

Option CZ, Gas Pressure Regulator Kits

Applies: Model Series ADF/ADFH; RGB/RGBL; RPB/ RPBL; PGBL; SSCBL & DFA

Description

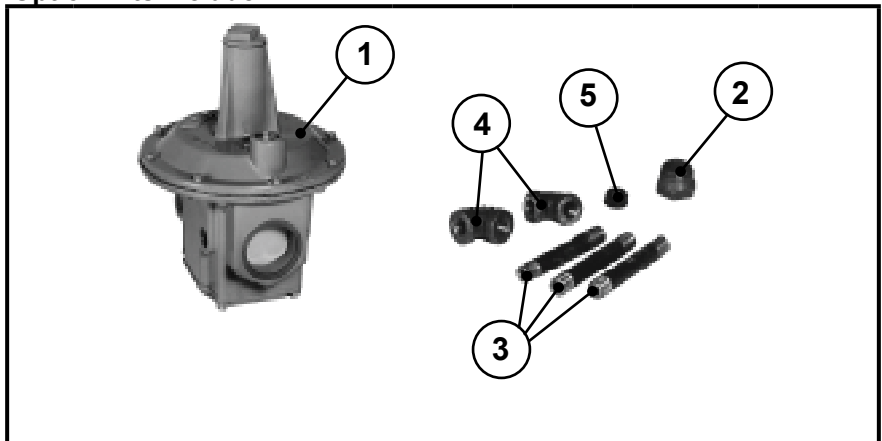
The maximum gas supply pressure to the application is 1/2 psi (14" w.c.). Option CZ gas pressure regulator kits are designed to regulate the gas pressure downward if the gas supply pressure is greater than 1/2 psi but less than or equal to 5 psi. Depending on the pipe size, there are four regulator kits available.

The gas regulators in these kits are the lock-up type and comply with codes using this specification. Under static conditions (no gas flow), a lock-up type regulator will allow the outlet pressure to rise slightly above the adjusted pressure but will still be low enough to protect the downstream controls. The regulators have an adjustable outlet gas range of 4" to 12" w.c. and are suitable for either nature or propane gas.

WARNING

Do not install these regulator kits if gas supply is greater than 5 psi. A field-supplied regulator with adequate capacity is required.

Option Kits Include:



| Pipe Size | 1" | 1-1/4" | 1-1/2" | 2" | | |
|-------------|---|--------|---------------------|---------------------|-----------------------|-----------------------|
| Option No. | CZ1 or CZ4A | CZ4B | CZ2 or CZ4C | CZ4D | | |
| Package P/N | 124258 | 170644 | 124259 | 170646 | | |
| Code | Components | Qty | P/N | P/N | P/N | P/N |
| 1 | Maxitrol Regulator (see model & specifications below) | 1 | 124254 | 170645 | 124255 | 170647 |
| 2 | Hex Bushing (black iron) | 1 | 8643 3/8" X 1/8" | 8643 3/8" X 1/8" | 124256 3/4" X 1/8" | 124256 3/4" X 1/8" |
| 3 | 1/8" X 2-1/2" Brass Nipple | 3 | 107122 | 107122 | 107122 | 107122 |
| 4 | 1/8" - 90° Brass Elbow | 2 | 124257 | 124257 | 124257 | 124257 |
| 5 | Insect Screen, 1/8"NPT | 1 | 96793 | 96793 | 96793 | 96793 |

Maxitrol Regulator Specifications

| Maxitrol Model & P/N | 210DZ - 1"Pipe Size P/N 124254 | 210DZ - 1-1/4"Pipe Size P/N 170645 | 210EZ - 1-1/2"Pipe Size P/N 124255 | 210EZ - 2"Pipe Size P/N 170647 |
|----------------------|-----------------------------------|---------------------------------------|---------------------------------------|-----------------------------------|
| Size | 1" x 1" NPT | 1-1/4" x 1-1/4" NPT | 1-1/2" x 1-1/2" NPT | 2" x 2" NPT |
| Housing | High strength aluminum alloy | High strength aluminum alloy | High strength aluminum alloy | High strength aluminum alloy |
| Ambient Range | -40°F to 200°F | -40°F to 200°F | -40°F to 200°F | -40°F to 200°F |
| Maximum Pressure | 5 psi | 5 psi | 5 psi | 5 psi |
| Emergency Exposure | 25 psi (inlet side only) | 25 psi (inlet side only) | 25 psi (inlet side only) | 25 psi (inlet side only) |
| Pressure Tap | Both inlet and outlet (plugged) | Both inlet and outlet (plugged) | Both inlet and outlet (plugged) | Both inlet and outlet (plugged) |
| Vertical Vent | 3/8" NPT | 3/8" NPT | 3/4" NPT | 3/4" NPT |
| Flow Rate Capacity | See Table 1 on page 2 | See Table 2 on page 2 | See Table 3 on page 2 | See Table 4 on page 2 |

Installation Instructions

NOTE: Pipe joint compound (pipe dope) must be resistant to the action of liquefied petroleum gas or any other chemical constituents of the gas being supplied.

1. Turn off the gas supply.
2. Install the Regulator

The gas regulator must be in an upright position. Exterior to the heater cabinet, connect the regulator into a horizontal section of gas supply line.

Installation Instructions (cont'd)

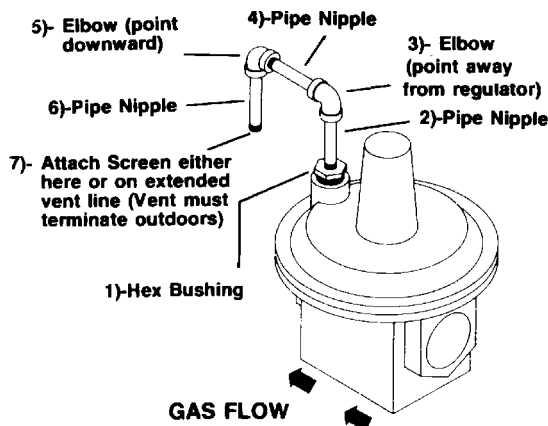
3. Install Vent Line (See Figure 1)

Remove the plastic plug from the tapped vent in the top of the regulator. Starting at the regulator (tapped vent) install the vent line by connecting the pieces of pipe in the following sequence:

- Black Iron Hex Bushing
- 2-1/2" Pipe Nipple
- 90° Elbow (*pointing away from the regulator*)
- 2-1/2" Pipe Nipple
- 90° Elbow (*pointing downward*)
- 2-1/2" Pipe Nipple

Outdoor Installation - Attach plastic bug screen.

Figure 1 - Install vent line on the gas regulator in the sequence and direction illustrated (If indoor installation, vent line must be field extended to the outdoors).



Indoor Installation - Extend vent line outdoors using 1/8" field-supplied piping; attach bug screen to outdoor end of the vent line.

4. Leak Test the Gas Connections & Test the Gas Pressure

If the unit has a gas train that includes an inlet manifold shutoff valve, close the valve. If the gas train does not include a manual shutoff valve before the main control valve, disconnect & cap the end of the gas line.

WARNING

All components of a gas supply system must be leak tested prior to placing equipment in service. **NEVER TEST WITH AN OPEN FLAME**

High pressure testing of supply line is acceptable, provided that the supply line has been disconnected from the unit & the pipe end capped.

Connect a manometer to the outlet pressure tap.

Turn on the gas supply & leak test the regulator connections. Test using a leak-detecting solution.

Check the gas pressure reading on the manometer. Outlet gas pressure must not be greater than 1/2 psi (14" w.c.). Outlet gas pressure may be adjusted between 4" w.c. and 12" w.c. at the regulator.

Capacities for Spring Loaded Gas Pressure Regulators in Options CZ1 & CZ2 - Cubic Feet Per Hour (0.64 specific gravity - natural gas).

TABLE 1 - Maxitrol Model 210DZ - 1" Pipe

| Inlet Pressure | Outlet Pressure ("w.c.) | | | | |
|----------------|-------------------------|-------|-------|-------|-------|
| | 2 | 4 | 6 | 9 | 12 |
| 8.0" w.c. | 2,400 | 1,900 | 1,300 | --- | --- |
| 0.5 psi | 3,400 | 3,100 | 2,700 | 2,200 | --- |
| 0.75 psi | 3,500 | 4,000 | 3,800 | 3,400 | 2,900 |
| 1.0 psi | 3,500 | 4,000 | 4,500 | 4,300 | 3,900 |
| 1.5 psi | 3,500 | 4,000 | 4,500 | 4,800 | 4,800 |
| 2.0 psi | 3,500 | 4,000 | 4,500 | 4,800 | 4,800 |
| 3.0 psi | 3,500 | 4,000 | 4,500 | 4,800 | 4,800 |
| 5.0 psi | 3,500 | 4,000 | 4,500 | 4,800 | 4,800 |

TABLE 2 - Maxitrol Model 210DZ - 1-1/4" Pipe

| Inlet Pressure | Outlet Pressure ("w.c.) | | | | |
|----------------|-------------------------|-------|-------|-------|-------|
| | 2 | 4 | 6 | 9 | 12 |
| 8.0" w.c. | 3,000 | 2,400 | 1,700 | --- | --- |
| 0.5 psi | 4,000 | 3,900 | 3,400 | 2,700 | --- |
| 0.75 psi | 4,000 | 5,000 | 4,700 | 4,200 | 3,700 |
| 1.0 psi | 4,000 | 5,000 | 5,000 | 5,300 | 4,900 |
| 1.5 psi | 4,000 | 5,000 | 5,000 | 6,000 | 6,000 |
| 2.0 psi | 4,000 | 5,000 | 5,000 | 6,000 | 6,000 |
| 3.0 psi | 4,000 | 5,000 | 5,000 | 6,000 | 6,000 |
| 5.0 psi | 4,000 | 5,000 | 5,000 | 6,000 | 6,000 |

TABLE 3 - Maxitrol Model 210EZ - 1-1/2" Pipe

| Inlet Pressure | Outlet Pressure ("w.c.) | | | | |
|----------------|-------------------------|-------|-------|--------|--------|
| | 2 | 4 | 6 | 9 | 12 |
| 8.0" w.c. | 4,450 | 3,650 | 2,550 | --- | --- |
| 0.5 psi | 6,300 | 5,750 | 5,150 | 4,050 | --- |
| 0.75 psi | 7,000 | 7,500 | 7,050 | 6,300 | 5,450 |
| 1.0 psi | 7,000 | 8,800 | 8,500 | 7,950 | 7,250 |
| 1.5 psi | 7,000 | 8,800 | 8,800 | 10,450 | 9,950 |
| 2.0 psi | 7,000 | 8,800 | 8,800 | 10,500 | 10,500 |
| 3.0 psi | 7,000 | 8,800 | 8,800 | 10,500 | 10,500 |
| 5.0 psi | 7,000 | 8,800 | 8,800 | 10,500 | 10,500 |

TABLE 4 - Maxitrol Model 210EZ - 2" Pipe

| Inlet Pressure | Outlet Pressure ("w.c.) | | | | |
|----------------|-------------------------|--------|--------|--------|--------|
| | 2 | 4 | 6 | 9 | 12 |
| 8.0" w.c. | 5,150 | 4,200 | 2,950 | --- | --- |
| 0.5 psi | 7,250 | 6,650 | 5,950 | 4,700 | --- |
| 0.75 psi | 8,000 | 8,650 | 8,150 | 7,250 | 6,300 |
| 1.0 psi | 8,000 | 10,000 | 9,850 | 9,150 | 8,400 |
| 1.5 psi | 8,000 | 10,000 | 10,000 | 12,000 | 11,500 |
| 2.0 psi | 8,000 | 10,000 | 10,000 | 12,000 | 12,000 |
| 3.0 psi | 8,000 | 10,000 | 10,000 | 12,000 | 12,000 |
| 5.0 psi | 8,000 | 10,000 | 10,000 | 12,000 | 12,000 |

Specifications & illustrations subject to change without notice and without incurring obligations.

© Nortek Global HVAC, LLC 2015. All rights reserved.

All marks are the property of their respective organizations.

O'Fallon, MO | Printed in U.S.A. (7-16)

Form 400-GR (7-16), PN 124760