

SPIROL®

INSERT INSTALLATION TECHNOLOGY

Model TA Automatic Driver for Self-Tapping Threaded Inserts

The **SPIROL Model TA Automatic Insert Driver** provides an accurate and consistent method to install Self-Tapping Inserts into plastic housings.

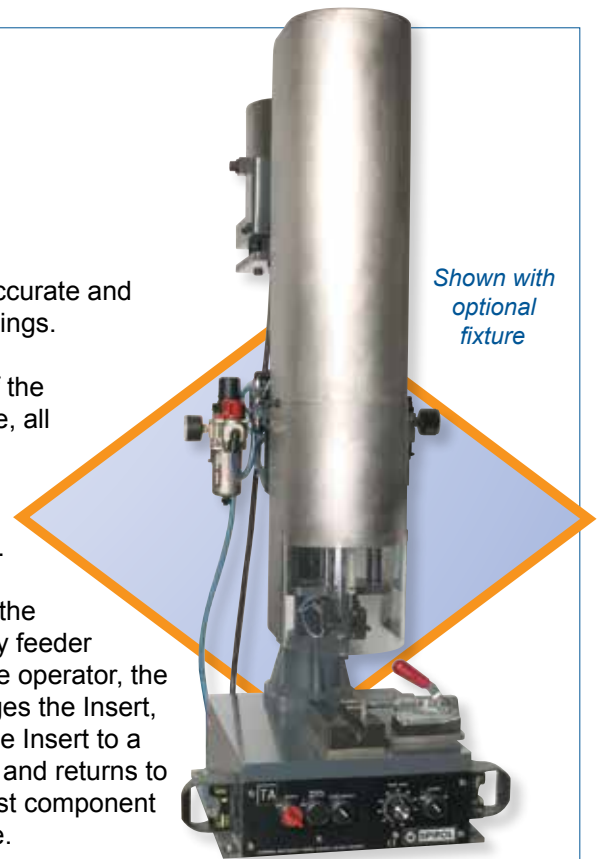
As much as 75% of an Insert's performance is the direct result of the installation method. Therefore, in order to maximize performance, all of the factors that impact installation must be carefully controlled. SPIROL's Model TA Automatic Insert Driver has been designed to eliminate the dependency on the operator to control these factors to ensure optimal retention and performance of the Insert.

The operator does not need to physically touch the Insert during the entire installation process. The Inserts are loaded into a vibratory feeder and fed automatically to the installation site. Once initiated by the operator, the insertion unit advances and rotates simultaneously, axially engages the Insert, and continues to advance to the host component where it taps the Insert to a preset depth. At this point, the system reverses, unscrews itself, and returns to the home position. During the unloading and reloading of the host component the insertion unit resets, and positions an Insert for the next cycle.

Design Features/Benefits:

- Accurate:**
- Micrometer style insertion depth adjustment for precise positioning of the Insert in the part
 - Pneumatic drive tool with flow controls to precisely control the insertion force and speed
- Efficient:**
- Automatic Insert feeding and installation
 - Precision ground machine base for easy fixture mounting
- Built to Last:**
- Toolled, coated stainless steel vibratory feeder system
- Versatile:**
- Installs Inserts ranging sizes from M2 to M6 metric threads and No. 2 to 1/4" unified threads
 - Simple up-down adjustment of the machine on a post mount to accommodate a wide range of component sizes
- Safe:**
- Guarded pinch points, and ergonomically friendly zero-force optical sensor actuation with anti-repeat, anti-tie down feature

Optional alignment fixtures available.



*Shown with
optional
fixture*

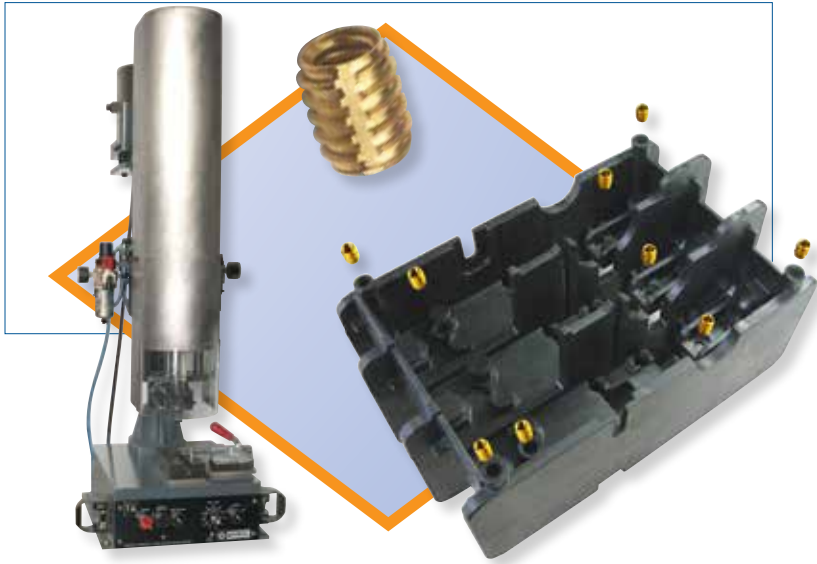


SPIROL INS 10
Thread Forming
Inserts are used in
soft, ductile plastics.



SPIROL INS 13
Thread Cutting
Inserts are used in
hard, brittle plastics,
and structural foams.

Options such as rotary and linear part indexing, part and Insert presence sensing, and torque monitoring can be added for enhanced productivity and heightened quality.



Application:

A molder of components used in high voltage controls was experiencing difficulty installing brass Inserts into their plastic parts. They required high performance Inserts with a quality installation to withstand a high torque load as well as resistance to vibration caused by constant low frequency switching. The plastic housing was designed to resist extremely high temperatures during normal operation. Accordingly, the plastic composition had a high percentage of glass and mineral fillers to withstand the harsh environment. The plastic's resistance to melting made it exceptionally difficult to install the Inserts using heat or ultrasonic equipment. However, without properly installed Inserts, the plastic assembly failed, causing short circuits. The molder requested **SPIROL's** help in determining the best Insert and most efficient installation method to meet their performance requirements.

Solution:

SPIROL Engineers reviewed the application, and recommended that the molder change from the current Inserts to **Self-Tapping Inserts**. The hole size in the molded part did not require any modification to accommodate the Self-Tapping Inserts. The manufacturer was also able to utilize their existing X-Y fixture tooling for part positioning. The **Model TA Automatic Insert Driver** was installed in place of their ultrasonic unit - almost a direct bolt-in - and production resumed immediately. The Thread Cutting Inserts were easy to install into the hard plastic component, and they exceeded the performance requirements of the assembly.

SPIROL Application Engineers will review your application needs and work with your design team to recommend the best solution. One way to start the process is to select **Installation Systems** in our **Optimal Application Engineering** portal at www.SPIROL.com.

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