

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

<b>Preparation</b>	Notify customer Inspect area Flush testcocks (open #4, open then close #1, #2 <b>slowly</b> , #3, close #4) Install fittings Inspect test kit - close all needle valves
<b>Observe CV #1</b>	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 <b>slowly</b> 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 (5.0psid. or greater to continue)
<b>Record Relief Value</b>	Open high control valve two full turns Open low control valve <b>slowly</b> (no more than ¼ turn) Record relief valve opening (2.0 psid or greater to pass) Close low control valve only
<b>Record CV #2 Leaks or Closed Tight</b>	Bleed bypass hose by opening bypass valve Loosely attach bypass hose to testcock #4 Close bypass valve Tighten bypass hose to testcock #4 open testcock #4 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)
<b>Record #2 shut-off Leaks or Closed Tight</b>	Close testcock #2 observe gauge Record #2 shut-off valve as (closed tight or leaking)
<b>Record CV #1</b>	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 pass) Record buffer value (cv#1 – rv = 3.0psid or greater to pass) Close testcocks #2, #3, and #4 Remove bypass hose from testcock #4
<b>Record CV #2</b>	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)
<b>Final</b>	Close testcocks #3 and #4, remove all equipment <b>Open #2 shut-off valve slowly</b>

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**Trouble Shooting**

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

PROBLEM	MAY BE CAUSED BY
Relief valve discharges continuously	<ol style="list-style-type: none"> <li>1. Faulty check valve #1</li> <li>2. Faulty check valve #2 with back-pressure condition</li> <li>3. Faulty relief valve</li> </ol>
Relief valve discharges intermittently	<ol style="list-style-type: none"> <li>1. Properly working assembly with back-siphonage condition</li> <li>2. 1st check valve "buffer" is too small (less than 3.0 psid), with line pressure fluctuation</li> <li>3. Water hammer</li> </ol>
Relief valve discharges after no. 2 shut-off valve is shut. (observe CV #1 test)	<ol style="list-style-type: none"> <li>1. Normally indicates faulty check valve #1               <ol style="list-style-type: none"> <li>a. dirty or damaged disk</li> <li>b. dirty or damaged seat</li> </ol> </li> </ol>
Relief valve would not open, differential on the gage would not drop (relief valve test)	<ol style="list-style-type: none"> <li>1. Leaky #2 shut-off valve with flow through the assembly</li> </ol>
Relief valve would not open, differential drops to zero (relief valve test)	<ol style="list-style-type: none"> <li>1. Relief valve stuck closed due to corrosion or scale</li> <li>2. Relief valve sensing line (s) plugged</li> </ol>
Relief valve opens too high (with sufficiently high 1st check reading)	<ol style="list-style-type: none"> <li>1. Faulty relief valve               <ol style="list-style-type: none"> <li>a. dirty or damaged RV disk</li> <li>b. dirty or damaged RV seat</li> </ol> </li> </ol>
1st check reading too low (less than 3.0 psid "buffer") (observe CV #1 test, & Relief valve test)	<ol style="list-style-type: none"> <li>1. Dirty or damaged CV #1 disk</li> <li>2. Dirty or damaged CV #1 seat</li> <li>3. Guide members hanging up</li> <li>4. Weak or broken CV #1 spring</li> </ol>
Leaky 2nd check valve (CV #2 back-pressure test) 2nd check valve reading too low (CV #2 differential test)	<ol style="list-style-type: none"> <li>1. Dirty or damaged CV #2 disk</li> <li>2. Dirty or damaged CV #2 seat</li> <li>3. Guide members hanging up</li> <li>4. Weak or broken CV #2 spring</li> </ol>

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