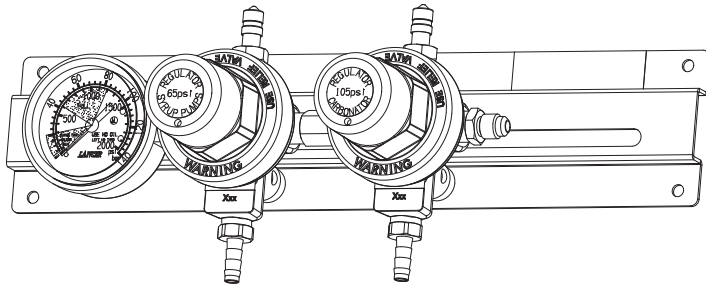


U.L. LISTED* CO2 GAS REGULATORS INSTALLATION AND SERVICE INSTRUCTIONS

This document applies to Lancer Regulators with the following
Model Number: 18-0522-2-4514,
Coca-Cola Preset Legacy Regulator Assembly

1. APPLICATION

These CO2 Gas Pressure Regulators are used to control Carbon Dioxide on soft drink dispensing systems. The left side is preset at 65 PSI to control the syrup pumps. The right side is preset at 105 PSI to control the carbonator.



IMPORTANT NOTICE

These service instructions were packaged with a Lancer Field Test Regulator. **DO NOT attempt to repair a Field Test Unit** - Instead contact Don Smeller, Engineer, at 1-800-729-1565, extension 7051.

***U.L. LISTING IS PENDING**

2. RELIEF TYPE

SELF-RELIEF: In addition to the standard safety relief valve, these regulators also have a SELF-RELIEF feature. The self-relief vents gas out through a hole in the bonnet. This happens:

- A. When the regulator adjusting screw is turned counterclockwise, and
- B. When, for a variety of reasons such as sudden shut off, the pressure overshoots. The self-relief will bring the overshooting pressure back down to the set point.

3. TECHNICAL DATA

- Fluid: Carbon Dioxide, Nitrogen, Air
 - Maximum primary pressure: 3000 psig
 - Max Operating Temperature: 140° F
 - Integral relief valve:
 - Soda: 126 to 134 psig
 - Self-Relief:
 - Overshoot not to exceed 15 psi above set pressure.
- Materials:
 - Body: Brass
 - Bonnet: Zinc
 - Cartridge: Brass, Teflon, Stainless
 - Seals: Nitrile, Urethane
 - Diaphragm: EPDM, Nylon, Brass
 - Relief Valve: Brass, Urethane

WARNING

CO2 CYLINDERS AND CO2 BULK TANKS CONTAIN HIGH-PRESSURE GAS, WHICH CAN BE HAZARDOUS IF HANDLED IMPROPERLY. MAKE SURE YOU READ AND UNDERSTAND THE FOLLOWING PROCEDURES FOR CO2 HANDLING BEFORE INSTALLATION. FAILURE TO HEED THESE WARNINGS COULD RESULT IN AN EXPLOSION WITH POSSIBLE INJURY OR DEATH.

1. ALWAYS CONNECT A CO2 CYLINDER TO A REGULATOR.
2. NEVER CONNECT A CO2 CYLINDER DIRECTLY TO A PRODUCT CONTAINER.
3. ALWAYS SECURE THE CYLINDER IN AN UPRIGHT POSITION WITH A CHAIN.
4. NEVER DROP OR THROW A CO2 CYLINDER.
5. ALWAYS VENTILATE AND LEAVE THE AREA IF CO2 LEAKAGE HAS OCCURRED.
6. ALWAYS CHECK THE TEST DATE ON THE NECK OF THE CYLINDER. IF OVER 5 YEARS, DO NOT USE. RETURN THE CYLINDER TO THE GAS SUPPLIER.

LANCER

6655 LANCER BLVD. • SAN ANTONIO, TEXAS 78219 USA • (210) 310-7000

FAX SALES

• NORTH AMERICA – 210-310-7245 • INTERNATIONAL SALES – 210-310-7242 • CUSTOMER SERVICE – 210-310-7242 •
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DATE: 10/24/05
P.N. 28-0594

4. INSTALLATION

These regulators have two primary (inlet) ports marked PRI, and two secondary (outlet) ports marked SEC. *Never connect the high-pressure supply to the regulator ports marked SEC. Never connect the outlet lines to the regulator ports marked PRI.* Improper connections will expose the downstream system to excessive pressure, resulting in equipment damage and/or personal injury.

If the Regulator is not connected directly to the gas cylinder, the intermediate hose between the source and the regulator must be rated for the maximum pressure that can be expected from the cylinder. Beware of the hoses coming from bulk sources. Always assume that a bulk source can be replaced, temporarily, with a bottle source.

Install the regulator so that the bonnet "roof" is tilted (best if vertical) allowing condensate to run off rather than to puddle up on the top. This prevents water from running down through the vent hole into the bonnet where it can freeze.

4.1 ADJUSTMENT

THESE ARE PRESET REGULATORS - DO NOT ADJUST.

4.2 DISASSEMBLY

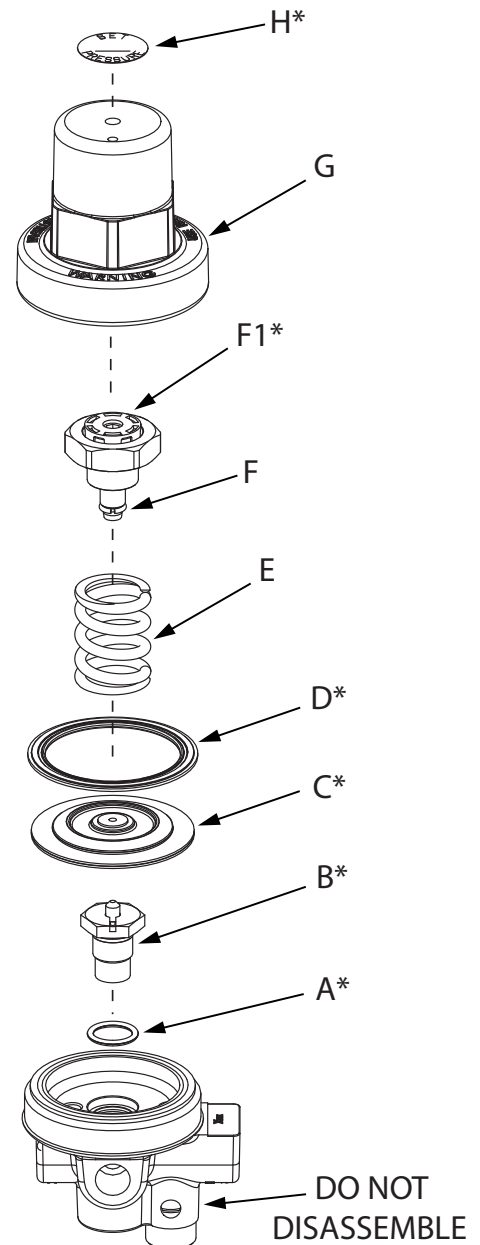
- A. Shut off the inlet pressure source.
- B. Vent the pressure on the inlet and outlet sides to zero.
- C. Relax the main spring force by turning the adjusting screw counterclockwise until it turns freely.
- D. Cleanliness is important from here on. Keep dirt and debris out of the regulator's innards. Contaminants can cause seals to leak.
- E. Remove the bonnet. A special wrench is available (Lancer PN 22-0215).
- F. Parts come out and go back, in the order as shown in Figure 1.
- G. Remove the cartridge seal assembly using an 11/16" socket.

4.3 CLEANING

- A. Clean the parts with warm water and soap.
- B. Rinse and dry parts. Leftover water drops will turn to ice.
- C. Inspect. Replace damaged parts.
- D. Note that the following sub-assemblies are not meant to be taken apart:
 - a. Cartridge Seal Sub-assembly
 - b. Diaphragm Sub-assembly
 - c. Externally adjusted Bonnet Sub-assembly
 - d. Internal Adjustment Sub-assembly
 - e. Safety Relief. If the safety relief is not operating properly, replace the regulator.

4.4 RE-ASSEMBLY

- A. Replace all "soft goods" using Repair Kit 82-3757.
- B. Using Silicone (Dow 111) Lubricant (a little goes a long ways), lubricate the O-Ring (Item A), and place it into the hole in the body. Do not place the O-Ring around the Seal Cartridge (Item B).
- C. Install the Seal Cartridge (Item B). Use 11/16" socket. Torque to 50 inch-pounds.
- D. Lubricate threads of Adjusting Assembly (Item F) with Dow 111 Lubricant.
- E. Stack Diaphragm Assembly (Item C), Glide Washer (Item D), Spring (Item E), and Adjusting Screw Assembly (Item F1) (if used).
- F. Lubricate threads of Bonnet (Item G) with Dow 111 Lubricant. Torque to 200 inch-pounds.
- G. Adjust the set pressure (see above).



***NOTE: THESE PARTS ARE INCLUDED IN REPAIR KIT**

**Exploded View
Figure 1**

WARNINGS

1. PRESSURE RELIEF VALVES MUST ALWAYS BE USED IN THE SECONDARY LINES DOWNSTREAM OF EACH REGULATOR. DO NOT REMOVE OR ATTEMPT TO ADJUST THE INTEGRAL SAFETY RELIEF VALVE.
2. THESE REGULATORS COME EQUIPPED WITH A CHECK VALVE AT THE OUTLET TO PREVENT LIQUID FROM BACKING UP INTO THE REGULATOR. THESE CHECK VALVES ISOLATE THE REGULATOR FROM THE DOWNSTREAM LINES. THE SAFETY RELIEF BUILT INTO THE REGULATOR DOES NOT VENT THE LINE DOWNSTREAM OF THE CHECK VALVE. THE DOWNSTREAM LINE(S) NEED(S) TO BE PROTECTED WITH OTHER SAFETY RELIEF(S).
3. THESE REGULATORS ARE NOT INTENDED FOR USE IN LIFE SUPPORT SYSTEMS.
4. THESE REGULATORS MUST NOT BE USED WHERE TEMPERATURE AND PRESSURE CONDITIONS EXCEED THE LIMITS IN THE TECHNICAL DATA.
5. THE ACCURACY OF THE PRESSURE GAUGES CAN BE AFFECTED BY SHIPPING AND TIME. IF INACCURATE INDICATIONS MAY BE HAZARDOUS TO PERSONNEL OR PROPERTY, THE GAUGES SHOULD BE CALIBRATED BEFORE INSTALLATION AND AT REGULAR INTERVALS.

5. TROUBLESHOOTING

<u>TROUBLE</u>	<u>CAUSE</u>	<u>REMEDY</u>
5.1 No CO2 comes out.	A. Tank may be empty. B. Gauge could be stuck indicating pressure when there is none. C. Gas cylinder may be closed.	A. Observe inlet pressure gauge. B. Try a new bottle. C. Open the gas cylinder by turning counter-clockwise
5.2 CO2 delivery rate is slow.	A. The inlet could be clogged with Teflon tape or contaminants present in the CO2 itself. B. It could be that there is an attempt to dispense too many drinks at once thus exceeding the capacity of the gas supply system.	A. Clean the screen. Clean the filter. B. When a cylinder is full, the max flow capacity of the regulator/cylinder combination is shown in the technical data. When using a bulk system, the max flow is limited by the bulk tank's flow capacity. That may be as low as only 3scfm. See the bulk tank manufacturer's literature. Similarly, when a cylinder source is low on pressure, the flow capacity declines. Lancer recommends that cylinders be changed at 300psi. The inlet pressure gauge shows red below this pressure. Solution: Split up the demand. Use two or more cylinders (or bulk tanks) and use an equal number of regulators.
5.3 Drinks have too much carbonation.	A. Low pressure gauge could be defective. B. Pressure setting could be too high.	A. Replace with known good gauge. B. Adjust downward.
5.4 Set pressure drifts high. (NOTE: A little of this is normal when the regulator is cold from heavy use.)	A. If the problem persists at room temperature, possibly there is a leak in the upper seal.	A. Check this by plugging the vent hole in the bonnet with your thumb. If the secondary pressure rises, the seal is bad and the diaphragm assembly should be replaced.

6. REPAIR KIT CONTENTS (see Figures 1 and 2)

ITEM	DESCRIPTION	PART NUMBER
--	REPAIR KIT*	82-3757
A	O-Ring	02-0584
B	Capsule Assembly	82-3563
C	Diaphragm Assembly	82-3528
D	Glide Washer	05-2301
F1	Glide Cap	05-2301
H	Label, 65 PSI (Set of 2)	06-2932
	Label, 105 PSI (Set of 2)	06-2933
I	Washer, 1/4 Flare (Qty 2)	05-0011
J	Quad Ring	02-0579
K	Hex Key	22-0216

NOTE*
Order two (2) Repair Kits if rebuilding both regulators

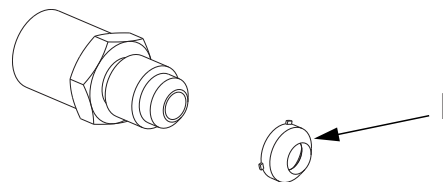
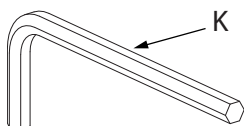


Figure 2

ALSO AVAILABLE:

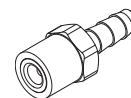
Hex Key, 5/32", PN 22-0216



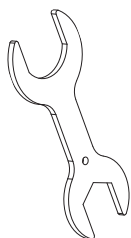
Diaphragm Assembly, PN 82-3733
(See Item C, Figure 1)



Check Valve, 1/4 Barb, PN 17-0606
(For use with 1/4 ID Soda Tubing)



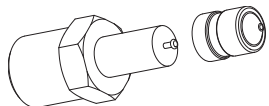
Wrench (Bonnet and CO2 Nut),
Regulator, PN 22-0216



Flare Washer, 1/4, PN 05-0011
(See Item I, Figure 2)



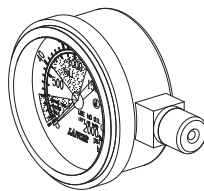
Schrader Valve and Cap,
PN 17-0607



Glide Cap, PN 05-2300
(See Item F1, Figure 1)



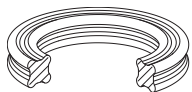
Gauge, Regulator, LH Thread,
0-2000, PN 16-0051



Glide Washer, PN 05-2301
(See Item D, Figure 1)



Quad Ring, PN 02-0579
(See Item J, Figure 2)



Label, Pressure Settings
(See Item H, Figure 1)

NOTE:
The word VOID will appear if this label is peeled up or removed.



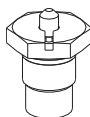
PN 06-2932

PN 06-2933

O-Ring, PN 02-0584
(See Item A, Figure 1)



Capsule Assembly, PN 82-3563
(See Item B, Figure 1)



CO2 Washer, Nylon, PN 05-0037



Please refer to the Lancer web site (www.lancercorp.com) for information relating to Lancer Installation and Service Manuals, Instruction Sheets, Technical Bulletins, Service Bulletins, etc.