



SURFACE VEHICLE RECOMMENDED PRACTICE

J1122™

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Helical Springs: Specification Check Lists

RATIONALE

This document has been determined to contain basic and stable information which is not dynamic in nature. The Technical Committee which originally created this document no longer exists.

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Documents

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Foreword—This Document has also changed to comply with the new SAE Technical Standards Board format. References were added as Section 2. SAE J916 was replaced with TSB 003.

1. Scope—The following SAE Recommended Practice furnishes sample forms for helical compression, extension and torsion springs to provide a uniform method for specifying design information. It is not necessary to fill in all the data, but sufficient information must be supplied to fully describe the part and to satisfy the requirements of its application. For detailed information, see “Design and Application of Helical and Spiral Springs - SAE HS 795”, also “Helical Compression and Extension Spring Terminology - SAE J1121”. Both of these documents use SI (metric) Units in accordance with the provisions of SAE TSB 003, as does SAE J1122. Here, however, the U.S. Customary Units (in, lb, psi) have been added in parentheses after each SI Unit for the convenience of the user who must furnish specifications on a project where all requirements are listed in non-metric terms.

2. References

2.1 Applicable Publications—The following publications form a part of the specification to the extent specified herein. Unless otherwise indicated, the latest revision of SAE publications shall apply.

2.1.1 SAE PUBLICATIONS—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J1121—Helical Compression and Extension Spring Terminology
SAE HS 795—Design and Application of Helical and Spiral Springs
SAE TSB 003—Rules for SAE Use of SI (Metric) Units

TABLE 1—CONVERSION TABLE
To Convert from SI Unit to U.S. Customary Unit, Divide by the Factor
To Convert from U.S. Customary Unit to SI Unit, Multiply by the Factor

Quantity	SI Unit		Factor	U.S. Customary Unit	
Length	millimeter	mm	25.4 (Exactly)	inch	in
Area	square millimeter	mm ²	645.16 (Exactly)	square inch	in ²
Mass	kilogram	kg	0.453 592 4	pound-mass	lb _m
Force (or Load)	newton	N	4.448 222 ⁽¹⁾	pound-force	lbf
Moment	newton millimeter	N·mm	112.984 8	pound inch	lb _f .in
Linear Spring Rate	newton per millimeter	N/mm	0.175 126 8	pound per inch	lb _f /in
Torsional Spring Rate	newton mm per degree	N·mm/deg	112.984 8	pound inch per degree	lb _f .in/deg
Stress	megapascal	MPa	0.006 894 757 ⁽²⁾	pound per square inch	psi

1. $4.448\,222 = 0.453\,592\,37 \times 9.806\,650$

where 9.806 650 = Acceleration of Gravity “g” adopted in 1901 by International Committee on Weights & Measures

2. $0.006\,894\,757 = 4.448\,221\,6 \times 0.001\,550\,003$