CONCOA®
PRECISION GAS CONTROLS
Certified ISO 9001

830-9412
830-9413
830-9414
Relief Valves

INSTALLATION AND OPERATION INSTRUCTIONS

Before Installing or Operating, Read and Comply with These Instructions

Controls Corporation of America
1501 Harpers Road • Virginia Beach, VA 23454
To Order Call 1-800-225-0473 or 757-422-8330 • Fax 757-422-3125
www.concoa.com

December 2009
Supercedes Septemeber 2004

USER RESPONSIBILITY

This equipment will perform in conformity with the description contained in this manual and accompanying labels and/or inserts when installed, operated, maintained, and repaired in accordance with the instructions provided. This equipment must be checked periodically. Improperly working equipment should not be used. Parts that are broken, missing, worn, distorted or contaminated, should be replaced immediately. CONCOA recommends that a telephone or written request for service advice be made to CONCOA Customer Service in Virginia Beach, Virginia, PHONE: 1-800-225-0473, FAX: 1-757-422-3125, or E-MAIL: e-mail@concoa.com.

This equipment or any of its parts should not be altered without prior written approval by CONCOA. The user of this equipment shall have the sole responsibility for any malfunction that results from improper use, faulty maintenance, damage, improper repair, or alteration by anyone other than CONCOA or a service facility designated by CONCOA.

CUSTOMER SERVICE

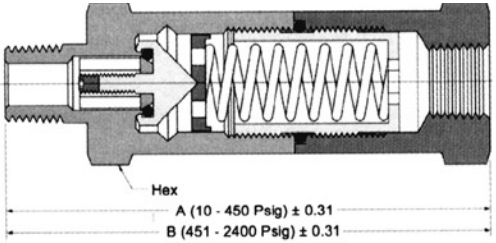
In the event of equipment failure, call CONCOA Customer Service. Please be prepared to provide the model number and serial number of the equipment involved, in addition to some details regarding its application.

CAUTION

1. Shut down gas supply, drain gas from relief valve and system before any maintenance is performed.
2. When using a vise or wrench on the valve, use only enough torque to hold or move the part. Be careful not to score or distort the body, threads, or other parts.
3. For replacement parts, use only those CONCOA parts designed for this relief valve.

INTRODUCTION

The CONCOA 9400 series brass high-flow relief valves in Figure 1 are designed to be field adjustable and offer zero leakage up to 98% of the nominal set pressure. The O-ring seal is encapsulated to prevent seat extrusion due to cold flow characteristics. The in-line design offers ½" male NPT inlet and ½" female NPT outlet for both the 9412 and 9413. The 9414 offers ¼" male NPT inlet and ½" female NPT outlet. Please refer to Table 1, for material, pressure range and flow data.



HPRV
Inline

Figure 1

Table 1

Part Number	Material	Seat	Pressure Range	Flow at 10% Pressure Differential
830-9414	Brass	Neoprene	80-120 PSIG	1,263 SCFH (N2 100 PSIG)
830-9413	Brass	Viton	270-600 PSIG	12,864 SCFH (N2 420 PSIG)
830-9412	Brass	Viton	130-310 PSIG	6,960 SCFH (N2 220 PSIG)

FIELD ADJUSTMENT

Note: The safety relief device should not be used as a control valve to regulate the system operating pressure. Frequent activation will cause seat leak and require excessive maintenance.

DO NOT ADJUST WHILE UNDER PRESSURE.

1. Maintain system-operating pressure at least 5-10% below the set pressure of the relief valve. Operating too close to the valve set pressure will cause seat leak and will shorten the time between valve maintenance.
2. To adjust the cracking pressure, a field test bench maybe constructed using the following parts as shown in Figure 2 below:
   a. 492-1312-01-580 0-750 PSIG regulator
      601-3312-01-580 0-150 PSIG regulator
   b. 529-0022-01-001 Reducing adapter
   c. 533-9002 Needle valve
   d. 830-5385 Brass ¼" tee

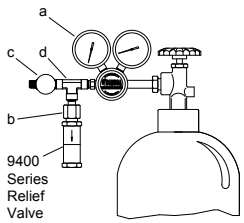


Figure 2

3. Attach the relief valve to the outlet adapter on the tee-block. Remove the adapter if the ¼" female NPT thread port is required.
4. Loosen the case of the relief valve approximately an 1/8 of a turn counter-clockwise by applying torque at the hex flats located at both ends of the valve.
5. Insert the appropriate Allen wrench into the female NPT outlet port of the relief valve.
6. Turn the Allen wrench clockwise to increase cracking pressure and counter clockwise to reduce.
7. Tighten the case by reversing step four (4).
8. Adjust the pressure of the 492-1312-01-580 to the desired relief point. Observe the point at which the relief exhausts.
9. Open the needle valve a ¼ turn and back out the regulator-adjusting knob until the outlet gauge pressure reads zero. If the relief valve exhausts at the desired pressure go to step eleven (11). If further adjustment is required, proceed to step ten (10).
10. Repeat steps four (4) through nine (9) until the desired cracking pressure is obtained.
11. Valve is ready for installation.

INSTALLATION

Note: It is the end user's responsibility to ensure that the relief system is properly designed by a professional engineer to meet the intended requirements.

1. Be sure that all connections are secure and leak tight. Teflon tape should be used on pipe fittings, but avoid impinging on the gas stream. Before applying tape, inspect the NPT threads and if necessary, clean the fitting to remove any dirt or thread sealant that remains. Start the Teflon tape on the second thread as shown in Figure 3; make sure the tape does not overlap the end of the thread. As the tape is wrapped in the direction of the thread spiral (clockwise), pull tightly on the end of tape so that it conforms to the thread. Apply two overlapping layers and cut off excess tape.

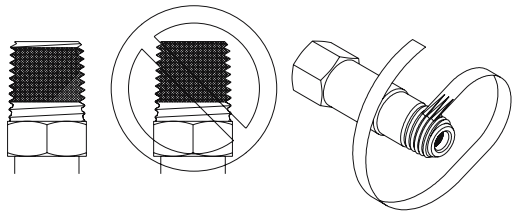


Figure 3

2. Install the 9400 series in a vertical position so the valve body is self-draining. The inlet piping should be short as possible, with no elbows, and equal to or greater than the size of the pressure relief valve inlet connection.
3. The discharge piping should be equal to or greater than the size of the pressure relief valve outlet connection so as to prevent backpressure when relieving. The piping termination point must be in a safe location and away from ignition sources. The termination point must be positioned to prevent the accumulation of moisture. An appropriate load-bearing device should support discharge piping, other than a short tailpipe.

MAINTENANCE

The relief valve should be inspected every 12-18 months to ensure proper working order. Depending on the service and the condition of the valve, the inspection interval may be adjusted.

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Warranty Information

This equipment is sold by CONTROLS CORPORATION OF AMERICA under the warranties set forth in the following paragraphs. Such warranties are extended only with respect to the purchase of this equipment directly from CONTROLS CORPORATION OF AMERICA or its Authorized Distributors as new merchandise and are extended to the first Buyer thereof other than for the purpose of resale.

For a period of one (1) year from the date of original delivery (90 days in corrosive service) to Buyer or to Buyer's order, this equipment is warrantied to be free from functional defects in materials and workmanship and to conform to the description of this equipment contained in this manual and any accompanying labels and/or inserts, provided that the same is properly operated under conditions of normal use and that regular periodic maintenance and service is performed or replacements made in accordance with the instructions provided. The foregoing warranties shall not apply if the equipment has been repaired: other than by CONTROLS CORPORATION OF AMERICA or a designated service facility or in accordance with written instructions provided by CONTROLS CORPORATION OF AMERICA, or altered by anyone other than CONTROLS CORPORATION OF AMERICA, or if the equipment has been subject to abuse, misuse, negligence or accident.

CONTROLS CORPORATION OF AMERICA's sole and exclusive obligation and Buyer's sole and exclusive remedy under the above warranties is limited to repairing or replacing, free of charge, at CONTROLS CORPORATION OF AMERICA's option, the equipment or part, which is reported to its Authorized Distributor from whom purchased, and which if so advised, is returned with a statement of the observed deficiency, and proof of purchase of equipment or part not later than seven (7) days after the expiration date of the applicable warranty, to the nearest designated service facility during normal business hours, transportation charges prepaid, and which upon examination, is found not to comply with the above warranties. Return trip transportation charges for the equipment or part shall be paid by Buyer.

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