Reduced Pressure Principle Assembly
(for use with five valve equipment)

**Preparation**
- Notify customer
- Inspect area
- Flush testcocks (open #4, open then close #1, #2 slowly, #3, close #4)
- Install fittings
- Inspect test kit - close all needle valves

**Observe CV #1**
- Attach high hose to testcock #2
- Attach low hose to testcock #3
- Open testcock #3 slowly then open low-pressure bleed valve
- Open testcock #2 slowly then open high-pressure bleed valve
- Close high-pressure bleed valve
- Close low-pressure bleed valve
- Close #2 shut-off valve, record line pressure
- Observe check valve #1 (5.0 psid. or greater to continue)

**Record**
- Open high control valve two full turns

**Relief**
- Open low control valve slowly (no more than ¼ turn)

**Value**
- Record relief valve opening (2.0 psid or greater to pass)
- Close low control valve only

**Record CV #2**
- Bleed bypass hose by opening bypass valve

**Leaks**
- Loosely attach bypass hose to testcock #4
- or
- Close bypass valve

**Closed**
- Tighten bypass hose to testcock #4 open testcock #4

**Tight**
- Reset gauge (open and close low-pressure bleed valve)
- Open bypass valve two full turns
- Observe whether relief valve drips
- Record status of check valve #2 as (closed tight or leaking)

**Record #2 shut-off**

**Leaks or**
- Close testcock #2 observe gauge

**Closed Tight**
- Record #2 shut-off valve as (closed tight or leaking)

**Record CV #1**
- Close bypass valve
- Open testcock #2
- Reset gauge (open and close low-pressure bleed valve)
- Record status of check valve #1 (closed tight or leaked)
- Record value of check valve #1 (5.0 psid or greater to leak)
- Record buffer value (cv #1 – rv = 3.0 psid or greater to pass)
- Close testcocks #2, #3, and #4
- Remove bypass hose from testcock #4

**Record CV #2**
- Move low hose to testcock #4
- Move high hose to testcock #3
- Open testcock #4 slowly then open low-pressure bleed valve
- Open testcock #3 slowly then open high-pressure bleed valve
- Close high-pressure bleed valve
- Close low-pressure bleed valve
- Record value of check valve #2 (1.0 psid or greater to pass)

**Final**
- Close testcocks #3 and #4, remove all equipment
- Open #2 shut-off valve slowly
Reduced Pressure Principle Assembly

**Trouble Shooting**

**NOTE:** Flushing and/or cleaning the internal components can correct many problems. Carefully observe condition of components.

<table>
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<tr>
<th>PROBLEM</th>
<th>MAY BE CAUSED BY</th>
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<tbody>
<tr>
<td>Relief valve discharges continuously</td>
<td>1. Faulty check valve #1</td>
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<tr>
<td></td>
<td>2. Faulty check valve #2 with back-pressure condition</td>
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<td></td>
<td>3. Faulty relief valve</td>
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</tbody>
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| Relief valve discharges intermittently | 1. Properly working assembly with back-siphonage condition |
| | 2. 1st check valve "buffer" is too small (less than 3.0 psid), with line pressure fluctuation |
| | 3. Water hammer |

| Relief valve discharges after no. 2 shut-off valve is shut. (observe CV #1 test) | 1. Normally indicates faulty check valve #1 |
| | a. dirty or damaged disk |
| | b. dirty or damaged seat |

| Relief valve would not open, differential on the gage would not drop (relief valve test) | 1. Leaky #2 shut-off valve with flow through the assembly |

| Relief valve would not open, differential drops to zero (relief valve test) | 1. Relief valve stuck closed due to corrosion or scale |
| | 2. Relief valve sensing line (s) plugged |

| Relief valve opens too high (with sufficiently high 1st check reading) | 1. Faulty relief valve |
| | a. dirty or damaged RV disk |
| | b. dirty or damaged RV seat |

| 1st check reading too low (less than 3.0 psid "buffer") (observe CV #1 test, & Relief valve test) | 1. Dirty or damaged CV #1 disk |
| | 2. Dirty or damaged CV #1 seat |
| | 3. Guide members hanging up |
| | 4. Weak or broken CV #1 spring |

| Leaky 2nd check valve (CV #2 back-pressure test) | 1. Dirty or damaged CV #2 disk |
| 2nd check valve reading too low (CV #2 differential test) | 2. Dirty or damaged CV #2 seat |
| | 3. Guide members hanging up |
| | 4. Weak or broken CV #2 spring |

**Repair note:** Lubricants shall **only** be used to assist with the re-assembly of components, and **shall be USDA approved and non-toxic.**