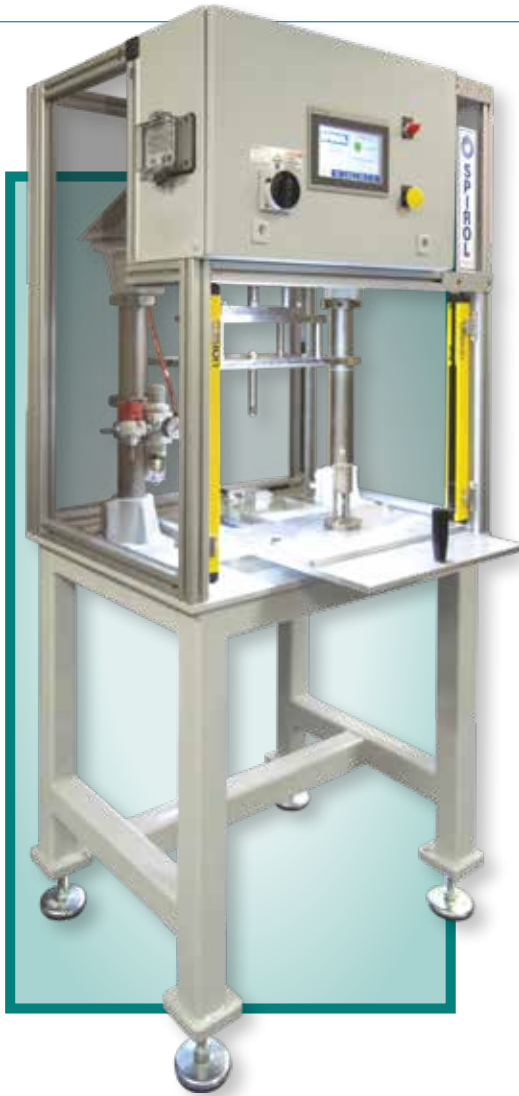


# SPIROL<sup>®</sup>

COMPRESSION LIMITER INSTALLATION TECHNOLOGY



**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.

## Model CL Compression Limiter Installation Machine

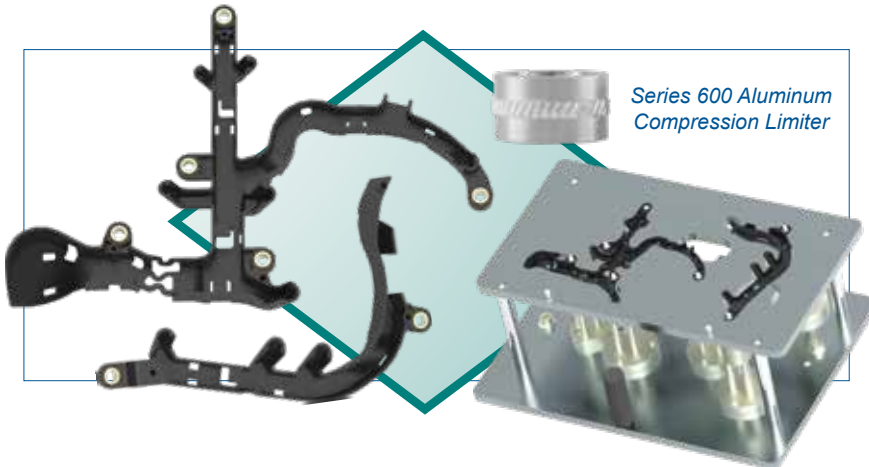
This robust, vertical installation machine is specifically designed to install **Compression Limiters** into a variety of plastic components. The machine is available in two models: the **CL1000** (1,000 lbs. maximum installation force) and the **CL2000** (2,000 lbs. maximum installation force).

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



### 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.

## Technical Centers

### Americas

**SPIROL International Corporation**  
30 Rock Avenue  
Danielson, Connecticut 06239 U.S.A.  
Tel. +1 860 774 8571  
Fax. +1 860 774 2048

**SPIROL Shim Division**  
321 Remington Road  
Stow, Ohio 44224 U.S.A.  
Tel. +1 330 920 3655  
Fax. +1 330 920 3659

**SPIROL Canada**  
3103 St. Etienne Boulevard  
Windsor, Ontario N8W 5B1 Canada  
Tel. +1 519 974 3334  
Fax. +1 519 974 6550

**SPIROL Mexico**  
Avenida Avante #250  
Parque Industrial Avante Apodaca  
Apodaca, N.L. 66607 Mexico  
Tel. +52 81 8385 4390  
Fax. +52 81 8385 4391

**SPIROL Brazil**  
Rua Mafalda Barnabé Soliane, 134  
Comercial Vitória Martini, Distrito Industrial  
CEP 13347-610, Indaiatuba, SP, Brazil  
Tel. +55 19 3936 2701  
Fax. +55 19 3936 7121

### Europe

**SPIROL France**  
Cité de l'Automobile ZAC Croix Blandin  
18 Rue Léna Bernstein  
51100 Reims, France  
Tel. +33 3 26 36 31 42  
Fax. +33 3 26 09 19 76

**SPIROL United Kingdom**  
17 Princewood Road  
Corby, Northants  
NN17 4ET United Kingdom  
Tel. +44 1536 444800  
Fax. +44 1536 203415

**SPIROL Germany**  
Ottostr. 4  
80333 Munich, Germany  
Tel. +49 89 4 111 905 71  
Fax. +49 89 4 111 905 72

**SPIROL Spain**  
08940 Cornellà de Llobregat  
Barcelona, Spain  
Tel. +34 93 193 05 32  
Fax. +34 93 193 25 43

**SPIROL Czech Republic**  
Sokola Tůmy 743/16  
Ostrava-Mariánské Hory 70900  
Czech Republic  
Tel/Fax. +420 417 537 979

**SPIROL Poland**  
ul. M. Skłodowskiej-Curie 7E / 2  
56-400, Oleśnica, Poland  
Tel. +48 71 399 44 55

### Asia Pacific

**SPIROL Asia Headquarters**  
1st Floor, Building 22, Plot D9, District D  
No. 122 HeDan Road  
Wai Gao Qiao Free Trade Zone  
Shanghai, China 200131  
Tel. +86 21 5046 1451  
Fax. +86 21 5046 1540

**SPIROL Korea**  
160-5 Seokchon-Dong  
Songpa-gu, Seoul, 138-844, Korea  
Tel. +86 (0) 21 5046-1451  
Fax. +86 (0) 21 5046-1540

e-mail: [info@spirol.com](mailto:info@spirol.com)