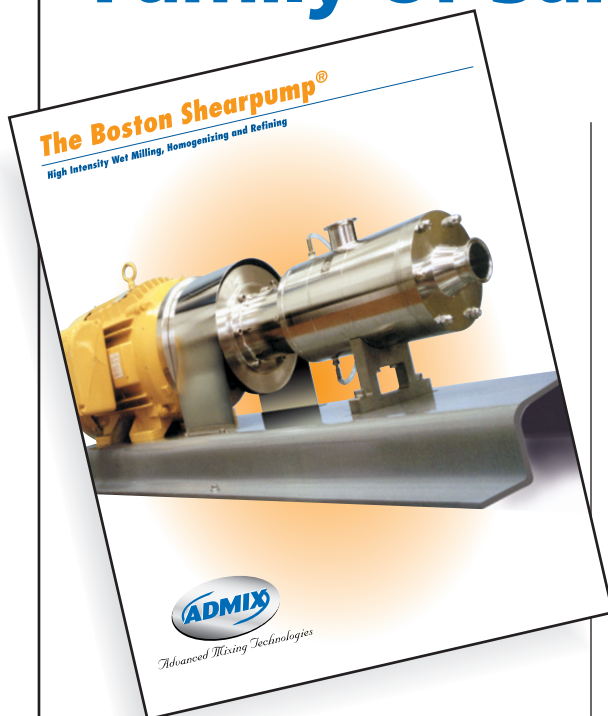


# ADMIXTURE

The Newsletter of Mixing Technology for Sanitary Processors

VOLUME 7, NUMBER 2

## The Boston Shearpump® Now Part of the Admix Family of Sanitary Mixers



On May 30, 2001, Admix acquired the Boston Shearpump line of wet milling, emulsification and homogenizing equipment from Copek Industrial Products. Since 1995 Boston Shearpump products have been among the leaders for the continuous processing of high solids, high viscosity mixtures and formulations where demanding standards for particle size reduction, homogenization, high throughput and sanitary construction are necessary. The BSP line was developed by Hans Copek following his many years of experience in the application and sale of in-line mixing and dispersion machinery. The product line has experienced double-digit growth every year since inception and that success can be attributed to:

1. Extremely rugged design with oversized support shafts combined with superior craftsmanship featuring ABEC-7 bearings and dynamically balanced rotors.
2. Able to process the most difficult mixing operations requiring a combination of dispersing, wet milling, grinding, chopping, particle size reduction, maceration and homogenizing.
3. Superior versatility with single, double and triple rotor/stator heads, combined with coarse through ultrafine processing stages.
4. Full range of sizes to process flows as low as 5 GPM to as high as 200 GPM.
5. Low maintenance, water flush mechanical seals with a 700 PSI+ pressure rating.
6. Every component has been designed and manufactured to meet and exceed 3A and USDA - Dairy standards.

While you might think that the Boston Shearpump may be just like other well known "shearpumps" currently on the market, our BSP units provide substantially more shear rate, flow capacity and "milling". Please review the enclosed articles for more details on how the Boston Shearpump can improve your mixing operations. A full range of machines are available for running trials at our testing facilities in Manchester, New Hampshire or ask our local sales agent about plant trials or rentals at your facility.

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WHAT'S NEW AT ADMIX

LETS GET TECHNICAL! Continued



# SUMMER

## Admix Product Pick: The Boston Shearpump®

### The Wow Factor!

Have you ever stumbled upon a product at your local department store, mail order catalog, or favorite website that immediately provides that instant wow! factor?? This was our reaction when we first encountered the Boston Shearpump line many years ago in competitive situations, and now as part of the Admix family! Why? For starters, the external look, fit and finish provide a unique combination of both brawn and polish. Once inside (with the easy to open inlet covers), the combination of superior craftsmanship, precision machining, and exact fit of all components becomes quickly obvious. The quick disassembly of the seal becomes another plus, and finally the weight and size of the massive bearing support to insure precise alignment and concentricity of the shaft and heads clearly distinguishes the Boston Shearpump from all other mixing devices.

### Performance Plus!

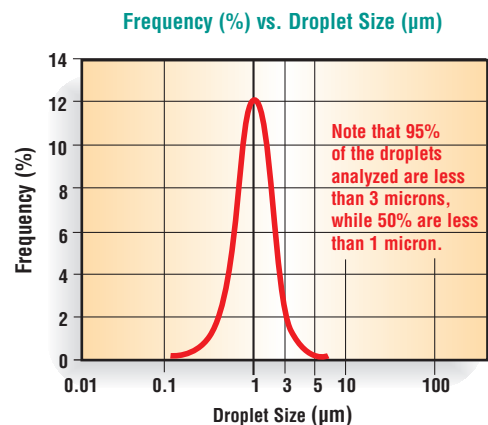
But the true test is performance, and this is where the Boston Shearpump really brings home the wow factor! Due to its rugged design and unique combination of rotors and stators, the BSP Turbo series will not only disperse and emulsify like our competition, but also provides milling, grinding, maceration, chopping and very fine particle size reduction not typical of in-line mixers and shearpumps. The BSP can approach a colloid mill for reducing hard particles, and can chop and grind coarse solids like serrated blade processors, but adds the distinct advantage of maintaining high throughputs while all this action is going on!

### Extreme Machine!

The Boston Shearpump can be designed and plumbed to provide reductions and milling within a single pass for many applications. This is possible when using a triple head design (three rotors and stators) in series. The heads can be identical whereby they are either all coarse, medium or fine relative to their deagglomeration capability, or can be differentiated from coarse to very fine where the application would be better served. In addition, special purpose rotors including ultrafine, chopping, ripping or mashing can be combined with any of our standard duty heads. For very extreme processing needs, our Shearmill™ series provides the highest tip speeds, the tightest gaps, and the greatest number of windows (ports) to provide ultrafine mechanical shear.

For more information on the Boston Shearpump, look us up at [www.admix.com](http://www.admix.com) or at [www.shearpump.com](http://www.shearpump.com).

### Performance Curve



Boston Shearpump® and Shearmill™ are designed to provide a median particle size of 1.0 micron with excellent distribution.

## Lets Get Technical! Tips to Improve In-line Mixing Performance



In general, in-line mixers, by design, are less susceptible to process or mechanical issues. The process performance can be predicted fairly accurately, because all of the process must pass through the mixing and shear zones, without any bypass or "backmixing" which could occur in batch mixing. Mechanical problems are also less common, since all in-line mixers have short shafts, eliminating most shaft deflection and critical speed issues. However, process or mechanical challenges can occur, and here are a few pointers to help prevent them:

### Process Tips for Better In-Line Mixing

**1. To Feed or Not To Feed:** Most in-line mixers (at least of the high shear type) are limited to how much flow, viscosity and solids they can pump. While all mixers have some self-pumping capabilities at viscosities below 500 cps, they will benefit from "feeding" the process with a centrifugal pump (for low viscosities) or positive displacement pump (for high viscosities). If you find that you are not achieving the flow capacity "advertised" by the mixer supplier, it is probably due to the viscosity or solids level causing a restriction in the flow rate. Feeding the process with an auxiliary pump also allows the in-line mixer to devote all of its energy to creating shear rather than providing flow.

### 2. Multi Pass Recirculation:

At least 50% of high shear mixing applications can be adequately achieved with a single pass through the mixer, especially with multiple head machines. Many applications will benefit from multiple passes through the unit, until the desired particle size

or emulsion stability is achieved. This can only be determined with field testing or lab tests at the vendor's facility.

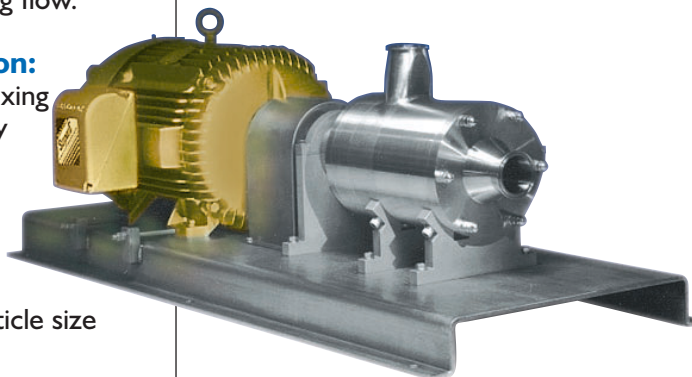
### 3. Use a Speed Controller (VFD) to Fine-Tune a Process:

Effective in-line mixing relies on both the tip speed of the mixing heads as well as the product velocity through the mixer. Both are measured in feet or meters per second. Flow velocity can be controlled with a feed pump (as discussed above) to maintain a specific velocity should that be a desirable objective. The tip speed or peripheral velocity is typically more critical, and this should be maintained at a specific target minimum. Having a variable speed controller allows the option of overspeeding the unit to fine tune the tip speed, or reducing the operating speed (and tip speed), completely separate from flow rate adjustments with the upstream pump.

### Mechanical Tips

**1. Reduce Seal Maintenance:** Begin by choosing the proper seal. The mixer vendor sometimes dictates this, but several seal options should be available to suit the process characteristics. A water flush single or double mechanical seal is always the preferred method, but will cost substantially more than a typical product flushed pump seal. Be sure to review the correct flush pressure and flow rate with the vendor when using flush seals, as even flushed seals can fail prematurely if not set up properly.

Continued on page 4



## Admix Team Members



Sue Foskitt, our Marketing Manager, has been with Admix for almost 10 years. After many years in administration, she currently oversees all of our marketing needs including Website maintenance, marketing updates for sales rep agencies, trade show coordination, scheduling trade ads and articles, brochure and newsletter design.

Our Production Supervisor, Gary Floyd, celebrates nine years with Admix this month! Gary is responsible for the production and shipment of all customer parts & mixer orders as well as maintaining our test lab & trade show equipment. He is committed to providing outstanding customer service by ensuring that delivery and quality standards are met.



Earlier this spring our Technical Director for Boston Shearpump®, Hans Copek, joined us when we acquired the Boston Shearpump line. Hans brings to Admix many years of experience with sanitary in-line mixing & dispersion equipment. In addition to assisting with customer sales, he will be instrumental in design enhancements and continued development of the BSP product line.

# WORLDWIDE FOOD EXPO

OCTOBER 18-21, 2001  
McCORMICK PLACE  
CHICAGO, IL USA

Don't forget to stop by and see us in **Booth #1008** at the Worldwide Food Expo in Chicago - October 18-21, 2001!

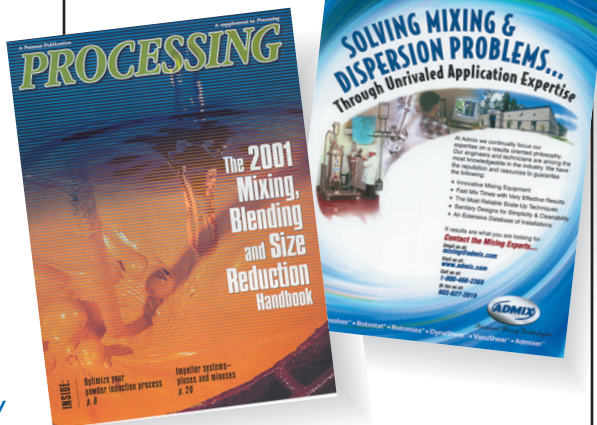
And why not start out 2002 with a visit to **Booth #6103** at the International Poultry Expo in Atlanta (January 16-18)!

## Contact Our Experts

Admix has applications experts available to answer any and all of your Advanced Mixing Technology needs.

Call anytime:  
Tel: 603-627-2340 or  
1-800-466-2369  
Fax: 603-627-2019  
[www.admix.com](http://www.admix.com)

## What's New at Admix...



Recently introduced literature includes 2 articles in Processing's Mixing, Blending and Size Reduction Handbook. Please call or email us for copies!

**This Is  
Your Last  
Issue!**

This will be your **Last Issue** unless we hear from you!! If you wish to continue receiving the Admixture Newsletter please call **1-800-466-2369** or e-mail **suef@admixon.com** Please include your Code # from the address label below - Thank you!

## LET'S GET TECHNICAL!

Tips to Improve Mixing Performance  
Continued from page 3.

### 2. Prevent Overload Situations:

In-line mixers are susceptible to motor and/or mixer overload when the viscosity or solids level is higher than the capacity of the motor or the mixer. Horsepower load on the mixer will rise as higher viscosity process streams are pumped or fed into the unit, which could cause the motor to cut out. Reducing the feed pump speed (and therefore mixer flow) will bring the capacity and HP back into an acceptable range. Observing the maximum throughput capacity recommended by the vendor will also prevent mixer overload. Forcing through 200 GPM of product into a mixer rated for 130 GPM could "stuff" and clog the mixer, potentially damaging the unit.

### 3. Do Not Run Dry!!:

Perhaps the most damaging of all mistakes with an in-line mixer is dry running. In addition to blowing the seal (if not water flushed), the potential for damaging the mixing heads is severe. Low flow operation could also be a problem, or not properly "priming" the mixer, with cavitation being the result. Using a throttling valve on the discharge is ideal for controlling cavitation, with the added benefit of increasing the retention or dwell time of the product within the mixing chamber. Providing a screening mechanism prior to the mixer or feed pump is also recommended, as any tramp metal, stones or large objects could damage the mixer internals.



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