

## REGO Cryo-Flow Products

### Operating Instructions For BK9410S, BK9412S, and BK9416S

### Extended Bonnet Cryogenic Globe and Angle Valves for Bulk Storage Containers, Transports, and Pipelines

Suitable for use on Oxygen, Argon, Nitrogen, Nitrous Oxide and Carbon Dioxide

Maximum Allowable Pressure 42 bar

**Warning:** Installation, usage and maintenance of this product must be in compliance with all Engineered Controls International Inc. instructions as well all requirements and provisions of national, and local standards, codes, regulations, and laws.

Inspection and maintenance on a periodic basis is essential. Only qualified personnel should perform installation and maintenance.

Be sure all instructions are read and understood before installation, operation and maintenance. These instructions must be passed on to the end user of the valve.

**Caution:** Contact of cryogenic liquids or inhalation of their vapors can cause serious injury and death! O<sub>2</sub>, Ar, N<sub>2</sub>, N<sub>2</sub>O and CO<sub>2</sub> must be released outdoors in air currents that will ensure dispersion to prevent exposure to people and livestock. These gases must be kept far enough from open flame or other source if ignition to prevent fire or explosion!

### **Installation:**

1. Using an appropriate wrench and firmly securing the body, remove the screws securing the bonnet to the body. Remove the bonnet, upper assembly, seat assembly, and body gasket from the body. Set aside in a CLEAN area for reassembly.
2. Ensure all connections are clean and free of any debris.
3. Braze the connections to the body. Follow all national, regional, and/or local code, standard or specification for the proper brazing procedures.
4. Position the valve such that the flow arrow is in the proper direction for the intended application.
5. Place a new body gasket onto the valve body. Restrain the body in a vise or with a suitable wrench. Place the seat assembly, upper assembly, and bonnet onto the body and thread the screws finger tight into the body. Using an appropriate wrench for the screws, tighten the screws in a cross pattern into the body with 45 to 57 N·m torque.
6. Follow all local or national codes and standards for pressure testing and leak checking the installation before start up of the system.

**Operation:** REGO Cryo-Flow Products Globe Valves are designed to provide positive shut-off and offer a long, low maintenance service life for liquid or vapor service: they are designed to stop flow in either direction. They are ideally suited for use on bulk storage containers, transports, cylinder filling plants, and plant piping.

1. Follow your company's established operating procedures.
2. Wear eye protection.

3. Wear suitable gloves to prevent freeze burns.
4. Ensure all threads engage smoothly and easily. Do not hammer or force the valve in any manner.
5. When opening the valve, turn the hand-wheel counterclockwise, and ensure that it is opened fully (back-seated). Do not partially open the valve. With the valve pressurized, inspect the connections for signs of leakage – no leakage permissible.
6. To close the valve, turn the hand-wheel clockwise until it stops. This indicates that the seat disc has contacted the seat. Do not over torque the hand-wheel after the seat disc has engaged the seat.
7. If the valve must be removed from the system, evacuate internal pressure before uncoupling valve connections.
8. Valves installed in piping systems such that cryogenic liquid could be isolated from a pressure relief device require installation of a suitable pressure relief device.

## **Maintenance and Inspection:**

Periodically check for:

1. Any signs of corrosion due to water, salt, industrial pollutants, chemicals, and roadway contaminants;
2. Any physical damage that would prevent proper sealing and usage or that may cause product failure under pressure;
3. Leaks in the valve bonnet area, body, and end connections of the valve.

**Keep all equipment clean, and replace damaged equipment immediately.**

## **Hazards:**

- These valves are designed to stop flow in either direction; however, the flow arrow on the valve indicates inlet to outlet orientation. The inlet should be positioned towards the side typically under higher pressure than the outlet.

## **General Warning:**

All REGO Cryo-Flow products are mechanical devices that will eventually become inoperative due to wear, contaminants, corrosion, and aging components. Periodic inspection and maintenance is essential. The safe useful life of this product can vary greatly depending on the environment it is exposed to, and the inspection/maintenance program that is used.

For more information, refer to REGO Cryo-Flow Products catalog or [www.regoproducts.com/cryoflow](http://www.regoproducts.com/cryoflow).

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