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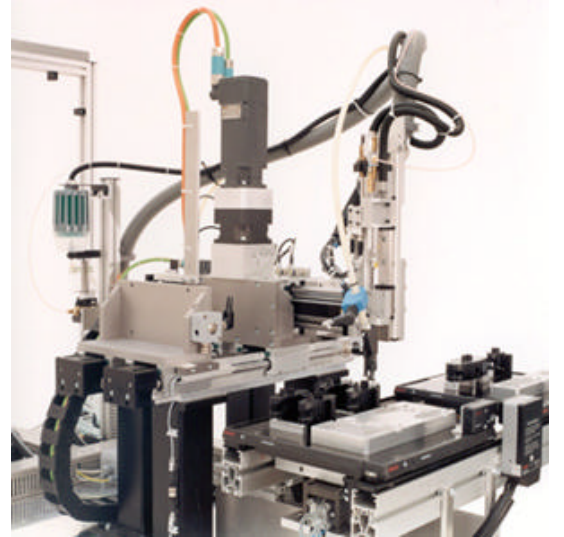
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## Automotive Electric Window Switch Assembly

This machine is an XYZ linear motion screwdriving robot, built for Valeo to assemble switches for an electric window system. It is mounted with a Micromat Screwdriver Spindle, model # 345-408-31, and a Twin Screwfeeder, model # SZG 0522-EP/0.75. It is run entirely by a Siemens S7 controller that choreographs each operation, stores X and Y positions, and monitors all machine functions. The Siemens S7 also interfaces with the master PLC that controls the entire assembly line. The control box is mounted on casters to facilitate relocation.



Note: The twin screwfeeder was used in case the customer decided later to increase throughput by adding a second spindle.



The primary axis (X-axis) is a gantry configuration, having two parallel tracks. The secondary axis (Y-axis) is a single track, cantilevered from the X-axis. Both the X and Y-axes are driven by servo-motors fitted with timing belts to insure quick response, accurate positioning, and rapid travel. The vertical axis (Z-axis) is mounted on the outboard end of the Y-axis. The Z-axis configuration is called a construction unit. The construction unit provides movement of the mouthpiece/nosepiece assembly relative to the work surface, and movement of the spindle relative to the mouthpiece/nosepiece assembly to allow feeding of the screw. Pneumatic cylinders provide all vertical movements. This machine incorporates a standard conveyor interface that allows it to be quickly integrated into an existing production line. With this standard interface, the customer can easily move the machine to a different location if necessary. The short conveyor shown in the pictures was a mock-up, and was only used during the run-off.