

Dairy & Food Markets

Crease Protector Technology (CPT)
spiral elements for concentration and
separation of high quality fluid streams

Market Application Publication



Background

USDA and 3A sanitary requirements for spiral wound elements mandate that they be free of any voids and potential areas that trap bacteria. An area which has trouble meeting these requirements is the membrane crease area. Parker's Crease Protector Technology (CPT) is a proprietary manufacturing process specifically designed to reduce the potential for bacterial growth. CPT, unlike other designs available, minimizes voids and bacterial generating locations around the crease area leading to better overall sanitary construction.



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Challenge

The existing spiral element design requires reinforcement of the crease area located near the permeate water tube (PWT). Without this protection in some fluid streams, the element life is substantially reduced due to process extremes. To improve element life, glue is applied within the crease area of the element. However, this approach results in the capture of highly concentrated organic materials which are not only difficult to clean, but an environment conducive to bacterial growth.

In addition, specialty products produced today require the dairy or food plant to maintain a very low level of bacterial concentration in their product. These types of products include WPI (Whey protein isolate), MPC (Milk protein concentrates), sugar concentration, and protein fractionations.

As process streams are concentrated so is any bacteria present in the initial feed product as well as those trapped and growing in less than sanitary crease protection methods. As a result, the quality of the finished product is compromised and food plants need to respond to their customer needs by reducing or eliminating bacteria.

The overall challenge for food plants is to produce bacteria-free products given the limitations of the current methods of manufacturing sanitary spiral elements.

Parker's solution is the Crease Protector Technology (CPT). The CPT provides food plants with a reliable method of protecting the crease area, avoiding bacteria generating locations and producing superior products for their customers.

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The Parker Solution

Parker introduced a new method of protecting the crease area that is completely sanitary and has increased the productivity of the element by reducing cleaning and bacterial issues. There are no glue pocket areas, voids, or use of plastic materials in the protection of the crease. This design and manufacturing process was thoroughly tested over the last 3 years in applications where the old methods created sanitary issues.

Crease Protection Technology (CPT) Features & Benefits:

- Available on all sanitary elements - RO, NF, UF
- Most sanitary design available today at no additional cost
- Proprietary process - no product build up in crease protection area
- Increased productivity - reduced cleaning requirements
- Sanitization - no issues with heat sanitizing the elements
- Improved overall element construction vs. older methods of crease protection
- FDA CFR 21 materials of construction
- Provides a uniform reinforced area over active membrane to avoid stress cracks from adjacent membrane leaves



Summary

Challenge	To replace current methods of crease protection used in manufacturing sanitary spiral elements and eliminating a less than sanitary design, making it cost effective and available on all sanitary elements.
Solution	Parker's Proprietary CPT - "Crease Protector Technology"
Results	<ul style="list-style-type: none">• Reduced bacteria caused by old manufacturing design• Improved overall element construction• Design that is the most sanitary available at no additional cost• Increased productivity - reduces cleaning requirements