



# Butter reworker -18°C

Working in close partnership with dairy customers, SPX has developed the GS Butter Reworker since its initial concept in response to the challenges and requirements of butter processing. A range of different systems are now available for reworking 25kg bulk butter based on the same main components to give standardized, proven solutions. They are all designed to improve overall process efficiency, deliver consistent high quality results and add flexibility to production methods.

## Technology improvements

SPX has continued to develop and improve the technology to lower the temperature of the butter blocks that can be reworked on the unit from +5°C (41°F) to -5°C (23°F) and further to -10°C (14°F). Today the machine is able to handle butter blocks at temperatures down to -18°C (-1°F). These ongoing enhancements have mainly been driven by customers who, for logistical reasons, prefer to rework bulk butter direct from a cold store (freezer) without prior tempering.

Naturally there is an increase in power consumption for the reworking of lower temperature product with the same final product temperature as mechanical shear is typically used to raise the temperature. The development of the butter reworker has had focus on minimizing the mechanical shear to the product as well as minimizing the incorporation of air to the reworked butter.

## Sustainable solution and increased ROI

SPX's Gerstenberg Schröder (GS) brand Butter Reworker operates without any cutting at its inlet to minimize mechanical shear in the process and lower energy consumption. Such device typically results in a larger incorporation of air when all the small butter pieces are worked together in the auger section. Working without any cutting or breaking device has also shown to result in a minimum loss of water from the reworking process. With the addition of a vacuum treatment system in the installation, the amount of air in the reworked butter is minimized, again improving operating profit.

## Flexible process solution

This design of butter reworker can be used for different process systems, such as in the repackaging process of 25kg bulk butter to 200g consumer packaging or the reworking of bulk butter to produce a spreadable butter product (Cold Mix Process). In addition to repackaging processes, the reworking system can also be utilized in applications where the reworked butter is further melted to be used in other food processes such as the production of spreads and Anhydrous Milk Fat (AMF).

The GS system can also be used to temper reworked butter for baking applications. It can rework the bulk butter and deliver the tempered butter to a dough mixer without risk of melting. The supply of this constant temperature butter to the dough mixers makes the mixing time for each batch more consistent compared with the use of 25kg blocks. This approach also removes the time taken for tempering of the butter, as blocks can be processed directly from cold store.



## OVERVIEW OF TYPICAL GS BUTTER REWORKER APPLICATIONS:

### Repackaging

Although systems are designed to reduce air incorporation during reworking, it is inevitable that some air will be entrapped during the process. The amount of air in the reworked butter bulk is dependent on the process system. A vacuum system will reduce the air content to a level <0.5% (vol), which is a similar level to that achieved by the GS butter machines. The GS Butter Reworker removes air and also enables adjustment of the final product composition by the addition of water, butter milk, salt, etc. to the reworked butter.

### Melting

For processes requiring melted butter, GS can deliver a melting unit after the reworker enabling melted butter at a temperature of typically around 60°C (140°F) to be added to continuous or batch downstream processes. Such a system requires very little floor space, fewer tanks and less flow components compared with a batch melting system. It also offers a more consistent melting temperature and, without the use of a melting tank, reduces oxidation and burning of proteins.

### Tempering

For baking applications where butter is added to the dough mixers, the tempering of 25kg bulk butter is typically required before adding to the mixers. To achieve the uniform temperature of 25kg butter block requires a long time and, therefore, a large volume must be on stock to maintain production levels. With the GS reworking process, butter can be more effectively delivered to dough mixers at a much more uniform temperature, ensuring a more constant mixing time and process for each batch.

### Summary

The GS Butter Reworker can improve final product quality with gentle handling and minimum risk of moisture loss or incorporation of air. It offers a flexible solution that can be applied in several applications and for the production of a variety of recipes. Its ability to provide continuous processing of product direct from the cold store with consistent results can further improve efficiency and assist with production logistics for overall better plant productivity.

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