Hybrid Relief Valves

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**Performance Curves**

- Maximum operating pressure = 5000 psi
- Maximum valve leakage at reseat = 5 drops/min.
- Reseat exceeds 85% of crack pressure
- Factory pressure setting established at 4 GPM
- Free flow check cracking pressure = 25 psi
- Typical response = 2 ms
- The check portion of the valve has a maximum leakage rate of less than 1 drop/minute.
- Note: This valve deviates from Sun’s normal flow path for three port relief valves; port 2 is the inlet, port 1 is the system and port 3 is tank. Therefore, it is probably not useable in existing standard Sun relief manifolds.

**OPTION ORDERING INFORMATION** Model Codes printed in Red are Preferred Versions and most readily available

<table>
<thead>
<tr>
<th>Nominal Capacity</th>
<th>Control**</th>
<th>Adjustment Range</th>
<th>Seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>D 10 GPM</td>
<td>L Standard Screw Adjustment</td>
<td>A 500 - 3000 psi</td>
<td>N Buna-N</td>
</tr>
<tr>
<td></td>
<td>C Tamper Resistant Factory Set</td>
<td>W 800 - 4500 psi</td>
<td>V Viton</td>
</tr>
<tr>
<td></td>
<td>K Handknob</td>
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** See page 162 for information on Control Options

Customer may specify pressure setting.

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Hybrid Valves

DIRECT ACTING RELIEF VALVE - AFTER CHECK

- Maximum operating pressure = 5000 psi
- Maximum valve leakage at reseat = 5 drops/min.
- Reseat exceeds 85% of crack pressure
- Factory pressure setting established at 4 GPM
- Free flow check cracking pressure = 25 psi
- Typical response = 2 ms
- The check portion of the valve has a maximum leakage rate of less than 1 drop/minute.
- Note: This valve deviates from Sun’s normal flow path for three port relief valves; port 2 is the inlet, port 1 is the system and port 3 is tank. Therefore, it is probably not useable in existing standard Sun relief manifolds.

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Hybrid Valves

VENTABLE, PILOT OPERATED, BALANCED PISTON, RELIEF VALVE - BEFORE CHECK

- Maximum operating pressure = 5000 psi
- Maximum valve leakage (port 2 to port 3) = 2 in³/min. at 1000 psi
- Factory pressure setting established at 4 GPM
- Free flow check cracking pressure = 25 psi
- Typical response = 10 ms
- Minimum setting is 75 psi for all spring ranges.
- Back pressure at port 3 (tank) is directly additive to the valve setting at a 1:1 ratio.
- Pressure at port 4 (vent) controls the valve below its setting.
- The check portion of the valve has a maximum leakage rate of less than 1 drop/minute.
- Note: This valve deviates from Sun’s normal flow path for four port relief valves; port 2 is the inlet, port 1 is the system, port 3 is tank and port 4 is vent. Therefore, it is probably not useable in existing standard Sun relief manifolds.

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Hybrid Valves

VENTABLE, PILOT OPERATED, BALANCED PISTON, RELIEF VALVE - BEFORE CHECK WITH INTEGRAL PILOT CONTROL CAVITY

The -8 control option allows the pilot control valve to be incorporated directly into the end of the relief cartridge via the T-8A cavity. These pilot control cartridges are sold separately and include electro-proportional, solenoid, air pilot, and hydraulic pilot operation. See Pilot Control Cartridges on page 121.

### Performance Curves

**HVCA-8**

- Maximum operating pressure = 5000 psi
- Maximum valve leakage (port 2 to port 3) = 2 in³/min. at 1000 psi
- Free flow check cracking pressure = 25 psi
- Minimum setting is 75 psi for all spring ranges.
- Back pressure at port 4 (tank) is directly additive to the valve setting at a 1:1 ratio.
- The check portion of the valve has a maximum leakage rate of less than 1 drop/minute.
- Note: This valve deviates from Sun’s normal flow path for four port relief valves; port 2 is the inlet, port 1 is the system, port 3 is tank and port 4 is vent. Therefore, it is probably not useable in existing standard Sun relief manifolds.
- With the -8 control option, the main stage valve should first be installed to the correct torque value. The T-8A pilot control valve should then be installed into the main stage valve to its required torque value.

### OPTION ORDERING INFORMATION

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<table>
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<th>Seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 GPM</td>
<td>8</td>
<td><strong>D 75 psi</strong></td>
<td><strong>N</strong> Buna-N</td>
</tr>
</tbody>
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