



05/29/24

Subject: Change #11 to SAE/USCAR-2, Revision 15

This letter describes a change to the USCAR-2 specification. Comments and questions can be sent to EWCAP@uscar.org.

Situation:

In USCAR-2 Section 5.4.3.3, test “B” assesses the blocking force of the lever when moved toward the mating direction but not in the opposite direction. USCAR learned recently that a failure mode exists for the lever unseating in either direction, so testing in both directions is needed.

Resolution

Changes to 5.4.3.3 and 5.4.3.4 (in red) to require the blocking force test in both directions have been made. They are effective immediately.

B. FORCE TO RELEASE LATCH FROM PRE-STAGE POSITION

NOTE: Connectors may be required to be shipped as part of a wiring assembly with levers or mechanical slides locked in the “open” or “pre-stage” position. This eliminates un-necessary operations at the vehicle assembly plant. This part of the test procedure measures the ability of the connector mechanical assist to remain open during shipping and handling.

1. Using the unmated connector, place lever or slide in its shipping (open) position.
2. ~~Determine the force class of the connector from USCAR-25.~~ Using the force tester, apply the appropriate force to the lever ~~slide~~ at a rate not to exceed 50 mm/min to move the lever/slide toward the lock position.
 3. Stop the test when the lever releases from the shipping position. Record peak force.
 4. Manually reset the lever into the shipping position.
 5. Re-insert the connector into the fixture (if needed)
 6. Restart the test in the opposite direction, with the lever being pushed away from the “mated” position.
 7. Stop the test when the when the lever releases. Record peak force.
 8. Reset to the shipping position.
 9. Verify conformance to the acceptance criteria of 5.4.3.4-3.

The following change (in red) to 5.4.3.4 is effective immediately.

5.4.3.4 Acceptance Criteria

Note that the acceptance criteria of this section vary with the available contact (grip) area of the connector being tested. Refer to SAE/USCAR-25 Electrical Connector Assembly Ergonomic Design Criteria for details of the acceptance criteria.

1. The force to engage the connector to its pre-lock position shall meet the requirements of SAE/USCAR-25.
2. The force required to release the connector from its pre-lock position shall be between 15 N and 75 N.
3. The force to move the lever/slide from its shipping position while the connector is not in its pre-stage position shall be 60 N min for Class 1 and 2 connectors and 90 N min for Class 3 connectors (both defined in USCAR-25, Section 4.1).

When the lever is reset to the shipping position, there shall be no damage to the lever or housing that impairs reuse of the connector.

4. The force required to move the lever to and from the locked (engaged) position shall meet the requirements of SAE/USCAR-25.
5. The minimum force to release the assist feature without depressing the release mechanism (if applicable) shall be ≥ 60 N for a fully mated connector.
6. Unmating force shall be ≥ 110 N with the primary connector lock fully engaged. A CPA device, if provided for, must NOT be engaged during this test.
7. Unmating force from the "unlatched/open" lever position to full separation shall be ≤ 75 N.
8. The force to completely disengage the connector lock shall be between 6 N and 51 N, inclusive, in its fully seated position (without the CPA engaged).
9. The primary connector lock must not deflect enough to clear the mating locking (shark fin) feature or be easily separated when pulled on when subjected to 70 N force with CPA engaged (see 5.4.3.3.E3).