

DIE SPRINGS TIPS, DOS, AND DON'TS

The most common die spring problems are generally the most basic – the result of improper selection and application. But trying to save a few pennies on die springs or a few minutes on selection can result in enormous expenses in terms of premature spring failure, increased maintenance costs and lost productivity. That's why making sure you have the best die spring for every application is truly a wise investment.



DO - make spring selection a part of the early design function, and work within the spring's physical limits. It's best to determine which springs and how many are needed for the job before the die is built.



DO preload each spring into the assembled tool to prevent the possibility of shock loading, which causes a stress surge in the vibration frequency and may result in early spring failure.



DO provide safeguards from adverse external elements such as heat, corrosive atmosphere, metal chips and other obstructions.



DO provide proper guidance on all springs to reduce the chance of buckling. As a general rule, if the free length is more than four times the mean diameter of the spring, it could have a buckling problem under compression. This is solved by using a guide rod, boring a pocket, or both.



DO deepen spring pockets proportionately when the die is sharpened to maintain the same spring travel and load level. Each spring pocket needs to have a fl at bottom and square corners, so the spring will provide uniform stress on each coil as it is compressed.



DO perform preventative maintenance on a regularly scheduled basis. Keep records on the number of cycles each die performs, and replace all the die springs at predetermined intervals.



DON'T replace only one spring, or mix springs of assorted lengths and deflection ranges on a die. Instead of using an unbalanced, mixed assembly of old and new springs, replace all of the springs to distribute the load evenly.



DON'T alter a die spring by cutting off coils or grinding the inside or outside diameter. Altering a die spring causes early failure and creates the potential for damaging the die.



DON'T expect maximum performance life from a spring that is producing at maximum load. Although die springs are designed to produce maximum load, they are highly stressed when maximum loads are met.



DON'T wait – make spring selection a part of the early design function, and work within the spring's physical limits. It's best to determine which springs and how many are needed for the job before the die is built.



DO call – our knowledgeable customer service and engineering professionals are always available to assist you with everything from custom sizes and special materials to technical questions and unusual applications.