



**TRIANGLE  
SPRING®**

*Technical Bulletin*

TSTB Number 2

## Leaf Spring Repair: Rebuilding

After a review of the options regarding repair vs. rebuild the decision is to rebuild, then a few additional considerations are necessary. First, rebuilding a spring is more involved than simply disassembling the unit, inserting a new leaf or leaves, and bolting the unit back together. Leaves can be replaced in one of three ways, using the *same thickness* steel as the broken leaf or leaves. These are:

1. *Raw steel can be tempered and formed into the appropriate leaf by a local spring service center. (This method is less common today than it once was.)*
2. *Tempered plate, obtained from a spring manufacturer, can be cut and “fitted” to the spring. This is a common practice for replacing ‘straight’ leaves in a spring.*
3. *Pre-manufactured eye and wrapper leaves, supplied by a spring manufacturer, can be fitted into the spring. This is also a common repair practice.*

While it may seem to be a minor issue, attention should be paid to the how the ends are finished on the original spring, with replacement leaves following these guidelines:

- ▶ *Blunt (square cut) ends should be replaced with Blunt ends.*
- ▶ *Diamond Points (corners cut) and Rolled Ends (rounded corners) should be replaced with Diamond Points. (Rolled Ends are not commonly available to the replacement market).*

### Fitting versus Re-arching/Refitting

A *Professional* repair center will “Fit” the new leaves to the existing arch of the remaining leaves *prior to assembly* - hence the term *Fitting*. This operation is highly desirable and gives you more value for your repair dollar.

*Re-arching/Refitting* consists of bringing a *Used* spring back to original arch according to spec through either re-heat treating and re-forming the leaves, or, by cold re-arching via the use of a hydraulic press.

While re-arching is not an uncommon practice, its value as a viable repair alternative is questionable due to the fact that heat treating of spring steel is a delicate process requiring proper furnace temperatures and quenching techniques. Further, cold bending can cause *Stress Risers* in the steel which will accelerate the potential for failure.

***The bottom line on spring repair is simply this: Utilize a professional spring repair facility for the repair, or consider a complete replacement. Why risk safety or additional downtime?***

