

## Surface condition and Corrosion protection

**Phosphating and oil:** Phosphating is usually for carbon steel disc springs. Disc spring will be formed a stable phosphating film after chemical reaction with phosphoric acid or phosphate.

**Electroplating:** Hydrogen gas diffuses on the surface of the spring when the metal coating is separated from the solution. Diffusion of hydrogen leads to brittle fracture (hydrogen embrittlement). After Electroplating, a suitable heat treatment (diffusion annealing) can reduce the hydrogen embrittlement, but it cannot be completely eliminated. Due to the effect of hydrogen embrittlement, electroplating is not recommended for surface of disc springs.

**Mechanical galvanization:** Its corrosion protection is the same as electroplating, but no hydrogen embrittlement. In the case of mechanical galvanizing, zinc powder is applied to the surface of the disc spring by barrel plating.

**Geomet :** Also called zinc-aluminum coating, As the replacement of Dacromet, it excludes Cr6+ . It offers best characteristics of superior corrosion and high heat resistance, no hydrogen embrittlement, no pollution and etc.

**Polish:** Reduce the roughness of the disc springs surface by mechanical or chemical methods, to obtain bright and smooth surface.

**Electrophoresis:** Its processing is to eliminate the grease, rust stains, scale cinder and other impurities from disc springs, which is to provide good conditions for electrophoresis film.