



496 Gas Regulator

Installation Guide

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Utility Solutions Group
7525 Pingue Drive
Worthington, OH 43085

www.my-usg.com

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1 496 Gas Regulator Introduction

The Model 496 is a general purpose gas pressure regulator for natural gas, air, CO₂, propane, butane, nitrogen, and other gases. It can be used for gas service to homes, commercial establishments and small industries as well as burners, unit heaters, boilers, and other equipment. All regulators include an internal relief valve.

496 Installation & Start-Up

1. Remove the shipping plugs from both the regulator inlet and outlet connections.
2. Make certain that the inside of the piping and the regulator inlet and outlet connections are clean. The connections must be free of dirt, pipe dope and other debris.
3. Use pipe joint material only on the male threads of the pipe being connected to the regulator. Do not use pipe joint material on the female threads of the regulator.
4. Install the regulator in the piping. Make certain that the gas flow through the regulator is in the direction as indicated by the arrow on the regulator body. The regulator may be installed in any position: right side up, upside down, vertical piping, diagonal piping, etc., If required the diaphragm case may be rotated 360° in 90° increments. To rotate the 496 diaphragm case, detach the diaphragm case from the body by removing the two body-to-diaphragm case screws. After repositioning the diaphragm case to the desired position, reinstall the body-to-diaphragm case screws. Ensure that the body-to-diaphragm screws are sufficiently tightened to reseal the regulator. 35-50 ft-lbs. of torque is recommended. The diaphragm case vent (11) should be positioned to minimize the chances of moisture collecting on the vent side of the diaphragm. The upper diaphragm case (4) may be rotated to a downward position by removing the flange screws (10). If required, the upper diaphragm case may be rotated by removing the upper-to-lower case flange screws and rotating the upper diaphragm case to the desired position. Reinstall the diaphragm flange screws and tighten to hold the diaphragm case in position and reseal, ensuring proper seal and verifying no leaks by using a soap and water solution or other utility-approved method.



Note: The diaphragm case vent must be positioned to protect against flooding, rain, ice formation, traffic, tampering, etc. The vent must be protected against nest building animals, bees, insects, etc. to prevent vent blockage and minimize the chances for foreign material from collecting in the vent side of the regulator diaphragm.

5. Turn the gas on very slowly. Do not overload the diaphragm with a sudden surge of inlet pressure. If an outlet stop is used, open it first. Monitor the outlet pressure during start-up to prevent an outlet pressure overload.
6. Make certain that all connections are tight, ensure proper seal and verify no leaks by using a soap and water solution or other utility-approved method.
7. If necessary, adjust outlet pressure (set point) by removing cap (1) and turning adjustment spring button (2). Turn clockwise to increase and counter-clockwise to decrease outlet pressure. Only adjust when gas is flowing through regulator. Be sure to reinstall the cap.



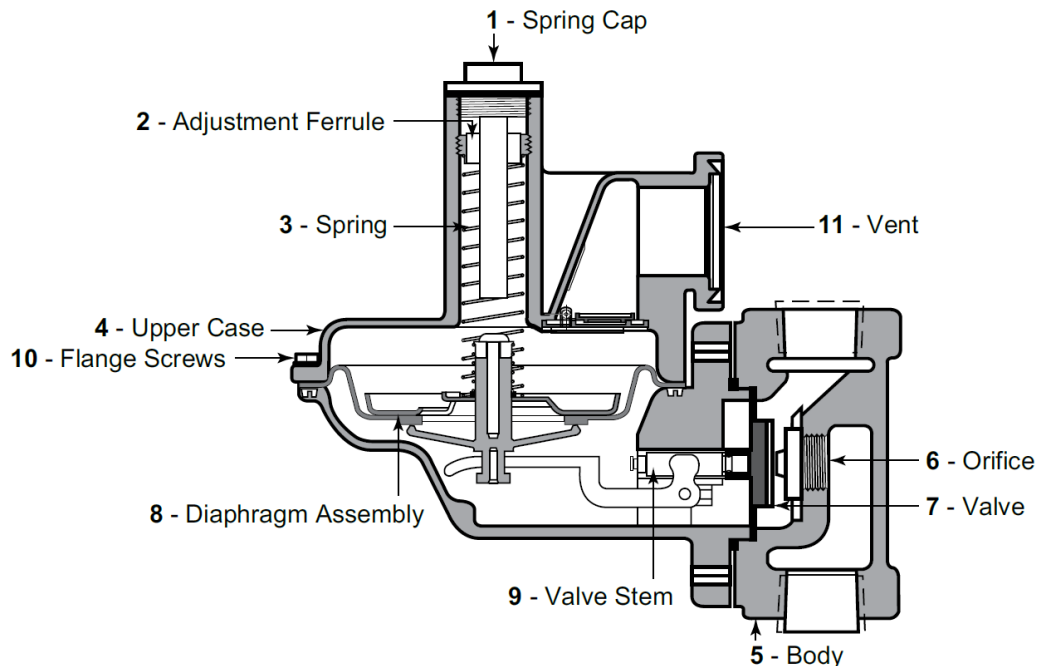
CAUTION: The vent connection is an escape path for the regulated gas. Depending upon the type of gas, it could be flammable as with natural gas and propane. It is the user's responsibility to assure that all regulator vents and/or vent lines exhaust individually to a non-hazardous location away from any potential sources of ignition. Where vent lines are used, it is the user's responsibility to assure that each regulator is individually vented and that common vent lines are not used. Therefore, the vent connection needs to be located or piped so that potential discharge occurs in a safe area away and must be protected against the potentials listed in instructions #4, #8 and #9.

8. For outdoor installations, it is recommended that the regulator be installed so that the regulator vent faces downward to avoid the potential for water and other foreign matter entering the regulator and interfering with the proper operation of the regulator.



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

496 Regulator Service



1. To access valve (7), orifice (6), or diaphragm assembly (8), first remove spring compression by unscrewing the spring cap (1) and spring adjustment ferrule (2).
2. Remove spring (3) from regulator.
3. For access to the valve (7) and orifice (6), remove body-to-diaphragm case screws from body (5) with a 1/2" standard socket (or standard screwdriver) and remove diaphragm case assembly from body (5).
4. To replace valve pad (7), simply pull off of valve stem (9) and replace with new pad.
5. To replace orifice (6), unscrew from body using a 7/8" hex socket wrench. Apply sealant on threads of orifice when installing replacement orifice. The replacement orifice must be installed at 50-60 ft-lbs. of torque.
6. To replace diaphragm assembly, remove flange screws (10) and disassemble diaphragm assembly. Make certain all parts are reassembled in their correct order and all threads and joints are tightened evenly and firmly.
7. Before reassembling body to diaphragm case, make certain that the o-ring is in position. Ensure proper seal and verify no leaks by using a soap and water solution or other utility-approved method.

Over-Pressurization Protection

Protect the downstream piping system and the regulator's low pressure chambers against over-pressurization due to possible regulator malfunction or failure to achieve complete lockup. The allowable outlet pressure is the lowest of the maximum pressures permitted by federal codes, state codes, or other applicable standards. The method of protection can be a relief valve, monitor regulator, shutoff device, or similar mechanism.

Maximum Emergency Pressures

“Safely contained” means no leakage as well as no bursting. Before using any of the above data, make sure this entire section is clearly understood.

The maximum pressure to which the regulator inlet may be subjected under abnormal conditions, without causing damage to the regulator, is the stated Maximum Inlet Pressure + 50 psi.

The maximum pressure to which the regulators case may be subjected under abnormal conditions without causing damage to the internal parts is: Set point plus 3 psi. If the outlet pressure exceeds this pressure, the regulator must be removed from service and carefully inspected. Damaged or otherwise unsatisfactory parts must be replaced before returning the regulator to service.

The maximum outlet pressure that can be safely contained in the diaphragm case is 10 psi (safely contained means no leakage as well as no bursting.)

If any of the pressure limits are exceeded, the regulator must be taken out of service and inspected. All damaged or otherwise unsatisfactory parts must be repaired or replaced.