

## DEPRAG 2-SPINDLE SCREWDRIVING UNIT

This Screwdriving Station is used to insert two M2 x 6mm flathead screws that attach a cover to an automotive door handle. The required cycle time is 5 seconds. The customer, H & F, provided DEPRAG with the machine frame, the aluminum base-plate and the parts fixture. DEPRAG then integrated the components and programmed the machine. The elapsed time from order confirmation to delivery was approximately 12 working weeks.

The part fixture is mounted directly to the base, and has a built in locking mechanism to hold the parts during assembly. Two construction units drive the screws, one horizontal and one vertical, each with a single spindle. The horizontal construction unit is mounted directly to the base plate with a spacer block to bring it to the correct elevation. It has a conventional mouthpiece and is fed by a standard feeder bowl. The vertical construction unit is mounted to an aluminum profile frame that extends upward from the base plate. Due to space constraints, this spindle cannot use a mouthpiece. Instead, the spindle is equipped with a vacuum sleeve, a vacuum injector and a vacuum sensor. Screws are blown to a device called a pick slide that indexes one screw underneath the spindle. The spindle comes down and holds the screw with vacuum. Then the pick-slide indexes back out of the way so the driver can insert the screw. One DEPRAG LC172-Controller controls all of these actions.

In production, the operator loads a door handle and a cover into the parts fixture, and closes the safety door to start the cycle. The pneumatic locking device secures the parts in the fixture and the spindles drive the two screws to the correct torque. The spindles move back, the part fixture locking-device unlocks, and the safety door opens up so the operator can remove the completed part and reload the part fixture. The machine cycle time is 5 seconds.

