DESCRIPTION: WATEROUS HAS TWO SYSTEMS AVAILABLE FOR CONTROLLING PUMP PRESSURE AS FOLLOWS:

DISCHARGE RELIEF VALVE

The automatic discharge relief valve system provides pump pressure control by keeping a uniform load on the engine with a continuous range of pressure control from 90 to 300 psi (6.2 to 20.7 bar).

The automatic discharge relief valve system consists of the relief valve, mounted between pump discharge and pump intake and a separately mounted pilot valve. The pilot valve is mounted on the pump operator’s panel.

The pilot valve controls consist of one to adjust relief valve operating pressure and one to place relief valve in and out of operation.

INTAKE RELIEF VALVE

The intake relief valve system acts as a safety valve by dumping excess pressure to atmosphere from the inlet side of the pump. The valve is calibrated from 50 to 250 psi (3.4 to 17.2 bar).

The intake relief valve system consists of the main relief valve mounted on the pump intake fitting or intake piping with a 2-1/2 inch Victaulic® outlet. The pilot valve is separately mounted on the operator’s panel or other location.

The pilot valve control consists of one control to adjust relief valve dumping pressure.
### Discharge Relief Valves and Intake Relief Valves Are Available As Follows:

**Table 1. Discharge Relief Valves and Intake Relief Valves**

<table>
<thead>
<tr>
<th>Pump Model</th>
<th>Pump Material</th>
<th>Discharge Relief Valve</th>
<th>Intake Relief Valve (2)</th>
<th>See Dimensional Drawing</th>
<th>See Dimensional Drawing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Valve Mounting (1)</td>
<td>Valve Size</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CM, CMH</td>
<td>Iron</td>
<td>On the Pump</td>
<td>4 in.</td>
<td>DPL82084-2</td>
<td>On the Pump or Separate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Separate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bronze</td>
<td>On the Pump</td>
<td>3 in.</td>
<td>DPL82084-1</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Separate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CMU, CMUH</td>
<td>Iron</td>
<td>On the Pump</td>
<td>4 in.</td>
<td>DPL82084-2</td>
<td>On the Pump or Separate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Separate</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bronze</td>
<td>On the Pump</td>
<td>3 in.</td>
<td>DPL82084-1</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Separate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CS, CSH</td>
<td>Iron</td>
<td>On the Pump</td>
<td>4 in.</td>
<td>DPL82084-2</td>
<td>On the Pump or Separate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Separate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bronze</td>
<td>On the Pump</td>
<td>3 in.</td>
<td>DPL82084-1</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Separate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSU, CSUH</td>
<td>Iron</td>
<td>On the Pump</td>
<td>4 in.</td>
<td>DPL82084-2</td>
<td>On the Pump or Separate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Separate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bronze</td>
<td>On the Pump</td>
<td>3 in.</td>
<td>DPL82084-1</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Separate</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>S100</td>
<td>Iron</td>
<td>Separate</td>
<td>4 in.</td>
<td>DPL82084-2</td>
<td>Separate</td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
<td>CXR, CXV, CXN, CXS</td>
<td>Iron</td>
<td>On the Pump</td>
<td>3 in.</td>
<td>DPL82084-1</td>
<td>Separate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Separate</td>
<td></td>
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</tr>
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<td>Bronze</td>
<td>Separate</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>CZ</td>
<td>Iron</td>
<td>Separate</td>
<td>3 in.</td>
<td>DPL82084-1</td>
<td>Separate</td>
</tr>
<tr>
<td></td>
<td>Bronze</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>CZU</td>
<td>Iron</td>
<td>Separate</td>
<td>4 in.</td>
<td>DPL82084-2</td>
<td>Separate</td>
</tr>
<tr>
<td></td>
<td>Bronze</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CR</td>
<td>Iron</td>
<td>Separate</td>
<td>4 in.</td>
<td>DPL82084-2</td>
<td>Separate</td>
</tr>
<tr>
<td></td>
<td>Bronze</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CH-4</td>
<td>Iron</td>
<td>Separate</td>
<td>4 in.</td>
<td>DPL82084-2</td>
<td>Separate</td>
</tr>
<tr>
<td></td>
<td>Bronze</td>
<td></td>
<td></td>
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</table>
Table 1. Discharge Relief Valves and Intake Relief Valves (continued)

<table>
<thead>
<tr>
<th>Pump Model</th>
<th>Discharge Relief Valve</th>
<th>Intake Relief Valve (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pump Material</td>
<td>Valve Mounting (1)</td>
</tr>
<tr>
<td>CGV, CGVN, CGVR, CGVG</td>
<td>Iron</td>
<td>Separate</td>
</tr>
<tr>
<td></td>
<td>Bronze</td>
<td></td>
</tr>
<tr>
<td>CLS</td>
<td>Iron</td>
<td>On the Pump</td>
</tr>
<tr>
<td></td>
<td>Bronze</td>
<td>Separate</td>
</tr>
<tr>
<td>CLR, CLV</td>
<td>Iron</td>
<td>Separate</td>
</tr>
<tr>
<td></td>
<td>Bronze</td>
<td></td>
</tr>
<tr>
<td>CP-2</td>
<td>Iron</td>
<td>Separate</td>
</tr>
<tr>
<td></td>
<td>Bronze</td>
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<tr>
<td>CP-3</td>
<td>Iron</td>
<td>Separate</td>
</tr>
<tr>
<td></td>
<td>Bronze</td>
<td></td>
</tr>
<tr>
<td>CP-4</td>
<td>Iron</td>
<td>Separate</td>
</tr>
<tr>
<td></td>
<td>Bronze</td>
<td></td>
</tr>
</tbody>
</table>

Notes:

1) Pump Mounted Valves are installed on the pump by Waterous, Separately Mounted Valves must be plumbed between the Intake and Discharge piping by the OEM.

2) Intake Relief Valves are not available on Bronze Pumps.
Discharge Relief Valve (Includes Pilot Valve)
Specify Mounting Location if Pump Mounted, or End Flanges if Separately Mounted
One Pilot Valve is furnished with each Discharge Relief Valve ordered. Additional Pilot Valves may be ordered if necessary.

*Table 2. Relief Valves*

<table>
<thead>
<tr>
<th>Pump</th>
<th>Relief Valve</th>
<th>Pump Mounted Mounting Location</th>
<th>Separately Mounted Mounting Location</th>
<th>End Flanges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>Material</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CP-2, CP-3, CP-4, CGV, CGVN, CGVR, CGVG, CLR, CLV</td>
<td>Iron or Bronze</td>
<td>N/A</td>
<td>2 in. NPT</td>
<td>2-1/2 in. NPT</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4-Bolt (No Flange)</td>
</tr>
<tr>
<td>CLS</td>
<td>Iron or Bronze</td>
<td>Between Pump Intake and Discharge</td>
<td></td>
<td>2 in. NPT</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2-1/2 in. NPT</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4-Bolt (No Flange)</td>
</tr>
<tr>
<td>CXR, CXV, CXN, CXS</td>
<td>Iron</td>
<td>Between Pump Intake and Discharge (1) (2)</td>
<td>3 in. NPT</td>
<td>3 in. Victaulic</td>
</tr>
<tr>
<td></td>
<td>Bronze</td>
<td>N/A</td>
<td></td>
<td>4-Bolt (No Flange)</td>
</tr>
<tr>
<td>CZ</td>
<td>Iron or Bronze</td>
<td>N/A</td>
<td></td>
<td>3 in. NPT</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3 in. Victaulic</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4-Bolt (No Flange)</td>
</tr>
<tr>
<td>CM, CMH, CS, CSH</td>
<td>Iron or Bronze</td>
<td>Left or Right Side (3) (4)</td>
<td>3 in. NPT</td>
<td>3 in. Victaulic</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4-Bolt (No Flange)</td>
</tr>
<tr>
<td>CMU, CMUH, CSU, CSUH</td>
<td>Iron or Bronze</td>
<td>Left or Right Side (3) (4)</td>
<td>4 in. NPT</td>
<td>4 in. Victaulic</td>
</tr>
<tr>
<td>CZU, CR, CH-4, S100</td>
<td>Iron or Bronze</td>
<td>N/A</td>
<td>4 in. NPT</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4 in. Victaulic</td>
</tr>
</tbody>
</table>

Notes:
1) Pump Mounted Relief Valves on CXR, CXV, CXN and CXS pumps require the use of the 3-1/2 in. Flanged Discharge Manifold.
2) Pump Mounted Relief Valves on CXV and CXS pumps have a 3 in. NPT flange on the discharge which the customer must plumb into the intake piping.
3) Left Side Relief Valve mounting is not available on CM and CS ECLIPSE pumps due to interference with the compressor oil cooler.
4) Pump Mounted Relief Valve is not available on CM and CS ECLIPSE pumps with a 1000 GPM Foam Manifold and Left Manifold discharge. The Discharge Fitting does not have a Relief Valve mounting provision.
Intake Relief Valve (Includes Pilot Valve)

Specify Mounting

Pump Mounting on Intake Fitting (Available on CM, CMU, CS and CSU models only)

Separately Mounted with 2-1/2 in. NPT Tapped Flange (Available on all models)

Note: Intake Relief Valve is not available on Bronze pumps.