Consolidated* Products

July 21, 2017

1900 Series Restricted Lift Option

Do you have pressure relief valves with inlet pressure losses greater than 3% of the valve set pressure? Do you have oversized pressure relief valves causing valve chatter? Did you know a restricted lift pressure relief valve could solve these common problems?

API 526 Table 1 shows a 21% to 78% increase in effective orifice area from one selected orifice to the next lettered orifice. In some applications, the user may require an orifice somewhere in between so that the resulting rated capacity is lower. This reduction in rated capacity can be achieved by restricting the lift. A restricted lift pressure relief valve has a reduced flow area (reduced effective orifice area), resulting in a lower rated capacity for the valve. A lower rated capacity, based on the reduced lift, will lower the inlet and outlet piping pressure losses and reduce the acoustic effects. API 520 Part 2, Sixth Edition, paragraph 7.3.7.5 also recommends restricting the valve lift to address high inlet pressure losses.

Consolidated offers the 1900 Series API 526 pressure relief valve with a restricted lift option for orifices F-W under National Board capacity certification number 18223. This certification was granted by compliance to ASME B&PVC Section VIII, paragraph UG-131(e)(1). This option is available for all compressible media (gases and steam) applications for both new valves and repair valves.

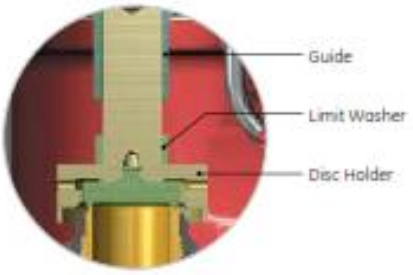
ASME B&PVC Section VIII, paragraph UG-136(a)(11) gives the requirements that must be met for restricted lift applications which states valves shall not have their lifts restricted to a value less than 30% of full rated lift, or 0.080 in. (2 mm). Paragraph UG-133(h) states that when sizing and selecting valves, the restricted lift nameplate capacity shall be determined by multiplying the capacity at full rated lift as defines in UG-131(e)(3) by the ratio of the restricted lift to the full rate lift. Paragraph UG-136(c)(4)(b)(5) gives the requirements that an ASME Assembler must meet to supply restricted lift valves.

A VR stamp holder is not required by NB-23 (NBIC Part 3) to have ASME restricted lift capacity certification when performing lift restriction as part of a repair.

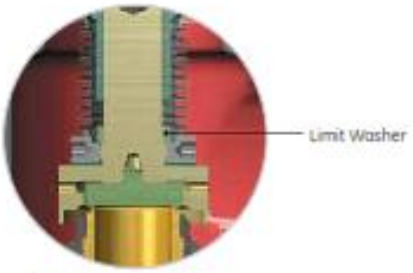
The nameplate on restricted lift relief devices shall be stamped to identify the reduced lift value and the rated capacity based on that reduced lift value. Restricted lift pressure relief valves may be specified by providing the manufacturer with a required restricted capacity. The manufacturer shall determine the lift that will provide a restricted rated capacity that meets the required capacity. Prior to making a final selection the purchaser shall confirm that the restricted lift relief device meets the design requirements. Note that valves restricted under a VR repair will have the rated restricted capacity and the restricted lift value listed on the repair nameplate.

SRVSpeQ has the restricted lift option included and requires the percentage restriction to be inputted. The valve configuration code will have an “RL” included at the end.

Lift restriction is accomplished by installing a limit washer between the guide and disc holder as shown in the figure. The limit washer is cut to the appropriate length based on the lift required.



Conventional



Balanced Bellows

The following Consolidated manufacturing locations hold NB capacity certificate number 18223:

Jacksonville, FL
DMS, China

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