

# SI 300



**Speed: 10-20 products/minute**

## SYSTEM DESCRIPTION

*The proposed cake portioning system is designed to:*

- Handle sheet cakes with overall dimensions of: 15 1/4" (l) X 11 1/4" (w) X 2-2 1/2" (h)
- Portion sheet cakes according to various cutting patterns.
- The proposed MatisSonic portioning system is designed and manufactured to meet the highest standards in food processing equipment construction. All components in contact with the products are made of materials approved by the *Food and Drug Association (FDA)*, featuring heavy-duty stainless steel construction.

## Cutting conveyor

- Main stainless steel support structure mounted on leveling legs.
- Food-grade belt conveyor (approx. length: 81", approx. width: 20").
- Positive main drive traction roller powered using a wash down rated gear-motor with inverter for variable speed.
- Precision encoder for accurate guillotines functioning.
- Sharp nose for automatic product transfer at the out-feed section.
- Removable weight loaded belt scraper with recuperation drawer.
- Pneumatic belt tracking mechanism.
- Pneumatic belt tensioning mechanism with quick-release unit.

## First guillotine – MatisSonic S-100 (Longitudinal cutting)

- Servo-driven mechanism for the lateral displacement of the cutting blades (precise cake portioning).
- Servo-driven mechanism for the up-down motion of the cutting blades.
- Servo-driven mechanism for the tracking of the product while cutting.
- Top of the line *ASEPTIC* ultrasonic components including:  
*One 2.2KW power supply, one converter with stainless steel housing and one solid-mount titanium booster;*  
*One 12" wide half-wave titanium cutting blade;*
- Photo-eye sensors for automatic cake position detection on the conveyor belt. Product rows' dimensions can be calculated to divide evenly the cake detected.



[Next page](#)

# SI 300

- Automatic monitoring and levelling of the ultrasonic power induced in the cutting blades for maximum cutting efficiency, reduced cooling and increased life of the cutting blades.
- Pneumatic cooling system for the ultrasonic components.
- Paneling and protection grids with relevant safety switches.

## Second guillotine – MatisSonic S-200 (Lateral cutting)

- Servo-driven mechanism for the longitudinal displacement of the cutting blades to follow the product while cutting (precise cake portioning).
- Servo-driven mechanism for the up-down motion of the cutting blades.
- Top of the line ASEPTIC ultrasonic components including:  
*Two 2.2KW power supplies, two converters with stainless steel housings and two solid-mount titanium boosters.*  
*Two 8" wide (16" total) half-wave precision tuned titanium cutting blades.*
- Photo-eye sensors for automatic cake position detection on the conveyor belt. Product rows' dimensions can be calculated to divide evenly the cake detected.
- Automatic monitoring and levelling of the ultrasonic power induced in the cutting blade for maximum cutting efficiency, reduced cooling and increased life of the cutting blade.
- Pneumatic cooling provided to maintain the ultrasonic components within working temperature.
- Paneling and protection grids with relevant safety switches.

## ADVANTAGES OF THE ULTRASONIC CUTTING TECHNOLOGY

The ultrasonic cutting system which represents the technological innovation of this system, uses 2 frequency generators oscillating 2 titanium blades at ultrasonic frequencies. The generated movement eliminates almost all friction between the blades and the product being cut, resulting in a clear and precise cut. The blade remains consequently cleaner and retains its sharp-edge longer.

There are several advantages resulting from ultrasonic cutting. Here is a brief description.

**Uniformity:** Cuts made with the ultrasonic cutting unit are straight, clean, and uniform. The energy produced by the ultrasonic vibrations virtually eliminates all friction between the blade and the product being cut.



Next page

# SI 300

- Speed:** Compared to conventional cutting systems, the ultrasonic cutting system is faster and keeps product accumulation on the cutting blade to a minimum. Increased speed means enhanced productivity and no bottlenecks at cutting stations.
- Maintenance:** Maintenance costs and production downtime are substantially reduced since the cutting blades stay cleaner longer.
- Cleanliness:** Ultrasonic cutting technology uses blades made of titanium, an inert material that does not contaminate the products being cut.

## CONTROLS

- A stainless steel (NEMA 4X-water tight) control panel is included to house all electrical components including the ultrasonic power supplies, motor drives, PLC and other components.
- An operator interface panel is located on the machine to select the operating mode, start and stop the system, change the production parameters such as cutting pattern, production speed, ultrasonic power levelling, conveyor belt speed, etc. and display error messages for fast troubleshooting.
- The cutting system supplies enough product to feed the wrapper up to 300 products/min.
- A button station located at the wrapper infeed is used to start and stop the system, select the normal or rework mode of feeding products.
- In rework mode, the system leaves 5-10% space to add product manually to the wrapper.
- Three emergency stops are included, one at each end of the system and one at the wrapper in-feed station.
- The system is powered using electrical power (460VAC – 3 phases – 60HZ) and compressed air (approx. 10-15 CFM @ 80 psi).
- The system meets UL standards.

## SAFETY

The system meets OSHA standards.

