



every solution is **unique.**

## Water Pressure Bypass/Relief Valve

### Specific Features & Functions

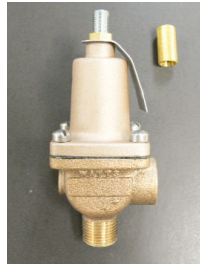
Your unit will come with one of the four bypass valves shown at the right depending on the flow rate requirements of your system. This is a modulating bypass valve—it does not snap open and closed. The valve serves two basic functions:

1. Its primary function is to divert the water pump discharge flow through the bypass line, through the cooling coil and into the storage tank, whenever the pump pressure reaches the bypass pressure setting. This reaction occurs when the closed loop becomes restricted, as when a solenoid valve on your equipment closes, or some other flow restriction develops. The bypass would also open if the relief setting was not above the required pressure to overcome the resistance to flow (pressure drop) in the closed loop.
2. As a secondary function, the valve can be used for partial flow diversion. If the flow characteristics of the pump could cause excessive pressure drop through the heat exchangers on the equipment being cooled, this valve can be adjusted to bypass some of the excess water. This reduces the flow through the equipment, thereby reducing the pressure required to complete the circuit.

### Relief Valve Adjustment Procedure

The valve has been preset for a maximum pressure in order to limit the pressure of the cooling water flowing to your equipment. An adjustment screw is located under the brass knurled cap on top of the valve. First loosen the hex nut, then turn the screw inward (clockwise) to increase the pressure required to bypass water, or turn the screw outward (counterclockwise) to reduce bypass pressure. When reducing pressure, make sure that you do not completely remove the screw to prevent the valve from leaking.

To find the pressure setting of the bypass valve, restrict the flow of supply water from the chiller (pinch the hose all the way or close the supply hand valve if supplied). The pressure gauge will then indicate the valve set point. As noted above, the valve does not snap open and shut. It will actually crack open approximately 10-15 psi below its set point, depending on the valve. The valve continues to open gradually, increasing the amount of bypass, as pressure approaches the valve set point. When the set point is reached, all of the flow from the pump is being bypassed. For this reason, the valve should be set a minimum 15 psi above the normal operating pressure to ensure full flow of the pump through the closed loop.



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