



## *Rate-of-Drop Test Kit*

The Gevalco "Rate-of-Drop Test Kit" is used to calibrate and simulate various pipeline operating scenarios in order to test automation control strategies. Supplied in a portable self-contained enclosure, the R.O.D. test kit is easily connected to the control system in the field. Quick-disconnect ports, and precision gauges are included to measure the pipeline pressure and various pressures within the control module. The R.O.D. test kit is also used to calibrate the trip points for the Gevalco "Line Break", "Station Bypass", and "Emergency



Shutdown" control modules. Various emergency scenarios can be simulated, under live conditions, to test control action without inadvertently causing a shutdown. Utilizing the R.O.D. test kit to calibrate and test control modules ensures the valve activates when, and only when desired.

When calibrating and testing the Gevalco "Line Break" module, the R.O.D. test kit monitors the pressure levels in the pipeline, the pressure level in the reference tank, and the differential pressure across the timing orifice used to determine the rate-of-drop trip point. Utilizing the "Line Break" calibration charts, the setpoint of the differential switching valve can be tested against simulated rates of pressure drop to obtain an exact trip point. As a standard, the "Line Break" control module is provided with test ports and isolation valves for easy connection to the R.O.D. test kit.

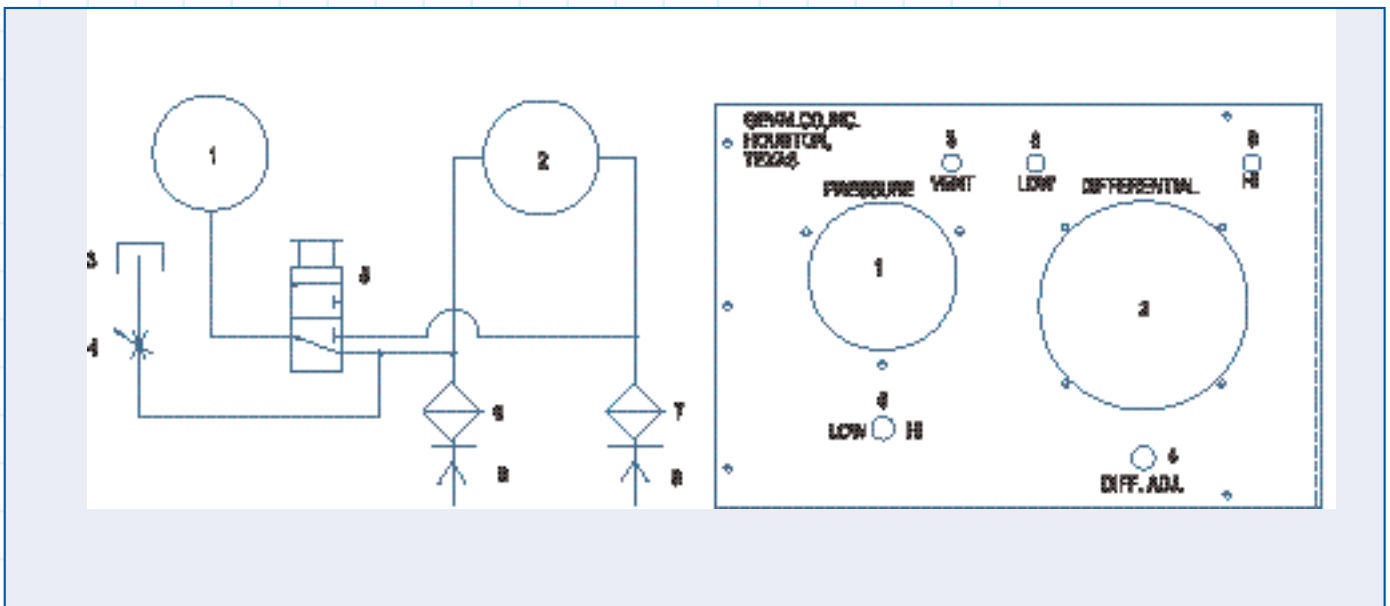
The R.O.D. test kit can also be used to calibrate the "Station Bypass" and "Bi-Directional Station Bypass" control modules. The test ports provided with the "Station Bypass" control module connect the test kit in parallel with the differential pressure sensing lines from the suction and discharge of the compressor station. Utilizing the precision differential gauge, and the digital pressure gauge, a station failure can be simulated and the exact trip point calibrated.

All other Gevalco control modules with pressure shutdown functions, such as, the "Low Pressure Emergency Shutdown" and the "High Pressure Emergency Shutdown" module can also be calibrated and tested with the R.O.D. test kit.



# Sequence of Operation

- 1 The Test Kit is connected to the test ports provided with the Line Break control module thru the quick disconnect ports; port 8 is connected to the direct pipeline port and port 9 is connected to the reference tank port.
- 2 When the Line Break sensing line is opened, the system is pressurized until the differential gauge (2) reads zero, indicating pressure equalization. The digital gauge (1) provides a cross check of the equalized pressure.
- 3 After closing the Line Break isolation valve, the restrictor (4) is slowly opened to create a differential pressure simulating a line break, and the differential trip point is established. By adjusting the setpoint of the differential pilot valve in the Line Break module, and retesting, an exact differential trip point can be established.
- 4 After re-pressurizing the system, the isolation valve is closed. With the low pressure port (8) connected to the digital gauge (1) thru the 3-way valve (5), the restrictor (4) is slowly opened to establish a system pressure slightly below the trip differential set point, as indicated on the differential gauge (2). The beginning pressure (digital gauge 1) is then recorded, as well as, the pressure at the end of each minute over a 3-minute period. This establishes the average rate of drop corresponding to a given differential trip set point.
- 5 For testing the differential setpoint of the Station Bypass Control module, the suction and discharge sensing lines are connected to the quick disconnect ports 8 & 9, respectively. After the system pressure stabilizes, the discharge isolation valve is closed and the restrictor (4) slowly opened. The differential increases until the setpoint is exceeded and the Station Bypass system trips.
- 6 The Test Kit can also be used to calibrate and test low pressure and high pressure Emergency Shutdown Control modules using the digital pressure gauge (1) and the restrictor (4).



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