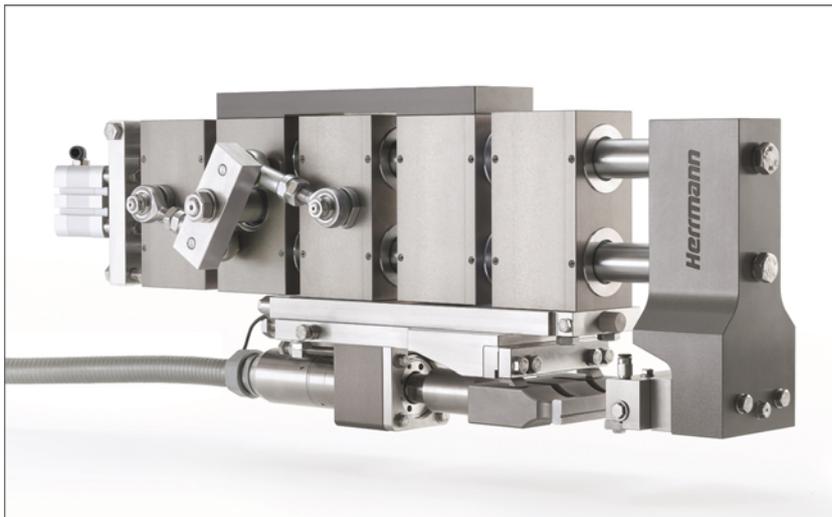


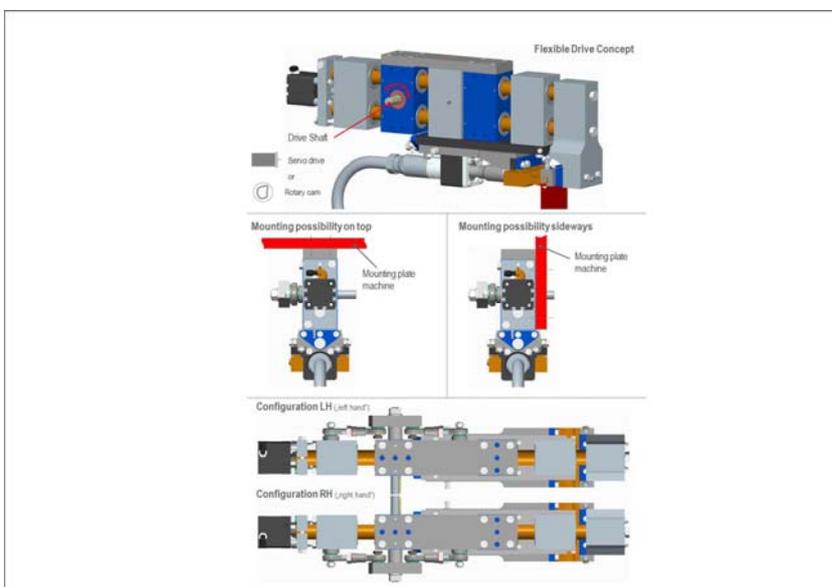
## New ultrasonic top seal module TSM 35 – your fast way towards series production

If packaging producers specify ultrasonics as their sealing technology, the manufacturers of packaging machines are now able to integrate the appropriate technology faster and better thanks to the slim design and the standardized interfaces of the new top seal module TSM35 by Herrmann Ultraschall. Opening widths of 50 to 100 mm between the anvil and the sealing tool, i.e. the sonotrode, cater for both rotary tables and longitudinal processing designs, also in the form of multi-track lines.

The new module (*Image 01: “top seal module TSM35-40-50”*) can be integrated into packaging machines in various ways thanks to its different types of mechanical interfaces. Mounting can optionally be performed by one of the two side surfaces or by the topside of the top seal module. The drive interface may be positioned either on the left or on the right. This provides key advantages, particularly for multi-track machines.



*Image 01:  
“top seal module TSM35-40-50”*



*Image 02:  
“Flexible arrangement of  
interfaces for different  
machine concepts”.*

The transfer of movement and force build-up are now integrated in the top seal module, while the drive for the closing movement will still be provided by the machine builder. Robust, precise guiding rails ensure the required parallel travel of weld tools. Separation of the drive movement from build-up of force using pre-loaded pneumatic cylinders allows for operation of the module even at high cycle rates. The weld force does not have to be built up after contact, instead the weld process can start directly upon contact of the weld tools. In connection with the optionally available proportional valve, the device provides a high degree of flexibility for setting the weld force, particularly upon format change.

Ultrasonics is particularly reliable and suitable for large production volumes, with liquid, pasty, chunky, and fibered products, such as pet food or convenience food and with thermally sensitive products, such as cheese, salad, chocolate, and pharmaceuticals. The major benefits over the widely used heat contact process are the hermetic weld seals, despite seal area contamination, and the fast cycle times.

#### **HDM ProcessControl - detecting critical conditions during sealing**

The digital ultrasonic generator allows for directed build-up of the oscillation amplitude and provides valuable data for quality surveillance thanks to its permanent measuring and analyzing the major measuring variables. More than twenty different measured values are recorded and processed 10,000 times per second.

The integrated HDM ProcessControl makes sure that critical conditions in the seal are safely and gaplessly detected. The system identifies and indicates:

- Creases in the top area
- Big chunks in the seal area
- Incorrect positioning in the weld station
- Lack of pouches
- Double configuration

This feedback allows for consistent assessment of the process. Based on that information, faulty bags and pouches can be safely identified and rejected and thus process safety is significantly increased.

#### **Short interview with Micha Augenstein - member of the product management team at Herrmann Ultraschall**

##### **What was your motivation to develop the new top seal module TSM35?**

**Augenstein:** In the past, incorporation of ultrasonic solutions provided a difficult challenge for packaging machine manufacturers, particularly initial integration. Our goal was to simplify that process. With the new module, we provide machine builders with all critical functions relevant for ultrasonics.

##### **Is the module suitable for integration in all conventional SUP machines?**

**Augenstein:** During development, our focus was on creating a product that comprises tried and tested standard components and at the same time provides maximum flexibility. And we managed to do so quite successfully, if I may say so, myself. Thanks to the modular structure we use eight standard variants to cater for most varied machine designs. Moreover, the six available fieldbus connections allow for fast and comfortable integration into the overall machine control.

##### **What are other highlights that TSM35 offers?**

**Augenstein:** The travel function and generation of force have been separated. The pneumatic cylinder is operated in pre-loaded condition; i.e. the set process force is permanently applied. This makes sure that we achieve best sealing results even at high machine speeds. Our thoroughly tried and tested HDM ProcessControl, which reliably detects faults in the seal area, completes the package.

**And what about the drive?**

**Augenstein:** The actual drive operation of the module is performed by the packaging machine and can be realized through the main drive shaft or a separate servomotor. This ensures additional flexibility for individual adjustment to the respective machine conditions. In general, this option provides higher speeds and better output than the purely pneumatic drives.



*Micha Augenstein  
Project Engineering  
Herrmann Ultraschall*