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discontinuities or welds having fatigue cracks. Keywords:

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(U) Fatigue Life of Stress-Peened Helical Compression Springs.

DESCRIPTORS: (U) \*ALUMINUM ALLOYS, \*METAL PLATES, \*BUTT WELDING, BRUSHES, SHOT PEENING, DISCONTINUITIES, FATIGUE LIFE, FATIGUE(MECHANICS), STRENGTH(MECHANICS), BOLTS, INTERFERENCE, REPAIR, CRACKS, POROSITY, WELDING, RESIDUAL STRESS, SOUND, WELDS, TENSILE TESTERS, TRANSVERSE

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IAC SUBJECT TERMS: M--(U)COUNTRY USA, DISCONTINUITIES, REPAIR WELDING, BUTT WELDS, 5456-H116, ALUMINUM ALLOYS, CRACK ARREST, PLATE, BOLTS, INTERFERENCE FIT, GAS METAL ARC WELDING, FRACTURE SURFACE, PENETRATION, ULTRASONIC TESTING, RESIDUAL STRESSES, SHOT PEENING, FATIGUE TEST, POROSITY, RADIOGRAPHY, AIR, TEMP 0 TO 99 C, TENSILE YIELD STRENGTH, ULTIMATE TENSILE STRENGTH, ELONGATION, FATIGUE PROPERTIES. ;

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ABSTRACT: (U) Stress peening variables (i.e., shot peening while under applied stress) are studied for their effect on fatigue life of helical compression springs. Comparisons are made with the effects of conventional shot peening. In terms of fatigue life, stress peening gives increases ranging from 1.4 to 5.8 times the life of conventionally peened springs. Increases were greatest for the smallest springs.

DESCRIPTORS: (U) \*SHOT PEENING, \*HELICAL SPRINGS, \*FATIGUE LIFE, FATIGUE TESTS(MECHANICS), RESIDUAL STRESS, TENSILE STRESS, CRACKS, COMPRESSION, STRESSES

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