

RSA
ENGINEERING & RISK CONTROL
SERVICES

MSBA
RISK MANAGEMENT

SAFETY VALVES**SAFETY RELIEF VALVES****SAFETY PRESSURE/TEMPERATURE RELIEF VALVES**

Boilers, hot water heaters, hot water storage tanks, air compressor receivers, and all objects containing pressure must be protected against overpressure by a properly rated and sized safety valve designed for the application. These valves are the most important safety device on any boiler or pressure vessel. They are not designed or intended to control the pressure in the system during normal operation. Instead, they are intended to function when normal operating conditions fail.

Testing these safety devices on a regular basis is important to determine freedom of operation and to help ensure their good working condition. A log book should be kept to record when and by whom these and other operating and safety devices have been tested. Another method is to attach a tag to the device and have the tester sign off on it every time a test is conducted.

Experience shows that the testing of these valves is often overlooked or if they are being tested, that a log of the test is not being kept.

The fact that some valves may continue leaking/weeping after testing is not a reason to not test them on a regular basis. As a matter of fact, testing on a more regular basis may help in preventing the valves from leaking after tests. Should a valve not reseat properly after testing, it should be operated manually again (possibly several times) and held open for a couple of seconds to flush out any sediment or scale caught on the seat. This should clear the valve and stop any further leakage. However, should all efforts fail to stop the valve from leaking, then it should be replaced.

Several other points for consideration regarding safety valves/ safety relief valves:

- They should be equipped with a lifting lever for testing.
- They should have a nameplate with their pressure setting and capacity rating clearly marked.
- The set pressure shall be no higher than the maximum allowable working pressure marked on the pressure retaining item or system.
- All electric or fired hot water tanks should be equipped with combination pressure-temperature relief valves, ensuring that the temperature sensing element – being of sufficient length – senses the water within the top six inches of the vessel.
- They should be installed directly on the vessel with no intervening shut off device.
- They should be equipped with full size discharge piping of the same size as the opening provided on the valve body, installed in accordance with standard practice, arranged so that there is no danger of injury to personnel at the time the valve discharges and piped toward a suitable drain, using full size piping throughout the entire pipe run.
- When testing, if they are found in any way not performing their intended function, repairs or replacements should be made immediately.

