



Power Adjuster Durability Test

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.

Note: All stated values are valid unless otherwise specified (i.e., in the Subsystem Technical Specification (STS) for Seats).

1.1 Purpose. The purpose of this test procedure is to evaluate the cycle durability of a power seat adjuster assembly and the switch box through its entire travel window with a simulated occupant load.

1.2 Applicability. This test shall be applied to all vehicles with free standing seat systems with power adjusters.

1.3 Remarks. Not applicable.

2 References

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

2.1 External Standards/Specifications.

SAE J826

2.2 GM Standards/Specifications.

None

2.3 Additional References.

- Subsystem Technical Specification
- Switch Drawing

3 Resources

3.1 Facilities. An approved GM certified test lab with an adequate bed plate or equivalent work surface necessary for mounting of the test sample and associated test fixtures.

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 Fixture. The fixture is a means to support the seat system including rigid mounting blocks, or equivalent, simulating the floor attachment points to mount the seat system in body position on a bed plate.

3.2.2 Weight. Sufficient weights equal to 75 kg plus simulation of maximum possible complete seat weight (high feature seat).

3.2.3 Seat Saddle. The seat saddle (SAE J826 H-Point form) is a form which represents the occupant body form which contacts the seat back and cushion when seated in the vehicle seat.

3.2.4 Wire Harness. Use the body wiring harness for the model year and type of adjuster being tested.

3.2.5 Cycle Timer. Station cycle timer for each direction of travel.

3.2.6 Power Supply. Fifty (50) A minimum.

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June 2014

Page 1 of 5

3.2.7 Counter. A mechanical counter.

3.2.8 Switch. A switch wired into the motor wiring for each direction of travel.

Note: Instrumentation is to be calibrated as required. Instrumentation details and date of calibration are to be recorded on the data sheet.

3.3 Test Vehicle/Test Piece.

3.3.1 Complete Trimmed Seat Subsystem. An appropriate seat subsystem consisting of all the components necessary to qualify as complete for the model and trim level specified by the Design Release Engineer/Designing Engineer (DRE/DE).

3.3.2 If the adjuster included "any" body-integrated components, a full or partial buck will be required. If the adjuster system is not part of the body, a buck will not be required and the adjuster system may be mounted in a test fixture.

3.4 Test Time. Not applicable.

Calendar time: days

Test hours: hours

Coordination hours: hours

3.5 Test Required Information. Not applicable.

3.6 Personnel/Skills. The following individuals are necessary to complete this test procedure:

3.6.1 General Motors Design Release Engineer.

3.6.2 General Motors Validation Engineer.

3.6.3 Testing Organization's Test Engineer.

3.6.4 Testing Organization's Test Technician.

4 Procedure

4.1 Preparation.

4.1.1 Switchbox Durability. A durability test with 30 000 cycles in each direction with the original load or an equivalent dummy load shall be performed.

If the switches are designed to switch the actuators directly, after $\frac{1}{3}$ of the cycles (10 000) the block current of the seat setup for adjuster durability shall be applied (ON/OFF, cycle: two times adjusting current, one time block current).

Detailed instructions are specified in the Switch Drawing.

4.1.2 Adjuster Durability.

4.1.2.1 Inspection. Visually inspect all components, including the body (if applicable).

4.1.2.2 Mounting. Mount the seat subsystem on the appropriate model mounting blocks on a bedplate using the minimum torque specifications. Include mounting spaces if specified for installation.

The slide angle on the adaptation has to be within 0.25 degrees difference to the specified angle. The seat anchorage points of the adaptation are to be within 0.2 mm deviance to the specified points.

A car battery may be used as a power buffer, connected in parallel to the power supply with short wires (4 mm²) between both. The length, diameter and number/type of connectors used between power supply and seat are to be comparable to the car wire harness, if the original one is not available.

4.1.2.3 Weights. Place the appropriate number of weights, equal to 75 kg plus simulation of maximum possible complete seat weight (high feature seat) into a seat saddle located on the cushion of the seat. The seat back shall not be loaded.

4.1.2.4 Power. Connect the power supply, cycle timer, data recording device and adjuster motor system using the appropriate switch identified in 3.2.8, and the wire harness.

4.1.2.5 Cooling. Provide adequate cooling for the adjuster motor system.

4.1.2.6 Memory. If the seat is (optionally) available in memory version using an Electrical Control Unit (ECU), the memory version is to be tested using the current ECU.

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June 2014

Page 2 of 5