

All-Stainless Air Cylinders Are Ideal for Washdown Applications

Alan Hitchcox | Hydraulics & Pneumatics / January 23, 2015

Applications in food processing plants can really be tough on machine components — especially air cylinders. That's because government agencies require frequent washdown of equipment that comes in direct or incidental contact with food products. These regulations are enacted not only to protect our food supply, but also to protect workers at the food processing plants.

Because bacteria can be found in almost any food-handling scenario, OSHA standard 1910.141(h) specifies that, "In all places of employment where all or part of the food service is provided, the food dispensed shall be wholesome, free from spoilage, and shall be processed, prepared, handled and stored in such a manner as to be protected against contamination." To comply with this and other OSHA and FDA standards, the food industry — from production to processing — relies on chemical washdown processes to eliminate bacteria.



Chemicals used in washdown processes typically are corrosive or caustic, characteristics that damage metals. According to Dana Johnson, of Birko Corp., a specialty chemical company, "General-purpose cleaners, foaming acids, and self-foaming chlorinated caustic cleaners and sanitizers such, as chlorine, are the most common chemicals used in washdowns." An-

other compound used solution is sodium hydroxide, which can be a strong caustic.

"Stainless steels have a proven record of being inert and are easily cleaned and sanitized, explained James D. Fritz, PhD, of TMR Stainless, a service provider to the stainless steel industry. "These properties, combined with the ease of fabrication, make stainless steels well suited for food processing applications. Typically, other materials — such as aluminum, copper alloys and coated carbon steels — do not have the same resistance for food processing and cleaning environments." Furthermore, at temperatures below 95° C (203° F), SAE types 304 and 316 stainless steel are resistant to highly concentrated sodium hydroxide.

Clippard's new line of all-stainless-steel cylinders resist corrosion and are designed and manufactured for high performance and long life.

In response to these challenges, Clippard Instrument Laboratory, Cincinnati, recently introduced a line of stainless steel cylinders intended for use in a broad range of applications, including those in washdown and caustic environments. The quality cylinders are constructed of SAE 303 and 304 stainless steel and are available in bores from $\frac{3}{4}$ to 2 in., with many standard stroke. They include a Nitrile rod wiper to keep potential contaminants from penetrating inside the cylinder.



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- Maximum pressure rating of 250 psig
- Nitrile U-cup piston seals for full-power, low-friction and long-life operation
- Nitrile U-cup rod seals for leak-proof operation
- SAE 303 stainless steel end caps
- FDA Compliant Rulon rod bushing
- FDA Compliant Rulon clevis bushing on all universal mount cylinders
- Dimensionally interchangeable with other common brands of round-body cylinders
- FDA-compliant grease lubrication and wipers standard
- Temperature range from -20 to 230° F (-29 to 110° C)
- Cylinders have SAE 304 stainless steel tubes with polished bore low breakaway friction
- Precision-rolled construction for a solid, leakproof cylinder
- Rods are threaded, bonded, and orbit-formed to pistons
- Ground, polished and roller burnished SAE 303 stainless steel rods exhibit a smooth finish that prolongs rod seal life
- Full piston area breakaway to ensure full power from the beginning of each stroke
- All stainless steel air volume tanks (accumulators) available

For more information on these cylinders, or any of Clippard's other products or services, call (513) 521-4261, or visit www.clippard.com.