# ONYX VALVE CO MODEL GSS

## Installation & Maintenance

**Operation**: **(03-2005)**

The Onyx Series GSS valves operate very simply. Injecting compressed air into the aluminum housing collapses the rubber sleeve, stopping flow in the process pipe. Relieving air from the housing allows the rubber sleeve to open.

Although usually used for on/off service, the GSS can be used for throttling when combined with a transducer and booster relay. In process lines with vacuum conditions, we recommend a venturri pump to generate a counter-vacuum to pull the rubber sleeve open.

**Storage**:

Correct storage yields improved sleeve life. Rubber sleeves are perishable. Ideal storage temperature is 50° F. We recommend the following storage procedures:

1. Store valves and sleeves in the coolest location possible. They can be stored in unheated locations, but allow maximum ventilation in areas subject to high summer temperatures. Do **NOT** store valves or sleeves in trailers, sheds or other poorly ventilated areas.

2. Avoid sunlight. Ultra-violet destroys rubber. Leave valves and sleeves in their box, or cover with black plastic.

3. Avoid ozone. Do not store near active electrical equipment.

4. For long term storage, coat exposed rubber parts every 6 months with silicone spray or liquid.

**Installation:**

1. **Safety:**

   a) Leakage: Consider the possibility of leakage due to improperly tightened bonnet bolts. Take precautions where liquids may drip onto electrical equipment or plant personnel, or combustible fluid may drain into a dangerous area.

   b) Pinch valve sleeves eventually wear out. When the sleeve fails, compressed air gets in the process pipe. Make sure that tanks, pumps, and other process equipment can safely withstand this additional pressure.

   c) Check the catalogue for max pressure rating for the valve. Do not exceed maximum recommended pressure for this valve.

   d) **Inlet and outlet pipe must be rigidly anchored!** Don't depend on friction between the rubber sleeve and the pipe to hold the pipes in place. If one of the pipes slip out of the socket, it probably won't kill you, but it'll give you a serious whack, and then, of course, your pumped fluid will blow all over the place, which is a major mess.

2. **Connections**

   a) The GSS is available with sockets to mate with schedule-40 or schedule-80 pipe (iron, steel or PVC), OD tubing, or EMT. Make sure that the piping or tubing you ordered and the valve you ordered match up.

   b) The pipe should be cut square. You don't need any grooves, serrations, or threads. Make sure that the pipe end is de-burred! A sharp pipe end will cut the rubber sleeve, damaging it. Make sure that the pipe is clean and free from grease, oil, or other residue.

   c) To assemble the valve to the piping,, start by loosening the housing bolts.

   d) The next step is to shove the pipe into each end of the valve until it hits the rubber stop.

   c) Make sure that the rubber housing gasket in in place, then tighten the housing bolts to clamp down on the pipe. Turn the bolts down hard, at least 60 ft-lb. An impact wrench helps.

   d) Design the installation so that the valve can be removed for service and reinstalled. Remember that pinch valve sleeves wear out and have to be replaced. If the mating pipes are rigidly anchored in concrete or permanently welded into a steel structure, you might be able to remove the valve from the line, but there will be hell to pay when you attempt to reinstall the valve. Connecting the pipe stubs to your process with a Victaulic or Dresser type coupling will facilitate removal and replacement of the valve.

3. Inspect the valve before installation. **Do not install a damaged valve.** Check inside valve to be sure no foreign objects are present.

4. Do not install valve near a source of extreme heat.

5. Locate the valve where it can be reached for service. Allow room to service auxiliary instrumentation. Orient the valve so operators can see gauges.

6. Be sure pipe line is clean. Foreign material left in the pipe can damage valve. Remove any residual gasket material from mating flanges.

7. Valve can be installed in any attitude with flow in either direction. Install valve with drain port facing down.

8. Bolt the valve into the pipe line. Snug the bolts gently in a criss cross pattern. Do not use excessive torque on flange bolts. Max torque required is 40 ft lb.

9. Attach air supply to the connection in valve housing.

**NO OIL OR GREASE**

**Important:** No Oil or Grease
Do not use lubricated air

Oil in the system will attack the rubber sleeve, causing damage and reducing sleeve life.
Do not allow any petroleum based oil or grease to contact the rubber sleeve.

10. **Important:**

    Use a pressure regulator on the supply air to this valve. Correct air pressure increases sleeve life.

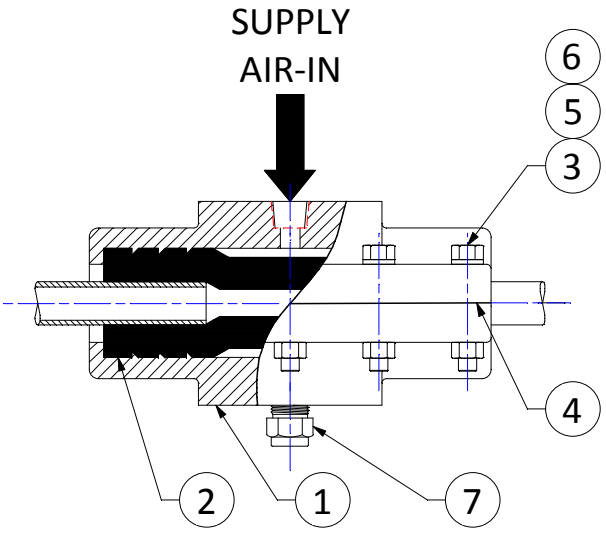
    **Set air pressure regulator 40 to 50 psi over maximum process pressure that the valve has to close against.**

    Too low pressure allows the valve to leak, causing erosion failure of the sleeve.

    Too high pressure stresses reinforcing fabric, leading to premature collapse.

**Sleeve Replacement:**

1. Relieve pressure and drain process pipe.
2. Turn off supply air.
3. Disconnect air and electric lines from valve.
4. Remove the valve from the pipe.
5. Remove the bonnet bolts (#3, 5, 6) and separate the bonnet sections (#1).
6. Remove the old rubber sleeve (#2).
7. Insert the new sleeve into the housing.
8. Replace housing gaskets (#4).
9. Reassemble the housing assembly. Replace the housing bolts, washers, and nuts.




| NO | DESCRIPTION |
|---|---|
| 1 | BONNET ASSY |
| 2 | SLEEVE |
| 3 | BOLT |
| 4 | GASKET |
| 5 | LOCK WASHER |
| 6 | NUT |
| 7 | DRAIN PLUG |

**Questions ?**

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