



February 14, 2018

**To: Tank car manufacturing and repair facilities**

**Subject: Leak testing of Jamesbury ball valves**

Testing of ball valve seats using low pressure air and high-sensitivity leak detection fluid such as Sherlock or Snoop can yield a percentage of visibly leaking valves. All Jamesbury valves are leak tested at the factory using 100 psi air and water as the leak detection fluid. In the factory test, air pressure is trapped between the seats so the ball is not biased into the downstream seat, which can generate a tighter seal. While the factory test is more conservative than actual use of the valve in service, it may not be as discriminating as a test using high-sensitivity leak detection fluid.

Ball valve seats are dynamic seals, meaning they must have enough compression to generate a seal, but there are limits to how much compression can be applied so that the valve can be operated. High-sensitivity test solutions such as Sherlock were initially developed for static connections such as compression fittings or flanged joints. They are very effective at quickly showing very small leaks that would not appear if testing with water. When testing dynamic seals with Sherlock, a single particle of debris of the sealing surface can create a leak path. Debris can come from many sources such as work surfaces, test equipment, instrument air, and may not be readily visible.

To ensure satisfactory results when testing ball valve seats with high-sensitivity leak detection fluid, Jamesbury suggests an additional cleaning step for any valve that does not initially pass testing. If desired, cleaning can be done as standard practice on all valves. The cleaning solution can be WD40, WD40 with Silicone, rubbing alcohol, or other degreasing cleaning fluid that is compatible with the media to be carried by the tank car. Normally, spraying or applying a small amount of the cleaning fluid over the surface of the ball and around the seat and then cycling the valve is sufficient to cause the valve to pass the leak test. Cleaning and cycling can be done repetitively times to increase effectiveness. As the manufacturer of the valve, we endorse the use of this cleaning process and recommend its use for ensuring valves pass leak testing with high-sensitivity leak detection fluid.

Sincerely;

A handwritten signature in black ink that reads 'David Bayreuther'.

**David Bayreuther**

Vice President of Jamesbury Product Line