

blendrex[®]
proven processing solutions

Polymer heat exchangers:

- are problem solvers for many types of difficult heating and cooling applications.
- significantly improve heat transfer rates to or from polymers and other viscous products. three to seven times the rate obtainable through an “open tube” (no blendrex[®] elements) design.
- result in a much more compact design and provide a shorter product residence time inside the unit.
- provide very uniform product residence time since the blendrex tube is a “plug flow” device
- tubes eliminate localized “hot spots,” and provides uniform temperature profile across the tube section.
- blendrex heat exchanger tubes contain alternating helical twist elements to obtain the high performance capabilities as described.
- the blendrex elements can be designed as permanently fixed or removeable depending upon the application. Fixed blendrex elements may be welded, crimped, or micro-brazed (metal sealed) inside the tubes for maximum heat transfer and mechanical strength.



Maag Pump Systems Textron specializes in the design and application of blendrex polystyrene preheaters used to preheat polystyrene melts prior to devolatilization, and of blendrex polyester coolers used to cool polyester prior to spinning or pelletizing.

polymer

Material Construction Options Available for blendrex[®] Heat Exchangers:

blendrex[®] heat exchangers may be fabricated from an extremely wide variety of materials, including the following:

- 304 and 304L (low carbon) stainless steels
- 316 and 316L (low carbon) stainless steels
- 321 stainless steel
- Carbon steels (economical, good strength)
- Titanium
- Carpenter 20 alloy
- Hastelloy (including grades "B" and "C")
- Inconel

Fabrication / Certification Standards:

blendrex heat exchangers can be designed, fabricated, tested, and certified to be in accordance with most international standards organizations, including the following:

- ASME (American Society of Mechanical Engineers) Section VIII, Divisions I and II, with National Board Registry of vessel also provided
- DIN (Deutsche Institute Normal) Standards
- CODAP Standards
- TUV Standards
- Chinese Safety Quality License (SQL): Mandatory for shipment to Mainland China
- TEMA (Tubular Exchanger Manufacturer's Association) "B," "C," and "R"
- API (American Petroleum Institute)

Unique blendrex Heat Exchanger Technology Available:

- Using a proprietary analysis program, an analysis of the proposed design may be evaluated from the viewpoint of flow distribution of the product through the bonnets and the tubes. From this analysis, elimination of stagnant flow areas and reductions in product residence time can be achieved.
- All product exposed surfaces can be electropolished (very highly polished by a proprietary process) in order to minimize product degradation and avoid product "hang-up" in the unit.
- Maag Pump Systems Textron's patented "Two Phase Flow Technology" (U.S. Patent #5,785,808) may be employed to provide heat transfer in applications where volatiles are to be removed from process streams. This technology prevents premature vaporization of volatiles in the product, thereby significantly improving overall heat transfer rates to allow for a much more compact and economical design of the blendrex heat exchanger.

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