

## Powder Processing – Blending

Each year Custom Powders blends a wide variety of products with varying densities, particle size distributions and compositions. The quantities vary from a couple of tonnes per order to thousands of tonnes per year. It is possible to deliver the raw material components in bulk, big bags or sacks but other options might also be possible.

In order to meet specific requirements from our customers we own a broad range of specially developed blenders from leading manufactures in the field like Lödige, Henschell, Kemutec, John R. Boone etc.

Some of these blenders are fixed permanently into dedicated mixing units, while other pieces of equipment have a more modular character

and can be combined readily with other types of processing. Blenders are selected on the basis of specific requirements for shear, suitability to handle fragile products, speed, heat input, the possibilities of injecting liquids and the need for explosion suppression, etc.

All our equipment is constructed from stainless steel and can be used to process products from the food, feed, care, detergent, plastic-additives or chemical industry. The equipment needs to be set up specifically according to the physical characteristics of the blend in order to maximise productivity.

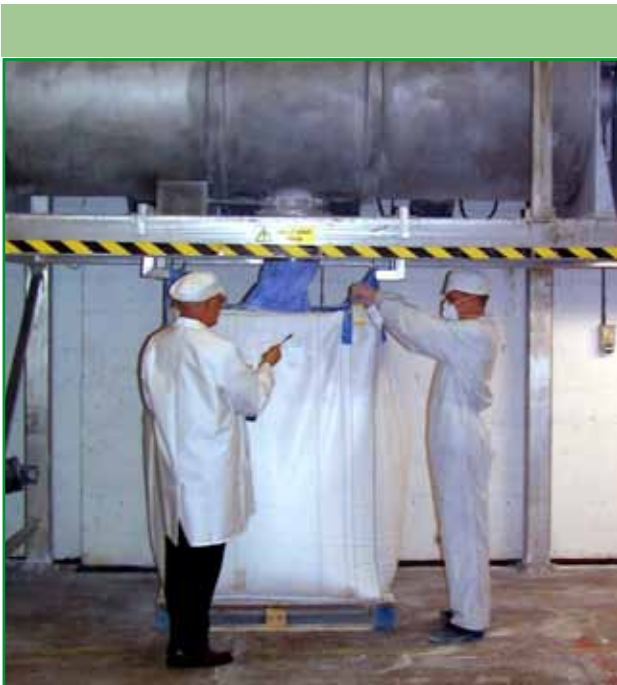
The selected equipment is configured by our in-house engineers in specific layouts in order to meet as best as possible your requirements.



## Types of blending processes

### Multi-component batch blending

Our range of blenders encompasses blenders that can hold between 600 and 4200 litre of product per batch. These blenders vary in the amount of shear that is imported to the product from a rather low level (ribbon- / U-trough blenders) to middle shear (Lödige Ploughshare blenders) to very high shear (Henschell blender). We have purposely chosen the ploughshare blenders for the reason that these are capable of blending small percentages of products very evenly and effectively into the rest of the product. Particles that stick together are chopped loose again by the integrated rotating side choppers. If required, liquids can be mixed in homogenously with the powder product and the blending action can be followed by a milling, sieving or compaction step. Other options are available as well.



### Continuous blending

With this type of blending the shear varies from low shear (Drum blender), to blenders with rather high shear (Henschell / Lödige CB-30). Powders can be volumetrically dosed or in instances where higher levels of accuracy are required fed to the system by a loss in weight feeding system. Typically one to three powders can be added in combination with one or two liquids.

In this manner we blend more than 6,000 T of product per year. The raw material is fed to the blender in a controlled way by the use of specific dosing equipment and is then blender into a homogenous mixture. In addition we can install options like milling, control sieving, magnets, addition of liquids, explosion suppression and other facilities.



## Types of blending processes

### Blending with high shear

Sometimes high shear blending is required in order to achieve an intensive powder/powders contact or in order to heat up a powder with a low melting point so that it will melt and coat the other powders present. In these cases one could choose the Henschell batch blender as a suitable option or alternatively the Lödige CB-30 continuous blender. Both blenders impart their energy to the process and this can have the following advantages: intensive mixing in a very short time frame, dispersion of a liquid, heating up by friction or the melting of waxy components in the blend. Both mixers have a variable speed drive and are laid out with a jacketed wall so that extra heat or cooling can be applied.



### Continuous Conditioning of powders

Loss in weight dosing can be used in combination with a range of machinery in order to blend in watery or non-volatile organic liquids into a powder blend. This process is often used in order to change the physical characteristics of the product, such as de-dusting of the product. In some instances, specific protective coating can be applied this way as well.

In this process, powders can be wetted with water or oil in a relatively simple and straightforward way. This can be done at relatively high speed at comparative low prices. This would involve the use of our Lödige CB-30 or our Shugi Flexomix disperser.

