Sherwood Model 623B
Filler Valve — 623B-100-KIT
Instruction Sheet R-623B



Kit #623B-100-KIT Contains:

Part Number	Description
623B-30	Seal
G216B	Filler O-Ring
623B-2	Retainer
TL623B	Tool Retainer
R-623B	Instruction Sheet

READ THIS INSTRUCTION COMPLETELY BEFORE BEGINNING.

WARNING

- Leaking gas can cause fires or explosions
- Only trained personnel should work on gas systems
- Inspect gas systems regularly
- Replace equipment as required

General

This instruction is intended for people familiar with LP gas equipment and applications. **IF YOU ARE NOT FAMILIAR WITH THIS EQUIPMENT — STOP.**

This instruction covers the filler-section replacement of Sherwood Model 623B Filler Valve using Sherwood Kit #623B-100-KIT.

Read this instruction completely before beginning. The valve cap and valve body may be reused if they are in good condition.

The 623B valve includes dual internal check valves (known in the industry as a “double back-check”). Parts for the bottom check valve are not field replaceable.

Make sure model number 623B is stamped into the valve body.

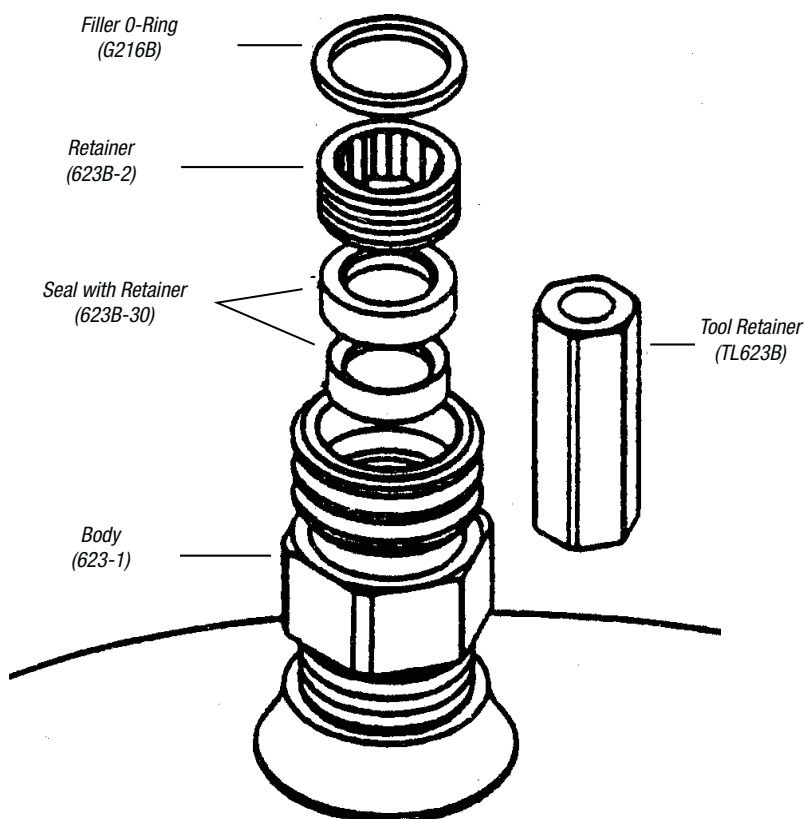
Tools Required

- ☐ Tool Retainer #TL623B
- ☐ Torque wrench 0–50 foot-pounds
- ☐ Commercial leak-test solution*

* Must be approved for use on brass and with LP gas.

SAFETY INSTRUCTIONS

- Always destroy a damaged or worn valve so it cannot be reused



Step 2: Inspection

1. Inspect the threads on the retainer and in the body. If any are damaged or worn, replace the retainer or replace the complete valve if damage is evident in the body.

Step 3: Re-Assembly

1. Place the seal into the white seal retainer.
2. Place the seal retainer assembly into the top of the valve body so that the black seal is facing down and the white seal retainer is facing up. Note: The seal retainer assembly must rest flat on top of the poppet assembly.
3. Hand-tighten the threaded brass retainer into the top of the valve body until it stops.
4. Use a torque wrench with a $\frac{7}{8}$ " socket and Tool #TL623B, tighten to 20 (± 5) foot-pounds.
5. Install a new G216B O-ring into the groove in the valve body.

Step 4: Testing

1. Pressurize the system with LP gas at 50 to 150 psig (30 to 90° F). Using a commercial leak-test solution, check for leaks. As a precaution, check the valve-to-tank connection as well.
2. Keep your body away from the valve inlet. Carefully place two or three drops of commercial leak-test solution around the poppet seal and inspect for leaks. When complete, use a clean cloth or paper towel to remove the excess liquid. **Do not use a soap-and-water solution for this test. It could corrode the internal parts.**
3. **If any leaks are found, evacuate the tank** according to NFPA Pamphlet #58 and NPGA Installation and Service Guide Book #4003. Remove and destroy the entire valve so it cannot be reused. Install a new valve.
4. **If no leaks are found**, the valve may now be placed in service. Make sure the valve cap is in place and tightened.

Warn Your Customer

- Leaking gas can cause fires or explosions
- If you smell gas:
 - Immediately call your gas supplier from a neighbor's phone
 - If you can't reach your gas supplier, call the Fire Department
 - Do not touch electrical switches or telephones
 - Do not light appliances

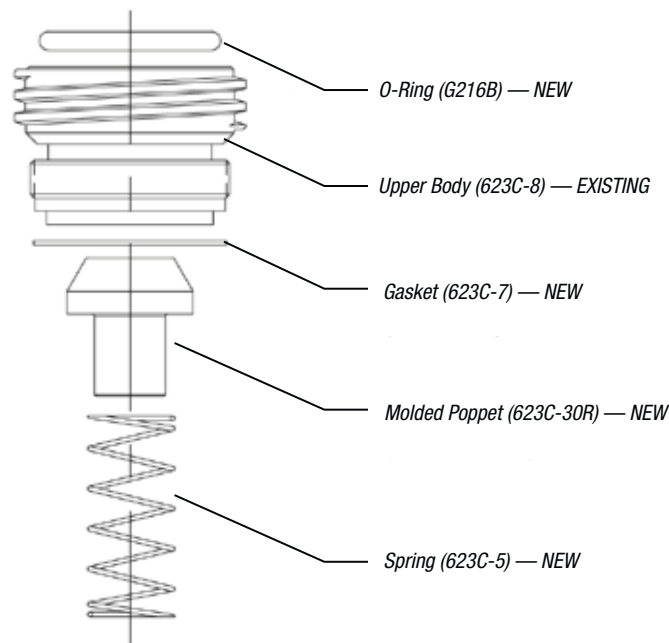
Filler-Section Replacement Procedures

Step 1: Disassembly

1. Remove all traces of LP gas from the cylinder using the procedures specified in National Fire Protection Association Pamphlet #58 and National Propane Gas Association Installation and Service Guide Book #4403.
2. Clean the valve with clean compressed air so dirt does not enter the valve interior.
3. Remove the valve cap. Remove the O-ring inside the ACME connector. Destroy the O-ring so it cannot be reused.
4. Using Tool #TL623B ($\frac{7}{8}$ " hex), remove the retainer from the valve by turning it counter-clockwise with a $\frac{7}{8}$ " wrench. NOTE: The retainer is completely inside the body.
5. Remove the seal retainer.

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Filler-Section Replacement Kit For Sherwood Model 623C
Filler Valve — 623C-100-KIT
Instruction Sheet R-623C



Kit #623C-100-KIT Contains:	
Part Number	Description
G216B	O-Ring
623C-7	Gasket
623C-30R	Molded Poppet
623C-5	Spring
V-ADH-105	Adhesive
TL623B	Tool
R-623C	Instruction Sheet

READ THIS INSTRUCTION COMPLETELY BEFORE BEGINNING.

WARNING

- Leaking gas can cause fires or explosions
- Only trained personnel should work on gas systems
- Inspect gas systems regularly
- Replace equipment as required

General

This instruction is intended for certified repair personnel familiar with LP gas equipment and applications. **IF YOU ARE NOT FAMILIAR WITH THIS EQUIPMENT — STOP.**

This instruction covers the filler-section replacement of Sherwood Model **623C** Filler Valve using Sherwood Kit #623C-100-KIT. Read this instruction completely before beginning. The valve cap and valve body may be reused if they are in good condition.

The 623C valve includes dual internal check valves (known in the industry as a “double-back check”). Parts for the bottom check valve are not field replaceable.

Make sure model number 623C is stamped into the valve body.

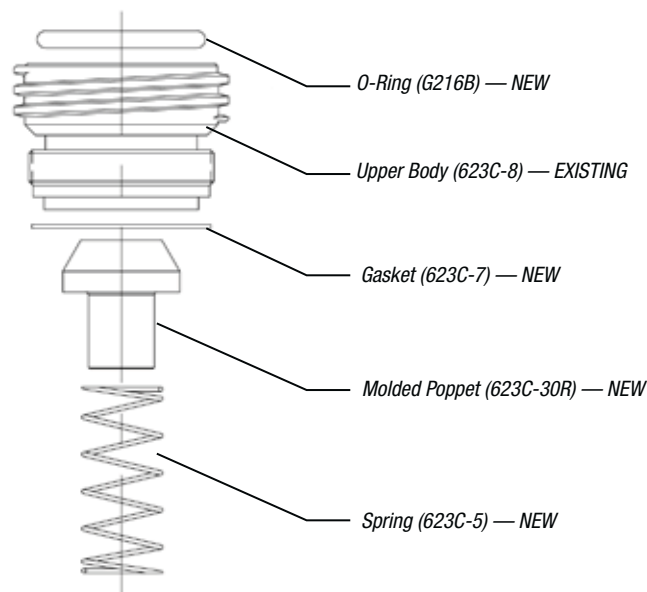
Tools Required

- ❑ Tool # TL623B
- ❑ Torque wrench, 0–100 feet pounds
- ❑ Commercial leak-test solution

* Must be approved for use on brass and with LP gas.

SAFETY INSTRUCTIONS

- Always destroy a damaged or worn valve and parts so they cannot be reused



Filler-Section Replacement Procedures

Step 1: Disassembly

1. Remove all traces of LP gas from the tank using the procedures specified in National Fire Protection Association Pamphlet #58 and by the National Propane Gas Association.
2. Clean the valve with clean, dry, compressed air or nitrogen so dirt does not enter the valve interior.
3. Remove cap, then remove O-ring from the groove in the upper body. Destroy the O-ring so that it cannot be reused.
4. Prevent the valve from turning while removing the upper body by holding it with a wrench applied at the valve body's wrench flats. Insert supplied tool (TL623B) fully into the upper body's hex recess and turn the tool counter-clockwise with a $\frac{7}{8}$ " wrench to remove.
5. Remove the white nylon gasket from the valve body's threaded recess, and remove the poppet and spring from the interior of the valve body.
6. Destroy and discard the poppet, spring, and gasket so that they cannot be reused.

Step 2: Inspection

1. Using a wire brush, remove all traces of adhesive from the inside threads of the valve body and the outside threads of the upper body.

2. Clean the valve with clean, dry, compressed air or nitrogen to remove any foreign particles.
3. Inspect inside the valve body, threads and gasket sealing surface for dirt, debris, or damage.
4. If the valve body is damaged, do not attempt to repair. Replace the entire assembly with a new valve.

Step 3: Assembly

1. Remove parts from the packaging and identify the parts.
2. Install the new white nylon gasket (623C-7) on the gasket sealing surface inside the valve body. Ensure the gasket is flat against the sealing surface.
3. Install the new spring (623C-5) and then the new poppet (623C-30R) over the post in the center of the valve body.
4. Apply a few drops of the supplied adhesive (V-ADH-105) to the threads of the upper body (623C-8).
5. Thread the upper body into the lower body by hand until it stops.
6. Using the supplied tool (TL623B) and add a calibrated torque wrench, and while bracing the lower body with an adjustable wrench to prevent rotation in the spud, tighten the upper body to 45–55 ft.-lbs. Do not over tighten.
7. Push the poppet down several times to make sure it moves without binding.
8. Install the new O-ring (G216B) into the groove in the upper body.

Step 4: Testing

1. Pressurize the system with LP gas at 50 to 150 psig. Using a commercial leak-test solution, check for leaks where the ACME connector screws into the valve body.
2. Keep your body away from the valve inlet. Carefully place a small amount of commercial leak-test solution around the poppet seal and inspect for leaks. When complete, use a clean cloth or paper towel to remove the excess liquid. Do not use a soap-and-water solution for this test — it could corrode the internal parts.
3. If any leaks are found, evacuate the tank using procedures specified in NFPA Pamphlet #58 and by the NGPA. Remove and destroy the entire valve so it cannot be re-used. Install a new valve.

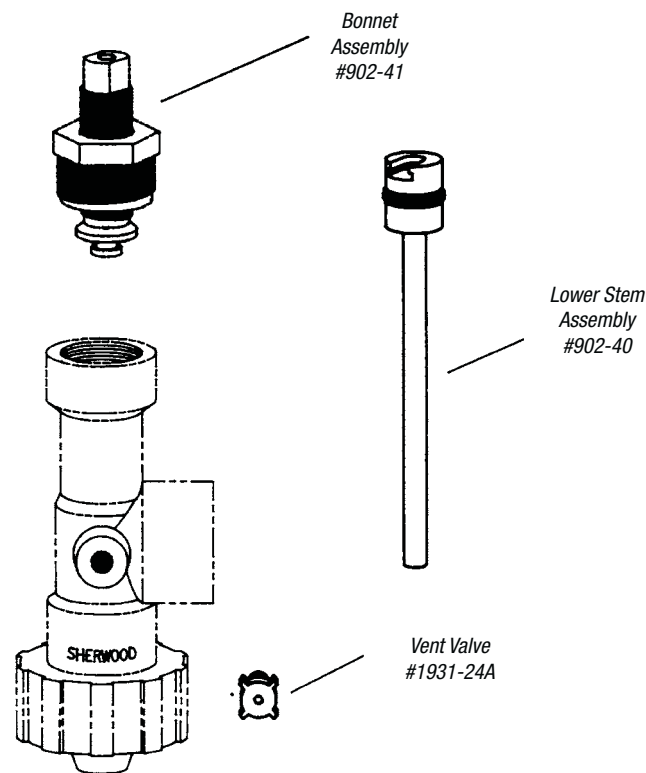
Warn Your Customer

- Leaking gas can cause fires or explosions
- If you smell gas:
 - Immediately call your gas supplier from a neighbor's phone
 - If you can't reach your gas supplier, call the fire department
 - Do not touch electrical switches or telephones
 - Do not light appliances

NOTICE: All Sherwood products must be used in strict compliance with the requirements and provisions of National Fire Protection Association Pamphlets #54 and #58, DOT, ANSI, and all applicable federal, state, provincial, and local standards, codes, regulations, and laws. It is the responsibility of the sellers, installation and maintenance personnel, and end users to remain knowledgeable of and in compliance with all standards, codes, regulations, and laws.


Component Replacement Instructions for Model 902A and 902B Unloading Adapters — 902-100-KIT


Instruction Sheet R-902



Kit #902-100-KIT Contains:	
Part Number	Description
902-41	Bonnet Assembly
902-40	Lower Stem Assembly
1931-24A	Vent Valve
R-902	Instruction Sheet

READ THIS INSTRUCTION COMPLETELY BEFORE BEGINNING.





WARNING

- Leaking gas can cause fires or explosions
- Only trained personnel should work on gas systems
- Inspect gas systems regularly
- Replace equipment as required

General

This instruction is intended for people familiar with LP gas equipment and applications. **IF YOU ARE NOT FAMILIAR WITH THIS EQUIPMENT — STOP.**

This instruction covers the renovation of Sherwood 902A and 902B Unloading Adapters using Kit #902-100-KIT. Read this instruction completely before beginning.

These adapter valves are used to open the Sherwood Model 623A filler valve installed on old-style (pre-1961) domestic tanks so that liquid LP gas can be removed. The 623A Filler Valve is installed into a tank flange with an internal dip tube that withdraws liquid from the bottom of the tank..

Make sure the adapter valve model number is either 902A or 902B. The model number is embossed on the adapter valve body. Also make sure the filler valve is a model 623A

Tools Required

- ☐ Medium slotted screwdriver (or #25 Torx® screwdriver)
- ☐ Deep hex socket, 1"
- ☐ Torque wrench, 0–100 foot-pounds
- ☐ Bench vise with soft-faced jaws
- ☐ Petroleum jelly lubricant
- ☐ Toothbrush
- ☐ Alcohol
- ☐ Fine wire brush
- ☐ Pressurized LP gas tank fitted with a 623A filler valve
- ☐ Commercial leak-test solution*

* Must be approved for use on brass and with LP gas.

SAFETY INSTRUCTIONS

- Use an accurate torque wrench to tighten the bonnet assembly
- Always destroy a damaged or worn valve and parts so they cannot be reused

Renovation Procedures

Step 1: Disassembly

1. Place the adapter valve in the vise so that the handwheel is up and the valve outlet is held flat against one of the vise jaws. Make sure that the ACME hand nut at the bottom of the valve clears the vise jaw (see Figure 1). Do not overtighten. Overtightening the vise can distort the valve body, making it difficult to remove the poppet assembly. Should this occur, the entire valve must be destroyed so it cannot be reused.

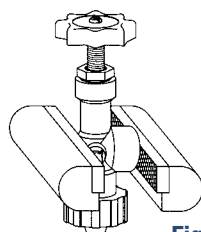


Figure 1

2. Remove and discard the vent valve located on the side of the main valve body.
3. Use the screwdriver (or #25 Torx driver) to remove the handwheel screw and handwheel. By hand, turn the threaded stem fully clockwise, withdrawing the bottom of the push rod into the valve body. Turn the stem back approximately half a turn counterclockwise to keep the assembly loose.
4. With the 1" socket and an appropriate wrench, fully loosen the bonnet nut by turning it counterclockwise, as shown in Figure 2. With the bonnet threads disengaged from the body, slowly pull the bonnet and the attached push-rod assembly straight out of the body. Discard the entire bonnet/push-rod assembly. Do not reuse any of the old parts except the handwheel and screw.

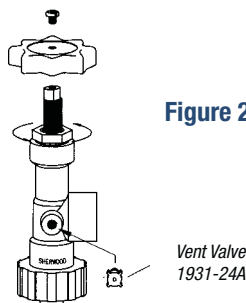


Figure 2

Step 2: Inspection

1. A damaged valve-to-bonnet seat may not allow a positive seal. Use a light to inspect the raised valve seat where the bottom of the bonnet nut contacts the valve when fully tightened. If the seat is nicked, scratched, worn, or distorted, destroy the entire valve so it cannot be reused.
2. Inspect all connections. Destroy the entire valve if any threaded connection is damaged or has worn threads. Clean all threads as necessary.
3. Inspect the smooth bore in the valve body where the O-ring of the push rod rides. If the bore is gouged, dented, pitted, or scratched, destroy the entire valve so it cannot be reused. If the bore is in good condition but is dirty, clean it with a toothbrush and alcohol. Re-inspect the bore. Do not use sandpaper, emery cloth, or similar abrasive to clean the bore. Abrasives will scratch the sealing surface too deeply.
4. Inspect the vent opening on the side of the valve. If the orifice sealing surface is dirty, clean it with a toothbrush and alcohol. If the orifice sealing surface is gouged, dented and pitted, corroded, or scratched, destroy the entire valve so it cannot be reused.

Step 3: Re-Assembly

1. Use petroleum jelly to lightly lubricate the inner bore of the valve body where the O-ring travels up and down.
2. Turn the new bonnet nut so it is in the middle of the upper threaded stem, as shown in Figure 3. Slide the locking groove of the lower stem onto the upper stem locking pin. Hold the top of the upper stem. Turn the bonnet nut counterclockwise down the stem so that the nut covers the top of the lower stem, preventing the lower stem from slipping off the locking pin (see Figure 4).
3. Insert the new bonnet and push-rod assembly, push rod first, into the valve body. By hand, screw the bonnet nut into the valve until the push rod almost touches the inside of the rod guide at the bottom of the valve.
4. Hold the valve and bonnet nut to prevent the nut from turning in the valve. Turn the threaded stem counterclockwise so the rod passes through the hole in the middle of the guide. If binding occurs, loosen the stem and try again. Finish turning the bonnet nut fully clockwise into the valve body.
5. Thread sealant is not necessary on the bonnet nut since the bonnet seat provides a metal-to-metal seal. Secure the valve in a vise as described earlier. Use an accurate torque wrench to tighten the bonnet nut at 50 to 60 foot-pounds. Do not overtighten.
6. Replace the handwheel and handwheel screw. Tighten the screw between 20 and 25 inch-pounds. Install the new vent valve finger-tight into the side of the adapter-valve body.

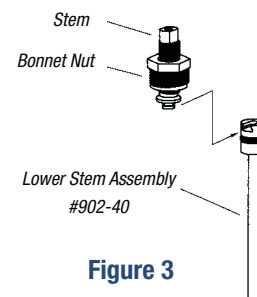


Figure 3

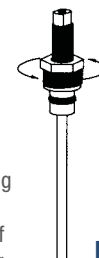


Figure 4

Step 4: Testing

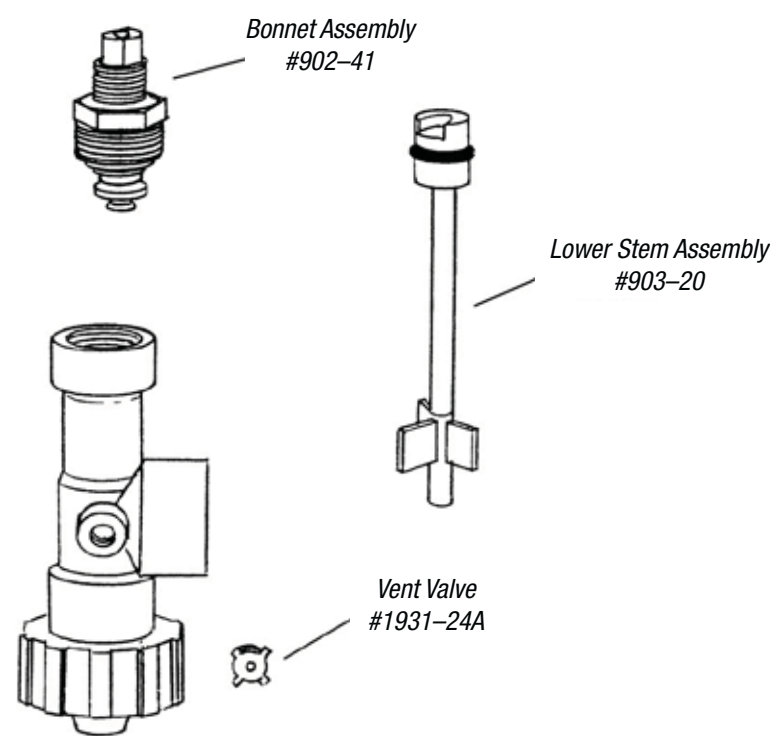
1. Turn the handwheel through its full range to ensure easy operation. If there is any binding or grinding, destroy the entire valve so it cannot be reused.
2. Turn the handwheel fully clockwise to withdraw the push rod fully into the valve body. Note that this does not "close" the adapter valve since it does not have any internal shutoff seat.
3. Install the adapter valve onto a Sherwood 623A Filler Valve pre-installed on a pressurized LP gas tank. Plug the adapter valve outlet with an appropriate (1/2" or 3/4") NPT pipe plug. **Never screw the adapter valve into the filler valve when the push rod is extended past the cone-shaped rod guide.** This can force the filler valve open before the hand nut is fully tightened, releasing liquid LP gas. **Never use a 902A or 902B Unloading Adapter on anything but a Sherwood 623A Filler Valve.** Permanent damage to both parts can result.
4. Turn the handwheel fully counterclockwise to extend the push rod, opening the filler valve. Using a commercial leak-test solution approved for use on brass and with LP gas, check for leaks at the bonnet nut, stem thread, inlet collar, and vent valve.
5. **If any leaks are found, close the valve** (turn clockwise). Open the vent valve on the side of the adapter valve body. When the venting stops, remove the adapter valve from the filler valve. Do not attempt to repair the leak. Destroy the entire adapter valve so it cannot be reused.
6. **If no leaks are found, close the valve** (turn clockwise) to close the filler valve. Open the vent valve on the side of the adapter valve body. The adapter valve may now be placed in service.

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Instruction Sheets

Component Replacement Instructions for Model PV903A
and PV903B Unloading Adapters — 903-100-KIT

Instruction Sheet R-903



Kit # 903-100-KIT Contains:	
Part Number	Description
902-41	Bonnet Assembly
903-20	Plug and Plunger Assembly
1931-24A	Vent Valve
R-903	Instruction Sheet

READ THIS INSTRUCTION COMPLETELY BEFORE BEGINNING.

WARNING

- Leaking gas can cause fires or explosions
- Only trained personnel should work on gas systems
- Inspect gas systems regularly
- Replace equipment as required

General

This instruction is intended for people familiar with LP gas equipment and applications. **IF YOU ARE NOT FAMILIAR WITH THIS EQUIPMENT — STOP.**

This instruction covers the renovation of Sherwood PV903A and PV903B Unloading Adapters using Kit #903-100-KIT. Read this instruction completely before beginning.

These adapter valves are used to open the Sherwood Model PV623B or PV1855SD filler valve installed on domestic tanks or cylinders so that liquid LP gas can be removed.

Make sure the adapter valve model number is either PV903A or PV903B. The model number is located at the top of the handwheel.

Also make sure the filler valve is either Model PV623B or PV1855SD.

Tools Required

- ☐ Medium slotted screwdriver (or #25 Torx® screwdriver)
- ☐ Deep hex socket, 1"
- ☐ Torque wrench, 0–100 foot-pounds
- ☐ Bench vise with soft-faced jaws
- ☐ Petroleum jelly lubricant
- ☐ Toothbrush
- ☐ Alcohol
- ☐ Fine wire brush
- ☐ Pressurized LP gas tank fitted with a PV623B or PV1855SD filler valve
- ☐ Commercial leak-test solution*

* Must be approved for use on brass and with LP gas.

SAFETY INSTRUCTIONS

- Use an accurate torque wrench to tighten the bonnet assembly
- Always destroy a damaged or worn valve and parts so they cannot be reused

Renovation Procedures

Step 1: Disassembly

- Place the adapter valve in the vise so that the handwheel is up and the valve outlet is held flat against one of the vice jaws. Make sure that the ACME hand nut at the bottom of the valve clears the vice jaw (see Fig. 1). Do not overtighten. Overtightening the vise can distort the valve body, making it difficult to remove the poppet assembly. Should this occur, the entire valve must be destroyed so it cannot be reused.
- Remove and discard the vent valve located on the side of the main valve body.
- Use the screwdriver (or #25 Torx driver) to remove the handwheel screw and handwheel. By hand, turn the threaded stem fully clockwise, withdrawing the bottom of the push rod into the valve body. Turn the stem back approximately half a turn counterclockwise to keep the assembly loose.
- With the 1" socket and an appropriate wrench, fully loosen the bonnet nut by turning it counterclockwise as shown in Fig. 2. With the bonnet threads disengaged from the body, slowly pull the bonnet and the attached plug and plunger assembly straight out of the body until the connection of the bonnet assembly and plug and plunger assembly is exposed. Disengage the bonnet assembly from the plug and plunger assembly and push the plug and plunger assembly through the valve body and remove it from the inlet side of the valve body. Discard the entire bonnet/plug and plunger assembly. Do not reuse any of the old parts except the handwheel and the screw.

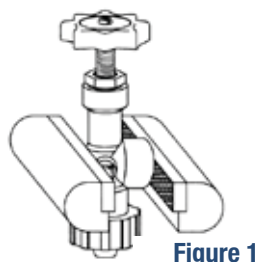


Figure 1

Step 2: Inspection

- A damaged valve-to-bonnet seat may not allow a positive seal. Use a light to inspect the raised valve seat where the bottom of the bonnet nut contacts the valve when fully tightened. If the seat is nicked, scratched, worn, or distorted, destroy the entire valve so it cannot be reused.
- Inspect all connections. Destroy the entire valve if any threaded connection is damaged or has worn threads. Clean all threads as necessary.
- Inspect the smooth bore in the valve body where the O-ring of the push rod rides. If the bore is gouged, dented, pitted, or scratched, destroy the entire valve so it cannot be reused. If the bore is in good condition but is dirty, clean it with a toothbrush and alcohol. Re-inspect the bore. Do not use sandpaper, emery cloth, or similar abrasive to clean the bore. Abrasives will scratch the sealing surface too deeply.
- Inspect the vent opening on the side of the valve. If the orifice sealing surface is dirty, clean it with a toothbrush and alcohol. If the orifice sealing surface is gouged, dented, pitted, corroded, or scratched, destroy the entire valve so it cannot be reused.

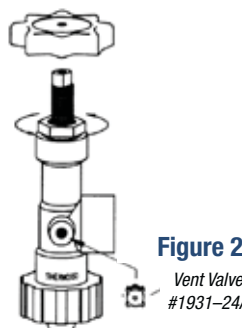


Figure 2

Vent Valve
#1931–24A

Step 3: Re-Assembly

- Use petroleum jelly to lightly lubricate the inner bore of the valve body where the O-ring travels up and down.
- Insert the plug and plunger assembly into the inlet of the valve until the upper plug (with the O-ring) extends past the bonnet portion of the body (see Fig. 4).
- Turn the new bonnet nut so it is in the middle of the upper threaded stem as shown in Fig. 3. Slide the locking groove of the lower stem onto the upper stem locking pin. Hold the top of the upper stem. Turn the bonnet nut counterclockwise down the stem so that the nut covers the top of the lower stem, preventing the lower stem from slipping off the locking pin (see Fig. 4).

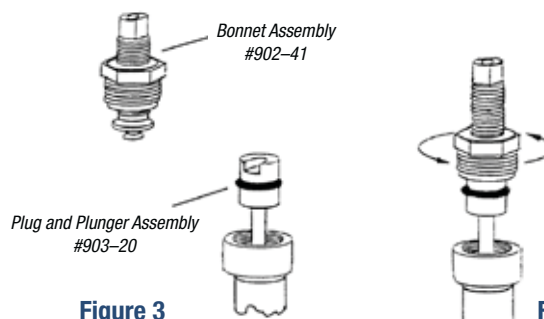


Figure 3

Figure 4

- Push the new assembly into the valve until the bonnet nut engages the threads in the body. Make sure the upper stem and plunger assembly does not disengage during assembly. Turn the bonnet nut clockwise (by hand) until the threads bottom out into the body.
- Thread sealant is not necessary on the bonnet nut since the bonnet seat provides metal-to-metal seal. Secure the valve in a vise as described earlier. Use an accurate torque wrench to tighten the bonnet nut at 50 to 60 foot-pounds. Do not over tighten.
- Replace the handwheel and handwheel screw. Tighten the screw between 20 to 25 inch-pounds. Install the new vent valve finger-tight into the side of the adapter-valve body.

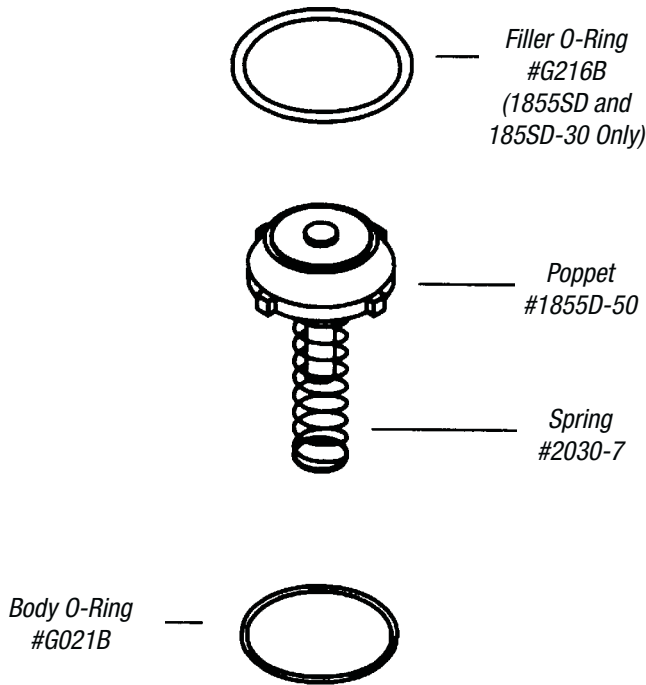
Step 4: Testing

- Turn the handwheel through its full range to ensure easy operation. If there is any binding or grinding, destroy the entire valve so it cannot be reused.
- Turn the handwheel fully clockwise to withdraw the push rod fully into the valve body. Note that this does not "close" the adapter valve since it does not have any internal shutoff seat.
- Install the adapter valve onto a Sherwood PV623B or PV1855SD filler valve pre-installed on a pressurized LP gas tank. Plug the adapter valve outlet with an appropriate (1/2" or 3/4") NPT pipe plug. **Never screw the adapter valve into the filler valve when the push rod is in an extended position.** This can force the filler valve open before the hand nut is fully tightened, releasing liquid LP gas. **Never use a PV903A or PV903B unloading adapter on anything but a Sherwood PV623B or PV1855SD filler valve.** Permanent damage to both parts can result.
- Turn the handwheel fully counterclockwise to extend the push rod, opening the filler valve. Using a commercial leak-test solution approved for use on brass and with LP gas, check for leaks at the bonnet nut, stem thread, inlet collar, and vent valve.
- If any leaks are found, close the valve (turn clockwise).** Open the vent valve on the side of the adapter valve body. When the venting stops, remove the adapter valve from the filler valve. Do not attempt to repair the leak. Destroy the entire adapter valve so it cannot be reused.
- If no leaks are found, close the valve (turn clockwise) to close the filler valve.** Open the vent valve on the side of the adapter valve body. The adapter valve may now be placed in service.

NOTICE: All Sherwood products must be used in strict compliance with the requirements and provisions of National Fire Protection Association Pamphlets #54 and #58, DOT, ANSI, and all applicable federal, state, provincial, and local standards, codes, regulations, and laws. It is the responsibility of the sellers, installation and maintenance personnel, and end users to remain knowledgeable of and in compliance with all standards, codes, regulations, and laws.

Instruction Sheets

Filler-Section Replacement Instructions for Model
1855 Series Filler Valve — 1855-100-KIT
Instruction Sheet R-1855



Kit #1855-100-KIT Contains:	
Part Number	Description
G216B	Filler O-Ring
1855D-50	Poppet
2030-7	Poppet Spring
G021B	Body O-Ring
1570 or 272	omniFIT® or Loctite®
R-1855	Instruction Sheet

READ THIS INSTRUCTION COMPLETELY BEFORE BEGINNING.

! WARNING

- Leaking gas can cause fires or explosions
- Only trained personnel should work on gas systems
- Inspect gas systems regularly
- Replace equipment as required

General

This instruction is intended for people familiar with LP gas equipment and applications. **IF YOU ARE NOT FAMILIAR WITH THIS EQUIPMENT — STOP.**

This instruction covers the filler-section replacement of Sherwood Model 1855SD, 1855SD-30, 1855SPD, 1855SVFD and 1855SD-90 Filler Valves using Kit #1855-100-KIT. Read this instruction completely before beginning. Any 1855 Series valve other than those listed must not be repaired with this instruction. Make sure the valve model number stamped into the valve body is listed above.

Each valve covered in this instruction is pictured in Figure 1. Note that a filler O-ring is used on 1855SD and 1855SD-30 valves only. Figure 2 shows an exploded view of a typical valve.

The internal poppet, poppet spring, and body O-ring are identical for all valves. All valves include dual internal check valves (known in the industry as a “double back-check”). Parts for the bottom check valve are not field replaceable.

Tools Required

- ☐ A large adjustable wrench or 1 1/4" open-end wrench
- ☐ Small, fine wire brush
- ☐ Small wooden dowel
- ☐ Torque wrench, 0–50 foot-pounds
- ☐ Commercial leak-test solution*
- ☐ Mild ammonia-free soap-and-water solution for lubrication

* Must be approved for use on brass and with LP gas.

Tools Required (Specific Valve)

Valve 1855SD

- ☐ 1/2" Allen wrench
- ☐ 1/2" crowfoot adapter

Valve 1855SD-30 Valve

- ☐ 1 1/8" crowfoot adapter and wrench

Valve 1855SPD

- ☐ 1 3/8" socket and wrench

Valve 1855SVFD

- ☐ 1 3/8" socket and wrench

1855SD-90

- ☐ 1 3/8" (12mm) crowfoot adapter and wrench

NOTE: Torque wrench, socket wrench, and crowfoot adapter should all have the same drive size.

SAFETY INSTRUCTIONS

- Use an accurate torque wrench to tighten the ACME connector
- Always destroy a damaged or worn valve and parts so they cannot be reused

Filler-Section Replacement Procedures

Step 1: Disassembly

- Remove all traces of LP gas from the cylinder using the procedures specified in National Fire Protection Association Pamphlet #58 and National Propane Gas Association Installation and Service Guide Book #4003.
- Clean the valve with clean compressed air so dirt does not enter the valve's interior.
- On valves 1855SD and 1855SD-30, remove the valve cap. Destroy the O-ring inside the ACME connector so it cannot be reused. On valves 1855SPD, 1855SVFD, and 1855SD-90, disconnect any tubing at the upper section of the valve.
- Using the tool appropriate to the valve (Allen wrench, crowfoot adapter, or socket), remove (turn counterclockwise) the upper body section from the valve. If necessary, prevent the lower valve section from turning by holding it steady with the adjustable wrench (or 1 1/4" open-end wrench). Note that the upper section of valve 1855SD is completely inside the lower section and is removed with the Allen wrench.
- Remove the poppet and poppet spring. Destroy the parts so they cannot be reused.
- Remove and discard the O-ring where the upper and lower valve sections mate. Destroy the O-ring so it cannot be reused.

Figure 1

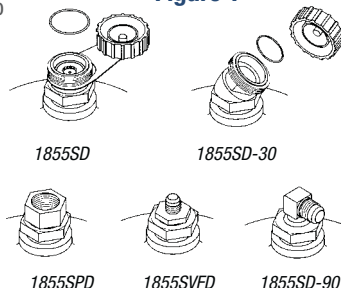
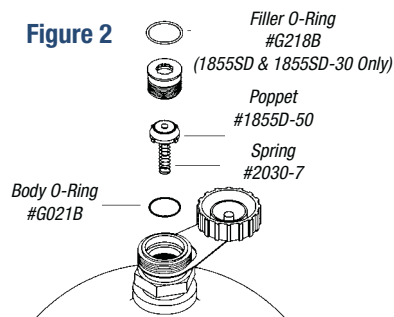


Figure 2



Step 2: Inspection

- Inspect the internal valve shoulder of the lower section, where the O-ring seats. If the seat is nicked, scratched, or distorted, replace the entire valve. Destroy the old valve so it cannot be reused.
- Inspect all threaded connections. If any are damaged or worn, replace the entire valve. Destroy the old valve so it cannot be reused.
- Inspect the bottom mating-seat rim of the upper section. If the rim is nicked, scratched, or distorted, replace the entire valve. Destroy the old valve so it cannot be reused.

- Replace the entire valve if any of the upper-section threads are damaged or worn. Destroy the old valve so it cannot be reused.
- Inspect the poppet seat of the upper section. If this seat is nicked, scratched, or distorted, replace the entire valve. Destroy the old valve so it cannot be reused.
- On valves 1855SD and 1855SD-30, inspect the ACME threads. If damaged or worn, replace the entire valve. Destroy the old valve so it cannot be reused.
- Using a fine wire brush, clean the old threadlocking residue from the fine female threads of the lower section. Blow the valve clean with compressed air.
- Where the upper section of the valve can be reused, clean the fine male threads that screw into the lower section.
- Inspect the internal poppet guide post for wear or nicks around the center guide hole. If any are present, replace the entire valve. Destroy the old valve so it cannot be reused.
- Inspect the valve cap. If it is cracked, worn, loose, or defective in any way, replace the cap. Use part #1850-10.

Step 3: Re-Assembly

- Lubricate a new #G021B O-ring with a mild, ammonia-free, soap-and-water solution. Shake off the excess liquid and install it into the valve at the O-ring seat. Be careful not to get any liquid on the female threads since it prevents the threadlocking adhesive from curing properly.
- Put three to four drops of omniFIT® 1570 or Loctite® 272 on the middle male threads of the new ACME connector.
- Install the new poppet spring onto new poppet stem. Guide the poppet stem through the guide hole in the middle of the poppet guide.
- Push the poppet and spring all the way down and use a pencil or wooden dowel to hold it down. Slide the upper section over the dowel and turn clockwise until the fine threads engage. NOTE: Loctite 272 will begin to cure within seconds of being confined within brass threads. If this happens before the following tightening procedure is completed, the sections must be separated, cleaned, and reassembled.
- Continue screwing the upper section into the lower section until it begins to bottom out. Inspect the O-ring. Make sure it is not sticking out anywhere around the seal. If it appears OK, immediately tighten the sections between 30 to 40 foot-pounds of torque. Do not overtighten the sections.
- Push the poppet down several times to make sure it moves without binding.
- On the 1855SD and 1855SD-30, install a new #G216B O-ring into the inlet of the ACME fitting.

Step 4: Testing

- Pressurize the cylinder with LP gas at 50 to 150 psig. Using the commercial leak-test solution specified above, check for leaks where the top section screws into the valve body. As a precaution, check the valve-to-tank connection as well.
- On 1855SD, 1855SD-30, and 1855SPD, carefully place two or three drops of commercial leak-test solution around the poppet seat and inspect for leaks. Keep your body away from the valve opening. When complete, use a clean cloth or paper towel to remove the excess liquid. **Do not use a soap-and-water solution for this test — it could corrode the internal parts.** On 1855SVFD and 1855SD-90, screw a 1/2" SAE cap on the inlet for two or three turns. Apply a commercial leak-test solution around the cap and valve threads and inspect for leaks.
- If any leaks are found, evacuate the tank according to NFPA Pamphlet #58 and NPGA Installation and Service Guide Book #4003. Remove and destroy the entire valve so it cannot be reused. Replace it with a new valve.
- If no leaks were found, the valve may now be placed in service. On 1855SD and 1855SD-30 valves, make sure the valve cap is in place and tightened.

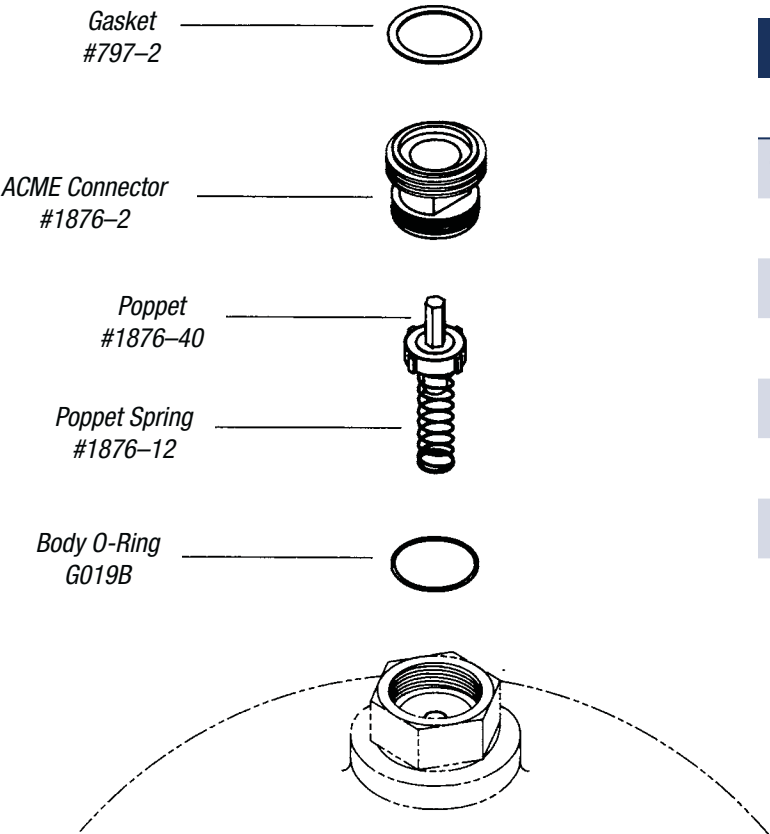
Warn Your Customer

- Leaking gas can cause fires or explosions
- If you smell gas:
 - Immediately call your gas supplier from a neighbor's phone
 - If you can't reach your gas supplier, call the Fire Department
 - Do not touch electrical switches or telephones
 - Do not light appliances

NOTICE: All Sherwood products must be used in strict compliance with the requirements and provisions of National Fire Protection Association Pamphlets #54 and #58, DOT, ANSI, and all applicable federal, state, provincial, and local standards, codes, regulations, and laws. It is the responsibility of the sellers, installation and maintenance personnel, and end users to remain knowledgeable of and in compliance with all standards, codes, regulations, and laws.

Instruction Sheets

Vapor-Return Replacement Instructions for Model 1876
Vapor-Return Valve — 1876-100-KIT
Instruction Sheet R-1876



Kit #1876-100-KIT Contains:	
Part Number	Description
797-2	Gasket
1876-2	ACME Connector
G019B	Body O-Ring
1876-40	Poppet
1876-12	Poppet Spring
1570 or 272	omniFIT® or Loctite®
R-1876	Instruction Sheet

READ THIS INSTRUCTION COMPLETELY BEFORE BEGINNING.

WARNING

- Leaking gas can cause fires or explosions
- Only trained personnel should work on gas systems
- Inspect gas systems regularly
- Replace equipment as required

General

This instruction is intended for people familiar with LP gas equipment and applications. **IF YOU ARE NOT FAMILIAR WITH THIS EQUIPMENT — STOP.**

This instruction covers the vapor-return section replacement of Sherwood Model 1876 Vapor-Return Valve using Kit #1876-100-KIT. The valve cap and bottom section may be reused if they are in good condition. Read this instruction completely before beginning.

The 1876 valve includes an excess-flow device that is an integral part of the valve's lower section. Parts for the excess-flow device are not field replaceable.

Make sure model number PV1876 is stamped into the valve body.

Tools Required

- ☐ A medium adjustable wrench or 1 1/4" open-end wrench.
- ☐ A 3/4" open-end wrench
- ☐ Small, fine wire brush
- ☐ Small wooden dowel
- ☐ Torque wrench, 0–50 foot-pounds
- ☐ 3/4" crowfoot adapter
- ☐ Mild ammonia-free soap-and-water solution for lubrication
- ☐ Commercial leak-test solution*

* Must be approved for use on brass and with LP gas.

NOTE: Torque wrench and crowfoot adapter should all have the same drive size.

SAFETY INSTRUCTIONS

- Use an accurate torque wrench to tighten the valve sections
- Always destroy a damaged or worn valve so it cannot be reused

Vapor-Return Section Replacement Procedures

Step 1: Disassembly

1. Remove all traces of LP gas from the cylinder using the procedures specified in National Fire Protection Association Pamphlet #58 and National Propane Gas Association Installation and Service Guide Book #4003.
2. Clean the valve with clean compressed air so dirt does not enter the valve's interior.
3. Remove the valve cap. Remove and discard the gasket inside the ACME connector. Destroy the gasket so it cannot be reused.
4. Using the 3/4" wrench, remove (turn counterclockwise) the ACME connector section from the valve. If necessary, prevent the lower valve section from turning by holding it steady with the adjustable wrench (or 1 1/4" open-end wrench). Destroy the old ACME connector so it cannot be reused.
5. Remove and discard the poppet and poppet spring. Destroy the parts so they cannot be reused.
6. Remove and discard the O-ring where the upper and lower valve sections mate. Destroy the O-ring so it cannot be reused.

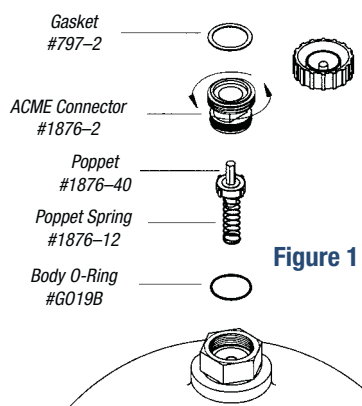


Figure 1

Step 2: Inspection

1. Inspect the internal valve shoulder of the lower section, where the O-ring seats. If the seat is nicked, scratched, or distorted, replace the entire valve. Destroy the old valve so it cannot be reused.
2. Replace the entire valve if the internal threads are damaged or worn. Destroy the old valve so it cannot be reused.
3. Using a fine wire brush, clean the old threadlocking residue from the fine female threads of the lower section. Blow the valve clean with compressed air. Clean all other threads as necessary.
4. Inspect the internal poppet-guide post for wear or nicks. If any are present, replace the entire valve. Destroy the old valve so it cannot be reused.
5. Inspect the valve cap. If it is cracked, worn, loose, or defective in any way, replace the cap.

Step 3: Re-Assembly

1. Lubricate a new #G019B O-ring with a mild, ammonia-free, soap-and-water solution. Remove the excess liquid and install it into the valve at the O-ring seat. Be careful not to get any liquid on the female threads since it prevents the threadlocking adhesive from curing.
2. Put two to three drops of omniFIT® 1570 or Loctite® 272 on the middle male threads of the new ACME connector.
3. Install the new poppet spring onto the round stem of the new poppet. The hexagonal poppet stem must face up as shown. Guide the lower poppet stem into the middle of the poppet guide.
4. Push the poppet and spring all the way down and use a wooden dowel to hold it down. Slide the new ACME connector over the dowel and turn clockwise until the fine threads engage. NOTE: Loctite 272 will begin to cure within seconds of being confined within brass threads. If this happens before the following tightening procedure is completed, the sections must be separated, cleaned, and reassembled.
5. Continue screwing the ACME connector into the lower section until it bottoms out. Tighten the sections between 25 to 35 foot-pounds of torque. Do not overtighten the sections.
6. Push the poppet down several times to make sure it moves without binding.
7. Install a new #797-2 gasket into the inlet of the ACME fitting.

Step 4: Testing

1. Pressurize the cylinder with LP gas at 50 to 150 psig. Using the commercial leak-test solution, check for leaks where the ACME connector screws into the valve body. As a precaution, check the valve-to-tank connection as well.
2. Keep your body away from the valve inlet. Carefully place two or three drops of commercial leak-test solution around the poppet seat and inspect for leaks. When complete, use a clean cloth or paper towel to remove the excess liquid. **Do not use a soap-and-water solution for this test — it could corrode the internal parts.**
3. If any leaks are found, evacuate the tank according to NFPA Pamphlet #58 and NPGA Installation and Service Guide Book #4003. Remove and destroy the entire valve so it cannot be reused. Install a new valve.
4. If no leaks were found, the valve may now be placed in service. Make sure the valve cap is in place and tightened.

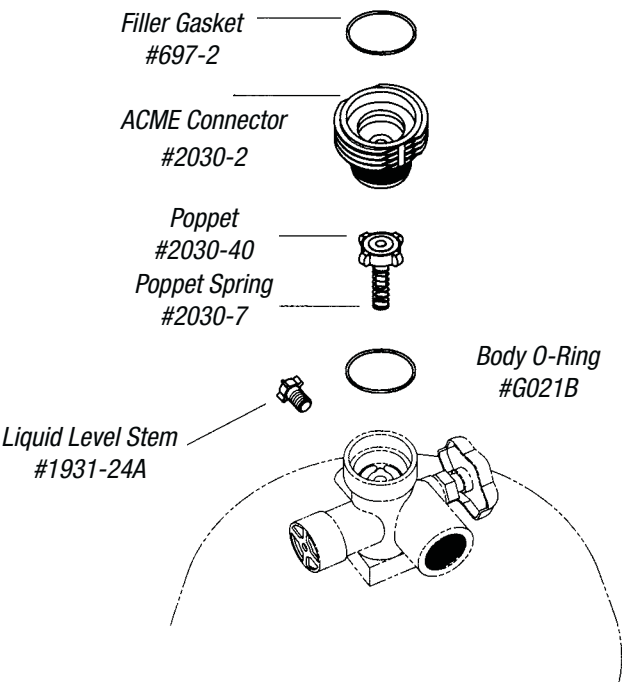
Warn Your Customer

- Leaking gas can cause fires or explosions
- If you smell gas:
 - Immediately call your gas supplier from a neighbor's phone
 - If you can't reach your gas supplier, call the Fire Department
 - Do not touch electrical switches or telephones
 - Do not light appliances

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Filler-Section Replacement Instructions for Model 2030BC Multi-Purpose
Cylinder Valves — 2030-100-KIT

Instruction Sheet R-2030



Kit #2030-100-KIT Contains:	
Part Number	Description
697-2	Filler Gasket
2030-2	ACME Connector
G021B	Body O-Ring
2030-40	Poppet
2030-7	Poppet Spring
1931-24A	Liquid Level Stem
272	omniFIT® 1570 or Loctite®
R-2030	Instruction Sheet

READ THIS INSTRUCTION COMPLETELY BEFORE BEGINNING.

WARNING

- Leaking gas can cause fires or explosions
- Only trained personnel should work on gas systems
- Inspect gas systems regularly
- Replace equipment as required

General

This instruction is intended for people familiar with LP gas equipment and applications. **IF YOU ARE NOT FAMILIAR WITH THIS EQUIPMENT — STOP.**

Read the instructions completely before beginning. This instruction covers the filler-section replacement of Sherwood Model 2030BC Multi-Purpose Cylinder Valves using Sherwood Kit #2030-100-KIT. These valves include a filler section with a 1¼" ACME connector, a pressure-relief device, dual internal check valves (known in the industry as a "double back-check"), a maximum-liquid-level indicator, and a vapor service on-off valve. These valves are used on cylinders up to 200 pounds capacity.

Make sure the valve model number embossed on the valve body is 2030BC. A white plastic tag should be attached to the bonnet stem on the side of the valve. It should read "Quick Fill 2030 BC Double Back-Check."

Any valve marked 2030C is obsolete. Should the ACME connector leak LP gas anywhere, the valve should be removed and destroyed to prevent reuse after all LP gas has been removed from the tank. Replace it with a Sherwood 2030BC.

Note the date code stamped on one of the wrench flats. Compare it to the date code chart on **page 13**. If the valve is 10 years old or older, replace the entire valve. Destroy the old valve so it cannot be reused.

Tools Required

- ☐ A large adjustable wrench or open-end wrench, 1½" and 1⅞"
- ☐ Small wooden dowel
- ☐ Spring scale, 20 to 40 pounds
- ☐ Petroleum jelly lubricant
- ☐ Small, fine wire brush
- ☐ Toothbrush and alcohol
- ☐ Commercial leak-test solution*

* Must be approved for use on brass and with LP gas.

NOTE: Torque wrench, socket wrench, and crowfoot adapter should all have the same drive size.

SAFETY INSTRUCTIONS

- Use an accurate torque wrench to tighten the ACME connector
- Always destroy a damaged or worn valve and parts so they cannot be reused
- Never repair or clean a safety relief device

Bonnet and Handwheel Inspection

Before evacuating the tank, make sure the bonnet assembly is in good working order. There must be at least 35 psig of cylinder pressure to perform this test. Plug the valve outlet with a POL plug. Open the outlet valve halfway and thoroughly check the bonnet nut and stem for leaks using a commercial leak-test solution.

Turn the handwheel clockwise until the bonnet just bottoms on the seat. Tighten the handwheel approximately one tenth of a turn further. Carefully remove the outlet plug. A small release of LP gas may occur as the plug is loosened.

Thoroughly check the outlet for leaks using a leak-test solution. Remove any excess liquid when complete. If any leak is found during either of the above tests, the bonnet assembly must also be replaced (see Sherwood Instruction Sheet R-3329).

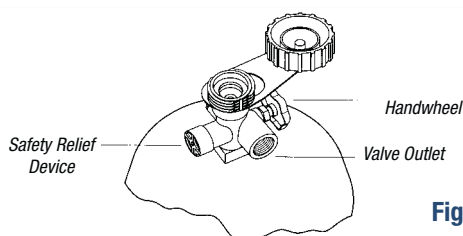


Figure 1

Filler-Section Replacement Procedures

Step 1: Disassembly

1. Remove all traces of LP gas from the cylinder using the procedures specified in National Fire Protection Association Pamphlet #58 and National Propane Gas Association Installation and Service Guide Book #4003.
2. Clean the valve with clean compressed air so dirt does not enter the valve's interior.
3. Remove and destroy the liquid-level stem located on the side of the main valve body.
4. Prevent the valve from turning while removing the ACME connector by holding it steady with an adjustable wrench (or 1½" open-end wrench) applied at the valve's wrench flats. Use the other adjustable wrench (or 1⅞" open-end wrench) on the flats of the ACME connector. Remove (turn counterclockwise) and destroy the ACME connector so it cannot be reused.
5. Remove the poppet and poppet spring. Destroy the parts so they cannot be reused. Do not remove the poppet guide or the wire that holds the poppet guide and the bottom check valve together. See Paragraph 4 under Inspection.
6. Remove the O-ring that seals the ACME connector to the valve body. Destroy the O-ring so it cannot be reused.

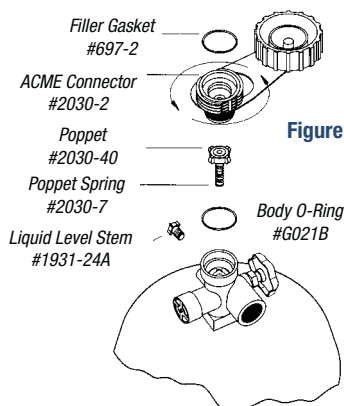


Figure 2

Step 2: Inspection

1. Inspect the internal valve shoulder where the O-ring seats. If the seat is nicked, scratched, or distorted, replace the entire valve. Destroy the old valve so it cannot be reused.
2. Inspect all threaded connections. Replace the entire valve if any threaded connection is damaged or has worn threads. Destroy the old valve so it cannot be reused.
3. Using a fine wire brush, clean the old threadlocking residue from the fine female threads where the ACME connector screws into the valve. Blow the valve clean with compressed air. Clean all other threads as necessary.
4. Inspect the poppet guide while it is installed in the valve. If rust is present, the entire valve must be replaced. Destroy the old valve so it cannot be reused. Sherwood does not provide for the replacement of the poppet guide or bottom check-valve parts.
5. Inspect the wire attaching the poppet guide to the bottom check valve. If it is missing and the poppet guide is loose, the entire valve must be replaced. Destroy the old valve so it cannot be reused. Sherwood does not provide for the replacement of the poppet guide or bottom check-valve parts.
6. Inspect the vent opening on the side of the valve. If the orifice sealing surface is corroded, clean it with a toothbrush and alcohol. If the orifice sealing surface is gouged, dented, pitted, or scratched, replace the entire valve. Destroy the old valve so it cannot be reused.
7. Inspect the safety relief device. If its openings are clogged with foreign matter or if it shows any sign of tampering or is dented, bent, or damaged in any way, replace the entire valve. Destroy the old valve so it cannot be reused. Never attempt to repair or clean a safety relief device.
8. Inspect the ACME cap. If it is cracked or broken, replace with a new cap.

Step 3: Re-Assembly

1. Lightly lubricate a new #G021B O-ring with petroleum jelly and install it into the valve at the O-ring seat.
2. Make sure the poppet guide is in the correct position inside the valve. Install the new poppet spring onto the new poppet stem. Guide the poppet stem through the guide hole in the middle of the poppet guide.
3. Push the poppet and spring all the way down and use a pencil or wooden dowel to hold it down. Slide the new ACME connector over the dowel and turn clockwise until the fine threads engage.
4. Continue screwing the ACME connector until only two or three of the fine male threads remain visible. Place two or three drops of omniFIT® 1570 or Loctite® 272 on the threads. **NOTE:** Loctite 272 will begin to cure within seconds of being confined within brass threads. If this happens before the following tightening procedure is completed, the sections must be separated, cleaned, and reassembled.
5. Tighten the ACME connector at 30 to 40 foot-pounds of torque by applying 30 to 40 pounds of pull at the end of a standard 12-inch-long wrench, or 24 to 32 pounds at the end of a standard 15-inch-long wrench. Do not overtighten.
6. Push the poppet down several times to make sure it moves without binding.
7. Install the new liquid-level stem into the side of the valve body and tighten finger tight.
8. Install the new filler gasket into the inlet of the new ACME connector.

Step 4: Testing

1. Pressurize the cylinder with LP gas at 50 to 150 psig. Using the commercial leak-test solution, check for leaks where the ACME connector screws into the valve body.
2. Keep your body away from the valve inlet. Carefully place two or three drops of commercial leak-test solution around the poppet seat and inspect for leaks. When complete, use a clean cloth or paper towel to remove the excess liquid. **Do not use a soap-and-water solution for this test — it could corrode the internal parts.**
3. If any leaks are found, evacuate the tank according to NFPA Pamphlet #58 and NPGA Installation and Service Guide Book #4003. Remove and destroy the entire valve so it cannot be reused. Install a new valve.
4. If no leaks were found, the valve may now be placed in service. Put the ACME cap tag on the valve so the cap will be right-side up. Install the cap and tighten.

Warn Your Customer

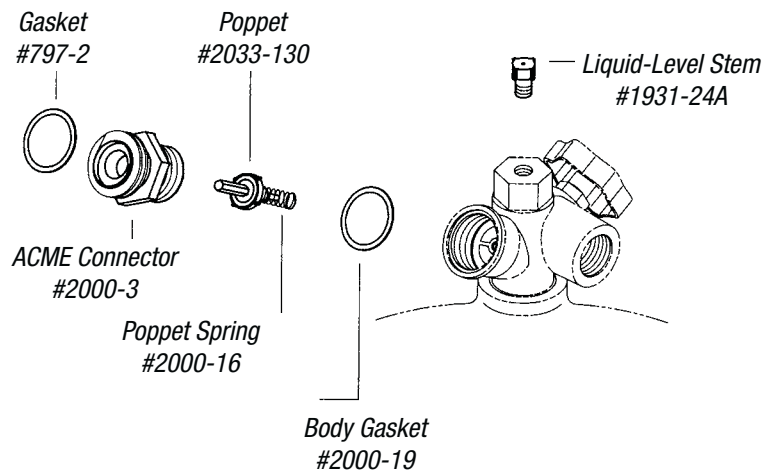
- Leaking gas can cause fires or explosions
- If you can't reach your gas supplier, call the Fire Department
- If you smell gas:
 - Immediately call your gas supplier from a neighbor's phone
 - Do not touch electrical switches or telephones
 - Do not light appliances.

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Instruction Sheets

Vapor-Return Section Replacement Instructions for Model 2033CL Multi-Purpose Cylinder Valves — 2033-100-KIT

Instruction Sheet R-2033



Kit # 2033-100-KIT Contains:

Part Number	Description
797-2	Gasket
2000-3	ACME Connector
2000-19	Body Gasket
2033-130	Poppet
2000-16	Poppet Spring
1931-24A	Liquid-Level Stem
1570 or 272	omniFIT® 1570 or Loctite®
R-2033	Instruction Sheet

READ THIS INSTRUCTION COMPLETELY BEFORE BEGINNING.

WARNING

- Leaking gas can cause fires or explosions
- Only trained personnel should work on gas systems
- Inspect gas systems regularly
- Replace equipment as required

General

This instruction is intended for people familiar with LP gas equipment and applications. **IF YOU ARE NOT FAMILIAR WITH THIS EQUIPMENT — STOP.**

This instruction covers the vapor-return section replacement of Sherwood Model 2033CL Multi-Purpose Cylinder Valves using Sherwood Kit #2033-100-KIT. These valves include a vapor return connection, a maximum-liquid-level indicator, and a vapor service on-off valve. They are used on domestic ASME bulk tanks. They cannot be used to add or remove liquid LP gas. Read this instruction completely before beginning.

Make sure the valve model number embossed into the valve body is 2033CL.

Tools Required

- ☐ Socket wrench
- ☐ Torque wrench, 0–50 foot-pounds
- ☐ Deep hex socket, 1¼"
- ☐ Small, fine wire brush
- ☐ Small wooden dowel
- ☐ Petroleum jelly lubricant
- ☐ Toothbrush and alcohol
- ☐ Commercial leak-test solution*

* Must be approved for use on brass and with LP gas.

SAFETY INSTRUCTIONS

- Use an accurate torque wrench to tighten the ACME connector
- Always destroy a damaged or worn valve and parts so they cannot be reused

Bonnet and Handwheel Inspection

Before evacuating the tank, make sure the bonnet assembly is in good working order. There must be at least 35 psig of cylinder pressure to perform this test. Plug the valve outlet with a POL plug. Open the outlet valve halfway and thoroughly check the bonnet nut and stem for leaks using a commercial leak-test solution.

Turn the handwheel clockwise until the bonnet just bottoms on the seat. Tighten the handwheel approximately one tenth of a turn further. Carefully remove the outlet plug.

Thoroughly check the outlet for leaks using a commercial leak-test solution. If any leak is found during either of the above tests, the bonnet assembly must be replaced (see Sherwood Instruction Sheet I-3329, Filler-Section Replacement Procedures).

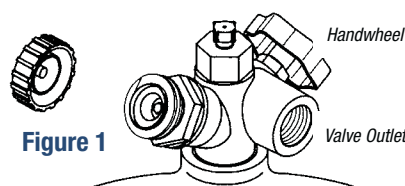


Figure 1

Vapor-Return Section Replacement Procedures

Step 1: Disassembly

1. Remove all traces of LP gas from the cylinder using the procedures specified in National Fire Protection Association Pamphlet #58 and National Propane Gas Association Installation and Service Guide Book #4003.
2. Clean the valve with clean compressed air so dirt does not enter the valve's interior.
3. Remove the liquid-level stem valve located on the top of the main valve body. Destroy the part so it cannot be reused.
4. Use the socket wrench and 1¼" socket, remove (turn counterclockwise) the ACME threaded vapor-return connector. Destroy the connector so it cannot be reused.
5. Remove the poppet and poppet spring. Destroy the parts so they cannot be reused.
6. Remove the flat metal gasket that seals the ACME connector to the valve body. Destroy the gasket so it cannot be reused.

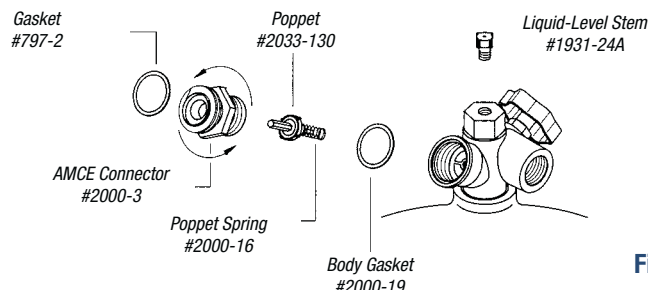


Figure 2

Step 2: Inspection

1. Inspect the internal valve shoulder where the metal gasket seats. If the seat is nicked, scratched, or distorted, replace the entire valve. Destroy the old valve so it cannot be reused.
2. Inspect all threaded connections. Replace the entire valve if any threaded connection is damaged or has worn threads. Destroy the old valve so it cannot be reused.

3. Using a fine wire brush, clean the old threadlocking residue from the fine female threads where the ACME connector screws into the valve. Blow the valve clean with compressed air. Clean all other threads as necessary.
4. Inspect the poppet guide for wear or nicks around the center guide hole. If any are present, contact Sherwood for a replacement. The poppet guide may be reused if it is in good condition.
5. Inspect the vent opening on the top of the valve. If the orifice sealing surface is corroded, clean it with a toothbrush and alcohol. If the orifice sealing surface is gouged, dented, pitted, or scratched, replace the entire valve. Destroy the old valve so it cannot be reused.
6. Inspect the valve cap. If it is cracked or broken, replace with a new cap.

Step 3: Re-Assembly

1. Install a new #2000-19 gasket into the valve at the gasket seat.
2. Install the new poppet spring onto the round stem of the new poppet. The hexagonal poppet stem must face up as shown. Guide the lower poppet stem through the guide hole in the middle of the poppet guide.
3. Push the poppet and spring all the way down and use a wooden dowel to hold it down. Slide the new ACME connector over the dowel and turn clockwise until the fine threads engage.
4. Continue screwing the ACME connector until only two or three of the fine male threads remain visible. Place two or three drops of omniFIT® 1570 or Loctite® 272 on the threads. NOTE: Loctite 272 will begin to cure within seconds of being confined within brass threads. If this happens before the following tightening procedure is completed, the sections must be separated, cleaned, and reassembled.
5. Make sure the metal gasket is correctly positioned in its seat. Using the torque wrench and 1¼" socket, tighten the ACME connector with 50 to 60 foot-pounds of torque. Do not overtighten.
6. Push the poppet down several times to make sure it moves without binding.
7. Install the new liquid-level stem into the top of the valve body and tighten finger tight.
8. Install the new gasket into the inlet of the new ACME connector.

Step 4: Testing

1. Pressurize the cylinder with LP gas at 50 to 150 psig. Using the commercial leak-test solution specified above, check for leaks where the ACME vapor return connector screws into the valve body. As a precaution, check the valve-to-tank connection as well.
2. Keep your body away from the valve inlet. Carefully place two or three drops of commercial leak-test solution around the poppet seat and inspect for leaks. When complete, use a clean cloth or paper towel to remove the excess liquid. Do not use a soap-and-water solution for this test — it could corrode the internal parts.
3. If any leaks are found, evacuate the tank according to NFPA Pamphlet #58 and NPGA Installation and Service Guide Book #4003. Remove and destroy the entire valve so it cannot be reused. Install a new valve.
4. If no leaks were found, the valve may now be placed in service. Make sure the valve cap is in place and tightened.

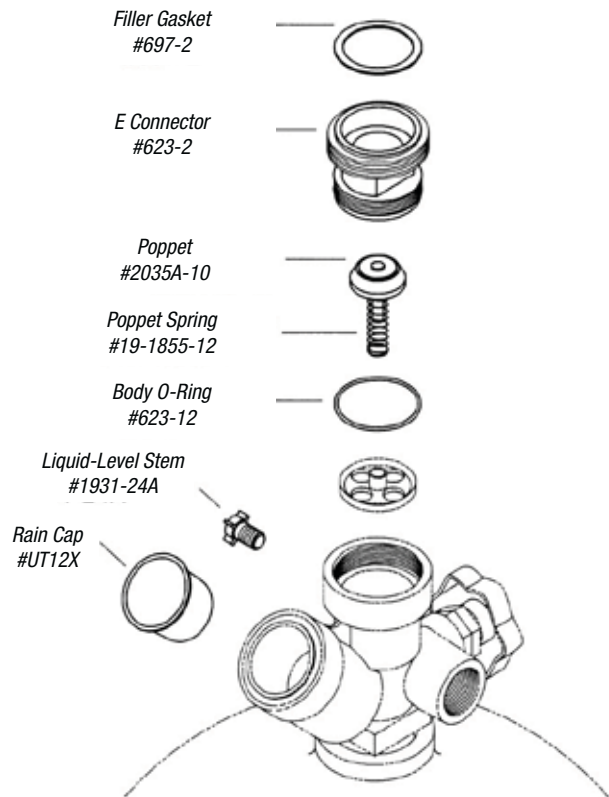
Warn Your Customer

- Leaking gas can cause fires or explosion
- If you smell gas:
 - Immediately call your gas supplier from a neighbor's phone
 - If you can't reach your gas supplier, call the Fire Department
 - Do not touch electrical switches or telephones
 - Do not light appliances

NOTICE: All Sherwood products must be used in strict compliance with the requirements and provisions of National Fire Protection Association Pamphlets #54 and #58, DOT, ANSI, and all applicable federal, state, provincial, and local standards, codes, regulations, and laws. It is the responsibility of the sellers, installation and maintenance personnel, and end users to remain knowledgeable of and in compliance with all standards, codes, regulations, and laws.

Filler-Section Replacement Instructions for Model 2035A
Multi-Purpose Cylinder Valves — 2035-100-KIT

Instruction Sheet R-2035



Kit #2035-100-KIT Contains:	
Part Number	Description
697-2	Filler Gasket
623-2	ACME Connector
623-12	Body O-Ring
2035A-10	Poppet
19-1855-12	Poppet Spring
1931-24A	Liquid-Level Stem
UT12X	Rain Cap
1570, 272	omniFIT®, Loctite®
R-2035	Instruction Sheet

READ THIS INSTRUCTION COMPLETELY BEFORE BEGINNING.

! WARNING

- Leaking gas can cause fires or explosions
- Only trained personnel should work on gas systems
- Inspect gas systems regularly
- Replace equipment as required

General

This instruction is intended for people familiar with LP gas equipment and applications. **IF YOU ARE NOT FAMILIAR WITH THIS EQUIPMENT — STOP.**

This instruction covers the filler-section replacement of Sherwood Model 2035A and 2035A250 Multi-Purpose Cylinder Valves using Sherwood Kit #2035-100-KIT. These valves include a filler section with a 1¼" ACME connector, a pressure-relief device, dual internal check valves (known in the industry as a “double back-check”), a maximum-liquid-level indicator, and a vapor service on-off valve. The 2035A valve is used on customer DOT cylinders up to 420 pounds capacity. The 2035A250 is used only on 100-gallon ASME tanks. Read this instruction completely before beginning.

Make sure the valve model number embossed into the valve body is 2035A or 2035A250.

Note the date code stamped on one of the wrench flats. Compare it to the data code chart on **page 13**. If the valve is 10 years old or older, replace the entire valve. Destroy the old valve so it cannot be reused.

Tools Required

- ☐ A large adjustable wrench or 1½" open-end wrench
- ☐ Torque wrench, 0–50 foot-pounds
- ☐ Socket wrench
- ☐ Open-end crowfoot adapter, 1½"
- ☐ Commercial leak-test solution*
- ☐ Petroleum jelly lubricant
- ☐ Toothbrush and alcohol
- ☐ Small wooden dowel
- ☐ Small, fine wire brush

* Must be approved for use on brass and with LP gas.

Note: Torque wrench, socket wrench, and crowfoot adapter should all have the same drive size.

SAFETY INSTRUCTIONS

- Use an accurate torque wrench to tighten the ACME connector
- Always destroy a damaged or worn valve so it cannot be reused
- Never repair or clean a safety-relief device

Bonnet and Handwheel Inspection

Before evacuating the tank, make sure the bonnet assembly is in good working order. There must be at least 35 psig of cylinder pressure to perform this test. Plug the valve outlet with a POL plug. Open the outlet valve halfway and thoroughly check the bonnet nut and stem for leaks using a commercial leak-test solution.

Turn the handwheel clockwise until the bonnet just bottoms on the seat. Tighten the handwheel approximately one tenth of a turn further. Carefully remove the outlet plug.

Thoroughly check the outlet for leaks using a commercial leak-test solution. Remove any excess liquid when complete. If any leak is found during either of the above tests, the bonnet assembly must also be replaced. See Sherwood Instruction Sheet R-3250-8LH.



Filler-Section Replacement Procedures

Step 1: Disassembly

1. Remove all traces of LP gas from the cylinder using the procedures specified in National Fire Protection Association Pamphlet #58 and National Propane Gas Association Installation And Service Guide Book #4003.
2. Clean the valve with clean compressed air so dirt does not enter the valve's interior.
3. Remove the liquid-level stem valve located on the side of the main valve body. Destroy the part so it cannot be reused.
4. Prevent the valve from turning while removing the ACME connector by holding it steady with an adjustable wrench (or 1½" open-end wrench) applied at the valve's wrench flats. Use the socket wrench and 1½" open-end crowfoot adapter on the flats of the threaded ACME connector. Remove (turn counterclockwise) the ACME threaded connector. Destroy the connector so it cannot be reused.
5. Remove the poppet and poppet spring. Destroy the parts so they cannot be reused.
6. Remove the O-ring that seals the ACME connector to the valve body. Destroy the O-ring so it cannot be reused.

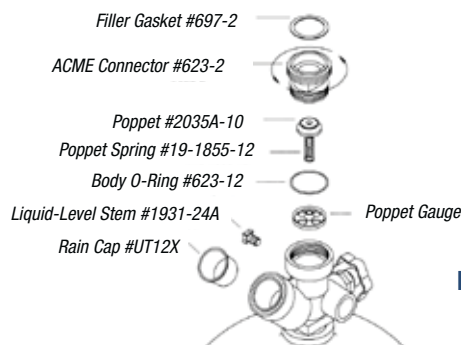


Figure 2

Step 2: Inspection

1. Inspect the internal valve shoulder where the O-ring seats. If the seat is nicked, scratched, or distorted, replace the entire valve. Destroy the old valve so it cannot be reused.
2. Inspect all threaded connections. Replace the entire valve if any threaded connection is damaged or has worn threads. Destroy the old valve so it cannot be reused.
3. Using a fine wire brush, clean the old threadlocking residue from the fine female threads where the ACME connector screws into the valve. Blow the valve clean with compressed air. Clean all other threads as necessary.
4. Inspect the poppet guide for wear or nicks around the center guide hole. If any are present, contact Sherwood for a replacement. The poppet guide may be reused if it is in good condition.
5. Inspect the vent opening on the side of the valve. If the orifice sealing surface is corroded, clean it with a toothbrush and alcohol. If the orifice sealing surface is gouged, dented, pitted, or scratched, replace the entire valve. Destroy the old valve so it cannot be reused.
6. Remove and discard the rain cap on the safety relief device. Inspect the safety-relief spring for corrosion. If anything but light surface corrosion is present on the spring, replace the entire valve. Destroy the old valve so it cannot be reused.
7. Inspect the safety relief device. If its openings are clogged with foreign matter or if it shows any sign of tampering or is dented, bent, or damaged in any way, replace the entire valve. Destroy the old valve so it cannot be reused. Never attempt to repair or clean a safety relief device.
8. Inspect the valve cap. If it is cracked or broken, replace with a new cap.

Step 3: Re-Assembly

1. Lightly lubricate a new #623-12 O-ring with petroleum jelly and install it into the valve at the O-ring seat.
2. Make sure the poppet guide is in the correct position inside the valve. Install the new poppet spring onto the new poppet stem. Guide the poppet stem through the guide hole in the middle of the poppet guide.
3. Push the poppet and spring all the way down and use a pencil or wooden dowel to hold it down. Slide the new ACME connector over the dowel and turn clockwise until the fine threads engage. See Figure 2.
4. Continue screwing the ACME connector until only two or three of the fine male threads remain visible. Place two or three drops of omniFIT® 1570 or Loctite® 272 on the threads. NOTE: Loctite 272 will begin to cure within seconds of being confined within brass threads. If this happens before the following tightening procedure is completed, the sections must be separated, cleaned, and reassembled.
5. Using the torque wrench and 1½" crowfoot adapter, tighten the ACME connector with 30 to 40 foot-pounds of torque. Do not overtighten.
6. Push the poppet down several times to make sure it moves without binding.
7. Install the new liquid-level stem into the side of the valve body and tighten finger tight.
8. Install the new filler gasket into the inlet of the new ACME connector.

Step 4: Testing

1. Pressurize the cylinder with LP gas at 50 to 150 psig. Using the commercial leak-test solution, check for leaks where the ACME connector screws into the valve body.
2. Keep your body away from the valve inlet. Carefully place two or three drops of commercial leak-test solution around the poppet seat and inspect for leaks. When complete, use a clean cloth or paper towel to remove the excess liquid. Do not use a soap-and-water solution for this test — it could corrode the internal parts.
3. If any leaks are found, evacuate the tank according to NFPA Pamphlet #58 and NPGA Installation and Service Guide Book #4003. Remove and destroy the entire valve so it cannot be reused. Install a new valve.
4. If no leaks were found, the valve may be placed in service. Make sure the valve cap is in place and tightened.

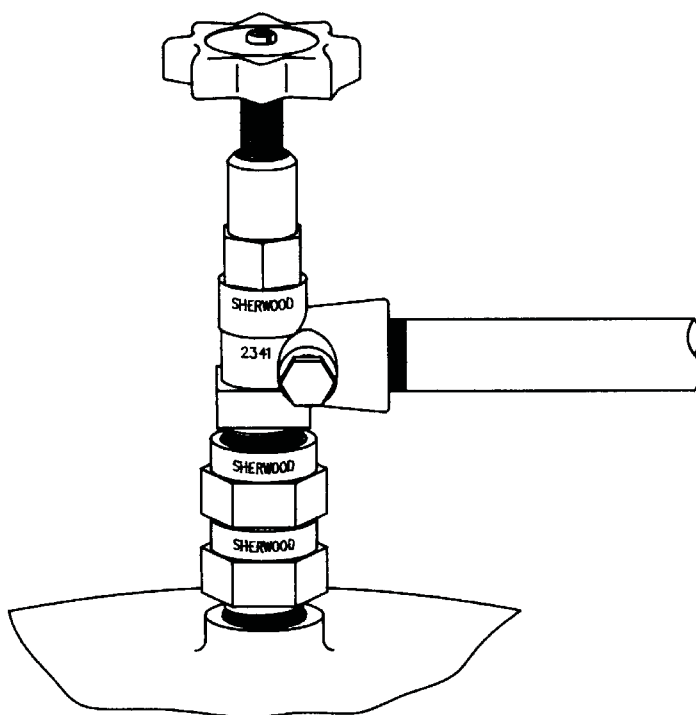
Warn Your Customer

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- If you smell gas:
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- If you can't reach your gas supplier, call the Fire Department
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Loctite is a registered trademark of the Loctite Corporation.

Operating Instructions for Sherwood 2341 Series Transfer Valve — Instruction Sheet I-2341



READ THIS INSTRUCTION COMPLETELY BEFORE BEGINNING.



! WARNING

- Leaking gas can cause fires or explosions
- Only trained personnel should work on gas systems
- Inspect gas systems regularly
- Replace equipment as required

General

This instruction is intended for people familiar with LP gas equipment and applications. **IF YOU ARE NOT FAMILIAR WITH THIS EQUIPMENT — STOP.**

This instruction covers the use of the Sherwood 2341 Series Transfer Valve and PA5138 Adapter to withdraw liquid LP gas from stationary or domestic tanks that have been pre-fitted with a Sherwood PVE5136 or PVE5137 Checkmate™ as shown in Figure 1.

ALL THREE COMPONENTS ARE NECESSARY TO REMOVE LIQUID LP GAS.

At low temperatures, (less than 15° F), the excess flow valve in the Checkmate™ may not close due to inadequate vapor pressure in the tank. Refer to NPGA Bulletin #113-90 for more information.

These components are designed to evacuate liquid LP gas from a stationary tank in case of an emergency or if the tank must be relocated.

The transfer valve and adapter must not be used as a permanent outlet and **MUST BE REMOVED FROM THE CHECKMATE WHEN THE LIQUID TRANSFER IS COMPLETE.**

SAFETY INSTRUCTIONS

- Wear approved eye and hand protection during liquid transfer procedures
- Use only the PA-5133 adapter between the Checkmate and 2341 Series Transfer Valve

Liquid Transfer Procedures

Step 1

1. Loosen the cap of the Checkmate using two wrenches; one to prevent the Checkmate™ from turning while the other loosens the cap by turning counterclockwise as shown in Figure 2. Do not loosen the cap fully. A bleed hole in the cap allows for a small accumulation of liquid and gas to escape.

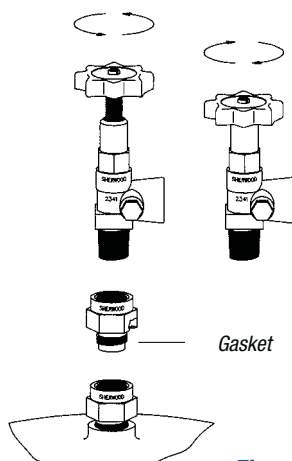


Figure 1

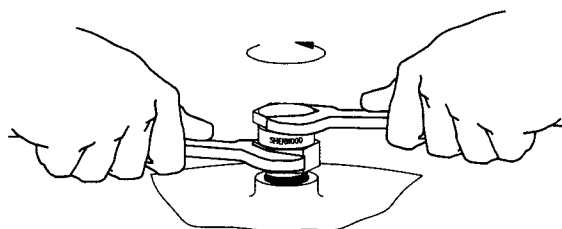


Figure 2

2. If this venting does not stop, re-tighten the cap. Since the Checkmate may be damaged, use another appropriate procedure to remove the liquid. When the tank is empty, remove and destroy the damaged Checkmate so it cannot be reused.

Step 2

1. Apply a thread sealant, suitable for LP gas, to the pipe threads of the transfer valve. Make sure the gasket is in place on the bottom of the adapter as shown in Figure 1. Screw the adapter onto the transfer valve and, using two wrenches, tighten the adapter until snug. **Do not overtighten.**
2. Before you screw the valve and adapter assembly into the Checkmate, open the transfer valve as shown at the left in Figure 1. This keeps the Checkmate closed, preventing a large release of LP gas when the transfer valve is installed. Do not use pipe dope on the male threads of the adapter. Screw the assembled transfer valve and adapter clockwise into the Checkmate and hand tighten until snug. A small, steady release of LP gas is normal at this time. This release will stop when the transfer valve is closed.

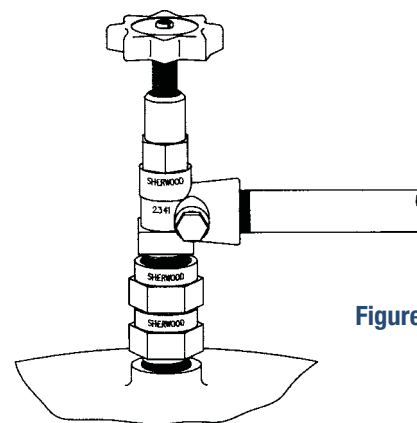


Figure 3

3. With a wrench, turn the valve approximately an eighth to a quarter turn further to ensure a snug fit. Do not overtighten. The assembly should resemble Figure 3, without the transfer pipe installed. The adapter seals with a gasket. If the transfer valve-to-adapter joint leaks when installed on the tank, remove the valve/adapter assembly and replace the adapter gasket or use a new adapter.

Step 3

1. Turn the handwheel to close the valve, as shown at the right in Figure 1. This allows tank gas pressure to open the excess-flow valve inside the Checkmate. Liquid LP gas then enters the transfer valve up to the valve shut-off seat.
2. Attach full-size piping to the outlet of the transfer valve as shown in Figure 3, and connect this piping to the liquid-transfer equipment.

Step 4

1. Slowly open the transfer valve, filling the piping and hose to the pump with liquid LP gas. Begin pumping the liquid from the tank. NOTE: Opening the transfer valve too quickly may cause the excess flow valve in the Checkmate to close, stopping the liquid flow. Should this occur, equalize the tank and transfer pipe pressures using the tank's vapor-return valve. Alternately, open the Checkmate by momentarily pumping liquid from the transfer equipment back through the Checkmate into the tank, then reversing the flow to empty the tank. Should these methods fail, the liquid should be removed using another appropriate method. The damaged Checkmate must be removed and destroyed so it cannot be reused.

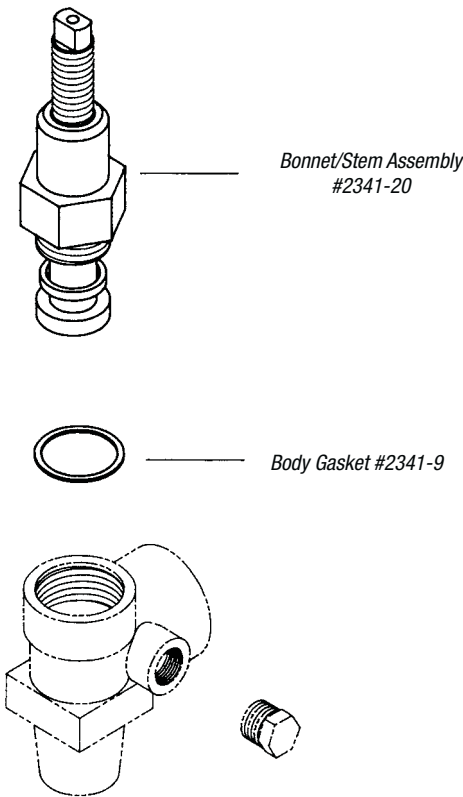
Step 5

1. After the LP gas is removed, close the transfer valve and remove the piping from the valve outlet.
2. Open the transfer valve quickly and fully. This will cause the tank pressure to close the Checkmate, but will still allow a small but continuous flow of LP gas at the transfer valve outlet. NOTE: If the tank pressure is too low because of outside temperature (less than 15° F), the excess flow valve may not close. If this happens, close the transfer valve and remove it later when the outside temperature gets warmer. **If anything but a small release of gas persists, or if liquid LP gas is present at the valve outlet,** immediately close the transfer valve and plug the outlet with an appropriate NPT pipe plug. Do not remove the valve until the tank is evacuated by another method. Damaged parts must be removed from service and replaced with new parts.
3. After the Checkmate closes, remove the transfer valve/adapter assembly. Re-install the Checkmate cap and cap gasket.

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Component Replacement Instructions for Sherwood 2341 Series Liquid-Withdrawal Valves — 2341-100-KIT

Instruction Sheet R-2341



Kit #2341-100-KIT Contains:	
Part Number	Description
2341-20	Bonnet Assembly
2341-9	Gasket
R-2341	Instruction Sheet

READ THIS INSTRUCTION COMPLETELY BEFORE BEGINNING.

! WARNING

- Leaking gas can cause fires or explosions
- Only trained personnel should work on gas systems
- Inspect gas systems regularly
- Replace equipment as required

General

This instruction is intended for people familiar with LP gas equipment and applications. **IF YOU ARE NOT FAMILIAR WITH THIS EQUIPMENT — STOP.**

This instruction covers the renovation of Sherwood 2341 Series Liquid-Withdrawal Valves using Kit #2341-100-KIT. These valves are used with a Sherwood PA5133 Adapter to withdraw liquid LP gas from stationary or domestic tanks that have been pre-fitted with a Sherwood 5133S or 5135S Checkmate™. Read this instruction completely before beginning. See Sherwood Instruction I-2341 for instructions on how to operate the valve.

Make sure the valve model number is either 2341, 2341A, 2341X, or 2341AX. The model number is embossed on the valve body.

Tools Required

- ☐ Medium slotted screwdriver (or #25 Torx® screwdriver)
- ☐ A 1 $\frac{1}{16}$ " -deep socket and wrench
- ☐ Bench vise with soft-faced jaws
- ☐ Torque wrench, 0–100 foot-pounds
- ☐ Petroleum jelly lubricant
- ☐ Toothbrush
- ☐ Alcohol
- ☐ Fine wire brush
- ☐ Empty LP gas tank with a $\frac{3}{4}$ " NGT female connection
- ☐ Commercial leak-test solution*
- ☐ Pipe dope suitable for LP gas

* Must be approved for use on brass and with LP gas.

SAFETY INSTRUCTIONS

- Use an accurate torque wrench to tighten the bonnet assembly
- Always destroy a damaged or worn valve and parts so they cannot be reused

Renovation Procedures

Step 1: Disassembly

1. Place the adapter valve in the vise so that the handwheel is up and the valve outlet is held flat against one of the vise jaws. DO NOT OVERTIGHTEN. Overtightening the vise can distort the valve body, making it difficult to remove the bonnet and stem assembly. Should this occur, the entire valve must be destroyed so it cannot be reused. See Figure 1.
2. Use the screwdriver (or #25 Torx driver) to remove the handwheel screw and handwheel. With the 1 $\frac{1}{16}$ " socket and wrench, fully loosen the bonnet nut by turning it in a clockwise direction (bonnet threads are left-hand) as shown in Figure 2. With the bonnet threads disengaged from the body, lift the bonnet and stem assembly out of the valve body and discard the entire assembly. Do not reuse any of the old parts except the handwheel and screw. See Figure 2.

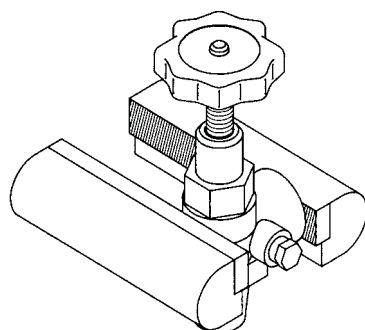


Figure 1

Step 2: Inspection

1. A damaged valve-to-bonnet seat may not allow a positive seal. Inspect the valve seat where the bottom of the bonnet nut contacts the valve when fully tightened. If the seat is nicked, scratched, worn, or distorted, destroy the entire valve so it cannot be reused.
2. Inspect the inlet and outlet connections. Destroy the entire valve if any threaded connection is damaged or has worn threads. Clean all threads as necessary.
3. Remove the pipe plug from the side of the valve. Inspect the access port. If the port threads are damaged or worn, destroy the entire valve so it cannot be reused. Replace the pipe plug, part #2426B, if the threads are damaged or worn.
4. On valves fitted with the optional excess-flow valve at the inlet of the valve body, press the mechanism several times to make sure the spring returns the valve to the open position. If there is any binding, if the spring post is bent, or if the valve disk is damaged in any way, use a $\frac{3}{4}$ " socket wrench to remove the excess-flow valve. Destroy the part. Replace with kit #2341-110-KIT.

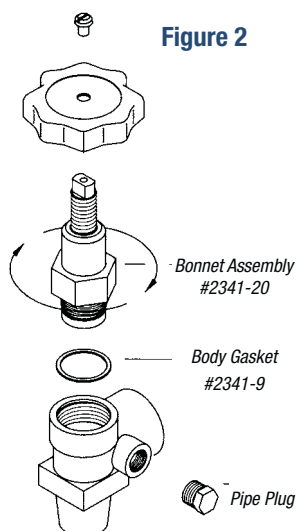


Figure 2

Step 3: Re-Assembly

1. Insert a new #2341-9 gasket into the valve-to-bonnet seat.
2. Insert the new bonnet and stem assembly into the valve body. By hand, screw the bonnet assembly counterclockwise into the valve. Thread sealant is not necessary since the bonnet seat provides a seal. Secure the valve in a vise as described earlier. Use an accurate torque wrench to tighten the bonnet nut between 45 to 50 foot-pounds of torque. Do not overtighten.
3. Replace the handwheel and handwheel screw. Tighten the screw between 20 to 25 inch-pounds of torque.
4. Apply pipe dope suitable for use with LP gas on the male threads of the pipe plug. Install into the side of the valve and tighten.

Step 4: Testing

1. Turn the handwheel through its full range to verify easy operation. If there is any binding or grinding, destroy the entire valve so it cannot be reused.
2. Install the valve onto an empty LP gas tank fitted with a $\frac{3}{4}$ " NGT female connection. Turn the handwheel fully clockwise to close (frontseat) the valve. Pressurize the tank with air to approximately 150 psig.
3. Screw an appropriate ($\frac{1}{2}$ " or $\frac{3}{4}$ ") NPT pipe plug one to three turns into the outlet of the valve. Apply a commercial leak-test solution around the outlet plug and check for leaks. A leak here indicates a leaking lower (front-seating) seal. If a leak was found, evacuate the cylinder according to NFPA Pamphlet #58 and NPGA Installation and Service Guide Book #4003. Remove and destroy the entire valve so it cannot be reused. Install a new valve.
4. Tighten the outlet pipe plug at 15 to 25 foot-pounds of torque. Open the valve (turn counterclockwise). Use the leak-test solution to check for leaks around the bonnet nut, stem, and gauge port.
5. If any leaks are found, close the valve (turn clockwise). Remove the outlet plug. Slowly open the valve to allow the air to escape. When the venting stops, remove the valve from the tank. Do not attempt to repair the leak. Destroy the entire valve so it cannot be reused.
6. If no leaks were found, close the valve (turn clockwise). Remove the outlet plug. Open the valve to allow the air to escape. When the venting stops, remove the valve from the tank. The valve may now be placed in service.

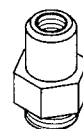


Figure 3

Back-Seat Seal
#2341-3

Lower Stem Assembly
#2341-40

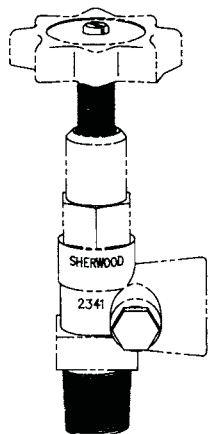
Warn Your Customer

- Leaking gas can cause fires or explosions
- If you smell gas
 - Immediately call your gas supplier from a neighbor's phone
 - If you can't reach your gas supplier, call the Fire Department
 - Do not touch electrical switches or telephones
 - Do not light appliances

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Optional Excess-Flow Valve Replacement Instructions for 2341 Series Liquid-Withdrawal Valves — 2341-110-KIT

Instruction Sheet R-2341-110





Excess-Flow Valve
#2341-110

Kit #2341-110-KIT Contains:

Part Number	Description
2341-110	Excess-Flow Valve
271	omniFIT® 1550 or Loctite®
R-2341-110	Instruction Sheet

READ THIS INSTRUCTION COMPLETELY BEFORE BEGINNING.



WARNING

- Leaking gas can cause fires or explosions
- Only trained personnel should work on gas systems
- Inspect gas systems regularly
- Replace equipment as required

General

This instruction is intended for people familiar with LP gas equipment and applications. **IF YOU ARE NOT FAMILIAR WITH THIS EQUIPMENT — STOP.**

This instruction covers the replacement or addition of the excess-flow valve on Sherwood 2341 Series Liquid-Withdrawal Valves using Kit #2341-110-KIT. Read this instruction completely before beginning. See Sherwood Instruction I-2341 for instructions on how to operate the valve.

Make sure the valve model number is either 2341, 2341A, 2341X, or 2341AX. The model number is embossed on the valve body.

Tools Required

- ❑ A 3/4" socket and wrench
- ❑ Torque wrench, 0–50 inch-pounds
- ❑ Bench vise with soft-faced jaws
- ❑ Fine wire brush

SAFETY INSTRUCTIONS

- Use an accurate torque wrench to tighten the bonnet assembly
- Always destroy a damaged or worn valve and parts so they cannot be reused

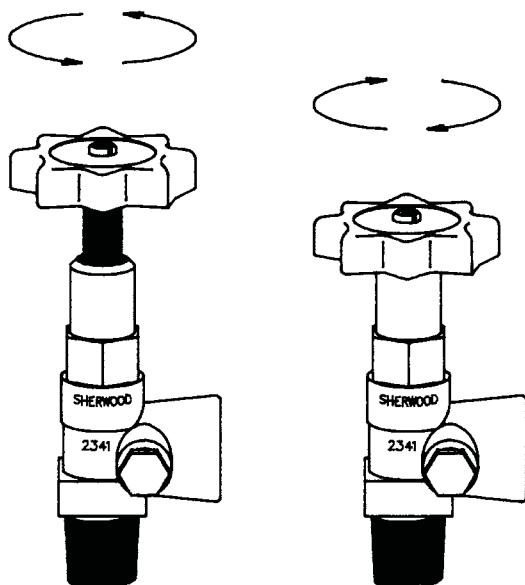


Figure 1

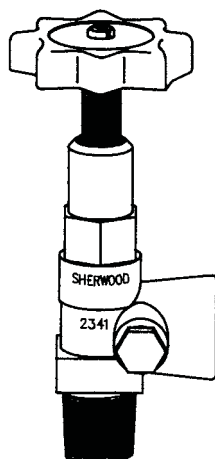


Figure 2

Excess-Flow Valve
#2341-110

Replacement Procedures

Step 1: Disassembly

1. Place the adapter valve in the vise so that the valve outlet is held flat against one of the vise jaws. DO NOT OVERTIGHTEN. Overtightening the vise can distort the valve body, making it difficult to remove the poppet assembly. Should this occur, the entire valve must be destroyed so it cannot be reused. See Figures 1 & 2.

Step 2: Inspection

1. Press the mechanism of the excess-flow valve several times to see if the spring returns the valve to the open position. If there is any binding, if the spring post is bent, or if the valve disk is damaged in any way, use a 3/4" socket wrench to remove (turn counterclockwise) the excess-flow valve. Destroy the part so it cannot be reused.

Step 3: Re-Assembly

1. Use a fine wire brush to clean the threadlocking residue from the female threads at the bottom inlet of the valve body. Apply two drops of omniFIT® 1550 or Loctite® 271 onto the male threads of the new excess-flow valve. Screw the part into the inlet and tighten between 10 to 20 inch-pounds of torque. NOTE: Loctite 271 will begin to cure within seconds of being confined within brass threads. If this happens before the following tightening procedure is completed, the parts must be separated, cleaned, and reassembled.

Step 4: Testing

1. Press the excess-flow mechanism several times to make sure the spring returns it to the open position.

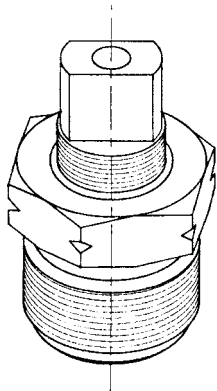
Warn Your Customer

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 - Do not touch electrical switches or telephones
 - Do not light appliances

NOTICE: All Sherwood products must be used in strict compliance with the requirements and provisions of National Fire Protection Association Pamphlets #54 and #58, DOT, ANSI, and all applicable federal, state, provincial, and local standards, codes, regulations, and laws. It is the responsibility of the sellers, installation and maintenance personnel, and end users to remain knowledgeable of and in compliance with all standards, codes, regulations, and laws.

Bonnet Assembly Replacement Instructions for LP Gas Cylinder Valves — 3250-8ALH-KIT

Instruction Sheet R-3250-8ALH



Bonnet Assembly
#3250-8ALH

Kit #3250-8ALH-KIT Contains:

Part Number	Description
3250-8ALH	Bonnet Assembly
R-3250-8ALH	Instruction Sheet

READ THIS INSTRUCTION COMPLETELY BEFORE BEGINNING.

WARNING

- Leaking gas can cause fires or explosions
- Only trained personnel should work on gas systems
- Inspect gas systems regularly
- Replace equipment as required

GENERAL

This instruction is intended for people familiar with LP gas equipment and applications. **IF YOU ARE NOT FAMILIAR WITH THIS EQUIPMENT — STOP.**

This instruction covers the bonnet replacement for the Sherwood 3359 Series Cylinder Valve models. Read these instructions completely before beginning. Do not use these instructions for valves not listed. The valve model number is either stamped on a wrench flat located on the side of the valve or embossed into the valve body. Make sure the bonnet kit number is correct for the valve model. Use no substitutes.

Note the date code stamped on one of the wrench flats. Compare it to the date code chart on **page 13**. If the valve is 10 years old or older, replace the entire valve. Destroy the old valve so it cannot be reused.

Tools Required

- ☐ Chain wrench or cylinder vise
- ☐ Medium slotted screwdriver (or #25 Torx® screwdriver)
- ☐ Hex socket, 7/8"
- ☐ Torque wrench, 50 to 60 foot-pounds
- ☐ Commercial leak-test solution*

* Must be approved for use on brass and with LP gas.

SAFETY INSTRUCTIONS

- Use an accurate torque wrench to tighten the bonnet assembly
- Always destroy a damaged or worn valve and parts so they cannot be reused
- Never repair or clean a safety-relief device

Bonnet Replacement Procedures

Step 1: Bonnet Removal

1. Remove all traces of LP gas from the cylinder using the procedures specified in NFPA Pamphlet #58 and NPGA Installation and Service Guide Book #4003. Secure the cylinder with the chain wrench or cylinder vise so it cannot be moved.
2. Use the screwdriver (or #25 Torx driver) to remove the handwheel screw and handwheel. Use the socket and wrench to remove the bonnet assembly (left hand thread) by turning it clockwise. Destroy the old bonnet assembly so it cannot be reused.

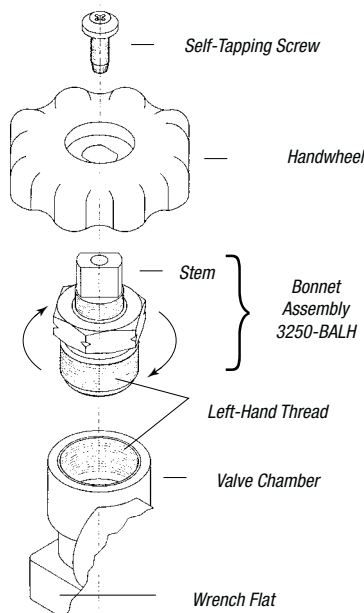


Figure 1

Step 2: Inspection

1. A damaged shut-off seat may not allow a positive seal. Use a light to inspect the valve shut-off seat located at the bottom of the bonnet-connection opening. The outer rim of the seat is about 3/8" in diameter. If the seat is nicked, scratched, or distorted, replace the entire valve. Destroy the old valve so it cannot be reused.

2. Inspect all threaded connections. Replace the entire valve if threaded connection is damaged or worn. Destroy the old valve so it cannot be reused.
3. Inspect the safety-relief device. If the openings are clogged with foreign matter or if it shows any sign of tampering, replace the entire valve. Destroy the old valve so it cannot be reused. Never attempt to repair or clean a safety-relief device.

Step 3: Re-Assembly

1. Before installing the bonnet assembly into the valve body, make sure the stem is turned fully counterclockwise at the top of the bonnet, as shown in Figure 1. The stem threads will be exposed as shown. This prevents the valve seat from damaging the nylon stem seat as the bonnet is tightened.
2. Screw the new bonnet assembly (left-hand thread) counterclockwise into the valve body. Use the socket and torque wrench to tighten the bonnet between 50 and 60 foot-pounds. Thread sealant is not necessary since the bonnet seat provides a metal-to-metal seal.
3. Re-install the handwheel and handwheel screw onto the bonnet. The screw is self tapping and the new stem is not threaded. Tighten the screw until it bottoms and the handwheel is tight.

Step 4: Testing

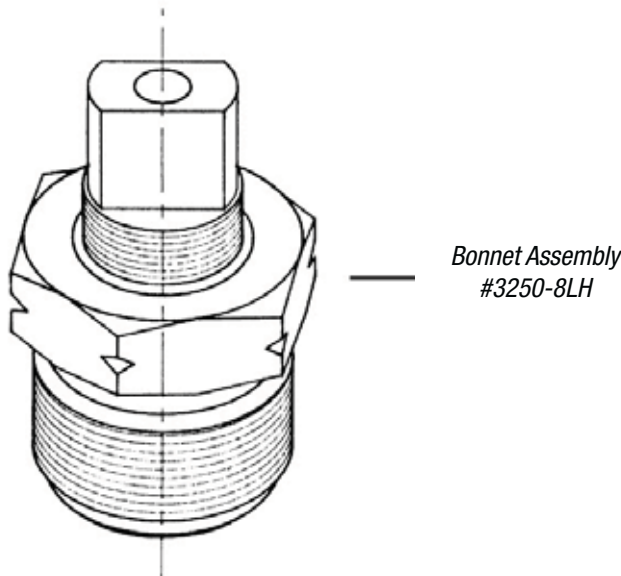
1. Turn the handwheel through its full range to verify easy operation. If there is any binding or grinding, replace the entire valve. Destroy the old valve so it cannot be reused.
2. Pressurize the cylinder with LP gas at 50 to 150 psig. Plug the outlet. Open the valve halfway and thoroughly check the bonnet nut, stem, and cylinder-to-valve connections for leaks using a mild ammonia-free soap-and-water solution or commercial leak-test solution.
3. If no leak was found, proceed to #4. If a leak was found, evacuate the cylinder according to NFPA Pamphlet #58 and NPGA Installation And Service Guide Book #4003. Remove and destroy the entire valve so it cannot be reused. Install a new valve.
4. Turn the handwheel clockwise until the bonnet just bottoms on the seat. Tighten the handwheel approximately one tenth of a turn further. Carefully remove the outlet plug. Thoroughly check the outlet for leaks using a leak-test solution. If a leak is found, evacuate the cylinder according to NFPA Pamphlet #58 and NPGA Installation and Service Guide Book #4003. Remove and destroy the entire valve so it cannot be reused. Install a new valve.
5. If no leaks were found, blow the outlet dry with clean, dry compressed air. The cylinder can now be filled according to NPGA Bulletin #129 or #130.

Warn Your Customer

- Leaking gas can cause fires or explosions
- If you smell gas:
 - Immediately call your gas supplier from a neighbor's phone
 - If you can't reach your gas supplier, call the Fire Department
 - Do not touch electrical switches or telephones
 - Do not light appliances

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Bonnet Assembly Replacement Instructions
for LP Gas Cylinder Valves — 3250-8LH-KIT
Instruction Sheet R-3250-8LH



Kit #3250-8LH-KIT Contains:

Part Number	Description
3250-8LH	Bonnet Assembly
R-3250-8LH	Instruction Sheet

READ THIS INSTRUCTION COMPLETELY BEFORE BEGINNING.

! WARNING

- Leaking gas can cause fires or explosions
- Only trained personnel should work on gas systems
- Inspect gas systems regularly
- Replace equipment as required

General

This instruction is intended for people familiar with LP gas equipment and applications. **IF YOU ARE NOT FAMILIAR WITH THIS EQUIPMENT — STOP.**

This instruction covers the bonnet replacement for the Sherwood Cylinder Valve models listed in Table 1 of this instruction sheet. Read these instructions completely before beginning. Do not use these instructions for valves not listed. The valve model number is either stamped on a wrench flat located on the side of the valve or embossed into the valve body. Make sure the bonnet kit number is correct for the valve model. Use no substitutes.

Note the date code stamped on one of the wrench flats. Compare it to the date code chart on **page 13**. If the valve is 10 years old or older and has a pressure-relief device, replace the entire valve. Destroy the old valve so it cannot be reused.

Tools Required

- ❑ Chain wrench or cylinder vise
- ❑ Medium slotted screwdriver (or #25 Torx® screwdriver)
- ❑ Hex socket, 7/8"
- ❑ Torque wrench, 50 to 60 foot-pounds
- ❑ Commercial leak-test solution*

* Must be approved for use on brass and with LP gas.

SAFETY INSTRUCTIONS

- Use an accurate torque wrench to tighten the bonnet assembly
- Always destroy a damaged or worn valve and parts so they cannot be reused
- Never repair or clean a safety-relief device

TABLE 1

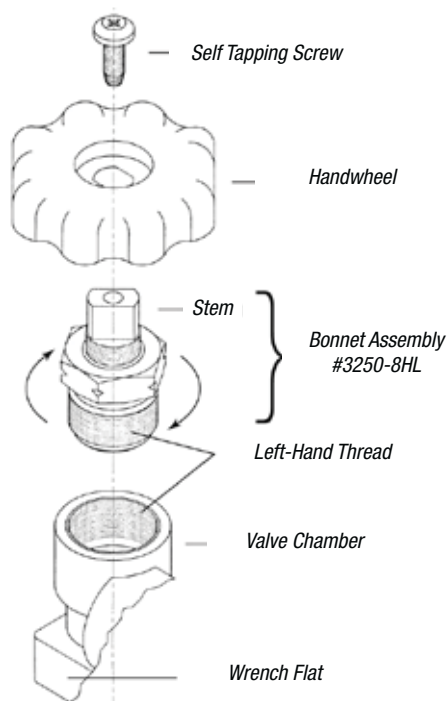
Bonnet Number	Valve Model Numbers				
3250-8HL	1425B	1445CA	2035A (Series)	3250AD-7	3250ALM-375
	1426B	1446B	3250A-375	3250AD-7X	3250ALG-405
	1427B	1446BMF	3250A-375MU	3250ALG-7	
	1445B	1447B	3250A-405	3250AALG-375	
	1445BMF	1447BMF	3250AD	3250ALG7-11.0	

Bonnet Replacement Procedures

Step 1: Bonnet Removal

1. Remove all traces of LP gas from the cylinder using the procedures specified in NFPA Pamphlet #58 and NPGA Installation and Service Guide Book #4003. Secure the cylinder with the chain wrench or cylinder vise so it cannot be moved.
2. Use the screwdriver (or #25 Torx driver) to remove the handwheel screw and handwheel. Use the socket and wrench to remove the bonnet assembly (left-hand thread) by turning it clockwise. Destroy the old bonnet assembly so it cannot be reused.

Figure 1



Step 2: Inspection

1. A damaged shut-off seat may not allow a positive seal. Use a light to inspect the valve shut-off seat located at the bottom of the bonnet-connection opening. The outer rim of the seat is about 3/8" in diameter. If the seat is nicked, scratched, or distorted, replace the entire valve. Destroy the old valve so it cannot be reused.
2. Inspect all threaded connections. Replace the entire valve if threaded connection is damaged or worn. Destroy the old valve so it cannot be reused.
3. Inspect the safety-relief device. If the openings are clogged with foreign matter or if it shows any sign of tampering, replace the entire valve. Destroy the old valve so it cannot be reused. Never attempt to repair or clean a safety-relief device.

Step 3: Re-Assembly

1. Before installing the bonnet assembly into the valve body, make sure the stem is turned fully counterclockwise at the top of the bonnet, as shown in Figure 1. The stem threads will be exposed as shown. This prevents the valve seat from damaging the nylon stem seat as the bonnet is tightened.
2. Screw the new bonnet assembly (left-hand thread) counterclockwise into the valve body. Use the socket and torque wrench to tighten the bonnet between 50 and 60 foot-pounds. Thread sealant is not necessary since the bonnet seat provides a metal-to-metal seal.
3. Re-install the handwheel and handwheel screw onto the bonnet. The screw is self tapping and the new stem is not threaded. Tighten the screw until it bottoms and the handwheel is tight.

Step 4: Testing

1. Turn the handwheel through its full range to verify easy operation. If there is any binding or grinding, replace the entire valve. Destroy the old valve so it cannot be reused.
2. Pressurize the cylinder with LP gas at 50 to 150 psig. Plug the outlet. Open the valve halfway and thoroughly check the bonnet nut, stem, and cylinder-to-valve connections for leaks using a mild ammonia-free soap-and-water solution or commercial leak-test solution.
3. If no leak was found, proceed to #4. If a leak was found, evacuate the cylinder according to NFPA Pamphlet #58 and NPGA Installation and Service Guide Book #4003. Remove and destroy the entire valve so it cannot be reused. Install a new valve.
4. Turn the handwheel clockwise until the bonnet just bottoms on the seat. Tighten the handwheel approximately one tenth of a turn further. Carefully remove the outlet plug. Thoroughly check the outlet for leaks using a leak-test solution. If a leak is found, evacuate the cylinder according to NFPA Pamphlet #58 and NPGA Installation and Service Guide Book #4003. Remove and destroy the entire valve so it cannot be reused. Install a new valve.
5. If no leaks were found, blow the outlet dry with clean, dry compressed air. The cylinder can now be filled according to NPGA Bulletin #129 or #130.

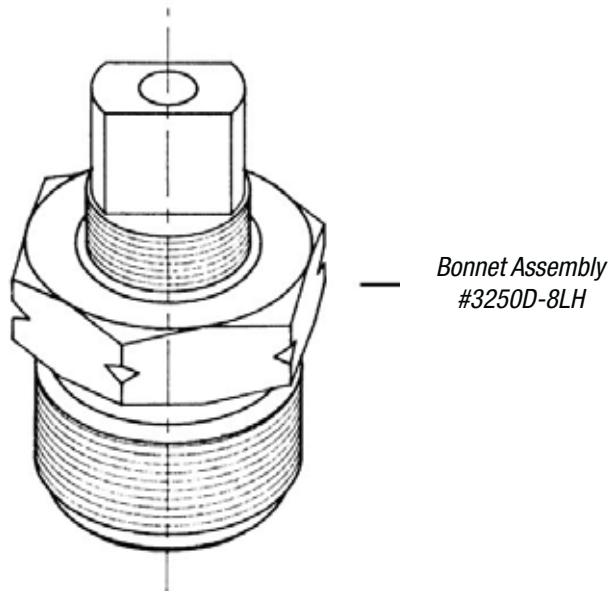
Warn Your Customer

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 - Do not light appliances

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Instruction Sheets

Bonnet Assembly Replacement Instructions
for LP Gas Cylinder Valves — 3250D-8LH-KIT
Instruction Sheet R-3250D-8LH



Kit #3250D-8LH-KIT Contains:

Part Number	Description
3250D-8LH	Bonnet Assembly
R-3250D-8LH	Instruction Sheet

READ THIS INSTRUCTION COMPLETELY BEFORE BEGINNING.

! WARNING

- Leaking gas can cause fires or explosions
- Only trained personnel should work on gas systems
- Inspect gas systems regularly
- Replace equipment as required

General

This instruction is intended for people familiar with LP gas equipment and applications.
IF YOU ARE NOT FAMILIAR WITH THIS EQUIPMENT — STOP.

This instruction covers the bonnet replacement for the Sherwood Cylinder Valve models listed in Table 1 of this instruction sheet. Read these instructions completely before beginning. Do not use these instructions for valves not listed. The valve model number is either stamped on a wrench flat located on the side of the valve or embossed into the valve body. Make sure the bonnet kit number is correct for the valve model. Use no substitutes.

Tools Required

- ☐ Chain wrench or cylinder vise
- ☐ Medium slotted screwdriver (or #25 Torx® screwdriver)
- ☐ Hex socket, 7/8"
- ☐ Torque wrench, 50 to 60 foot-pounds
- ☐ Commercial leak-test solution*

* Must be approved for use on brass and with LP gas.

SAFETY INSTRUCTIONS

- Use an accurate torque wrench to tighten the bonnet assembly
- Always destroy a damaged or worn valve and parts so they cannot be reused
- Never repair or clean a safety-relief device

TABLE 1

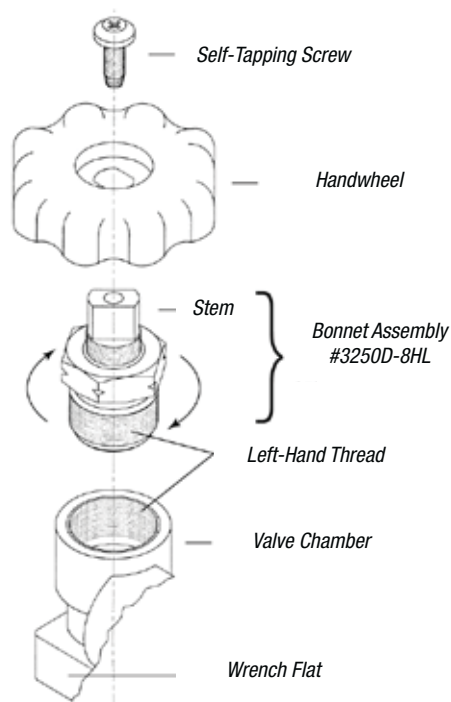
Bonnet Number	Valve Model Numbers		
3250D-8HL	1445CAF	1446CAH	1447CAH
	1445D	1446D	1447D
	1445DMF	1446DMF	1447DMF

Bonnet Replacement Procedures

Step 1: Bonnet Removal

1. Remove all traces of LP gas from the cylinder using the procedures specified in NFPA Pamphlet #58 and NPGA Installation and Service Guide Book #4003. Secure the cylinder with the chain wrench or cylinder vise so it cannot be moved.
2. Use the screwdriver (or #25 Torx driver) to remove the handwheel screw and handwheel. Use the socket and wrench to remove the bonnet assembly (left-hand thread) by turning it clockwise. Destroy the old bonnet assembly so it cannot be reused.

Figure 1



Step 2: Inspection

1. A damaged shut-off seat may not allow a positive seal. Use a light to inspect the valve shut-off seat located at the bottom of the bonnet-connection opening. The outer rim of the seat is about 3/8" in diameter. If the seat is nicked, scratched, or distorted, replace the entire valve. Destroy the old valve so it cannot be reused.
2. Inspect all threaded connections. Replace the entire valve if threaded connection is damaged or worn. Destroy the old valve so it cannot be reused.
3. Inspect the safety-relief device. If the openings are clogged with foreign matter or if it shows any sign of tampering, replace the entire valve. Destroy the old valve so it cannot be reused. Never attempt to repair or clean a safety-relief device.

Step 3: Re-Assembly

1. Before installing the bonnet assembly into the valve body, make sure the stem is turned fully counterclockwise at the top of the bonnet, as shown in Figure 1. The stem threads will be exposed as shown. This prevents the valve seat from damaging the nylon stem seat as the bonnet is tightened.
2. Screw the new bonnet assembly (left-hand thread) counterclockwise into the valve body. Use the socket and torque wrench to tighten the bonnet between 50 and 60 foot-pounds. Thread sealant is not necessary since the bonnet seat provides a metal-to-metal seal.
3. Re-install the handwheel and handwheel screw onto the bonnet. The screw is self tapping and the new stem is not threaded. Tighten the screw until it bottoms and the handwheel is tight.

Step 4: Testing

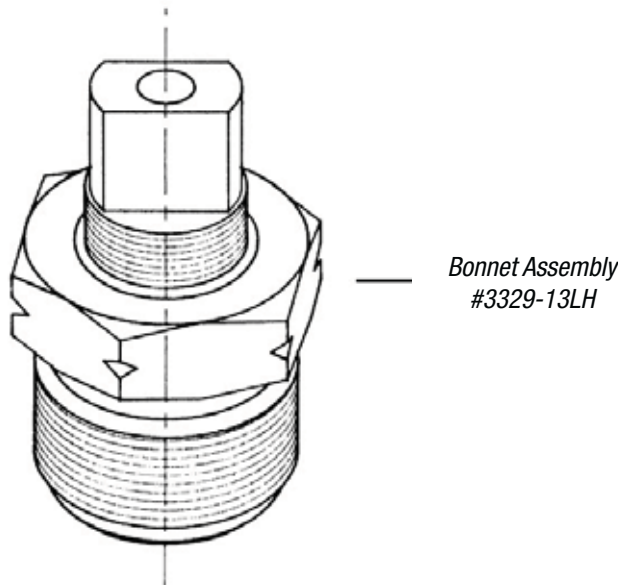
1. Turn the handwheel through its full range to verify easy operation. If there is any binding or grinding, replace the entire valve. Destroy the old valve so it cannot be reused.
2. Pressurize the cylinder with LP gas at 50 to 150 psig. Plug the outlet. Open the valve halfway and thoroughly check the bonnet nut, stem, and cylinder-to-valve connections for leaks using a mild ammonia-free soap-and-water solution or commercial leak-test solution.
3. If no leak was found, proceed to #4. If a leak was found, evacuate the cylinder according to NFPA Pamphlet #58 and NPGA Installation And Service Guide Book #4003. Remove and destroy the entire valve so it cannot be reused. Install a new valve.
4. Turn the handwheel clockwise until the bonnet just bottoms on the seat. Tighten the handwheel approximately one tenth of a turn further. Carefully remove the outlet plug. Thoroughly check the outlet for leaks using a leak-test solution. If a leak is found, evacuate the cylinder according to NFPA Pamphlet #58 and NPGA Installation and Service Guide Book #4003. Remove and destroy the entire valve so it cannot be reused. Install a new valve.
5. If no leaks were found, blow the outlet dry with clean, dry compressed air. The cylinder can now be filled according to NPGA Bulletin #129 or #130.

Warn Your Customer

- Leaking gas can cause fires or explosions
- If you smell gas:
 - Immediately call your gas supplier from a neighbor's phone
 - If you can't reach your gas supplier, call the Fire Department
 - Do not touch electrical switches or telephones
 - Do not light appliances

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Bonnet Assembly Replacement Instructions
for LP Gas Cylinder Valves — 3329-13LH-KIT
Instruction Sheet R-3329-13LH



Kit #3329-13H-KIT Contains:

Part Number	Description
3329-13LH	Bonnet Assembly
R-3329	Instruction Sheet

READ THIS INSTRUCTION COMPLETELY BEFORE BEGINNING.

WARNING

- Leaking gas can cause fires or explosions
- Only trained personnel should work on gas systems
- Inspect gas systems regularly
- Replace equipment as required

General

This instruction is intended for people familiar with LP gas equipment and applications. **IF YOU ARE NOT FAMILIAR WITH THIS EQUIPMENT — STOP.**

This instruction covers the bonnet replacement for the Sherwood Cylinder Valve models listed in Table 1 of this instruction sheet. Read these instructions completely before beginning. Do not use these instructions for valves and bonnets not listed. The model number is either stamped on a wrench flat located on the side of the valve or embossed into the valve body. Make sure the bonnet kit number is correct for the valve model. Use only Sherwood parts.

Note the date code stamped on one of the wrench flats. Compare it to the date code chart on **page 13**. If the valve is 10 years old or older and has a relief valve, replace the entire valve. Destroy the old valve so it cannot be reused.

Tools Required

- ☐ Chain wrench or cylinder vise
- ☐ Hex socket, 7/8"
- ☐ Medium slotted screwdriver (or #25 Torx® screwdriver)
- ☐ Torque wrench, 50 to 60 foot-pounds
- ☐ Commercial leak-test solution*

* Must be approved for use on brass and with LP gas.

SAFETY INSTRUCTIONS

- Use an accurate torque wrench to tighten the bonnet assembly
- Always destroy a damaged or worn valve and parts so they cannot be reused
- Never repair or clean a safety-relief device

TABLE 1

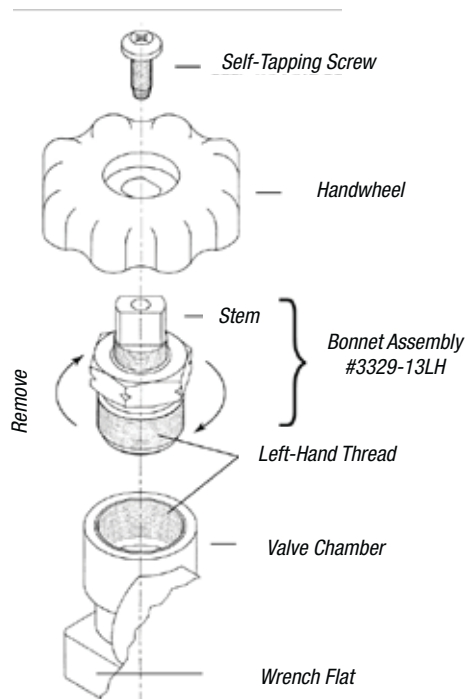
Bonnet Number	Valve Model Numbers		
3329-13HL	1425C	1446C	3250AC375
	1426C	1447C	3250ACLG375
	1427C	2030BC	3250BC312
	1427CV	2030CL	3329 (series)
	1445C	2033CL	3347 (series)
		2034CL	3349 (series)

Bonnet Replacement Procedures

Step 1: Bonnet Removal

1. Remove all traces of LP gas from the cylinder using the procedures specified in NFPA Pamphlet #58 and NPGA Installation and Service Guide Book #4003. Secure the cylinder with the chain wrench or cylinder vise so it cannot be moved.
2. Use the screwdriver (or #25 Torx driver) to remove the handwheel screw and handwheel. Use the socket and wrench to remove the bonnet assembly (left-hand thread) by turning it clockwise. Destroy the old bonnet assembly so it cannot be reused.

Figure 1



Step 2: Inspection

1. A damaged shut-off seat may not allow a positive seal. Use a light to inspect the valve shut-off seat located at the bottom of the bonnet-connection opening. The outer rim of the seat is about 1/4" in diameter. If the seat is nicked, scratched, or distorted, replace the entire valve. Destroy the old valve so it cannot be reused.
2. Inspect all threaded connections. Replace the entire valve if threaded connection is damaged or worn. Destroy the old valve so it cannot be reused.
3. Inspect the safety-relief device. If the openings are clogged with foreign matter or if it shows any sign of tampering, replace the entire valve. Destroy the old valve so it cannot be reused. Never attempt to repair or clean a safety-relief device.

Step 3: Re-Assembly

1. Before installing the bonnet assembly into the valve body, make sure the stem is turned fully counterclockwise at the top of the bonnet, as shown in Figure 1. The stem threads will be exposed as shown. This prevents the valve seat from damaging the nylon stem seat as the bonnet is tightened.
2. Screw the new bonnet assembly (left-hand thread) counterclockwise into the valve body. Use the socket and torque wrench to tighten the bonnet between 50 and 60 foot-pounds. Thread sealant is not necessary since the bonnet seat provides a metal-to-metal seal.
3. Re-install the handwheel and handwheel screw onto the bonnet. The screw is self tapping and the new stem is not threaded. Tighten the screw until it bottoms and the handwheel is tight.

Step 4: Testing

1. Turn the handwheel through its full range to verify easy operation. If there is any binding or grinding, replace the entire valve. Destroy the old valve so it cannot be reused.
2. Pressurize the cylinder with LP gas at 50 to 150 psig. Plug the outlet. Open the valve halfway and thoroughly check the bonnet nut, stem, and cylinder-to-valve connections for leaks using a mild ammonia-free soap-and-water solution or commercial leak-test solution.
3. If no leak was found, proceed to #4. If a leak was found, evacuate the cylinder according to NFPA Pamphlet #58 and NPGA Installation and Service Guide Book #4003. Remove and destroy the entire valve so it cannot be reused. Install a new valve.
4. Turn the handwheel clockwise until the bonnet just bottoms on the seat. Tighten the handwheel approximately one tenth of a turn further. Carefully remove the outlet plug. Thoroughly check the outlet for leaks using a leak-test solution. If a leak is found, evacuate the cylinder according to NFPA Pamphlet #58 and NPGA Installation and Service Guide Book #4003. Remove and destroy the entire valve so it cannot be reused. Install a new valve.
5. If no leaks were found, blow the outlet dry with clean, dry compressed air. The cylinder can now be filled according to NPGA Bulletin #129 or #130.

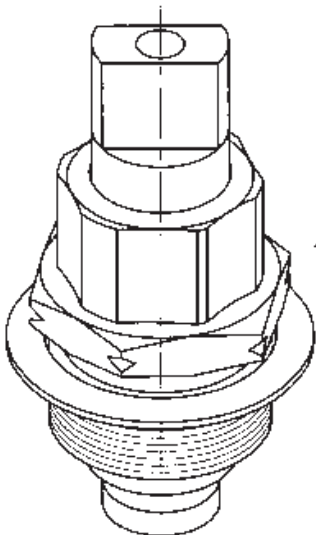
Warn Your Customer

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Dual Bonnet Assembly Conversion Instructions for LP Gas Cylinder Valves — 3429-100-KIT

Instruction Sheet R-3429



Dual Bonnet
Assembly

Kit #3429-100-KIT Contains:

Part Number	Description
3429-100	Dual Bonnet Conversion Assembly
R-3429	Instruction Sheet

READ THIS INSTRUCTION COMPLETELY BEFORE BEGINNING.

WARNING

- Leaking gas can cause fires or explosions
- Only trained personnel should work on gas systems
- Inspect gas systems regularly
- Replace equipment as required

General

This instruction is intended for people familiar with LP gas equipment and applications. **IF YOU ARE NOT FAMILIAR WITH THIS EQUIPMENT — STOP.**

This instruction covers the bonnet replacement for the Sherwood Cylinder Valve models listed in Table 1 of this instruction sheet. Read these instructions completely before beginning. Do not use these instructions for valves and bonnets not listed. The model number is either stamped on a wrench flat located on the side of the valve or embossed into the valve body. Make sure the bonnet kit number is correct for the valve model. Use only Sherwood parts.

Note the date code stamped on one of the wrench flats. Compare it to the date code chart on **page 13**. If the valve is 10 years old or older and has a relief valve, replace the entire valve. Destroy the old valve so it cannot be reused.

Tools Required

- ☐ 3/4" wrench
- ☐ Medium slotted screwdriver (or #25 Torx® screwdriver)
- ☐ Hex socket, 5/8"
- ☐ Torque wrench, 25 to 50 foot-pounds
- ☐ Commercial leak-test solution*

* Must be approved for use on brass and with LP gas.

SAFETY INSTRUCTIONS

- Use an accurate torque wrench to tighten the bonnet assembly
- Always destroy a damaged or worn valve and parts so they cannot be reused
- Never repair or clean a safety-relief device



WARNING

This conversion kit will convert standard-style 3329-13LH bonnets to dual bonnets in designated Sherwood valves only

TABLE 1

Bonnet Number	Valve Model Numbers
3429-100	PV2033CL PV2030BC

Bonnet Conversion Procedures

Step 1: Bonnet Removal

1. Remove all traces of LP gas from the cylinder tank using the procedures specified in NFPA Pamphlet #58 and NPGA Installation and Service Guide Book #4003. Secure the cylinder with the chain wrench or cylinder vise so it cannot be moved.
2. Use the screwdriver (or #25 Torx driver) to remove the handwheel screw and handwheel. Use the socket and wrench to remove the bonnet assembly 3329-13LH (left-hand thread) by turning it clockwise. Destroy the old bonnet assembly so it cannot be reused.

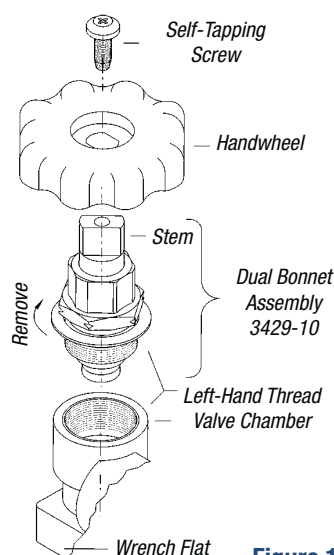


Figure 1

Step 2: Inspection

1. A damaged shut-off seat may not allow a positive seal. Use a light to inspect the valve shut-off seat located at the bottom of the bonnet-connection opening. The outer rim of the seat is about 1/4" in diameter. If the seat is nicked, scratched, or distorted, replace the entire valve. Destroy the old valve so it cannot be reused.

2. Inspect all threaded connections. Replace the entire valve if any threaded connection is damaged or worn. Destroy the old valve so it cannot be reused.
3. Inspect the safety-relief device. If the openings are clogged with foreign matter or if it shows any sign of tampering, replace the entire valve. Destroy the old valve so it cannot be reused. Never attempt to repair or clean a safety-relief device.

Step 3: Re-Assembly

1. Before installing the dual bonnet assembly into the valve body, make sure the stem is turned fully counterclockwise at the top of the bonnet, as shown in Figure 1. The stem threads will be exposed as shown. This prevents the valve seat from damaging the nylon stem seat as the bonnet is tightened.
2. Screw the new dual bonnet assembly (left-hand thread) counterclockwise into the valve body. Use the socket and torque wrench to tighten the dual bonnet between 25 and 30 foot-pounds. Thread sealant is not necessary since the bonnet seat provides a metal-to-metal seal. NOTE: To prevent loosening of the valve body from the cylinder, hold the body with a second wrench while installing the bonnet. Be sure to use the lower wrenching flats when installing the bonnet assembly.
3. Re-install the handwheel and handwheel screw onto the dual bonnet. The screw is self tapping and the new stem is not threaded. Tighten the screw until it bottoms and the handwheel is tight.

Step 4: Testing

1. Turn the handwheel through its full range to verify easy operation. If there is any binding or grinding, replace the entire valve. Destroy the old valve so it cannot be reused.
2. Pressurize the cylinder with LP gas at 50 to 150 psig. Plug the outlet. Open the valve halfway and thoroughly check the bonnet nut, stem, and cylinder-to-valve connections for leaks using a mild ammonia-free soap-and-water solution or commercial leak-test solution.
3. If no leak was found, proceed to Paragraph 4. If a leak was found, evacuate the cylinder according to NFPA Pamphlet #58 and NPGA Installation and Service Guide Book #4003. Remove and destroy the entire valve so it cannot be reused. Install a new valve.
4. Turn the handwheel clockwise until the bonnet just bottoms on the seat. Tighten the handwheel approximately one tenth of a turn further. Carefully remove the outlet plug. Thoroughly check the outlet for leaks using a leak-test solution. If a leak is found, evacuate the cylinder according to NFPA Pamphlet #58 and NPGA Installation and Service Guide Book #4003. Remove and destroy the entire valve so it cannot be reused. Install a new valve.
5. If no leaks were found, blow the outlet dry with clean, dry compressed air. The cylinder can now be filled according to NPGA Bulletin #129 or #130.

Warn Your Customer

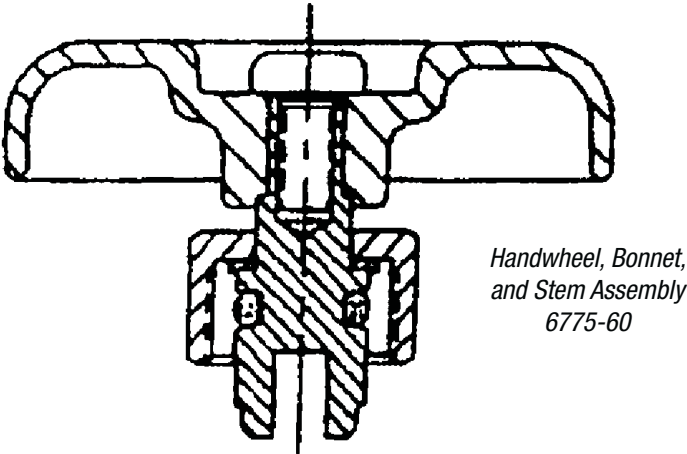
- Leaking gas can cause fires or explosions
- If you smell gas
 - Immediately call your gas supplier from a neighbor's phone
 - If you can't reach your gas supplier, call the Fire Department
 - Do not touch electrical switches or telephones
 - Do not light appliances

NOTICE: All Sherwood products must be used in strict compliance with the requirements and provisions of National Fire Protection Association Pamphlets #54 and #58, DOT, ANSI, and all applicable federal, state, provincial, and local standards, codes, regulations, and laws. It is the responsibility of the sellers, installation and maintenance personnel, and end users to remain knowledgeable of and in compliance with all standards, codes, regulations, and laws.

Instruction Sheets

Handwheel, Bonnet, and Stem Assembly Replacement Instructions
for LP Gas Cylinder Valves — 6775-60-KIT

Instruction Sheet R-6775-60



Kit #6775-60-KIT Contains:

Part Number	Description
6775-60	Handwheel, Bonnet, and Stem Assembly
R-6775-60	Instruction Sheet

READ THIS INSTRUCTION COMPLETELY BEFORE BEGINNING.

WARNING

- Leaking gas can cause fires or explosions
- Only trained personnel should work on gas systems
- Inspect gas systems regularly
- Replace equipment as required

General

This instruction is intended for people familiar with LP gas equipment and applications.
IF YOU ARE NOT FAMILIAR WITH THIS EQUIPMENT — STOP.

The instruction covers the handwheel, bonnet, and stem assembly replacement for the Sherwood Cylinder valve models listed in Table 1 of the instruction sheet. Read these instructions completely before beginning. Do not use these instruction on valves not listed. The valve model number is either stamped on a wrench flat located on the side of the valve or embossed into the valve body. Make sure the handwheel, bonnet, and stem assembly is correct for the valve model. Use no substitutes.

Note the date code stamped on one of the wrench flats. Compare it to the date code chart on **page 13**. If the valve is 10 years old or older, replace the entire valve. Destroy the old valve so it cannot be reused.

Tools Required

- ¾" end wrench
- 1⅞" end wrench
- Commercial leak-test solution

* Must be approved for use on brass and LP gas.

SAFETY INSTRUCTIONS

- Use an accurate torque wrench to tighten the bonnet assembly
- Always destroy a damaged or worn valve and parts so they cannot be reused
- Never repair or clean a safety-relief device



WARNING

This conversation kit will not convert existing Sherwood Multivalves with standard bonnets to the dual bonnet configuration.

TABLE 1

Bonnet Number	Valve Model Numbers
677S-60-KIT	2033CLDB Series

Handwheel, Bonnet, and Stem Assembly Replacement Procedures

Step 1: Bonnet Removal

A. IF GAS SERVICE HAS NOT BEEN DISCONNECTED:

1. Turn handwheel counterclockwise to fully open and backseat the lower stem.

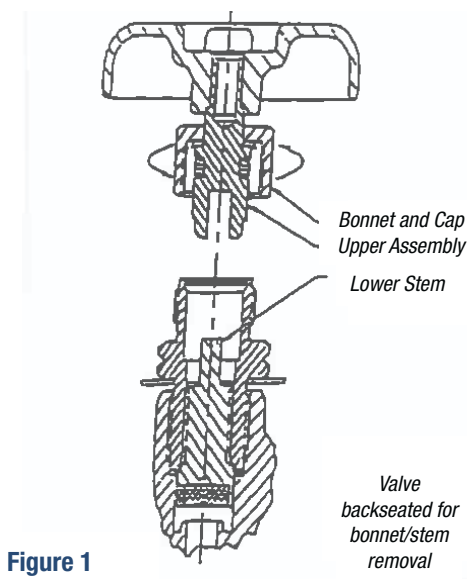


Figure 1

2. Hold the lower portion of the dual bonnet in place with a ¾" end wrench. Without turning the handwheel, use a second 1⅞" end wrench to remove the upper stem assembly by turning the bonnet cap counterclockwise (see Fig. 1). Destroy the old assembly so it cannot be reused.

B. IF GAS SERVICE HAS BEEN DISCONNECTED:

1. The valve is in the closed position.
2. Turn handwheel counterclockwise to fully open and backseat the lower stem.
3. See A-2 above.

Step 2: Re-Assembly

1. Place the new handwheel, bonnet, and stem assembly in the lower portion of the dual bonnet. Make the new assembly finger-tight by engaging the bonnet cap two or three threads.
2. Rotate the handwheel counterclockwise while pushing down on the handwheel until you feel the upper stem engage the lower stem.
3. Tighten the bonnet cap clockwise with 50 to 70 inch-pounds of torque.

Step 3: Testing

1. Turn the handwheel approximately a half turn towards the closed position.
DO NOT FULLY CLOSE THE HANDWHEEL AS THIS WILL SHUT OFF THE GAS AND INTERRUPT THE SERVICE. Note if there is any binding or grinding. Replace the assembly.
2. Check the bonnets and stem connections for leaks, using a mild ammonia-free soap-and-water solution or an approved commercial-leak solution. If no leak occurs, turn the handwheel counterclockwise to fully open and backseat the lower stem.

Warn Your Customer

- Leaking gas can cause fires or explosions
- If you smell gas
 - Immediately call your gas supplier from a neighbor's phone
 - If you can't reach your gas supplier, call the Fire Department
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