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## Technical Q&A with Lennard Zinn - In search of a magic bullet



By Lennard Zinn  
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### The Speedplay X series

Dear Lennard,  
I am a 15-year user of Speedplay X-series pedals. I purchased my first pair in 1995, never, ever greased them, and finally replaced them in the summer of 2006 when the bearing in the right pedal seized up on the way up to Ward, Colorado. Suffice it to say, I'm pleased with their durability as well as their function. However, I seem to go through cleats rather quickly. I ride about 4000 to 5000 miles per year and will break two sets per year. Okay, maybe one side twice and the other side once, or something like that. It's always the same point of failure; the rear clip wire breaks. I started lubing them a few years ago with grease and/or Pro Link chain lube to no avail. I called Excel and they had no answers but did say that switching to the 'Zero' model would not help (plus I don't need any additional float anyway).

What might I be doing wrong? What advice would you give? I'll continue to pony up for the cleats because I like the pedals that much, but wanted to see if the Zinn Master had any magic bullets.  
Ed

Answer from Speedplay:

Cleat springs should never break. This will occur only if the cleat spring is prevented from opening and closing properly. There are three possible causes for this.

First, all Speedplay pedal users should make sure that the cleats are installed properly each time. Most important is that the eight cleat-fastening screws should not be over-tightened. Too much tightening torque will bind the cleat springs and prevent them from working properly. Installation instructions are included with all Speedplay pedal systems and cleat sets. This information is also available on the Speedplay web site. Consumers are welcome to call Speedplay's technical support for additional assistance at 1-800-468-6694. If the cleat springs open and close freely, this is not the cause. (As a side note, the Zero springs are less susceptible to over-tightening and considerably more durable than the springs in the X Series cleats. Ed is welcome to call Speedplay for a more in-depth explanation about the differences.)

Second, the cleats must be lubricated regularly with a dry-type lube that contains Teflon or PTFE. If the cleats are not lubricated adequately, the springs will not open and close properly. Oil, WD-40, or wet chain lubes should never be used as they attract dirt and debris. (Pro Gold is the only exception because it does not attract dirt.) A complete list of recommended lubes is included with all pedal systems and cleat sets, and can also be found at [www.Speedplay.com](http://www.Speedplay.com).

Third, the cleats must be kept free of dirt, mud and debris. If the cleat springs are jammed, the springs cannot operate properly. You can rinse the cleats with water to clear the contamination. Be sure to lubricate after cleaning. If a cyclist intends to walk in their cycling shoes, I highly recommend the use of Speedplay Coffee Shop Caps that will protect the cleats from contamination. Speedplay cleats, like any technical product, require care and maintenance to deliver optimal performance. Taking these simple steps will provide miles and miles of riding enjoyment.

*Richard Bryne*  
Speedplay founder and president

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By Lennard Zinn

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## Speedplay cleat spring wear and foot biomechanics



This (photo above) foot will ruin any pedal. When I wrote about Speedplay cleat issues, I did not consider that the wear issue could have to do with pedaling mechanics of the rider. But Paul Swift, the guy behind Cleat Wedges wrote to set me straight on this. Perhaps this explains why I got so much mail from Speedplay users who never wear out springs, as well as those who do.

*Lennard*

Dear Lennard,

As Richard suggests, I also have never seen a broken spring that was not dry; but there is more. I have never seen a broken cleat spring with a person who is connected to the pedal with a "neutral" (flat) forefoot.

What do I mean? Every single case in which we found a broken spring, the person also displayed a forefoot Varus condition. Solution? -- Add some Cleat Wedges & voilà, your cleat now meets the pedal flat, yet allows your foot to remain in its natural (not neutral) tilted position.

This foot in the photo obviously wants to be tilted. Of course this person has a significant amount of foot

Varus. He is on Zero pedals and the cleats and spring are holding up. I'm not sure if the X series is as tough, but I am not the one to say. He does not have wedges (pre wedges) but does have an orthotic. Notice the orthotic did nothing to help flatten the connection to the pedal. Orthotics alone and/or inside-the-shoe wedges alone will not help this person.

This person needs Wedges. This person will wear out all pedals. Look Keos for example, will wear out fast for him as well. You can easily see pedal wear on Keos. The pedal will tell you a story.

A properly placed wedge will correct the problem. Shimano SL—the smaller platform would accommodate some of this tilt but the new wider platform would just make the body take up more of the misalignment. Hence some people switch to the SL for the large platform and suddenly have more pain or pressure.

People who have pressure at the outside of the foot will wear out pedals more quickly than people with even pressure at the ball of the foot. One of the pedals that will help assure more misalignment than any others is the SL with the larger platform. Bravo for Shimano to realize people wear out the outer edge of pedals on the older, smaller platform. Interesting that they choose to ignore why it wears out.

*Paul Swift*

[www.bikefit.com](http://www.bikefit.com)



Technical writer Lennard Zinn is a frame builder ([www.zinncycles.com](http://www.zinncycles.com)), a former U.S. national team rider and author of numerous books on bikes and bike maintenance including the pair of successful maintenance guides "Zinn and the Art of Mountain Bike Maintenance" - now available also on DVD, and "Zinn and the Art of Road Bike Maintenance," as well as "Zinn and the Art of Triathlon Bikes" and "Zinn's Cycling Primer: Maintenance Tips and Skill Building for Cyclists."

Zinn's regular column is devoted to addressing readers' technical questions about bikes, their care and feeding and how we as riders can use them as comfortably and efficiently as possible. Readers can send brief technical questions directly to Zinn. Zinn's column appears here each Tuesday.