

Back Check Valves

Installation & Parts

A2885 & A2883 (LPG)
A2882 (Refined Fuels)



LIQUID CONTROLS®

An IDEX Energy & Fuels Business

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Back Check Valves

Liquid Controls soft-seat back check valves are designed to prevent reverse flow of liquid product through the meter. This assures that the meter and all components downstream remain full of the liquid being measured.

A2885 and A2883 valves: Install the A2885 or A2883 LPG on the inlet side of the strainer assembly on the meter. Both the A2885 and A2883 are applicable for MA-5 and MA-7 meters.

A2882 valves: The A2882 for Refined Petroleum products is installed on the outlet side of the meter. The A2882 is applicable for M-5, M-7, and M-10 Meters.

Resources in this Guide

For convenience, you can easily download the [PDF edition of this guide](#). Liquid Controls recommends that you read through the introductory and safety information, and then proceed to both the Installation & Operation and the Maintenance chapters.

NOTICE

This manual provides warnings and procedures that are intended to inform the owner and/or operator of the hazards present when using the Liquid Controls Meter on LP gas and other products. The reading of these warnings and the avoidance of such hazards is strictly in the hands of the owner-operators of the equipment. Neglect of that responsibility is not within the control of the manufacturer.

Publication Updates

The most current versions of all Liquid Controls publications are available on our web site, www.LCmeter.com/resources/technical/manuals. If there are questions about the language or interpretation of any LC manuals, instructions, or specification sheets, please first contact your local distributor for help with your inquiry.

For service related issues that require further support from the Liquid Controls Service Team, please call the number below.

Liquid Controls Corporate Office:

Phone: +1 847 295-1050

Toll-free: 800 458 5262

Address: Liquid Controls LLC, 105 Albrecht Drive, Lake Bluff, IL 60044 USA

Website: www.LCmeter.com

Safety Procedures



BE PREPARED

- Before using this product, read and understand the instructions.
- All work must be performed by qualified personnel trained in the proper application, installation, and maintenance of equipment and/or systems in accordance with all applicable codes and ordinances.
- When handling electronic components/boards, always use proper Electrostatic Discharge (ESD) equipment and follow proper procedures.
- Make sure that all necessary safety precautions have been taken.
- Provide for proper ventilation, temperature control, fire prevention, evacuation, and fire management.
- Provide easy access to appropriate fire extinguishers for your product.
- Consult with your local fire department, state, and local codes to ensure adequate preparation.
- Read this manual and all the literature provided in your owner's packet.
- Save these instructions for future reference.
- Failure to follow the instructions in this publication could result in, personal injury, or death from fire and/or explosion, property damage, or other hazards that may be associated with this type of equipment.



SAFELY EVACUATE PIPING SYSTEM

Before disassembly of any meter or accessory component: **ALL INTERNAL PRESSURES MUST BE RELIEVED AND ALL LIQUID DRAINED FROM THE SYSTEM IN ACCORDANCE WITH ALL APPLICABLE PROCEDURES.**

- Pressure must be 0 (zero) psi.
- Close all liquid and vapor lines between the meter and liquid source.

Failure to follow this warning could result in property damage, personal injury, or death from fire and/or explosion, or other hazards that may be associated with this type of equipment.



OBSERVE NATIONAL & LOCAL CODES

Power, input, and output (I/O) wiring must be in accordance with the area classification for which it is used (Class I, Div 2). For North America, installations must be per the U. S. National Electrical Code, NFPA 70, or the Canadian Electrical Code in order to maintain Class I, Division 2 ratings. This may require using connections or other adaptations in accordance with the requirements of the authority having jurisdiction.

Peripheral equipment must be suitable for the hazardous location where it is installed. (L'équipement périphérique doit être adapté à la zone dangereux où il est installé.)

WARNING: Explosion Hazard

When in hazardous locations, turn power OFF before replacing or wiring modules. (Lorsque dans des endroits dangereux, coupler le courant avant de remplacer ou de câbler des modules.)

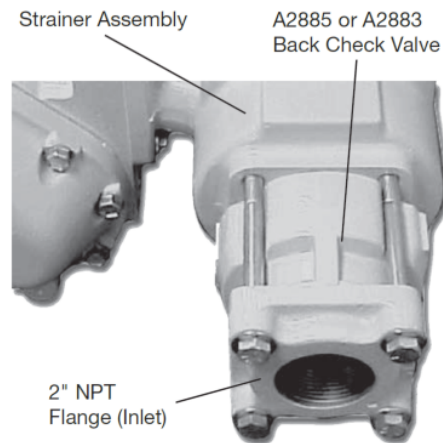
DO NOT disconnect equipment unless power has been switched OFF or the area is known to be Non-Hazardous. (NE PAS déconnecter l'équipement sans coupler l'alimentation ou sans s'assurer que la zone est non dangereuse.)

WARNING: Use 3.5 in • lb (0.4 N • m) torque when tightening terminal block screws.

Installation - A2885 & A2883

New Installations

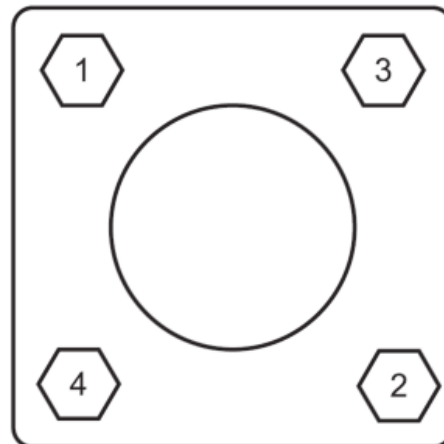
When ordering with a new metering system, a A2885 or A2883 Back Check Valve comes mounted to the inlet side of the strainer housing, as shown in the figure. To complete the A2885 or A2883 back check valve portion of the installation, connect a liquid line to the flange on the inlet side of the valve. The flange connection is 2-inch NPT.



Retrofit Installations

Depending on the existing configuration, it may be necessary to modify the inlet piping when adding an A2885 or A2883 back check valve.

After relieving the internal pressure from the system, disconnect the inlet line from the inlet side of the strainer assembly. Then, connect the valve and flange assembly to the inlet side of the strainer. Use the four bolts and washers provided to fasten the valve/flange assembly to the strainer, tightening the bolts in a crossing pattern, as shown in the figure below. Once the valve/flange assembly is secure, connect the inlet line to the flange. The flange fitting is 2-inch NPT.



Bolt Tightening Pattern

Item Numbers

Refer to the illustrations in [Bill of Materials](#) ¹³ for the item numbers given in these instructions. Item numbers appear in circles in the drawings.

Disassembly

Follow these steps for disassembly:

1. Remove the valve from the line by removing the four screws (Item 3) and washers (Item 4) that hold it in place.
2. From the inlet side of the valve, unscrew the valve stem (Item 265) from the valve nut (Item 875).
3. Remove the valve nut (Item 875) by pressing down on the spring holder (Item 382). The spring should be held down with a press. Lift the valve nut out of position. Remove the spring holder and lock washer from the housing.
4. Remove the O-Ring retainer (Item 452), O-Ring (Item 470), piston (Item 133), O-Ring (Item 471), and spacer (Item 472), lifting by the threaded end of the valve stem (Item 265).
5. Remove the O-Ring retainer (Item 452) and O-Ring (Item 471) from the stem.
6. Remove the O-Ring (Item 471) and the piston (Item 133) from the stem.
7. Replace components, if necessary. Then reassemble. Since the bushing (Item 485) is pressed in place, it's not necessary to remove it.

Reassembly

Follow these steps for reassembly:

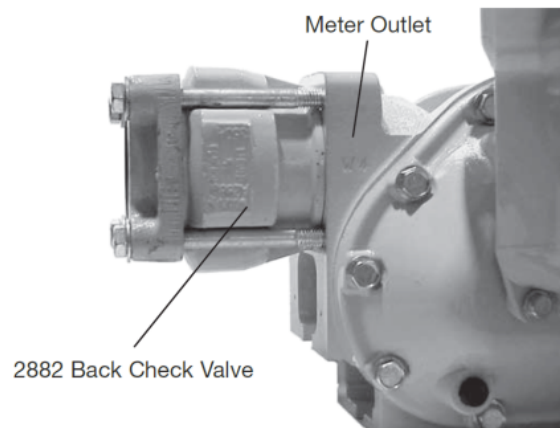
1. Place the piston (Item 133) on the valve stem (Item 265), with the raised rim pointing upwards.
2. Place the spacer (Item 472) and O-Ring (Item 471) on the piston (Item 133).
3. Place the O-Ring (Item 470) on the retainer (Item 452) and place it over the piston (Item 133) with the O-Ring downward.
4. Place a self-locking nut (Item 875) on the valve stem and tighten. Place a second self-locking nut (Item 875) on the valve stem and tighten.
5. Insert this assembly into the housing (Item 110) from the outlet side.
6. Place the compression spring (Item 595) over the valve stem (Item 265).
7. Insert the Teflon bearing (Item 486) into the valve spring holder (Item 382).
8. Place the spring holder (Item 382) on the housing (Item 110) and compress the spring inward. Use a press to overcome the force of the spring.
9. Secure the spring holder with the spiral retaining ring (Item 393).
10. Place the O-Ring (Item 473) into the groove on the outlet side of the housing assembly (Item 110).

The back check valve is now ready for reinstallation, using the four screws (Item 3) and washers (Item 4).

Installation - A2882

New Installations

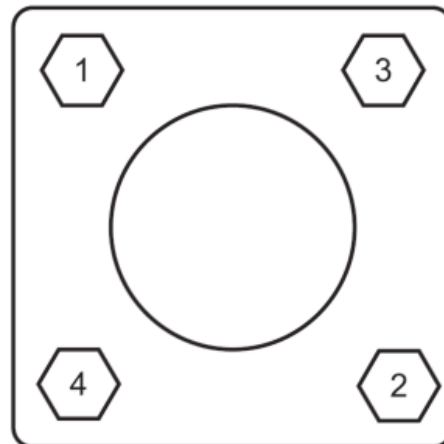
When ordering with a new metering system, a A2882 Back Check Valve comes mounted to the outlet side of the strainer housing, as shown in the figure. To complete the A2882 back check valve portion of the installation, connect a liquid line to the flange on the inlet side of the valve. The flange connection is 2-inch NPT.



Retrofit Installations

Depending on the existing configuration, it may be necessary to modify the outlet piping when adding an A2882 back check valve.

After relieving the internal pressure from the system, disconnect the outlet line from the outlet side of the strainer assembly. Then, connect the valve and flange assembly to the outlet side of the strainer. Use the four bolts and washers provided to fasten the valve/flange assembly to the strainer, tightening the bolts in a crossing pattern, as shown in the figure below. Once the valve/flange assembly is secure, connect the outlet line to the flange. The flange fitting is 2-inch NPT.



Bolt Tightening Pattern

Item Numbers

Refer to the illustrations in [Bill of Materials](#) ¹³ for the item numbers given in these instructions. Item numbers appear in circles in the drawings.

Disassembly

Follow these steps for disassembly:

1. Remove the valve from the line by removing the four screws (Item 3) and washers (Item 4) that hold it in place.
2. From the inlet side of the valve, unscrew the valve stem (Item 265) from the valve nut (Item 875).
3. Remove the valve nut (Item 875) by pressing down on the spring holder (Item 382). The spring should be held down with a press. Lift the valve nut out of position. Remove the spring holder and lock washer from the housing.
4. Remove the O-Ring retainer (Item 452), O-Ring (Item 470), piston (Item 133), O-Ring (Item 471), and spacer (Item 472), lifting by the threaded end of the valve stem (Item 265).
5. Remove the O-Ring retainer (Item 452) and O-Ring (Item 471) from the stem.
6. Remove the O-Ring (Item 471) and the piston (Item 133) from the stem.
7. Replace components, if necessary. Then reassemble. Since the bushing (Item 485) is pressed in place, it's not necessary to remove it.

Reassembly

Follow these steps for reassembly:

1. Place the piston (Item 133) on the valve stem (Item 265), with the raised rim pointing upwards.
2. Place the spacer (Item 472) and O-Ring (Item 471) on the piston (Item 133).
3. Place the O-Ring (Item 470) on the retainer (Item 452) and place it over the piston (Item 133) with the O-Ring downward.
4. Place a self-locking nut (Item 875) on the valve stem and tighten. Place a second self-locking nut (Item 875) on the valve stem and tighten.
5. Insert this assembly into the housing (Item 110) from the outlet side.
6. Place the compression spring (Item 595) over the valve stem (Item 265).
7. Insert the Teflon bearing (Item 486) into the valve spring holder (Item 382).
8. Place the spring holder (Item 382) on the housing (Item 110) and compress the spring inward. Use a press to overcome the force of the spring.
9. Secure the spring holder with the spiral retaining ring (Item 393).

The back check valve is now ready for reinstallation, using the four screws (Item 3) and washers (Item 4).

Bill of Materials - A2885 & A2883 (LPG)

Model A2885 (For LPG)

Used on meters sold AFTER December 19, 1991 beginning with Serial No. 225233

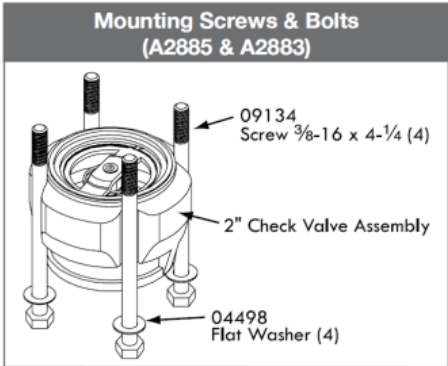
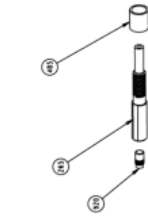
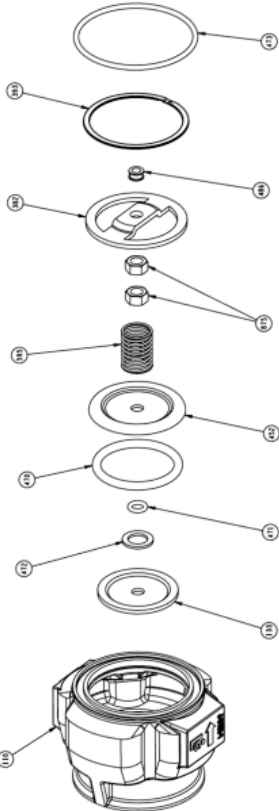
501565 2" Check Valve Assembly		
Item	Description	Part Number
486	Bearing	N/S*
473	Buna-N O-Ring	06854
393	Spiral Retaining Spring	09137
382	Valve Spring Holder	48337
595	Compression Spring	09138
875	Self Locking Nut (2)	09143
452	O-Ring Retainer	47974
470	Buna-N O-Ring	09131
471	Buna-N O-Ring	09140
472	Spacer	47295
133	Piston	47975
265	Valve Stem	N/S
485	Bushing	07867
110	Check Valve Housing	47973
920	Valve Core	N/S

*N/S = Not for Sale

Model A2883 (For LPG)

Used on meters sold BEFORE December 19, 1991 ending with Serial No. 225232

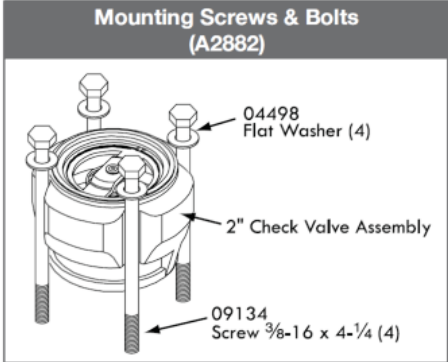
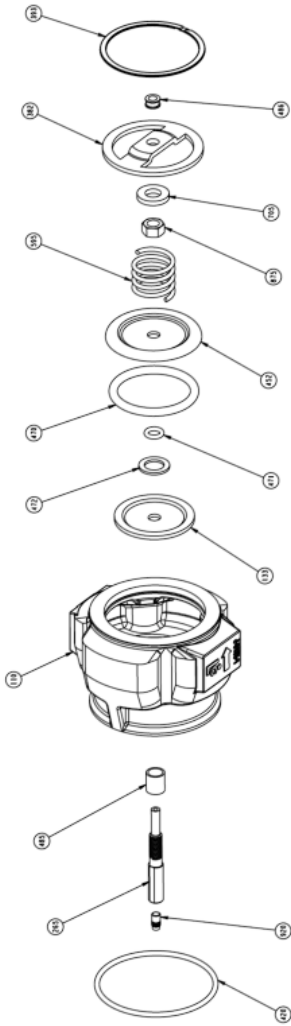
501566 2" Check Valve Assembly		
Item	Description	Part Number
486	Bearing	N/S
473	Buna-N O-Ring	06854
393	Spiral Retaining Spring	09137
382	Valve Spring Holder	48337
595	Compression Spring	09138
875	Self Locking Nut (2)	09143
452	O-Ring Retainer	47974
470	Buna-N O-Ring	09131
471	Buna-N O-Ring	09140
472	Spacer	47295
133	Piston	47975
265	Valve Stem	N/S
485	Bushing	07867
110	Check Valve Housing	47994
920	Valve Core	N/S



Bill of Materials - A2882 (Refined Fuels)

Model A2882 (For Refined Fuels)

501568 2" Check Valve Assembly		
Item	Description	Part Number
393	Spiral Retaining Spring	09137
486	Bearing	07801
382	Valve Spring Holder	48337
595	Compression Spring	N/S
875	Self Locking Nut (2)	09143
705	Flat Washer	40241
452	O-Ring Retainer	47974
470	Viton O-Ring	09025
471	Viton O-Ring	09139
472	Spacer	47295
133	Piston	47975
110	Check Valve Housing	N/S
485	Bushing	07867
265	Valve Stem	N/S
920	Valve Core	N/S
420	Buna-N O-Ring	06854





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