



Dynamic Test of Suspension Coil Spring Insulators

1 Introduction

Note: Nothing in this standard supercedes applicable laws and regulations.

Note: In the event of conflict between the English and domestic language, the English language shall take precedence.

1.1 Purpose. The purpose of this specification is to determine the service life of suspension coil spring insulators (also referred to as damping rings or spring pads) in a bench test.

1.1.1 In the spring system (per GMW14253) for development purposes.

1.1.2 In a special test fixture (coil spring replacement) for quality control purposes.

1.2 Applicability. This specification is intended for both coil-over shock and standalone coil spring insulators.

2 References

Note: Only the latest approved standards are applicable unless otherwise specified.

2.1 External Standards/Specifications.

None

2.2 GM Standards/Specifications.

GMW14253

GMW14682

GMW14738

2.3 Additional References.

Component Technical Specification (CTS)

3 Resources

3.1 Facilities.

3.1.1 Calibration. The test facilities and equipment shall be in good working order and shall have a valid calibration label.

3.1.2 Alternatives. Alternative test facilities and equipment may also be used. However, all measuring variables as specified in this standard shall be determined correctly with respect to their physical definition.

3.2 Equipment.

3.2.1 Spring testing machine, refer to GMW14253. Reference 1.1.1.

3.2.2 Closed loop hydraulic pulsator with cycle counter. Reference 1.1.2.

3.2.2.1 Test fixture per coil spring insulator drawing. See Figure 1.

3.3 Test Vehicle/Test Piece. Rubber or MCU spring insulator.

3.4 Test Time. Setup time for the test is approximately 3 hours. Test length will vary based on specific cycles required by the program.

Calendar time: 2 days

Test hours: 24 hours

Coordination hours: 3 hours

3.5 Test Required Information. Not applicable.

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3.6 Personnel/Skills. Technician will be required for test setup and monitoring. Equipment should automatically monitor for load loss with a safety shutoff when the limit is exceeded.

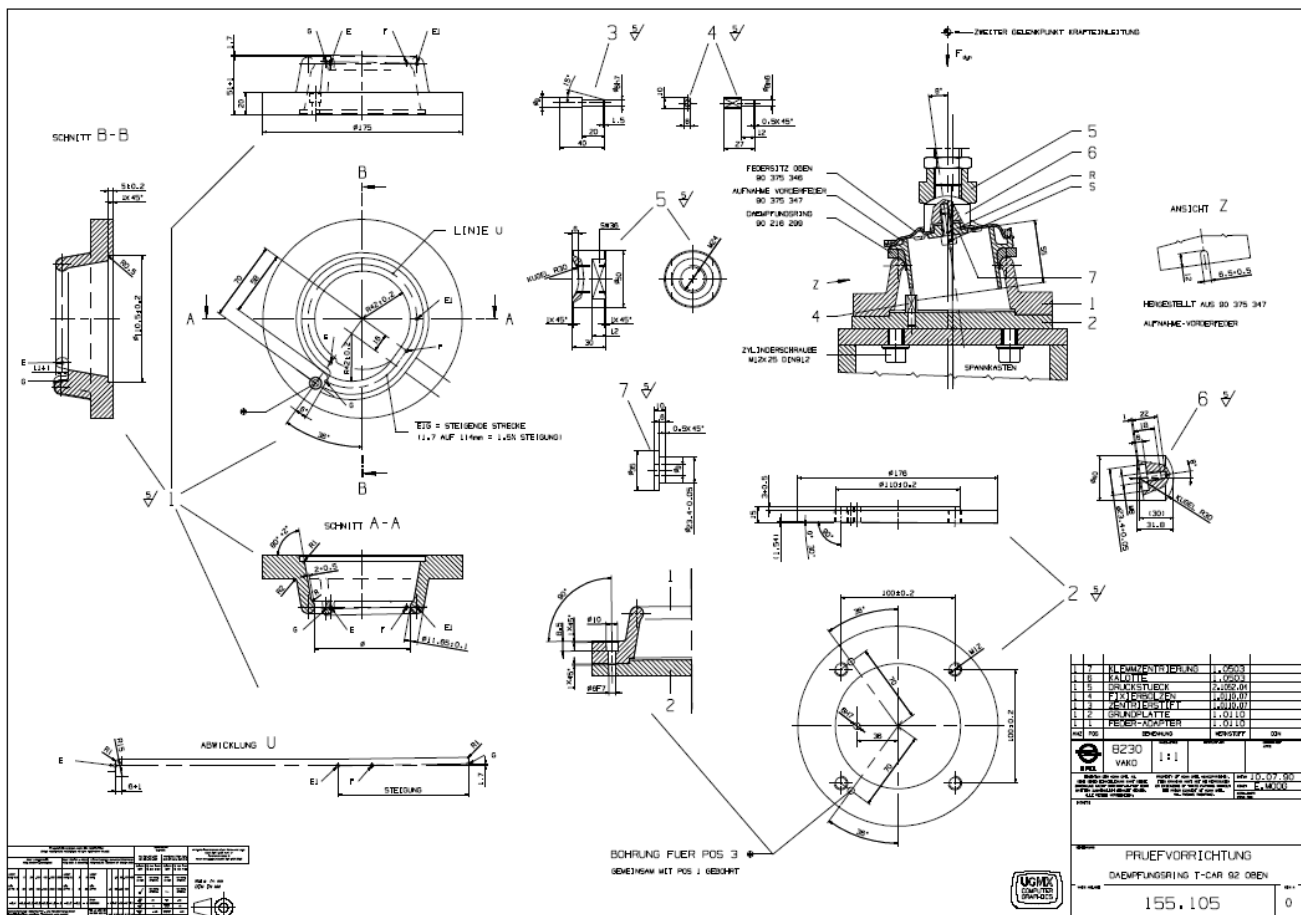


Figure 1: Special Test Fixture (Coil Spring Replacement)

4 Procedure

4.1 Preparation. Not applicable.

4.2 Conditions.

4.2.1 Environmental Conditions. Not applicable.

4.2.2 Test Conditions. Deviations from the requirements of this standard shall have been agreed upon. Such requirements shall be specified on component drawings, test certificates, reports, etc.

4.2.2.1 In the spring system per GMW14253 and the respective spring drawing. Reference 1.1.1.

4.2.2.2 Per the fixture drawing applicable to the coil spring insulator. Reference 1.1.2.

4.3 Instructions.

4.3.1 Subject the spring contact surface of the coil spring insulator to a single step test at room temperature.

4.3.2 Test force, test frequency and rated number of cycles can be seen from the respective sample drawing, or per design responsible engineer.

5 Data

5.1 Calculations. Not applicable.

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