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## DEPRAG XYZ-DCAM with automatic Screwfeeding



Total Machine View

### Required Process:

Assembly of an automotive Multimedia Control Component

### Solution:

One XYZ-DEPRAG-Compact-Assembly-Module (DCAM), consisting of the following components:

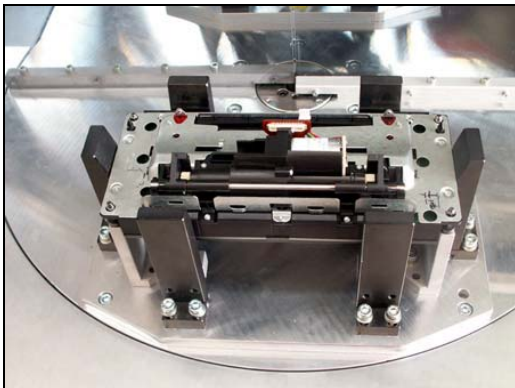
- One **XYZ-Axis System**
- One 2-Position Rotary Index Table with 2-Hand Safety Start-Buttons and hinged Safety-Flap
- One Pneumatic Downhold-Device at Screw-Assembly Area
- One **DEPRAG Screwfeeding Machine (0511-EP)**
- One **DEPRAG Screwdriver Spindle Model No. 347-218-31**
- One **DEPRAG P-Controller** and one **DEPRAG Add-On Display Panel**
- One **DEPRAG Motion Controller MC283**

**Total Cycle Time: < 40 Seconds**

### Cycle Description:

The Operator loads the part fixture, located on the rotary table, with a pre-assembled multi-media control-component. A Rotary-Index Table indexes two part-fixtures into, and out of the Screwdriving Station. The Operator presses the 2-Hand Safety-Buttons to cycle the rotary table by 180-degree into the Screwdriving area of the DCAM. To assure that the indexing motion (when changing parts) is clear from interference, a hinged safety-flap was integrated. If a component or a finger of the Operator or another person is placed anywhere in between a rigid element of the rotary table and the machine frame, then the flap swivels back and the unit reports an Emergency-Off signal to the controller.

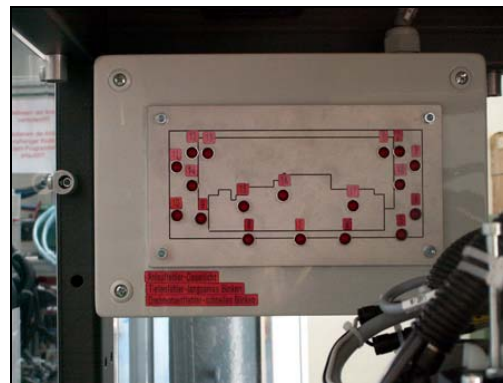
The XYZ-axes move to each screwdriving position of the control-component after a downhold device has secured the control-component. The SFM [[Screwdriver Function Module](#)] has a size-2, pneumatic Screwdriver DEPRAG Minimat®-Ultra [347-218-31](#) integrated.



Rotary Dial Plate with loaded Part

The screws are presented to the split-type Nosepieces using a Single Screwfeeder Model [SZG0511-EP/0.75-1](#). The control-component is assembled with a total of 18 screws. The SFM features an 80-mm mouthpiece-stroke, which allows easy access to each screw-location while clearing the down-hold plate.

After each screw-assembly, sensors are verifying the screw-depth, the torque and the screwdriving cycle-time. If an assembly error occurs, the screw holepattern on the add-on display indicates exactly the screw location having an error as well as the type of error that occurred. This add-on display informs the Operator as to the assembly status and allows a simple recognition of the error message and the exact error-location.



Add-On Display showing the screw holepattern and error indicators

During the actual screwdriving-cycle, a completely assembled part may be removed from the load/unload station and a new part may be loaded. The Operator load-time is therefore independent from the machine cycle time and will not show down the assembly process.