The mechanical properties especially the fatigue and stress corrosion resistance

Deformation by repeated heading (one-way upsetting, cross upsetting, double cross heading) and the degree of deformation is big enough to achieve the following purposes:
The refinement and uniform high speed steel, chromium type 12 steel, 3Cr2W8V steel of carbide, improve their performance;
The elimination of microstructure and properties of aluminum alloy, titanium alloy in direction, improve the uniformity of microstructure and properties.
3 Effect of deformation velocity
Generally speaking, the increase of deformation rate will make the malleability decreases, even though the plasticity of metal deformation resistance decreased, increased.
The deformation velocity will also affect the forging penetration. In large deformation degree, deformation velocity is small, then the forging penetration for the better, the more good grain refinement and recrystallization, and is also conducive to improve the technology of plasticity.
Effects of 4 heating rate.
The section size and poor heat conductivity of the billets, if the heating speed is too fast, the holding time is too short, often causes the non-uniform temperature distribution caused by thermal stress, and the blank cracking. Such as: high alloy steel, high alloy tool steel, high temperature alloy steel ingot forging billet heating and often because of improper cracking. Billet temperature uneven, can also cause deformation and tissue is not uniform, resulting in additional stress, such as other internal cracking.