

# SPIROL®

## COMPRESSION LIMITER INSTALLATION TECHNOLOGY

### Model CL Compression Limiter Installation Machine

This robust, vertical installation machine is specifically designed to install **Compression Limiters** into a variety of plastic components. The machine is available in two models: the **CL1000** (1,000 lbs. maximum installation force) and the **CL2000** (2,000 lbs. maximum installation force).

To operate, load the plastic part(s) and the Compression Limiter(s) over the fixture locating post(s). Automatically lock the fixture into place by moving it into the work zone. Upon removal of the operator's hands, the light curtain is clear and the machine can be activated. All Compression Limiters are installed simultaneously.

The Model CL is equipped with installation verification to ensure that the machine has completed a full installation cycle and a Compression Limiter was installed at each location. In the event of a fault, the touchscreen will flash an error message. The fixture slide locks in place until the operator acknowledges the message and places the machine back into operation mode.

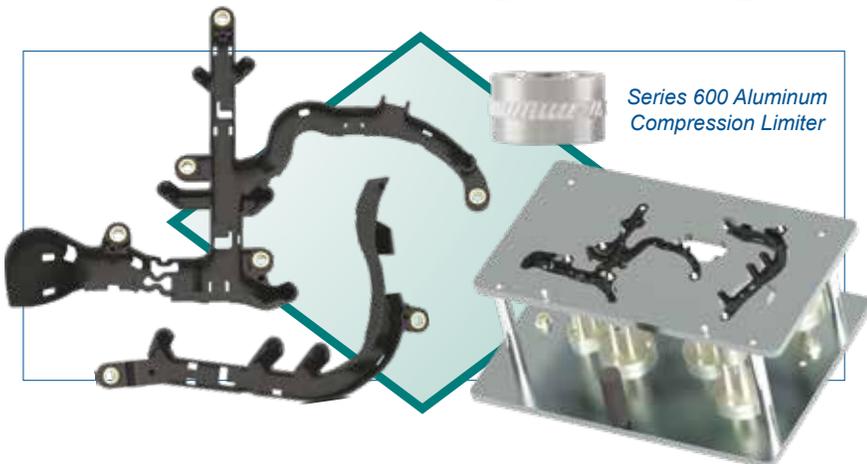
#### Design Features/Benefits:

- Precise:**
  - Fine tip adjustment for depth
  - Precision ground work table
- Versatile:**
  - Single or multiple part installation
  - Available with multiple installation tips in nearly any configuration at various elevations
  - Installs different size Compression Limiters
- Easy to Use:**
  - 7" Touchscreen interface
  - LED work surface illumination
  - Ergonomic part loading
  - Programming interface with two 120 VAC outlets
  - USB and Ethernet ports
- Safe:**
  - Full perimeter guarding with light curtain
  - CE certified / Safety Controls meet safety category 4 per EN 954-1 / Performance Level PL<sub>e</sub> per ISO 13849-1
- Installation Verification:**
  - Full stroke sensor confirms cylinder reached preset installation elevation
  - Sensors verify part installation at all locations



#### Optional enhancement features include:

Andon stack light for visual indication of machine status, audible alarm for fault notification, tool kits to accommodate various assembly designs, and data acquisition.



### Application:

A plastic molder of automotive wiring harness channels was faced with the task of installing multiple Compression Limiters into irregular shaped components. In total, there were four different components - each containing between two and six **SPIROL® Series 600 Aluminum Compression Limiters**. The irregular shape and thin walls of the wiring harness posed a fixturing and installation challenge for the customer. The wiring harness was not only irregular in shape, but the Compression Limiter installation heights varied within the part. The previous method of assembly was manual with the operator placing and hammering each Compression Limiter into place. The manual process was slow, it was difficult to ensure proper alignment of the Compression Limiter with the hole, and the scrap levels were unacceptable.

### Solution:

**SPIROL® Model CL Compression Limiter Installation Machine** was designed with multiple fixture cavities. Each cavity accommodates and securely holds the harness channels at the proper height and orientation for Compression Limiter installation. The operator simply loads the wiring harness assembly into the proper fixture location using the fixture cut-out as a guide. Each installation hole is loaded over a guidepost to ensure proper hole location, alignment and support throughout the installation process. The operator then manually loads a Compression Limiter onto each post. Once all components are loaded, the fixture plate is moved into the work zone and locks in place. The machine is activated and the top platen advances downward simultaneously installing all Compression Limiters. Upon verification that the installation cycle has completed and all Compression Limiters are sensed as installed, the machine retracts, the fixture is unlocked and the completed assemblies removed.

SPIROL delivered the complete assembly solution by providing the Compression Limiters and Installation Machine. The Model CL significantly increased productivity, improved product quality, and eliminated scrap associated with the manual installation process.

**SPIROL** Application Engineers will review your application needs and work with your design team to recommend the best solution. To start the process, select **Installation Systems** in our **Optimal Application Engineering** portal at [www.SPIROL.com](http://www.SPIROL.com) or contact your local Technical Center.

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