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(54) Title: HIGH PERFORMANCE THREAD FORMING SCREW

(57) Abstract: A thread forming screw (10) having a minimum surface hardness of HRC 56. The screw (10) can form threads in a workpiece having a surface hardness which exceeds HRC 23. A method of surface hardening a screw (10) includes carbon enriching the screw (10) to at least a 0.48 carbon level, and then quenching the screw (10). Then, the screw (10) is tempered such that the surface hardness does not exceed the core hardness by more than 3 Rockwell C points, and both the surface and core are at a Rockwell C33-C39 hardness. Subsequently, the point (16) is induction hardened, and the screw is quenched again. The screw (10) is again tempered such that the lead threads (18) and the first 3-4 full threads (22, 24) are at a Rockwell C56 minimum hardness, preferably to a depth (26) of at least 0.008 inches, and the core of the fastener (10) is at Rockwell C33-C39 hardness. Finally, a finish is applied.



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