UTILITY SOLUTIONS GROUP

Model 122 Regulator

Installation and Maintenance Manual

USG-IMM-023

Contents

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Regulator Introduction

The Model 122 Regulator represents a combination of capacity, performance, and value. Its streamlined body passages provide large capacity. An external control line is required from the lower case to the control piping. The 122 has rapid response speeds yet is stable in operation. Soft seats ensure positive, tight shutoff. Regulator orifices are replaceable. Springs are color-coded.

Installation

1. Examine the regulator for shipping damage.
2. Check nameplate data. Ensure the regulator conforms with what was ordered.
3. The inside of the regulator and piping must be clean and free of dirt. Remove all dirt and debris before installing the regulator. Failure to remove dirt/debris could result in regulator damage or trouble.
4. Remove all shipping screens and covers from the regulator. Do not let dirt get inside the regulator.
5. Install the regulator. Ensure the inlet and outlet are correctly connected. High-pressure connects to the inlet. The flow arrow must point downstream.

NOTE: Threaded connections must conform with good piping practice free of excess thread engagement per ANSI B2.1. Apply pipe joint compound to male threads only.

The model 122 Regulator is usually right-side up, as shown on the Typical Installation drawing (see Page 6). It may, however, be installed upside down. When inverted, it may be necessary to readjust the set-point.

Do not install sideways. The diaphragm should be horizontal.

6. Install the control line by connecting it to the outlet pipe. Ensure the outlet pipes have a diameter of at least 8 to 10 inches and are positioned downstream from the regulator.

CAUTION

Do not install any automatic shutoff device that closes completely between the regulator and the control line connection into the piping.

NOTE: To avoid excessive turbulence, the connection should be clean and smooth on the inside and be located in straight pipe clear of valves and fittings. Keep the inside of the control line clean and protect it from corrosion. Pitch it away from the regulator and avoid moisture pockets. It must be strong (¼" or larger steel tubing or pipe is preferred). It must be well protected against breakage (remember, regulators open wide if the control breaks).

7. On indoor installations requiring venting outdoors, run the vent piping as short and direct as possible with minimum bends and elbows. Use the same size or larger pipe as the vent connections on the regulator.
8. The inlet and outlet shutoff valves should both be closed. The bypass valve should be closed when utilizing the bypass.

CAUTION

With natural gas or any other hazardous gas, vent to a safe place outdoors in case gas should accidentally be discharged. Screen and protect the opening outdoors to guard against water, ice, dirt, debris, or insects.

Start-Up

1. The inlet and outlet shutoff valves should both be closed. If a bypass is used, the bypass valve should also be closed.
2. Take note of the set-point (set-point is the outlet pressure the regulator is adjusted to deliver). Regulator is factory adjusted to the set-point specified on the order.

CAUTION

This caution applies where the piping downstream of the outlet shutoff valve is pressured. That pressure must not exceed the regulator set-point by more than the pressure noted (see "Maximum Emergency Pressures", Page 21).

3. Slowly and carefully open the inlet shutoff valve just enough to allow inlet pressure to build up slowly in the regulator until it is fully pressured.

CAUTION

During start-up a pressure gauge must be used on the regulator outlet pressure and carefully watched. While inlet pressure builds up, outlet pressure must not exceed set-point by more than 1 pounds per square inch (psi). If outlet pressure begins to exceed set-point by more than 1 psi, close the inlet shutoff valve. This indicates the regulator is not closing properly. Check and make necessary corrections before proceeding with start-up. If regulator outlet pressure exceeds set-point by more than 2 psi, refer to "Maximum Emergency Pressures", Page 21 for instructions.

4. Check installation for leaks.
5. Slowly open the outlet shutoff valve to allow a small flow (approximately 250 standard cubic feet per hour (SCFH)). Ensure the flow of gas does not create a hazard.

NOTE: If piping downstream of outlet shutoff valve is pressured, see "Caution" under step 2.

6. With gas flowing, check for correct inlet and outlet pressures. It may be necessary to further open the inlet shutoff valve to maintain full inlet pressure.
7. Ensure the regulator closes tight (lock-up). To do this, reduce flow to zero by slowly closing the outlet shutoff valve. Outlet pressure should not exceed set-point by more than 3" water column (w.c.).
8. Fully open inlet and outlet shutoff valves slowly and carefully. Watch pressure gauges.
9. Complete start-up by making sure there are no leaks.

CAUTION

Do not exceed the regulator's pressure ratings (see table on Page 6). The regulator outlet has a lower pressure rating than the inlet. Do not expose the regulator outlet or control line to inlet pressure. Regulator with external control may be used as an upstream monitor or upstream regulator in a monitor set. The control line must connect into the outlet piping downstream of the downstream regulator. If the regulator is to be moved to another location, ensure its construction is compatible with the pressure and flow conditions.

Set-Point Adjustment

(See parts diagrams on Pages 6 and 8.)

The 121 is factory adjusted as specified on the order. To change the set-point, readjust as follows:

1. Remove top cap (**1**).
2. Adjust set-point with adjustment button (**3**) or (**3a**). Turn clockwise to increase or counterclockwise to decrease outlet pressure.

NOTE:

a. Only make this adjustment when gas is actually flowing through the regulator. The flow should be small (approximately 1000 SCFH).

b. Do not adjust when the regulator is closed and there is no flow. Do not increase the set-point beyond the upper limit of the outlet pressure range for the spring (**9**) (refer to Pressure Ranges and Springs table, Page 5).

c. Always check the outlet pressure with a pressure gauge while adjusting the set-point.

3. When adjustment is complete, replace top cap (**1**). Screw it securely into place. Failing to replace cap could cause unstable regulator operation.

CAUTION

It is the user's responsibility to ensure all regulator vents and/or vent lines exhaust to a non-hazardous location away from ANY POTENTIAL sources of ignition. Where vent lines are used, it is the user's responsibility to ensure each regulator is individually vented and that common vent lines ARE NOT used.

Changing a Spring

(See parts diagrams on Pages 6 and 8.)

NOTE: The outlet pressure ranges of spring (**9**) are given in the tables on Page 7.

1. Remove top cap (**1**).
2. Unscrew and remove adjustment button (**3**) or (**3a**). by turning counterclockwise, and remove spring (**9**).
3. Insert new spring. Ensure the new spring is positioned correctly at the bottom before replacing adjustment button (**3**) or (**3a**).
4. Adjust for the desired outlet pressure per previous section "Set-Point Adjustment."
5. When adjustment is complete, replace top cap (**1**). Screw it securely into place. Failing to replace cap could result in unstable regulator operation.
6. New spring range should be marked on regulator. If old spring range appears on regulator, it should be removed.

CAUTION

The diaphragm case vent must be positioned to protect against flooding, drain water, ice formation, traffic, tampering, etc. The vent must be protected against nest-building material, bees, insects, etc. to minimize the chances for foreign material to collect in the vent side of the regulator diaphragm.

Shut Down Instructions

Shut down and take the regulator out of service:

1. Carefully close the inlet stop valve.
2. Close the outlet stop valve.

NOTE: Before working on regulator, read the next section "General Servicing Instructions" and the applicable servicing instructions.

CAUTION

Turn gas on very slowly. If an outlet stop valve is used, it should be opened first. Do not overload diaphragm with a sudden surge of inlet pressure. Monitor the outlet pressure during start-up to prevent an outlet pressure overload.

General Service Instructions

1. Before any disassembly of the regulator, ensure it is completely depressurized. Pressure must be fully released from the inlet, outlet, and control line connection.
2. Carefully note location and position of all disassembled parts to be certain reassembly is correct. Inspect each one carefully and replace those that are worn, damaged, or otherwise unsatisfactory.
3. Upon completion of servicing, ensure regulator installation is entirely free of leaks.

CAUTION

Regulators are pressure control devices with numerous moving parts subject to wear that is independent upon particular operating conditions. To ensure continuous satisfactory operation, a periodic inspection schedule must be adhered to with the frequency of inspection determined by the severity of service and applicable laws and regulations.

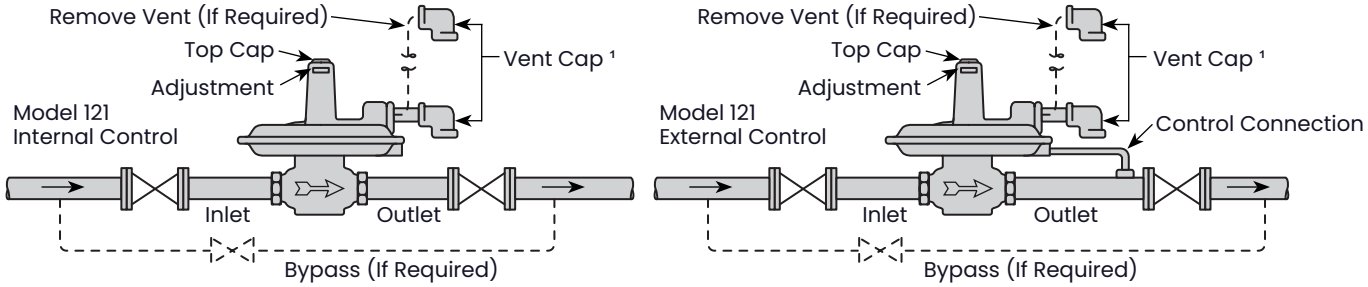
Temperature Limits

The Model 122 Regulator can be used for flowing temperatures from -20°F to 150°F.

Buried Service

Model 122 Field Regulators are not suitable for buried (underground) service.

Typical Installation



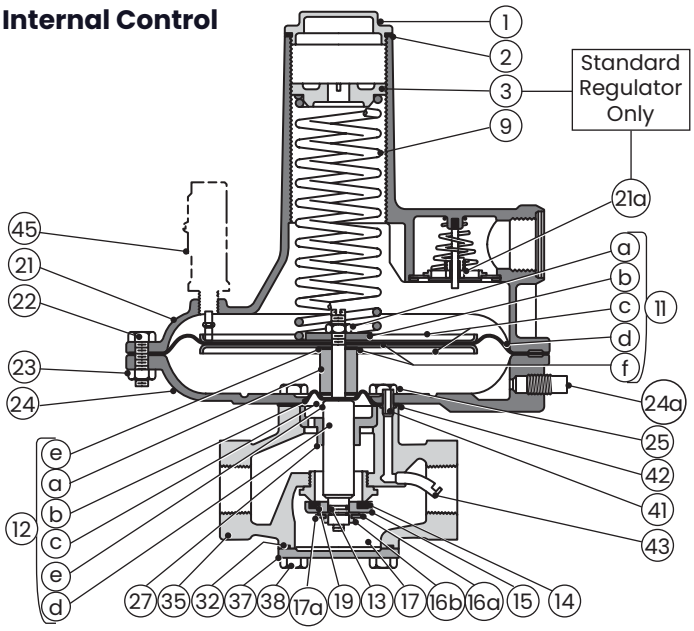
¹ Screened VENT CAP (Model 137) with screen-facing downwards is recommended to minimize the possibility of water or other foreign matter entering regulator vent.

Pressure Ranges and Springs

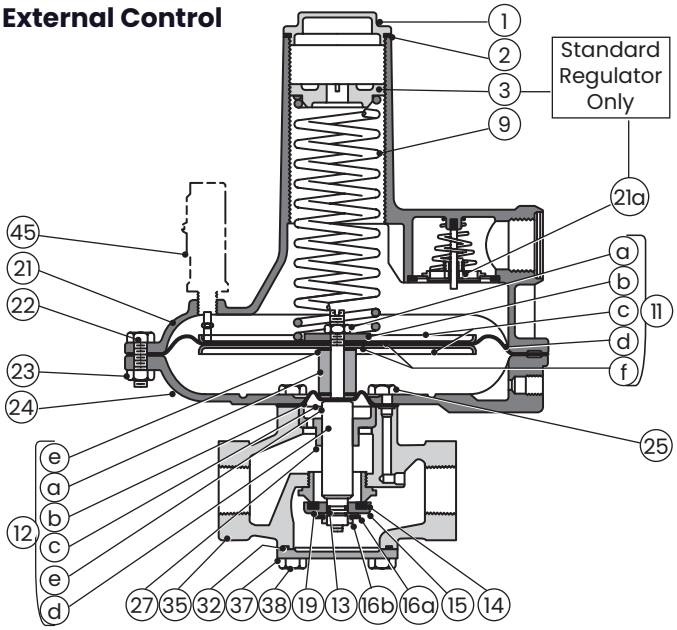
Size	Outlet Pressure Range	Spring Color	Spring Part Number	Maximum Inlet Pressure	Nominal Diaphragm Size
1" and 1 ¼" Model 122-8	1 ½" w.c. to 3 ½" w.c.	Blue-Black	143-82-021-01 (main spring)	15 psi	8"
	1 ½" w.c. to 3 ½" w.c.	Black	121-41-021-00 (counter spring)		
	1 ½" w.c. to 12" w.c.	Green-Black	143-82-021-02 (main spring)		
	1 ½" w.c. to 12" w.c.	Black	121-41-021-00 (counter spring)		
	3 ½" w.c. to 6 ½" w.c.	Red-Black	143-82-021-00		
	5" w.c. to 8 ½" w.c.	Blue-Black	143-82-021-01		
	6" w.c. to 14" w.c.	Green-Black	143-82-021-02		
	12" w.c. to 28" w.c.	Green	143-16-021-05		
	1 psi to 2 psi	Orange	143-16-021-06		
1 ½", 2" and 2 ½" Model 121-12	1 ½" w.c. to 3 ½" w.c.	Red	143-16-021-03 (main spring)	15 psi	12"
	1 ½" w.c. to 3 ½" w.c.	Red-Black	121-10-021-50 (counter spring)		
	1 ½" w.c. to 12" w.c.	Maroon	121-42-021-00 (main spring)		
	1 ½" w.c. to 12" w.c.	Red-Black	121-10-021-50 (counter spring)		
	3 ½" w.c. to 6 ½" w.c.	Red	143-16-021-03		
	5" w.c. to 8 ½" w.c.	Blue	143-16-021-04		
	6" w.c. to 14" w.c.	Green	143-16-021-05		
	12" w.c. to 28" w.c.	Orange	143-16-021-06		
	1 psi to 2 psi	Black	143-16-021-07		
	½ psi to 2 psi	Cadmium	143-16-021-08		

1" and 1 ¼" Model 122-8

Internal Control



External Control



Condensed Parts List 1" and 1 ¼" Model 122-8

Illustration Number	Description	Part Number
1	Top Cap	143-16-005-00
2	O-ring	951357
3	Adjustment Button	143-16-009-00
6	Adjustment Button	121-10-309-50
9	Spring, See Tables, Page 5	--
11a	Nut	908158
11b	Bottom Spring Button	121-10-022-50
11c	Diaphragm Pan	121-10-017-50
11d	Diaphragm, Buna-N, Std.	121-10-150-50
11f	Grip Washer	121-41-178-00
12a	Spacer	121-41-079-00
12b	Seal Diaphragm, Buna-N. Std.	121-41-064-00
12c	Clamp Washer	121-41-010-00
12d	Stem, Stainless	121-41-016-02
12e	Seal Washer	107-62-358-01
12s	Spacer, Standard, Stainless	121-41-079-01
12t	Stem, Stainless	121-41-016-03
13	O-ring, ⅜" × ½" O-ring, Viton, ⅜" × ½"	934007 902418
14	Wave Washer	905479
14a	Washer Retainer	121-16-103-50
14b	Spacer Washer, Poly-U, Std.	121-16-102-52
15	Molded Valve, Buna-N, Std.	121-10-311-50
16a	Retaining Ring, (5100-75H)	904447
16b	Valve Holder, Split, Stainless	121-16-130-51
17	Counter Spring, See Table, Page 5	--
17a	Spring Guide	121-42-018-00
19	Orifice, 1¼" dia., Brass, Std.	143-16-023-03
20	Orifice, 1¼" dia., Brass, Std.	121-10-023-50
21a	Vent Valve Assembly	143-16-526-01
26	Gasket	121-41-063-00
32	Tetraseal (or O-ring), 2 ⅜" x 2 ½"	904081
41	Bushing	121-41-091-00
42	O-ring, ¼" x ⅜", Buna-N	934005
43	Control Tube	121-41-015-01
	Travel Indicator	091-00-365-63
45	Repair Kit; Consisting of Main and Seal Diaphragms, Seal Washers, Molded Valve with Wave Washer, and Retaining Ring, Tetraseals, and Gaskets:	
	All Internal Control Models:	121-41-598-00
	All External Control Models:	121-598-01

NOTE: For discontinued models, please contact the manufacturer directly to obtain replacement parts.

Servicing Model 122-8 (1" and 1 ¼")

(See Page 6 for 122-8 diagrams and parts list.)

Service Valve

1. Remove bolts (**38**) and bottom plate (**37**).
2. Remove retaining ring (**16a**) (use Truarc 0200 pliers, Utility Solutions Group Part Number 1190646).
3. Remove both halves of valve holder (**16b**) and remove valve (**15**).
4. Reassembly is the reverse order of disassembly.

Service Main Diaphragm

1. Remove top cap (**1**), adjustment (**3**) and (**6**), and spring (**9**).

NOTE: Mark or measure position of adjustment at start. Use this to return adjustment to original setting during reassembly.

2. Remove bolts (**22**) and upper case (**21**).
3. On standard regulators, remove bolts (**38**) and bottom plate (**37**). Hold valve (**15**) in upward position for remaining work.
4. Use a screwdriver in slot in top end of stem (**12d**) or (**12t**) to prevent stem from turning, and loosen and remove nut (**11a**).
5. Disassemble diaphragm assembly (**11**).
6. When reassembling, use screwdriver per step 4 above to prevent stem (**12b**) or (**12t**) from turning, while firmly tightening nut (**11a**).

NOTE: Excessive turning of stem could strain or damage seal diaphragm (**12b**).

7. Rim bolts (**22**) should be first made finger tight. Next, insert spring (**9**) and compress it slightly with adjustment (**3**) or (**6**), just enough to force diaphragm assembly (**11**) fully downwards. Then tighten screws a little at a time until all are firm and secure.

NOTE: There must be no leakage around the rim, however diaphragm (**11d**) must not be crushed, twisted, or pinched.

Service Orifice

1. Remove bolts (**38**) and bottom cap (**37**).
2. For orifice (**19**), remove retaining ring (**16a**) (use Truarc 0200 pliers, Utility Solutions Group Part No. 1190646), remove split valve holder (**16b**), and remove valve (**15**).
3. For orifice (**20**), remove top cap (**1**) and adjustment (**3**), and remove spring (**9**).

NOTE: Mark or measure the position of adjustment (**3**) beforehand and return it to the same place at reassembly.

4. Unscrew orifice (**19**) or (**20**) using 1 ⅝" hex socket wrench. When replacing orifice, use a moderate amount of pipe joint compound on orifice threads.

Service Seal Diaphragm

1. Disassemble diaphragm assembly per section "Service Main Diaphragm".
2. Remove bolts (**25**) and lower diaphragm case (**24**).
3. Remove seal washer (**12e**), spacer (**12a**), and seal diaphragm (**12b**).
4. During assembly, use screwdriver in slot in top end of stem (**12d**) or (**12t**) while tightening nut (**11a**).

NOTE: Diaphragms must not be twisted or strained while regulator reassembly is completed.

Convert From Internal to External Control

1. Remove seal diaphragm (**12b**) per section "Service Seal Diaphragm" and remove bushing (**41**). Reinstall seal diaphragm (**12b**) so it covers and blocks the hole for bushing (**41**), and reassemble.
2. Remove plug (**24a**) and install external control line.

Convert From External to Internal Control

1. Installation of a new body (**35**), with internal control tube (**43**), is required. For installation, completely disassemble per previous sections, except assemblies (**11**) and (**12**) should remain intact. Install bushing (**41**) and O-ring (**42**).
2. Install plug (**24a**).

CAUTION

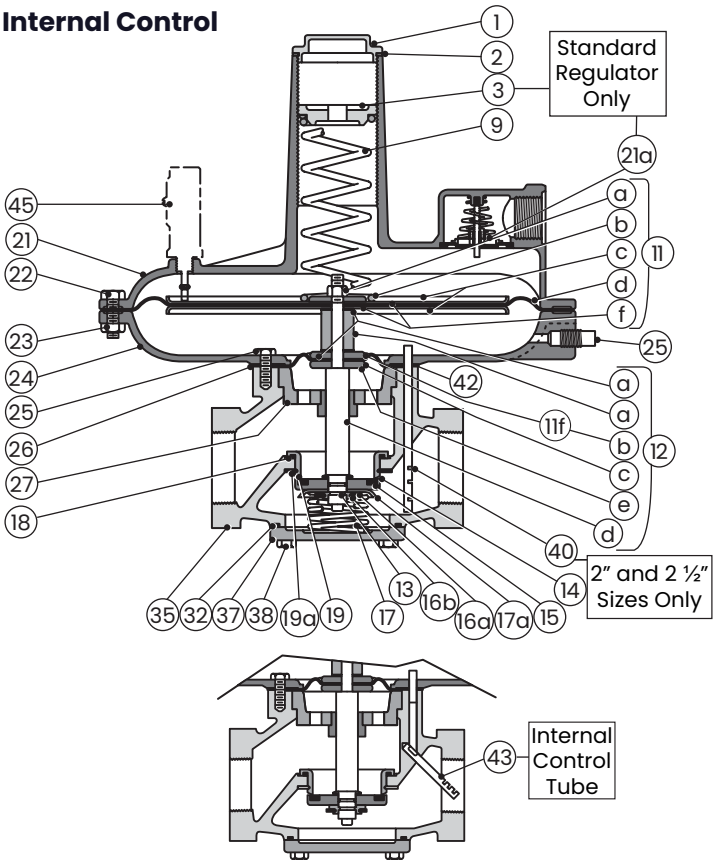
Regulators are pressure control devices with numerous moving parts subject to wear that is independent upon particular operating conditions. To ensure continuous satisfactory operation, a periodic inspection schedule must be adhered to with the frequency of inspection determined by the severity of service and applicable laws and regulations.

CAUTION

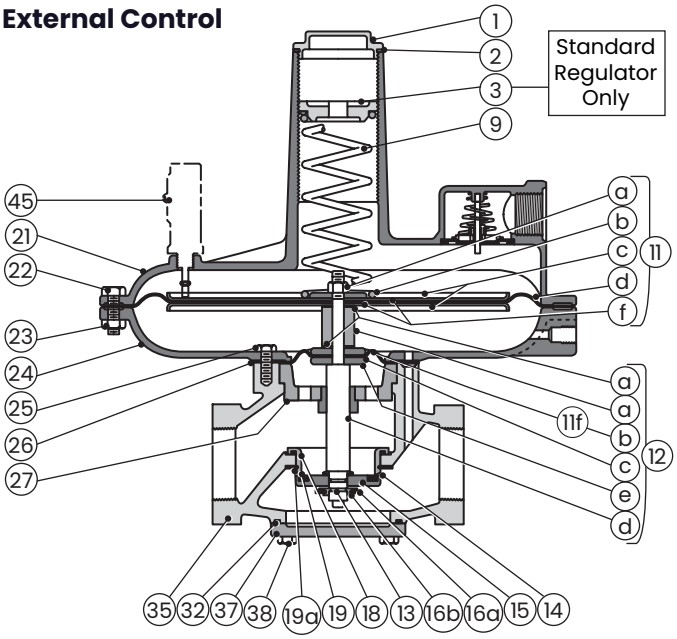
Turn gas on very slowly. If an outlet stop valve is used, it should be opened first. Do not overload diaphragm with a sudden surge of inlet pressure. Monitor the outlet pressure during start-up to prevent an outlet pressure overload.

1 ½", 2", and 2 ½" Model 122-12

Internal Control



External Control



Condensed Parts List 1 ½", 2", and 2 ½" Model 122

NOTE: For illustration Numbers 1, 2, 3, 6, 11a, 11b, 12e, 13, 14a, 14b, 16a, 16b, 17a, 21a, 24a, 41, and 42 see parts list on Page 6.

Illustration Number	Description	Part Number
9	Spring, See Tables, Page 5	--
11a	Hex S. Nut	908158
11b	Diaphragm Plate	121-10-022-50
11c	Diaphragm Pan	121-16-017-50
11d	Diaphragm, Buna-N	121-16-150-50
11f	Grip Washer	121-10-178-50
12a	Spacer	121-42-079-01
12b	Seal Diaphragm, Buna-N	121-42-064-00
12c	Clamp Washer	121-42-010-00
12d	Stem, Std.	121-42-016-00
	Stem, Stainless	121-42-016-02
12f	Seal Washer	107-62-358-01
12e	Seal Washer (Emery Cloth)	121-10-179-50
12s	Spacer, Stainless	121-42-079-03
12t	Stem, Stainless	121-42-016-03
13	O-ring, ⅜" × ½"	934007
14	Wave Washer	905479
14a	Valve Washer Ret. (B/P)	121-16-103-50
14b	Valve Spacer Washer (B/P)	121-16-102-52
15	Valve, Buna-N	121-16-311-50
16a	Retaining Ring, (5100-75H)	904447
16b	Valve Holder	121-16-130-50
16b	Valve holder (Stainless Steel)	121-16-130-51
17a	Spring Holder	121-42-018-00
19	Orifice, 2 5⁄32" dia., Std.	121-16-023-51
19	Orifice, 2 5⁄32" dia., Stainless	121-16-023-52
26	Gasket	121-42-063-00
27	Valve Stem Bushing	121-42-373-00
32	Tetraseal (or O-ring), 3 ¼" x 3 ½"	904078
40	Control Tube	121-42-315-00
43	Internal Control Tube	121-43-315-00
	Travel Indicator	091-00-365-65
45	Repair Kit; Consisting of Main and Seal Diaphragms, Seal Washers, Molded Valve with Wave Washer, and Retaining Ring, Tetraseals, and Gaskets:	
	All Internal Control Models:	121-42-598-00
	All External Control Models:	121-42-598-01

Servicing Model 122-12 (1 ½", 2", and 2 ½")

(See Page 8 for 122-12 diagrams and parts list.)

Service Valve

1. Disassemble diaphragm assembly per section "Service Main Diaphragm".
2. Remove bolts (**25**) and lower diaphragm case (**24**).
3. Remove seal washer (**12e**), spacer (**12a**), and gasket (**26**), and remove seal diaphragm (**12b**).
4. During assembly use screwdriver in slot in top end of stem (**12d**) or (**12t**) while tightening nut (**11a**).

NOTE: Diaphragms must not be twisted or strained during regulator reassembly.

Service Main Diaphragm

1. Remove top cap (**1**), adjustment (**3**) and (**6**), and spring (**9**).

NOTE: Mark or measure position of adjustment at start. Use this to return adjustment to original setting during reassembly.

2. Remove bolts (**22**) and upper case (**21**).
3. On standard regulators, remove bolts (**38**) and bottom plate (**37**). Hold valve (**15**) in upward position for remaining work.
4. Use a screwdriver in slot in top end of stem (**12d**) or (**12t**) to prevent stem from turning, and loosen and remove nut (**11a**).
5. Disassemble diaphragm assembly (**11**).
6. During reassembly, use screwdriver per step 4 above to prevent stem (**12b**) or (**12t**) from turning while firmly tightening nut (**11a**).

NOTE: Excessive turning of stem could strain or damage seal diaphragm (**12b**). Emery surface of grip washers (**11f**) should face against both sides of diaphragm (**11d**).

7. Make rim bolts (**22**) finger tight. Insert spring (**9**) and compress it slightly with adjustment (**3**) or (**6**), just enough to force diaphragm assembly (**11**) fully downward. Then tighten screws (**22**) carefully and evenly, alternately tightening opposite screws a little at a time until all are firm and secure.

NOTE: There must be no leakage around the rim, however diaphragm (**11d**) must not be crushed, twisted, or pinched.

Service Orifice

1. Remove bolts (**38**) and bottom cap (**37**).
2. Remove valve (**15**) per section "Service Valve".
3. Remove main diaphragm (**11d**) per section "Service Main Diaphragm", bolts (**25**) and lower case (**24**). Then remove assembly (**12**) and bushing (**27**).
4. Remove retaining ring (**19a**). Use Truarc 0600 pliers, Utility Solutions Group part number 1190648.
5. Remove orifice (**19**).
6. On assembly be sure retaining ring (**19a**) is fully seated in the groove all the way around the orifice.

NOTE: The bevel on the inside edge of (**19a**) must face toward the knife-edge of the orifice.

Service Seal Diaphragm

1. Disassemble diaphragm assembly per section "Service Main Diaphragm".
2. Remove bolts (**25**) and lower diaphragm case (**24**).
3. Remove seal washer (**12e**), spacer (**12a**), and seal diaphragm (**12b**).
4. During assembly, use screwdriver in slot in top end of stem (**12d**) or (**12t**) while tightening nut (**11a**).

NOTE: Diaphragms must not be twisted or strained while regulator reassembly is completed.

Convert From Internal to External Control

1. Reinstall seal diaphragm (**12b**) and gasket (**26**) so they cover and block hole for (**40**) and (**41**), and reassemble.

NOTE: Emery surface of grip washers (**11f**) must face against both sides of seal diaphragm (**12b**). Seal diaphragm (**12b**) and gasket (**26**) must block the hold for (**40**) or (**41**).

2. Remove plug (**24a**) and install external control line.

Convert From External to Internal Control

1. Remove seal diaphragm (**12b**) per section "Service Seal Diaphragm".
2. 1 ½" Model 122 requires a new body with control tube (**43**) in place as shown in "External Control" illustration (Page 8). Install bushing (**41**) and O-ring (**42**) as shown in "External Control" illustration (Page 8).

   On 2" and 2½" Model 122 install control tube (**40**) and O-ring (**42**). Control tube (**40**) must be centered and aligned with slots faced downstream as shown.

CAUTION

Regulators are pressure control devices with numerous moving parts subject to wear that is independent upon particular operating conditions. To ensure continuous satisfactory operation, a periodic inspection schedule must be adhered to with the frequency of inspection determined by the severity of service and applicable laws and regulations.

CAUTION

Turn gas on very slowly. If an outlet stop valve is used, it should be opened first. Do not overload diaphragm with a sudden surge of inlet pressure. Monitor the outlet pressure during start-up to prevent an outlet pressure overload.

Over-Pressurization Protection

Protects the downstream piping system and the regulator slow pressure chambers against over-pressurization due to the possible regulator malfunction or failure to achieve complete lockup. The allowable outlet pressure is the lowest of the maximum pressures permitted by federal and state codes, Utility Solutions Group document USG-IG-038, or other applicable standards. The method of protection can be a relief valve, monitor regulator, shutoff device, or similar mechanism.

Maximum Emergency Pressures

CAUTION

Ensure the following section is clearly understood before using the information.

The maximum inlet pressure a Model 122 regulator may be subjected to under abnormal conditions without causing internal damage is:

Maximum Inlet Pressure ..... 20 psi

The maximum pressure the diaphragm may be subjected to under abnormal conditions without causing internal damage is:

Maximum Diaphragm Pressure ..... Set-Point +2 psi

NOTE: Set-point is defined as the outlet pressure a regulator is adjusted to deliver.

CAUTION

If either of the above limits is exceeded, the regulator must be taken out of service and inspected. Damaged or otherwise unsatisfactory parts must be repaired or replaced before returning the regulator to service.

The maximum pressure that can be safely contained by the diaphragm case on a Model 122 regulator is:

Maximum Safe Pressure ..... 5 psi

NOTE: "Safely contained" means no leakage as well as no bursting.

Full Open Capacity

Capacity of the Model 122 in the wide-open position can be calculated using the following formula and K factors:

$Q = K\sqrt{P_o(P_i - P_o)}$ ..... (for P_i/P_o less than 1.894)

$Q = \frac{K P_i}{2}$ ..... (for P_i/P_o less than 1.894)

Q = Full open capacity in SCFH of 0.6 specific gravity natural gas

P_i = absolute inlet pressure (psi)

P_o = absolute outlet pressure (psi)

1" Model 122-8 ..... K= 1,400
1 ¼" Model 122-8 ..... K= 1,750
1 ½" Model 122-12 ..... K= 2,750
2" Model 122-12 ..... K= 4,750
2 ½" Model 122-12 ..... K= 5,250

NOTE: At the above full open capacities the droop is significantly greater than specified in the capacity tables. When checking 122 regulator capacity to provide adequate relief valve capacity, use the above calculated full open capacity. Capacities for pressure reductions not listed in the table can be calculated with the above formula.

Other Gases

Model 121 Regulators are most widely used with natural gas. However, they perform equally well with LP gas, nitrogen, dry carbon dioxide (CO_2), and air.

For other gas capacities, multiply the table values on Pages 4, 5, 6, and 7 by the applicable correction factors:

Pipe Sizes

Type of Gas	Correction Factor
Air (Specific Gravity 1.0)	0.77
Propane (Specific Gravity 1.53)	0.63
1,350 BTU Propane-Air Mix (Specific Gravity 1.20)	0.71
Nitrogen (Specific Gravity 0.97)	0.79
Dry Carbon Dioxide (Specific Gravity 1.52)	0.63

For other non-corrosive gases, use the following formula:

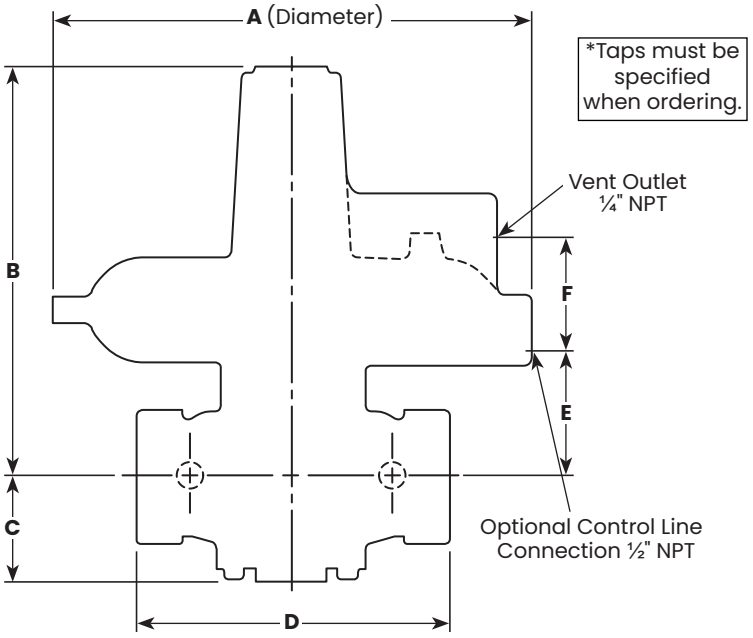
$$\text{Correction factor} = \sqrt{\frac{0.60}{\text{Specific gravity of the gas}}}$$

When used with gases not listed above, please contact your Utility Solutions Group representative or Industrial Distributor for recommendations.

Construction Materials

Component	Materials Used
Body	Cast Iron
Diaphragm Case	Die Cast Aluminum Alloy
Stem Bushing and Plate	Plated Steel
Main Seal and Diaphragms	Buna-N with Nylon Fabric Insert
Orifice:	Aluminum Alloy
¾", 1", and 1 ¼" Models	Brass
1 ½", 2", and 2 ½" Models	Cast Iron
Valve	Plated Steel with Molded Buna-N Soft Seat
Stem	Stainless Steel
Diaphragm Pan, Collars, and Washers	Plated Steel
O-rings and Tetraseals	Buna-N
Adjustment Spring Button:	
1" through 2 ¾" Models	Zinc Die Casting
¾" Model	Thermo-Set Plastic
Seal Cap:	
1" through 2 ½" Models	Zinc Die Casting
¾" Model	Thermo-Set Plastic

Dimensions



Pipe Size	A	B	C	D	E	F	Shipping Weight
1" NPT	10 ¼"	11 ⅝"	1 ⅞"	5 ¾"	2 ½"	3 7⁄16"	15 lb
1 ¼" NPT	10 ¼"	11 ⅝"	1 ⅞"	5 ¾"	2 ½"	3 7⁄16"	15 lb
1 ½" NPT	14"	13"	2 ⅜"	7 ½"	3 15⁄16"	3 9⁄16"	28 lb
2" NPT	14"	13"	2 ⅜"	7 ½"	3 15⁄16"	3 9⁄16"	28 lb
2 ½" NPT	14"	13"	2 ⅜"	8 ¼"	3 15⁄16"	3 9⁄16"	30 lb

UTILITY SOLUTIONS GROUP

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