Machine elements are exposed to variable forces while performing their functions. After a certain number of stresses caused by the effect of these forces, the result of fatigue is usually caused by the progression of the cracks on the surface by breaking the machine element.

The damage caused by fatigue of machine elements prevented by surface hardening methods by forming a hard layer on the surface. Thus, the life of the part is increased with the easing or delaying of the crack formation.

SAE 4340 Steel; Steering parts engine parts camshaft and the crankshaft in automobiles and airplanes, casings are used. High toughness and suitable for surface hardening. In this study, the effect of heat treatment on fatigue life of SAE 4340 reclaimed steel was investigated. Preparation of fatigue samples, quenching process and tempering at different temperatures were applied. For he prepared samples, rotating curved fatigue test were applied. In order to support fatigue strength results, tensile tests, hardness and metallographic, were carried out.