



How to Select the Proper Spacer for Your Assembly

WHITE PAPER

by Tom Buchta, President and Tubular Products Director
SPIROL Industries Ltd., Windsor, Ontario, Canada

There are many different types of components that can be used as spacers, standoffs, distance bushings and sleeves. Popular options include cut-off tubing, tubes, ferrules, grommets, and machined parts. A low cost alternative to these more expensive options are Roll Formed Tubular Spacers.

SPIROL offers metal Tubular Spacers in two standard wall thicknesses, SP100 Standard Wall and SP150 Heavy Wall, to accommodate specific application strength and bearing requirements. As the name implies, the SP100 Standard Wall Spacer has a thinner wall thickness compared to the SP150 Heavy Wall Spacer. Often used in conjunction with a bolt, Tubular Spacers are designed to provide a clearance fit over standard bolt and screw sizes.

Columnar strength is a primary consideration when determining whether to use the SP100 Standard Wall or SP150 Heavy Wall Spacer. In addition to having a higher columnar strength, Design Engineers may prefer the SP150 Heavy Wall Spacer as the thicker wall makes it more robust, enabling it to withstand a higher clamping load than the SP100 Standard Wall Spacer. Other applications may require the thicker wall for the larger bearing surface for distribution of the clamp load on the mating surfaces. This is particularly beneficial to prevent indenting of the material when the Spacer is clamped between two soft materials. As a general rule of thumb, SPIROL's roll formed Spacers have about 70% of the columnar strength of cut pipe or tubing of similar size, material and wall thickness. (Variation in wall thickness and material types have significant effects on overall performance).

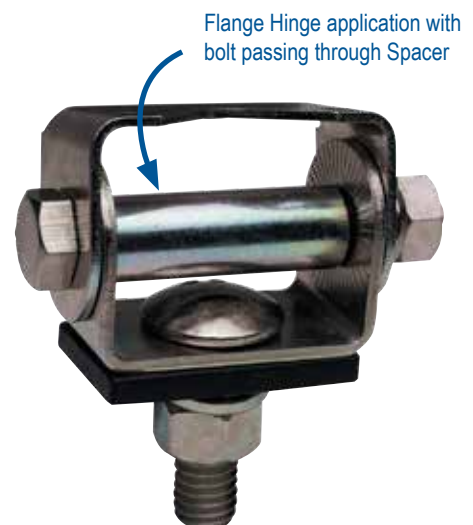
For lighter duty applications where clamp loads are less and the larger bearing surface is not required, it is recommended to use the SP100 Standard Wall series. In addition to costing less, the SP100 Standard Wall Spacer also reduces the weight of the overall assembly since it contains less material than the SP150 Heavy Wall Spacer.

The savings that companies realize through using SPIROL Roll Formed Spacers rather than more expensive spacing options is achieved through SPIROL's proprietary roll forming technology that allows production at high speeds with no need for secondary deburring the ends of the Spacers after forming like with cut tubing. In addition, while SPIROL offers Spacers with distinct diameter and length combinations from stock, intermediate lengths can be produced quickly, without any special tooling costs.

SPIROL's Application Engineers are ready to assist you in selecting the most appropriate Roll Formed Spacer for your specific application.



Difference in material thickness between SP100 Standard Wall (left) and SP150 Heavy Wall (right)



Flange Hinge application with bolt passing through Spacer



**Innovative fastening solutions.
Lower assembly costs.**

Technical Centres

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

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 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-ca@spirol.com

SPIROL.ca



Coiled Spring Pins



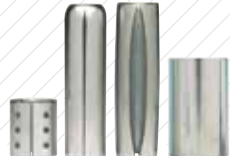
Slotted Spring Pins



Solid Pins



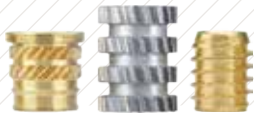
**Alignment Dowels /
Bushings**



**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.ca 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.ca**.

  2022 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.