

Is the PRB* Being Misunderstood?

We Test the PRB for its Performance on a Gas Sales Line

THE COMMON SCENARIO - A MISUNDERSTANDING

We have had a number of conversations with customers regarding the PRB when used on a gas sales line. The scenario has always gone something like this:

"The regulator is set at 50 psi (for example). When the gas company tests the regulator for shut off, the set point climbs several pounds before the regulator is closed. Then when they re-open the downstream, the set point drops several pounds below 50 before the regulator opens and regains control."

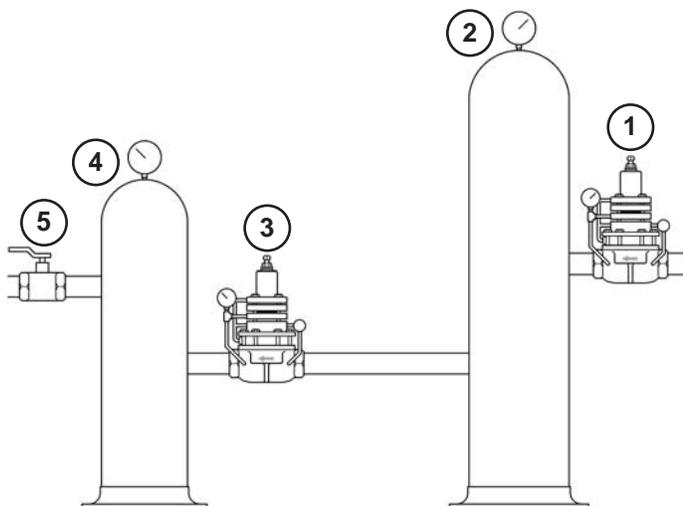
We tested a 2" PRB with a range in upstream pressure of from 20 to 90 psi, set points ranging from 5 to 70, and a differential ranging from 5 to 80 psi. We had the regulator flowing into a small vessel and tested the shut in pressure and re-open pressure by closing and opening a valve on the outlet of the downstream vessel. When we blocked flow downstream the set point never climbed more than 1 psi, and when we opened the downstream valve the set point only dropped more than 1 psi on 3 of 27 tests when it dropped by 1.5 psi.

OUR CONCLUSION

Our conclusion is that the gas company is testing the regulator in a way which does not really demonstrate the true shut-off point, or re-opening point. Though it is not a good idea for us to tell the representatives from the gas companies how they should test the PRB, but we do want to explain how we performed the tests.

If the regulator is tested by closing a block valve located close to the outlet of the PRB, the results will more closely match those of the scenario above than the results we witnessed in our testing.

OUR TEST PROCEDURE



Upstream pressure is controlled at Regulator (1) and is indicated at Gauge (2). Downstream pressure is controlled by the Test Regulator (3) and is indicated at Gauge (4). Flow is allowed or stopped by Valve (5).

Test Procedure:

- Open (5) to allow flow.
- Set upstream pressure at (1).
- Set downstream pressure at (3).
- Close (5) and note change in pressure at (4).
- Open (5) and note pressure at (4)

*PRB designates the Kimray Pressure Reducing Balanced Regulator which is a gas pilot operated regulator often used for control of gas pressure on a natural gas sales line.