Abstract

Leaf spring is one important component in the four-wheeled vehicles, leaf springs holding serve static and dynamic loads to provide comfort to the rider. This condition requires a spring material that has good mechanical properties. Mechanical properties are greatly affected include spring steel yield strength, tensile strength and elasitisitas.

Through this research carried out heat treatment on spring steel JIS SUP 9A to have mechanical properties in accordance with the standards and the age of the spring will increase wear. Processes include heat treatment Quenching and partitioning at temperatures (225 ° C, 250 ° C and 275 ° C) and time of arrest (10, 100 and 1000 seconds). Effect of temperature and detention time as a variable partitioning observed through the micro structure while testing the mechanical properties were analyzed by tensile test and hardness test.

From the results of this study tensile strength values obtained the highest average in the specimen with a temperature variation of 225 ° C arrest and detention time of 10 seconds with a value of 2124 ± 141 N/mm2. Elongation value of the highest average in the specimen with a temperature variation of detention 250 ° C and 10 second detention time with a value of 5.705 ± 1.057%. Value of the average force on the specimen with the highest detention temperature variations of 250 ° C and detention time of 10 seconds with a value of 55.4 HRC.

Key Words: Spring steel, Mechanical Properties, Micro structure, Quenching, Partitioning.