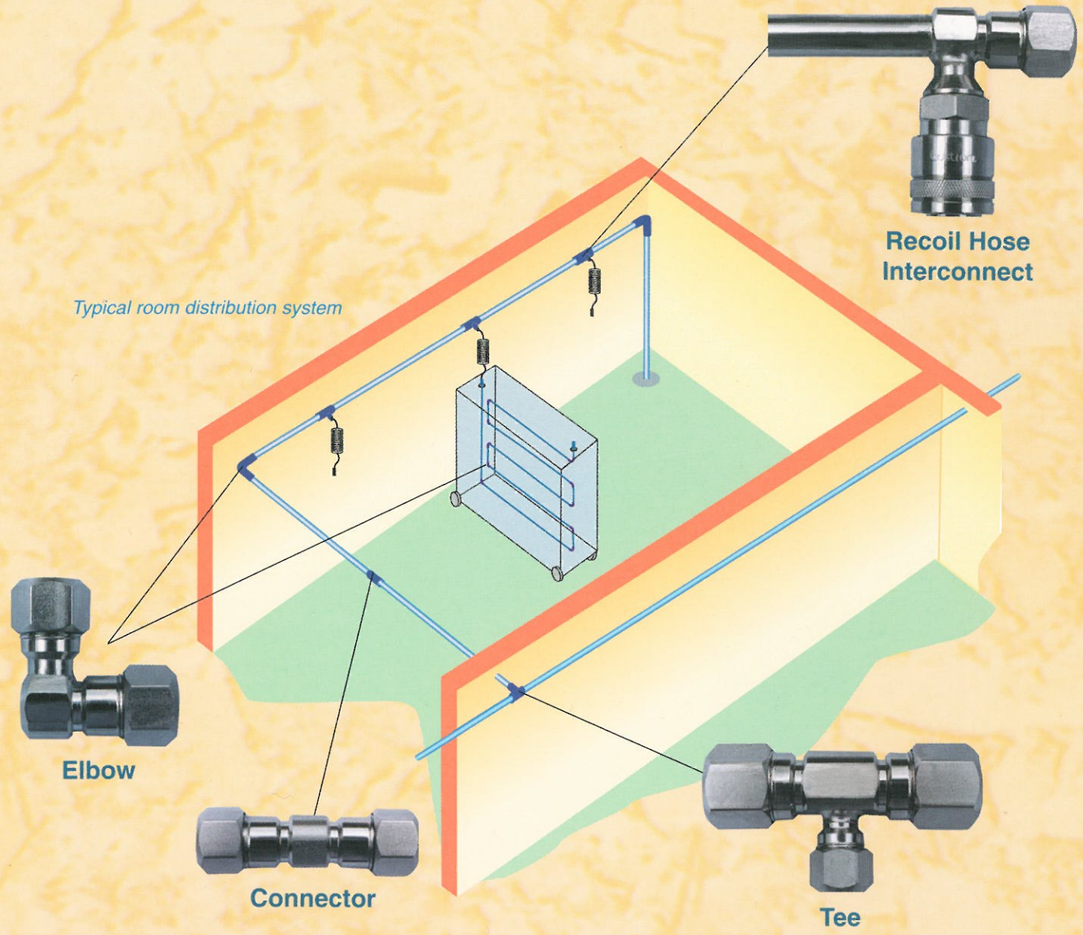
Edstrom
Clean Joints as found throughout the system



Typical room distribution system

Call Us

If you have any questions about our Clean Joints, please don't hesitate to call or e-mail us. We are happy to provide you with all the information or advice you need to provide your animals with clean, fresh water.

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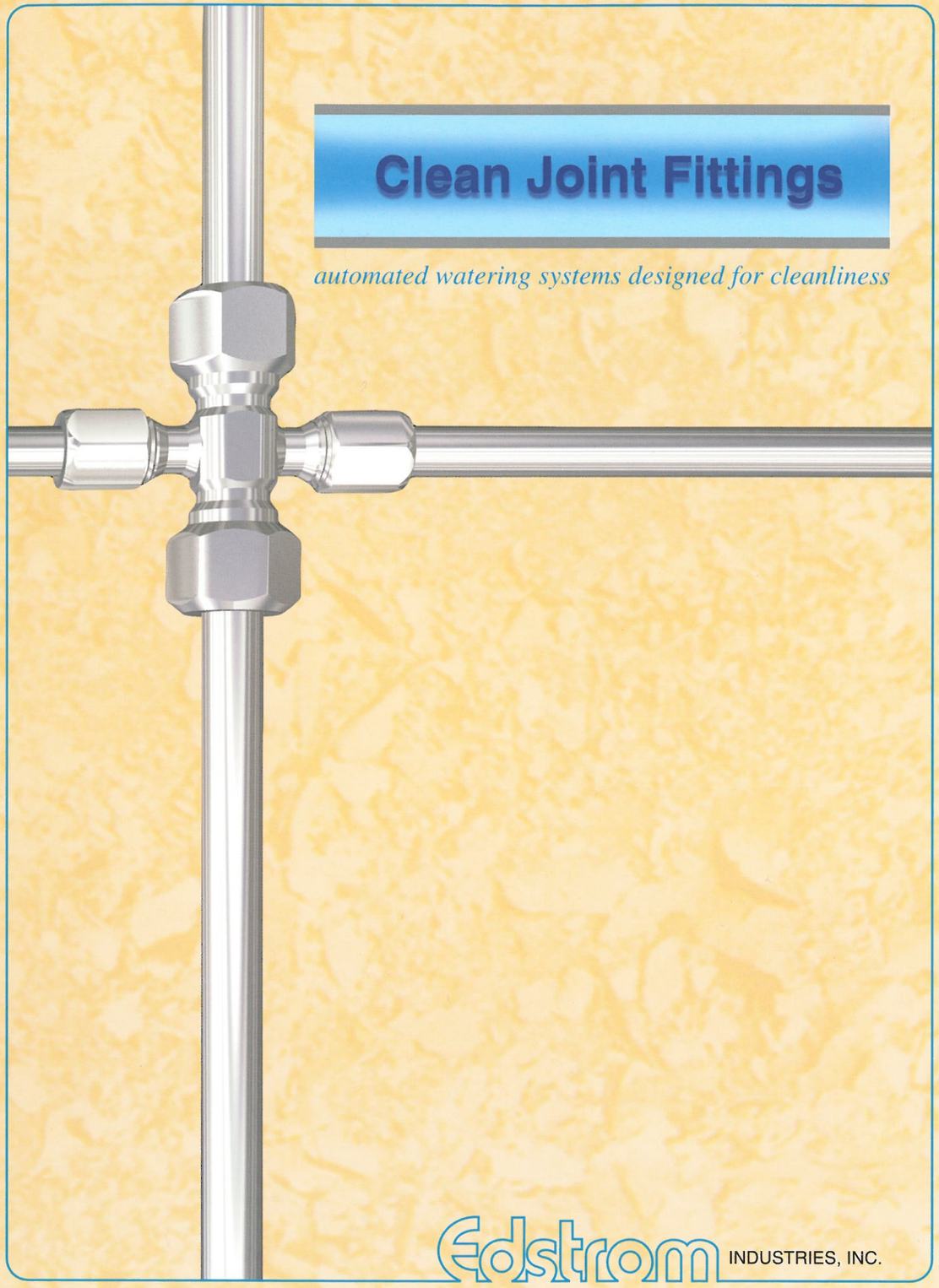
Clean Joint Fittings

automated watering systems designed for cleanliness



Edstrom INDUSTRIES, INC.

Clean By Design

Why a Clean Joint* Fitting?

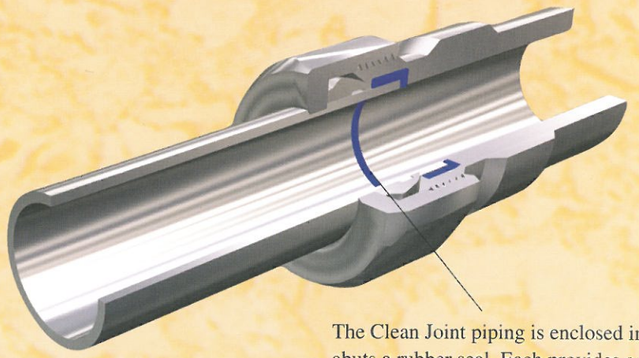
There is a common saying that a chain is only as strong as its weakest link. At Edstrom Industries we have a corollary to that: a watering system is only as clean as its piping joints. The good news is that all new Edstrom watering systems feature the patented Clean Joint, a unique new pipe fitting that is the equivalent of sanitary fittings used in pharmaceutical manufacturing and the food industry.

As animal models become more specialized, the need to control drinking water quality increases. The first step in taking control is to use reverse osmosis purified water and follow a sanitation SOP for the water piping. But studies have shown that bacteria can regrow within 24 hours of sanitation**, even in pure water systems. To combat this, we use chlorinated water and regular flush cycles.

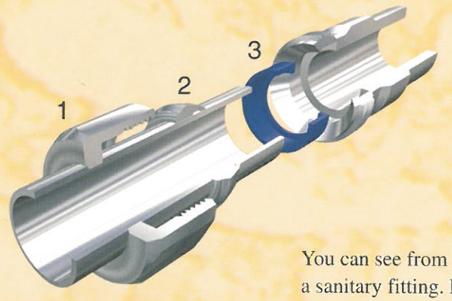
There is a lot that can be done with the distribution system to design for cleanliness. Pipe joint crevices are dead spaces where bacteria in biofilm can hide and shield themselves from the action of sanitization chemicals. By eliminating dead spaces in the system, sanitization becomes more effective. The Clean Joint eliminates these dead spaces.

*Patent 5,655,797
Patent Pending

Clean Joint Fitting

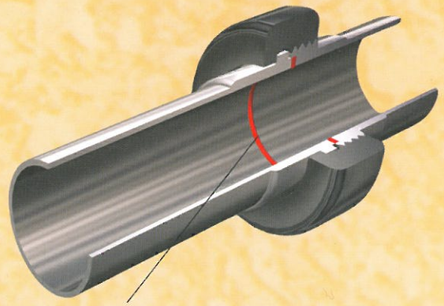


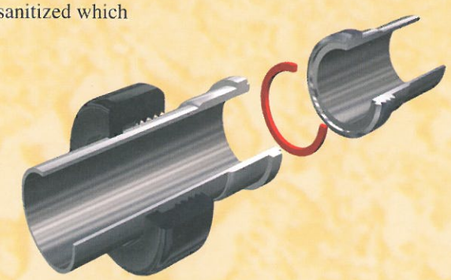
The Clean Joint piping is enclosed in an L-shaped rubber seal. In a sanitary fitting, the pipe abuts a rubber seal. Each provides a smooth internal profile which is free of internal dead spaces. When dead spaces are eliminated the system may be more effectively sanitized which makes it easier to control the growth of bacteria and biofilm.



As the nut (1) is tightened, the ferrule (2) grips the pipe and draws it forward against the rubber seal (3). The result is a secure seal without any dead spaces to harbor bacteria and biofilm.

Sanitary Fitting

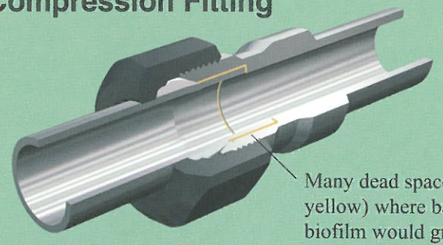




You can see from the pictures that the Clean Joint is equivalent to a sanitary fitting. Furthermore, it has been designed especially for use in animal drinking water systems. It is made from electropolished, passivated, 316 stainless steel, so it can stand up to acidified and chlorinated water.

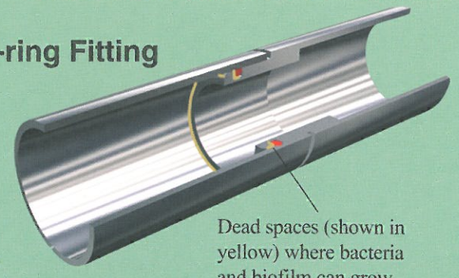
Alternative Joint Comparisons

Compression Fitting



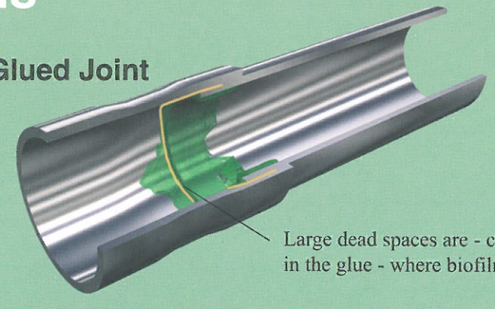
Many dead spaces (shown in yellow) where bacteria and biofilm would grow.

O-ring Fitting



Dead spaces (shown in yellow) where bacteria and biofilm can grow.

Glued Joint



Large dead spaces are - created by voids in the glue - where biofilm can grow.

Facilities regularly test their animal drinking water for bacteria. But what most don't know is that over 99% of bacteria live in biofilms attached to the internal surfaces of the piping. Biofilms are communities of microorganisms surrounded by the slime they secrete – a place where bacteria (some pathogenic) can thrive and multiply. Biofilms are the source of much of the free-floating bacteria in drinking water that is consumed by laboratory animals.

Biofilm protected in the dead spaces created by most pipe joints will quickly (within 24 hours of sanitizing) recolonize a watering system.** In our ongoing effort to improve animal drinking water quality, we designed the Clean Joint to eliminate these areas so that internal piping surfaces can be more completely sanitized, providing more effective control of bacteria and biofilm growth.

To learn more about biofilm see these web sites.

** www.edstrom.com/lab
Read our paper on biofilm and many water quality bulletins.

** www.erc.montana.edu
Center for Biofilm Engineering.

www.criver.com/tecdocs/pseudomonas.html
Pseudomonas and the Laboratory Animal. An important article on the Charles River web site.