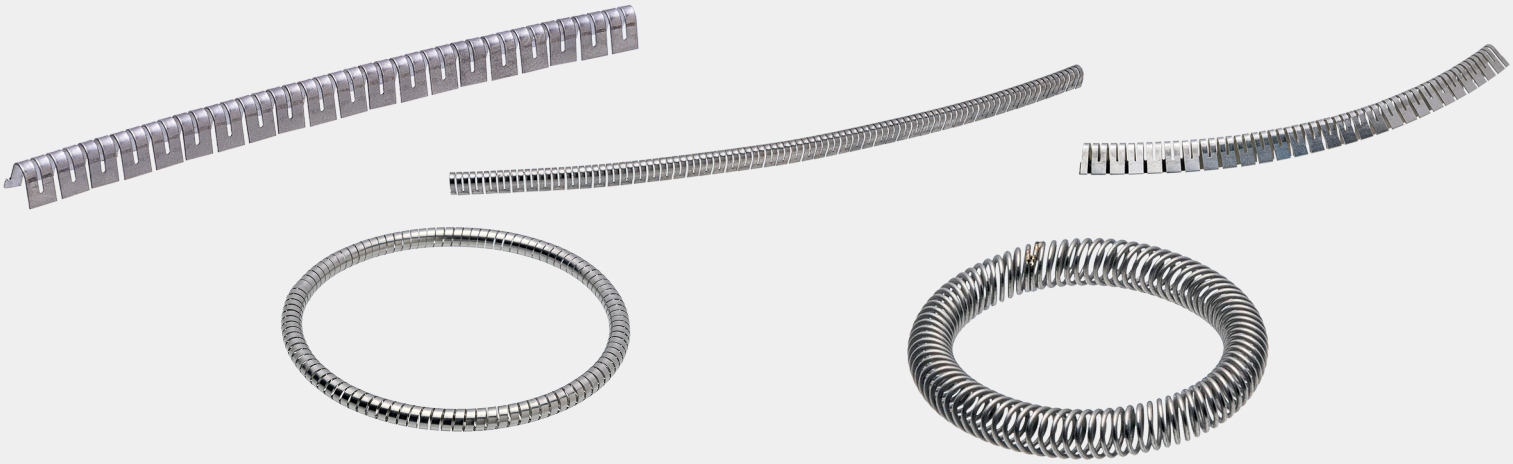
Maudlin Laser Welding



For a long time, spot welding was the standard method for connecting the ends of spring energizers. Maudlin Products has taken this process to the next level with our state-of-the-art laser welding capabilities. There are many advantages to laser welding, including a precise and even weld, consistency and efficiency of high-volume runs, no weld tab or extra pieces to deal with and limited heat transfer which keeps the spring properties intact. Through many years in the business, Maudlin has found that one of the most common contributors to seal failures is an improper or missing energizer spring weld. An improper weld can lead to a “high point” on the sealing lip which causes uneven pressure and premature wear. Or, when the spring is not welded at all, it cannot provide adequate, evenly distributed support to the seal. Laser welding creates a precise weld, allowing for even distribution of loads to ensure proper sealing.

The illustrations below compare the Maudlin laser weld vs. various spot welding techniques. Please contact Maudlin Products Engineering with any questions regarding your specific application.

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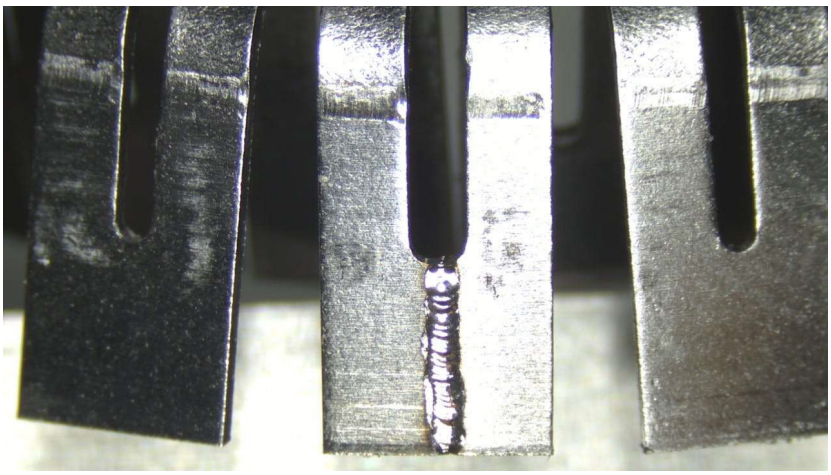
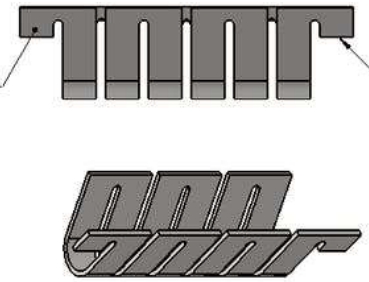


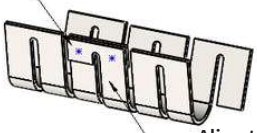
Cantilever Spot Weld (Not the Maudlin Laser Weld)

Cut each end on the same side of the spring to leave a small verticle tab.



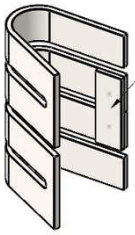
Cut and trim on same side of spring.

Once the ends have been cut the spring can be wrapped into a circle such that the ends overlap to form a continuous pattern.



Align the pre-cut ends and spot weld 2-5 times depending on the cross section

Cantilevered Tab Weld (Not the Maudlin Laser Weld)

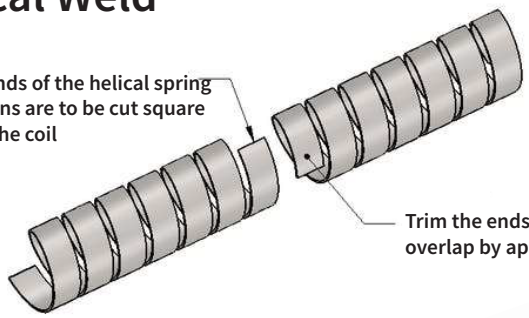


For a tab weld a small rectangular tab is spot welded across the cut section of the springs. This provides a rigid union in the joining area.

The tab located on the inside of the spring cross section so not to interfere with the seal contact areas.

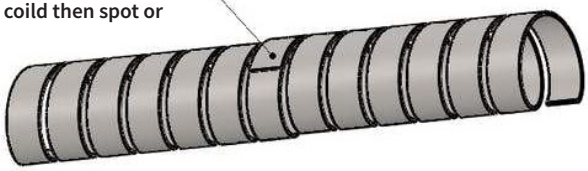
Helical Weld

The ends of the helical spring sections are to be cut square with the coil



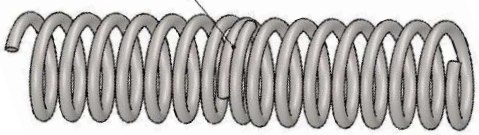
Trim the ends such that they overlap by approximately 30°

Overlap ends to simulate a continuous coild then spot or laser weld.



Slant Coil Weld

For a proper slant coil weld the spring ends must overlap roughly 30° and then be spot or laser welded along the seam.



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281.334.7566 | 281.334.7560 Fax