

Fire Protection — Long-Bolt Flangeless Valves



Would you recognize the metal cover (yellow arrow) in Picture 1 as an important piece of safety equipment? If it was damaged or missing, would you know to report it so that it could be repaired or replaced?

The metal cover wraps something called a “long-bolt flangeless valve” (also called long bolt, sandwich, flangeless, or wafer valve). Some examples, with the covers removed, are circled in red in Pictures 2 and 3. These valves have no integral flanges for bolting to pipe or vessel flanges, and have exposed bolts longer than 3 in. (about 7 cm). If there is a fire in the area, the long bolts may be contacted directly by flames (impingement). The heat causes the bolts to expand and lengthen, allowing the gaskets on the two sides of the valve to leak. If the leaking material is flammable or combustible, it will add fuel to the fire (Picture 4). If the pipe is under pressure, a large, spraying fire that results in more damage can occur.

The metal cover wraps the long bolts with a fire-resistant material and encloses the entire assembly with a stainless steel covering to protect it from flame and heat impingement. It is an important safety device and it must be properly reinstalled if removed for maintenance. It must also be inspected periodically to ensure it is in good condition, and any damage must be reported so it can be repaired.



What Can You Do?

- If you have long-bolt flangeless valves on piping in combustible, flammable or liquefied petroleum gas (LPG) service, make sure the covers are properly maintained at all times.
- A cover on a long-bolt flangeless valve can hide corrosion or other damage. The covers should be removed periodically to inspect the flanges and valves under the cover, and immediately replaced following the inspection.
- Passive fire protection on such a valve will only be rated for a short-duration fire. An inherently safer engineered solution would be to replace the flangeless valve with a fully flanged valve.

Understand your Safety Equipment!

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