

# Conoflow's Reversing Relay GH232T

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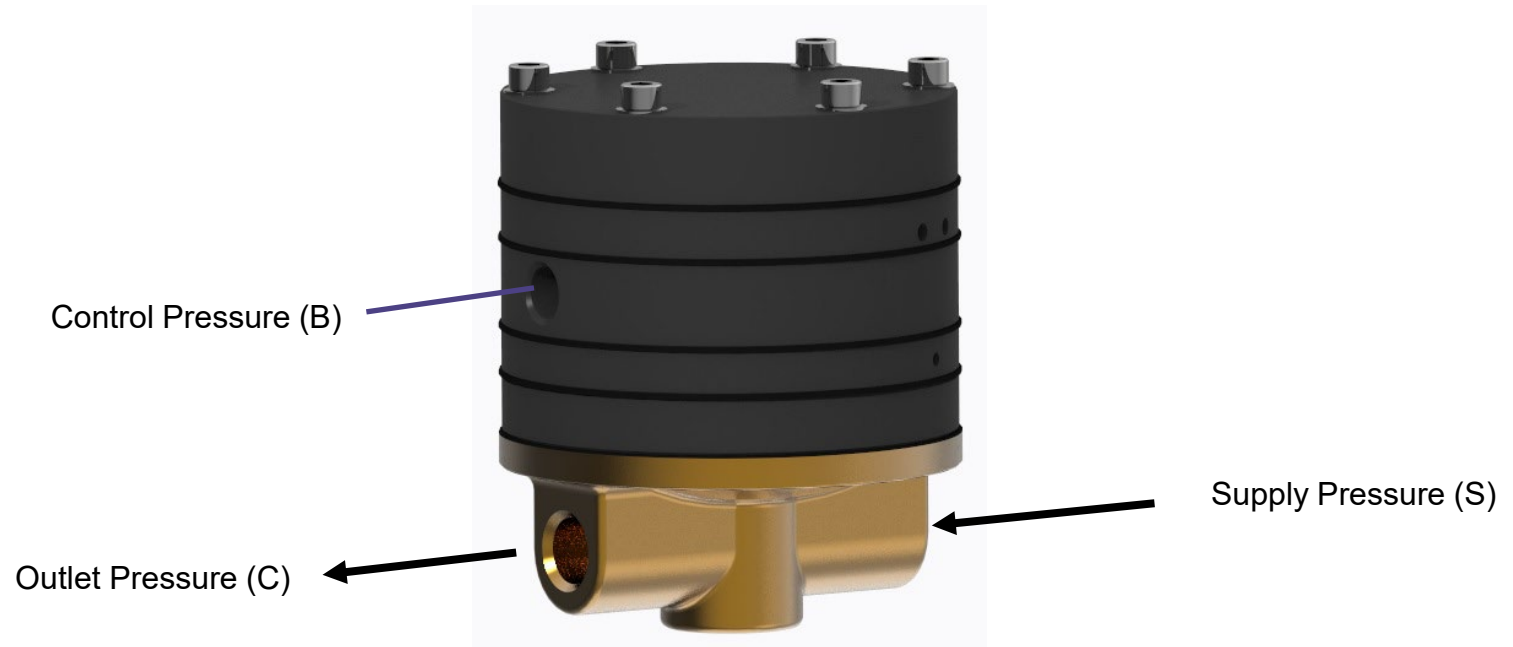


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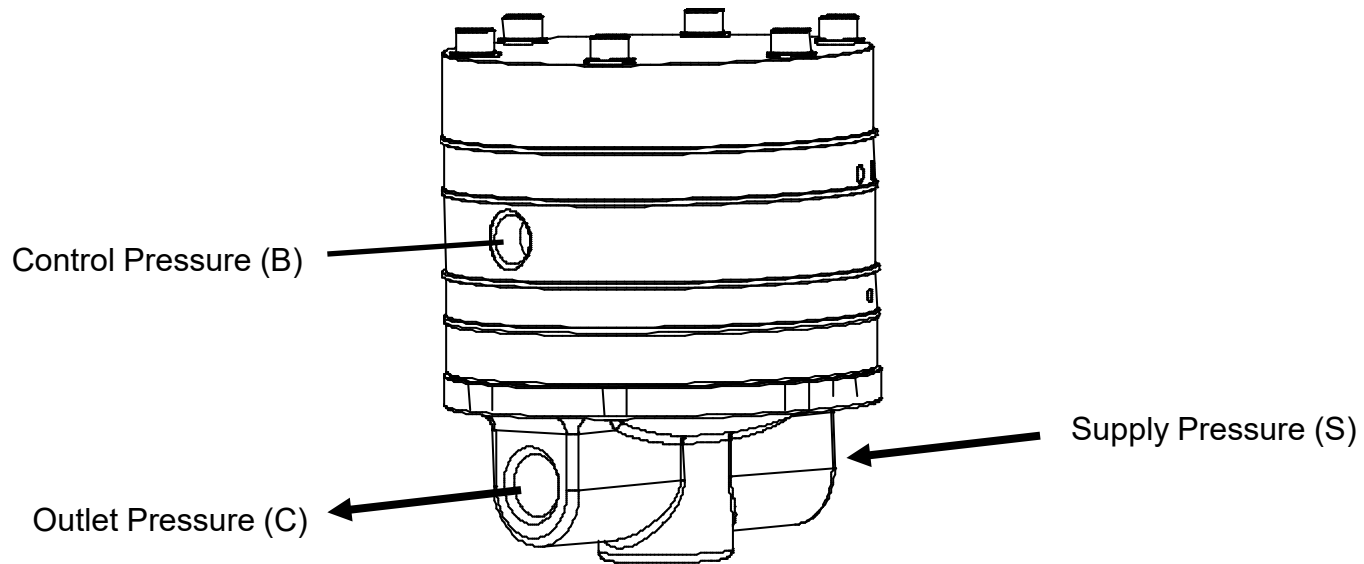
# GH232T Reversing Relay Description

- The Conoflow GH232T Reversing Relay is an air operated pressure regulator, with a twist.
- There is an inlet port (S) for supply air.
- There is an outlet port (C) for regulated outlet pressure.
- There is a control (or signal) port (B) to monitor the control signal.
- The regulator is self relieving to vent regulated outlet pressure when it is reduced.
- The difference between the GH232T and a self relieving volume booster is the reversing logic in the diaphragm stack.
  - The outlet pressure of a reversing relay is the **difference** between the supply (S) pressure and the control (B) pressure.
  - A volume booster (e.g. GH22 / GH42) output is the same or a proportion of the signal pressure.

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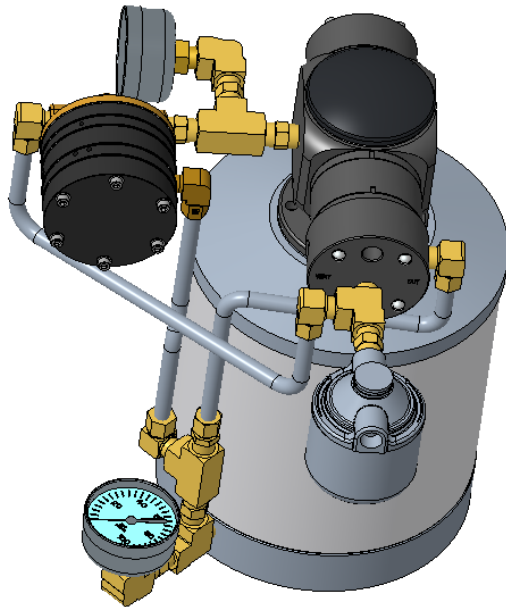
The control pressure port and outlet pressure port are on the same side.

# GH232T Reversing Relay Output Pressure

- Mathematically, the output pressure (C) is the Supply (S) minus the Control (B) pressure. In other words, if you subtract the control pressure from the inlet pressure, you get the output pressure.
- Outlet (C) = Supply (S) - Control (B)
- $C=S-B$
  
- Examples: Supply (S) is 100 psi
  - When the Control (B) is 0 psi, the Output (C) is 100 psi
  - When the Control pressure is 25 psi, the Output is 75 psi
  - When the Control pressure is 75 psi, the Output is 25 psi.
  - When the Control pressure is 100 psi, the Output is 0 psi.

# GH232T Reversing Relay Applications

- The primary application for the GH232T is to replace the cushion load regulator on double acting actuators.
- The GH232T allows single acting positioners to drive piston actuators without a fixed pressure cushion from a cushion load regulator.
  - The reversing relay permits full actuator thrust in both directions, as there is no fixed cushion load to offset positioner drive pressure.



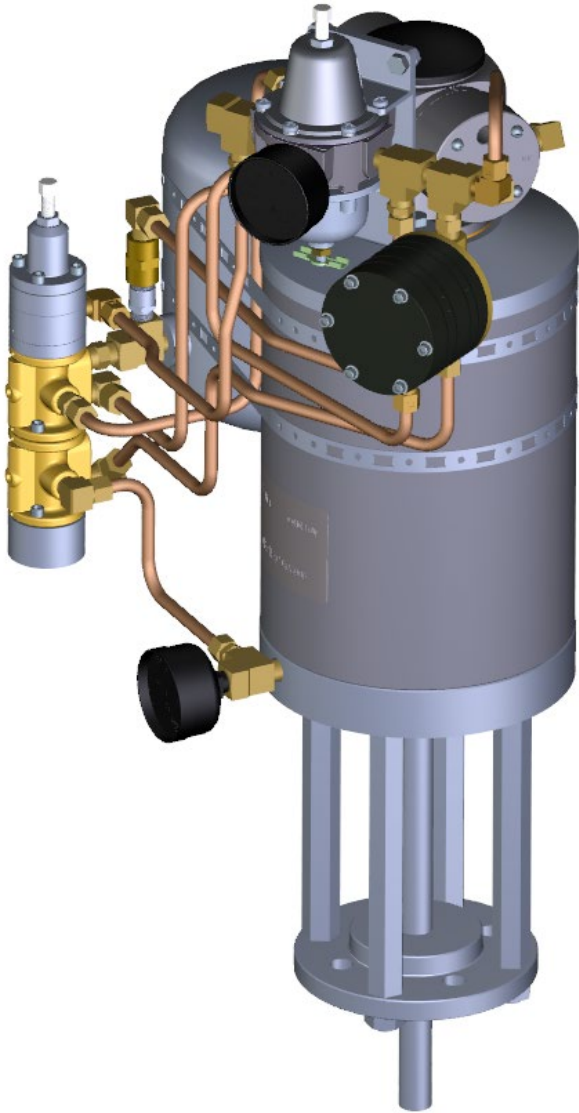
Example: GH232T used with GB52 piston actuator and GC33 positioner.

In this common piping arrangement, the GH232T reversing relay and the GC33 positioner share the same filtered supply air.

The output of the GC33 positioner feeds the bottom of the GB52 actuator, and the control port of the GH232T reversing relay.

The output from the GH232T reversing relay feeds the top of the GB52 actuator through the housing of the GC33 positioner.

# GH232T Reversing Relay Applications



Example: A GH232T is used with GB52 piston actuator, a GC31 positioner. The assembly also includes a retract upon air failure system using a GVB12 and a capacity tank.

In this more elaborate piping arrangement, the GH232T reversing relay, the GC31 positioner and the capacity tank fill line share the same regulated, filtered supply air from an FR95.

The output of the GC31 positioner feeds the top of the GB52 actuator, and the control port of the GH232T reversing relay.

The output from the GH232T reversing relay feeds the bottom of the GB52 actuator through the B1 port of the GVB12 snap acting relay.

In this manner, the actuator can generate full thrust in both the extend and retract modes, while having a retract upon air failure system.

# GH232T Reversing Relay Applications

- Applications are limited only by imagination.
  - Suppose you wanted two (2) flow control valves to work together to mix different materials. This could be for material blending, or temperature modulation with hot and cold fluids.
  - Using actuators (spring return or cushion loaded double acting) and a reversing relay, the control valves could be linked so as one opens, the other closes.

