

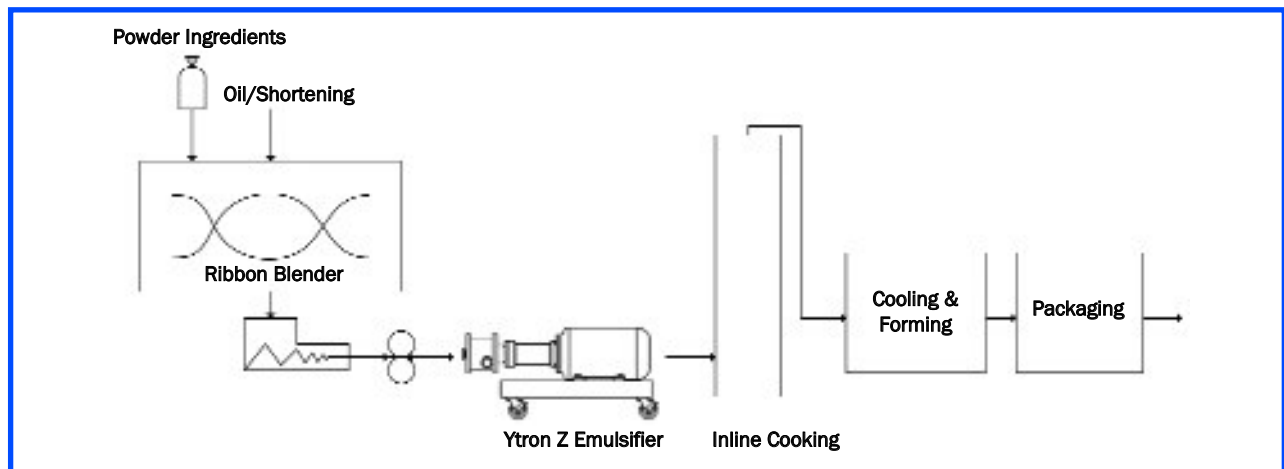
Quadro Ytron®

PROCESS CHEESE PRODUCTION

BACKGROUND/REQUIREMENT

Process cheese is a product made by blending various natural cheeses & cheese powders, emulsifying salts, common salt, preservatives, dry milk powder, whey and fat together, followed by cooking to liquefy the mixture to provide a homogeneous mass ready for forming & cooling. For process cheese slices, the molten cheese is cast on a roller drum, followed by cutting into ribbons, slicing and packaging.

An international cheese manufacturer approached Quadro to find a solution to problems encountered when adding reclaimed fresh cheese to their process. The addition of reclaimed cheese results in large savings of raw material costs. However, the existing horizontal ribbon blender did not provide sufficient mixing and shearing action resulting in hard agglomerates of cheese and shortening passing to the downstream cooking and forming steps leading to off-spec, wasted product.

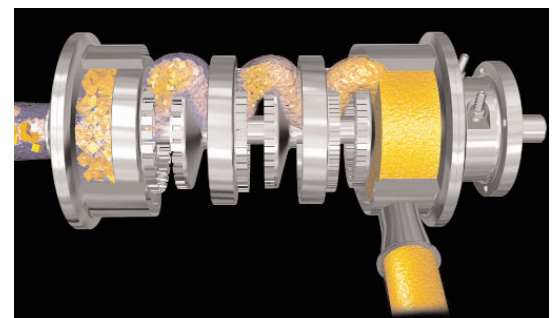


QUADRO'S SOLUTION

Following initial trials at Quadro's Test Center, Quadro recommended the installation of a Ytron Z Emulsifier following the ribbon blender to de-agglomerate and smooth the pre-mix prior to cooking. Optimal speeds and rotor/stator tooling geometries were finalized following trials on five (5) different cheese blends.

SUMMARY

Quadro Ytron® Z Emulsifiers are built to house up to 3 sets of rotors/stators with extremely fine radial tolerances. The rotors and stators themselves are made with different slot widths offering the user the ultimate in flexibility and multi-product usage. Product enters the Z Emulsifier housing axially and must pass through 1 to 3 sets of rotor/stator elements before exiting. With no recirculation of product, a controlled, high-intensity shearing is delivered equally to all fluid elements irrespective of product characteristics. The shear rate is dependent only upon the rotor tip speed and the rotor/stator tooling selection.



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