

Application example

Cutting cakes and biscuits

PLASTIC WELDING

METAL WELDING

CUTTING

CLEANING

SCREENING



Task

The industrial process of dividing soft cakes and biscuits into portions imposes heavy demands, both in terms of the cutting process and the quality of the knives. The cut surfaces must look neat and the product must largely be prevented from sticking to the knife surface. Above all, soft cakes containing chocolate chips must not be pushed out of shape or get stuck to the knife during cutting. The unusable end piece must be sliced as thinly as possible to ensure maximum use of the product.

Solution

Ultrasonics provide an efficient way of cutting cakes and biscuits with neat results. This application relies on the following 20 kHz ultrasonic components:

- A sonotrode with a thin cutting area and ground knife edge
- A tightly sealed converter
- A modular MAG generator

The components are integrated into a special system and operate intermittently.

Configuration advantages

The ultrasonic vibrations significantly reduce the friction between the cake and the knife sonotrode so that virtually no material sticks to the knife. Even at very high cycle speeds, this still results in an extremely neat cut. Thanks to the reduced friction, very thin end pieces can be sliced off, thereby making considerably greater use of the product. The modular components can be integrated into a production system or a 3D robot without any difficulty. The MAG generator detects when a sonotrode is faulty and shuts the system down immediately. As a result, top cutting quality is assured while minimising rejects.



The application was solved using 20 kHz ultrasonic cutting components (knife sonotrode, converter and MAG generator), which were combined in a special system.