



**Blentech**  
corporation

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## **BLENTHERM**

### *The Cost Effective Blending Cooker*

#### General Description

The **BlenTherm** is a new generation of blending cooker derived from Blentech's cutting edge VersaTherm horizontal blender-cooker technology. Blentech's engineers have merged the VersaTherm's patented scraper system with a unique agitator design double set of ribbon-paddle creating bi-directional product flow for extraordinary mixing and cooking efficiency in a single shaft agitator machine. The BlenTherm is a very cost effective single agitator blending cooker ideally suited for moderate viscosity product applications.

#### Mixing and Scraping Ability

The BlenTherm's single horizontal shaft agitator has inner and outer ribbon-paddles configured with opposing pitches to create a 'vortex' mixing action in the blender trough. This mixes the product both horizontally and vertically while keeping the batch evenly blended from end-to-end. The dual mixing action is the key to maintaining particulate suspension and evenly blending highly viscous products - making the BlenTherm an exceptionally efficient blender. Keeping the product homogeneously mixed throughout the heating cycle results in a uniformly cooked batch every time.

Mounted to the outer ribbon-paddle agitators are our proprietary reversible scrapers (PATENTED). These scrapers are held firmly against the heat exchange surfaces by a leaf spring assembly. If the product begins to build-up on the heat exchange surfaces, the scrapers are designed to flex and dig into the build-up by making a point contact with the heating surface. The more stubborn the build-up, the more the scrapers dig in to scrape the build-up free.

The combination of our unique scraper system and the folding/blending action of the ribbon-paddle agitators results in a product that is cooked evenly throughout.

#### Inefficiency Of Hemispherical Kettles

Conventional hemispherical, jacketed kettles commonly used today are relatively inefficient in most applications - particularly viscous products. Such kettles simply cannot perform effectively when cooking very viscous products and foods with particulates that sink to the bottom or float to the top. The addition of propeller mixers does not significantly increase their efficiency. The reason: a vertical shaft agitator is not effective in blending viscous products. Product simply goes around and around in a single plane. A kettle is a very poor blender regardless of how many agitators it has. The solution: the product must be mixed in two planes - vertically as well as horizontally.

Consider mixing a cake batter in a bowl: You do not just stir the product in a circle; you also lift and fold the product into itself. Blentech horizontal blender-cookers duplicate this blending

action. Viscous products tend to cook unevenly in kettles because heat transfer is dependent on slow moving conduction heating. The result is overcooked product near the heating surface with undercooked product in the center. Even the addition of rotating angled agitators does not completely eliminate this problem.

### Shorter Cook Times

The BlenTherm has a very high heat exchange coefficient as well as a high heating surface area to product volume ratio, thus it is very effective at driving the steam energy into the product. The unique scraper system and efficient ribbon-paddle agitator results in a scraped surface, forced convection action. In combination with a full wrap jacket, the BlenTherm yields a dramatically shorter heat up time than comparably sized kettles. Field tests have confirmed that cook times are substantially less than kettles with all products.

### Additional Options Available:

Below are some of the options that are available on the Blentech BlenTherm:

- Vacuum construction for Vacuum Cooling and/or Cooking
- Variable Frequency Speed Control with Auto-Reversing
- Direct steam injection in addition to the standard 90 psi steam jacket
- Modulating steam control
- Jacket pressure sensing
- Serpentine jacket for chilled water or glycol jacket chilling
- CO<sub>2</sub> snow horns for chilling
- Serpentine jacket for thermal oil heating
- On board emulsification system
- 130 psi steam jacket for sauté applications
- 316 stainless construction
- CIP spray ball fittings and manifolding

### Ideal Applications

The BlenTherm is very effective cooking the following products:

- Thick soups and sauces which can be hard to mix and cook and tend to have pockets of stagnation leading to overcooking in some areas and undercooking in others.
- Products with particulates that sink to the bottom or float on top during cooking. Examples of such products are meat gravies or soups with vegetables.
- Formulated foods which are built up or staged by adding ingredients during cooking. Such products may require sautéing or pre-cooking some ingredients before other liquids are added and may require being cooked at different temperatures.

Just a Few of the Products Successfully Processed in the BlenTherm:

spinach mornay sauce	cheese sauce	butter saffron sauce
mushroom filling	custard	creamed onions
beef stew	sweet and sour sauce	scrambled eggs
steak sauces	sautéed spinach	cheese & ham filling
thick cheese sauce	steak & kidney filling	macaroni & cheese
chicken pie filling	chili with onions	bolognese sauce
lamb korma	BBQ sauces	sautéed onions

Summary

The BlenTherm is a very unique cooking system that offers advantages for the small processor and large processor alike on moderate viscosity applications. It is a cost effective cooking solution that delivers many of the same standard features as well as options offered on a VersaTherm, making it, too, one of the most versatile cooking blenders available.