



# The Advantages of CL220 Split Seam Compression Limiters

## WHITE PAPER

by Peter Grant, Tubular Product Specialist  
SPIROL Canada

In the 1940s, SPIROL's founder, Herman Koehl, invented the Coiled Spring Pin to service a need in the aviation industry that couldn't be met by any other fastener. Throughout the years, innovation has remained one of SPIROL's core principles, and new product lines have been continuously developed to address the needs of the evolving manufacturing landscape. One example of this is with the proliferation of plastics throughout just about every industry. Starting in the 1990's, as increasingly more metal products were being converted into plastic to reduce weight and lower cost, manufacturers required a method to protect plastic components from the compressive loads resulting from the tightening of the bolts. It was for this reason that SPIROL introduced the first standard line of Compression Limiters to the industry. Essentially, Compression Limiters provide "spot reinforcement" of metal within the plastic assembly in the high stress areas where components mate. SPIROL's Compression Limiters are designed to enable a bolt to be tightened to its recommended tightening torque, and ensure that the joint remains intact throughout the life of the assembly.



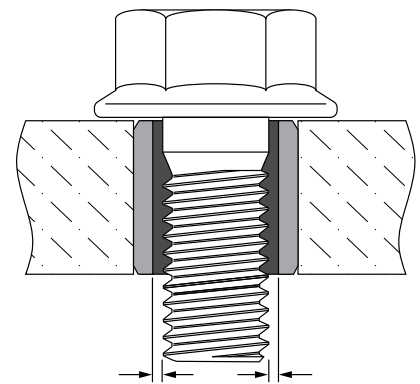
SPIROL offers a range of both formed and machined Compression Limiters including split seam, molded-in, oval and solid wall designs to meet specific technical and commercial requirements. The latest series to be introduced to SPIROL's expansive product offering is the series CL220 Compression Limiter.

Equipped with a split seam, flexible diameter, and a lead-in chamfer on both ends, the CL220 Limiter is designed to be simply pressed into a plastic hole after the molding process is complete. Compared to other Compression Limiters, there are distinct features of the CL220 Compression Limiter that provide substantial benefits:

- 1) The flexible diameter accommodates wide hole tolerances, and the gap is designed such that the parts do not interlock in the free state enabling trouble-free automatic feeding and installation.
- 2) The series CL220 Limiter was designed with a large inner diameter (ID) after insertion to compensate for misalignment. Once installed, the CL220 provides a minimum clearance of 1mm around the bolt diameter. This grants the bolt room to shift within the ID of the Compression Limiter to accurately align itself with the mating hole when there is an offset.
- 3) The CL220 series is finished with ArmorGalv®, a zinc alloy thermal diffusion coating with two sealers that provides 1000+ hours of salt spray protection. This level of corrosion resistance provides a net benefit in most applications, but is invaluable in outdoor applications such as agricultural, automotive / EV, structural, etc. ArmorGalv® is also one of the most environmentally friendly coatings in industry.

There are commercial advantages of the CL220 Compression Limiter series as well. Standard size CL220 Split Seam Compression Limiters ship from stock, intermediate, longer and shorter lengths can be quickly produced, and the standardized design ensures reliable, high quality product.

The CL220 standard line of Compression Limiters accommodates M4, M5, M6, M8, M10, and M12 bolts with a 'Class 8.8' or 'Grade 5' bolt rating and are offered in any length between 4mm – 50mm.



Minimum clearance of 1mm  
around the bolt diameter



ArmorGalv® Coated



Electroplated Zinc

### Complimentary Application Engineering Support

**Need help choosing the most appropriate fastening solution for your application?**  
SPIROL's Application Engineers will review your specific requirements, and design the most cost-effective Compression Limiter to meet your technical and commercial needs. **Contact us today!**

# SPIROL

Innovative fastening solutions.  
Lower assembly costs.

## 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 United Kingdom**  
17 Princewood Road  
Corby, Northants  
NN17 4ET United Kingdom  
Tel: +44 (0) 1536 444800  
Fax: +44 (0) 1536 203415

**SPIROL France**  
Cit  de l'Automobile ZAC Croix Blandin  
18 Rue L na Bernstein  
51100 Reims, France  
Tel: +33 (0) 3 26 36 31 42  
Fax: +33 (0) 3 26 09 19 76

**SPIROL Germany**  
Ottostr. 4  
80333 Munich, Germany  
Tel: +49 (0) 89 4 111 905 71  
Fax: +49 (0) 89 4 111 905 72

**SPIROL Spain**  
Plantes 3 i 4  
Gran Via de Carles III, 84  
08028, Barcelona, Spain  
Tel/Fax: +34 932 71 64 28

**SPIROL Czech Republic**  
Evropsk 2588 / 33a  
160 00 Prague 6-Dejvice  
Czech Republic  
Tel: +420 226 218 935

**SPIROL Poland**  
ul. Solec 38 lok. 10  
00-394, Warsaw, Poland  
Tel. +48 510 039 345

**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 (0) 21 5046-1451  
Fax: +86 (0) 21 5046-1540

**SPIROL Korea**  
16th Floor, 396 Seocho-daero,  
Seocho-gu, Seoul, 06619, South Korea  
Tel: +82 (0) 10 9429 1451

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

**SPIROL.com**



Coiled Spring Pins



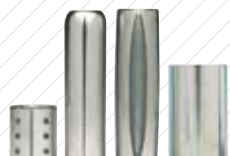
Slotted Spring Pins



Solid Pins



Alignment Dowels /  
Bushings



Spacers & Rolled  
Tubular Components



Compression  
Limiters



Threaded Inserts  
for Plastics



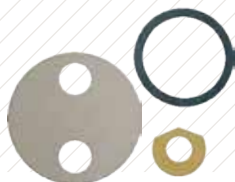
Railroad Nuts



Disc Springs



Precision Shims &  
Thin Metal Stampings



Precision Washers



Parts Feeding  
Technology



Pin Installation  
Technology



Insert Installation  
Technology



Compression Limiter  
Installation Technology

Please refer to [www.SPIROL.com](http://www.SPIROL.com) for current specifications and standard product offerings.

SPIROL offers complimentary Application Engineering support! We will assist on new designs as well as help resolve issues, and recommend cost savings on existing designs. Let us help by visiting **Application Engineering Services** on **SPIROL.com**.

  2023 SPIROL International Corporation  
No part of this publication may be reproduced or transmitted in any form or by any means, electronically or mechanically, except as permitted by law, without written permission from SPIROL International Corporation.