



Sizing

Model Number	RV-1	RV-2
Port Size, NPT	1/8	1/4
Weight	4.7 oz.	4.6 oz.

Features

- Simple - One moving part
- Corrosion resistant construction
- Black anodized aluminium body
- Light weight
- Compact
- Repairable
- Buna-N seals
- Simple adjustment
- Operating temperature 0° to + 180°F

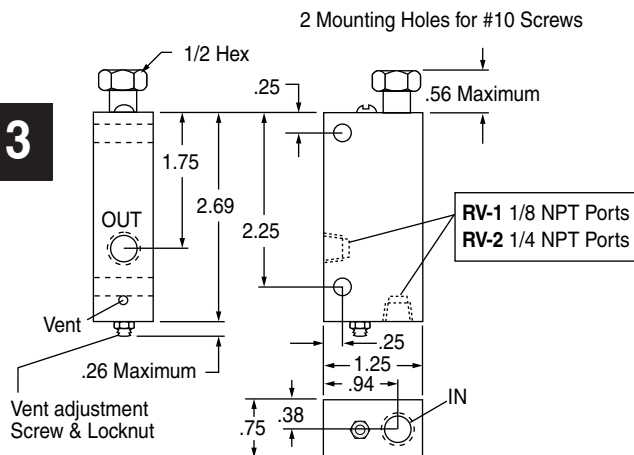
Operating pressure: 20 to 150 psi

Standard Spring: 50 to 150 psi

Light Spring: 20 to 55 psi

Light spring and instructions included with each unit.

Dimensions



“RV” Valve Function

The “RV”, with its unique poppet type seal, senses the pressure being applied and opens at a pre-adjusted point to provide a pilot signal for circuit control. Because the output force of a cylinder is a direct function of pressure times area, the “RV” provides direct and precision adjustable force sensing.

If the application requires that a predetermined force be applied to an object at a point that may vary in physical dimension (such as riveting, crimping, etc.) the "RV" is the control to use. It assures that the predetermined force (pressure) is applied. If the system pressure should drop below the "RV's" set point, the valve cannot open. Therefore the cycle will stop and wait for the required pressure rather than produce an unacceptable rivet or crimp. When the required pressure is restored the cycle will continue.

If the application requires that a particular physical point is reached by the cylinder then a position sensor, such as a limit valve, Hall Effect sensor, Reed Switch, limit switch, or other device should be used.

Pressure Sensing (See circuit on page 13.4) Accurately senses pressure (force) and provides a control signal to retract cylinder.

Applications: Riveting, crimping, marking, staking, molding and more.

Sequencing (See circuit on page 13.4) The pressure rise in a cylinder indicates that it is applying the force intended. When the pressure preset into the “RV” is reached, it produces a signal for the control circuit to initiate the next function, thus the next sequence.

Applications: Step by step extension and retraction of multiple cylinders.

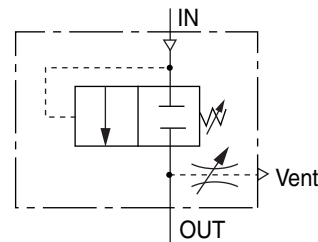
Time delay or Function delay (See circuit on page 13.4) Coupled with a flow control & volume chamber, the “RV” provides time or function delay.

Applications: Heat sealing, gluing, compacting, time between functions, load or unload time, and many others.

Please note the following:

- This valve is intended for control circuit signals only and **CANNOT** operate a cylinder directly.
- For most consistent accuracy, the “RV” set-point should be at 90% to 95% of incoming system pressure.
- For accurate circuit setup, pressure gages should be installed to monitor incoming circuit pressure and indicate “sensed” pressure. See circuits on page 13.4.

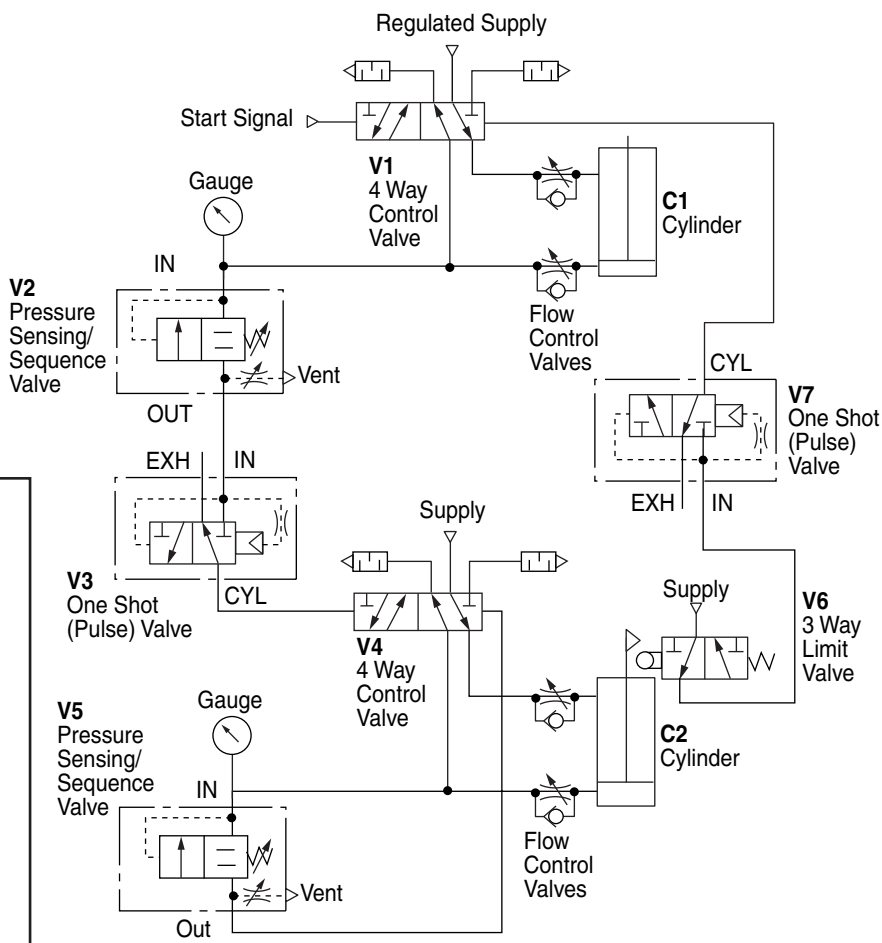
Symbol



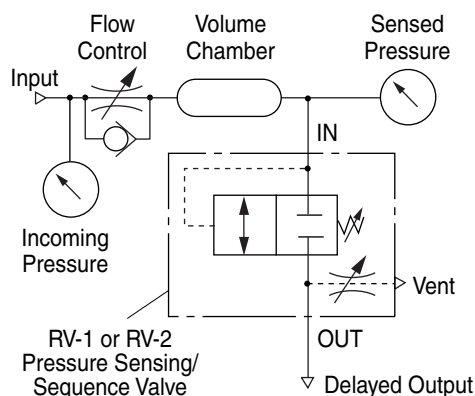
The basic “RV” valve function is two way normally closed. When the input is removed the spring automatically closes the valve, trapping downstream or output pressure. A vent is incorporated in the valve to relieve this trapped signal. The vent is adjustable so that it can be set for various pilot volumes and cycle times. Basic procedure for setting adjustment is to close the vent (turn adjustment screw clockwise), then open 1/4 to 1/2 turn. Fine tuning can then be made from that point.

Sequencing Circuit

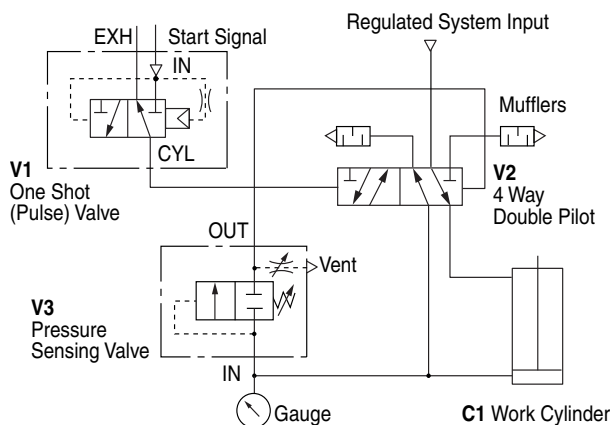
1. Start signal to **V1**
2. **C1** - extends to load
3. Load pressure from **C1** to **V2**
4. Constant signal from **V2** to **V3**
5. Pulse signal from **V3** to **V4**
6. **C2** extends to load
7. Load pressure from **C2** to **V5**
8. Signal from **V5** to **V4**
9. **C2** retracts to **V6**
10. Constant signal from **V6** to **V1**
11. Pulse signal from **V7** to **V1**
12. **C1** retracts



Time Delay Circuit



Pressure Sensing Circuit



1. Start signal can be maintained or momentary
2. Pulse signal from **V1** to **V2**
3. **C1** extends
4. Load pressure from **C1** to **V3**
5. Signal from **V3** to **V2**
6. **C1** retracts

“RV” Valve Function

As the cylinders in any circuit move, there is a natural pressure drop or differential between the incoming system supply and the cylinder where the “RV” is sensing the pressure. When the cylinder meets its load it slows or stops. Air flow then becomes slow or static and the pressure rises to the “RV” setting. An output signal is then produced by the “RV”. This pressure change (differential) between the dynamic or moving pressure and the static or stopped pressure is a natural function of the cycle and is ESSENTIAL for proper “RV” function. If the load is a constant high load throughout the stroke, or speed controls are closed down causing a consistent high load, the “RV” may see “set point” pressure before the cylinder has done its final work. This results in a premature signal. Therefore, it is highly recommended that a gage be mounted in the “RV” line (as indicated in the circuit) so that the differential or lack thereof can be seen as well as the actual “set point” of the “RV” for cylinder force actuation.

The basic “RV” valve function is two way normally closed. When the input is removed the spring automatically closes the valve, trapping downstream or output pressure. A vent is incorporated in the valve to relieve this trapped signal. That vent is adjustable so that it can be set for various pilot volumes and cycle times. Basic procedure for setting the adjustment is to close the vent (turn adjustment screw clockwise), then open 1/4 to 1/2 turn. Fine tuning can then be made from that point.

Please note that when applying these products or circuit concepts, all safety features that the equipment may warrant should be included and are the responsibility of the user.