

## MID-TRONIC sets standards in the field of double-sided SMD assembly of Flex- PCB`s

**WIESAU. MID-TRONIC Wiesauplast GmbH is always committed to innovation: The best example for this is a new sensor application for a 4-unit lifting cylinder unit. The flexible sensor unit allows precise detection of 4 adjacent lifting cylinder units.**

MID-TRONIC Wiesauplast GmbH was founded in 2010, in order to meet the growing requirements for high-tech plastic products in combination with electronic functions. The main focus of our company lies in the development of technologies serving the combination of electronic and sensor functions with functional and visual thermoplastic products. MID-TRONIC is an affiliated company of Wiesauplast Deutschland GmbH & Co. KG, founded in 1958, with presently more than 500 employees at the production sites in Wiesau and Mexico. We have therefore more than 50 years experience in the production of plastic parts and are system supplier in the field of automotive and technical parts and for medical technology.

On the basis of three-dimensional plastic elements we develop and produce functional electronic applications in series. As a portfolio expansion we are also concentrating on the 2D-SMD electronic production in connection with plastic components for the production of mechatronic components. Our key competencies lie in the area of in-house production of plastic components, complemented by LDS-MID technology along with spatial SMD assembly, as well as the mounting of sub-assemblies.



Injection molding at Wiesauplast

**MID-TRONIC and WIESAUPLAST offer you the industrialization of the customer's development from prototype until line production.**

Our contribution in the development phase of mechatronic systems in the overall disciplines electronics and mechanics enables us, to give comprehensive support to our customers for new approaches to solutions. Result-oriented we can build on our experiences and possibilities in the field of the classic SMD assembly or the 3D-MID technology. The newly installed production systems offer us a maximum of production flexibility and integrated process steps.

New SMD production line at MID-TRONIC



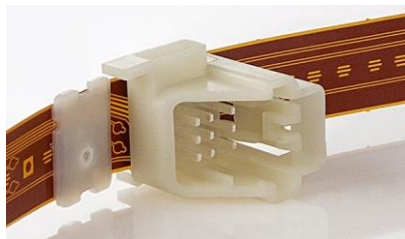
For the mechanic components we set priority on plastic components. The competence in development and production of these parts is fully covered by Wiesauplast. Among others, over-molding of stamping parts for the automotive industry is made on fully automatic production cells in high volumes under highest quality requirements.

Growing requirements with regard to design, function, precision and miniaturization drive us to develop high-integrated customer products. The great interest, numerous inquiries and the good order situation are the basis for a constant growth and the positive development of our company.

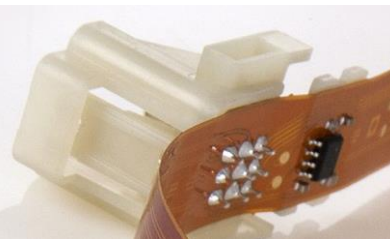
## MID-TRONIC produces new sensor application for an automotive 4-unit lifting cylinder unit

MID-TRONIC developed and designed a multi-step production process for the double-sided high precision SMD assembly of a Flex PCB for a German specialist for automotive actuating systems. The flexible printed circuit board with four Hall sensor units is functionalized on both sides and meets our high precision requirements along the entire board length of 280 mm. This enables the precise sensing of the four adjacent lifting cylinder units and thus meets the high demands of the final customer, a German premium car manufacturer.

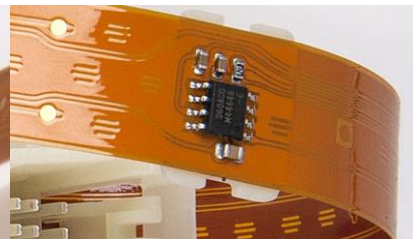
A proved and tested highly stressable basic material is used as flexible printed circuit board. Mounted on specifically developed SMD carriers, they are passing three fully-automatic production steps. Independently of any influence of the operator, the plastic covers are SMD assembled and fixed in the first step, the SMD components in a second step and the two connectors in the final step. The customer-specific and application related connector interconnects the board with the central control unit. 100%-AOI and ICT tests are done separated from the assembly process. Furthermore, the AOI system checks the dimensional relation between the plastic cover on the upper side of the Flex PCB and the positioning of the Hall-ICs on the bottom side of the Flex PCB. This correct positional arrangement of cover and IC is essential for the final position and function of the Hall sensor in the overall assembly housing. A system-wide and fully integrated traceability software enables a consistently traceability of all product and process related data of each unique circuit board by writing a data matrix code by laser.



Upper side of Flex PCB



Bottom side of Flex PCB



Hall sensor area

The field of application of the product is under the hood and the main focus besides of precision is on the robustness of the system. Key advantage is a high heat and media resistance against aggressive fluids. The three-dimensional arrangement of the four sensor units at the associated housing supports the use of a well-engineered flexible conductor structure, especially as the extreme arrangement of the HALL sensor units did not allow to use the MID technology.

## PLASTIC MEETS ELECTRONIC



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