



March 27, 2024

Subject: Change to SAE/USCAR-44 Rev. 2 (Revision letter #2)

A modification has been made to USCAR-44 Table 8. Note 4 has been removed since it was only referenced in a test for “second removal” that is not used in revision 2. Comments and/or questions can be addressed to EWCAP@uscar.org.

Table 8 - Insertion and removal force criteria

#	Test and Condition	Hole Size in Test Plate	Applicable Test Path	Force (N)		
				Insert (max)	Removal for traditional design	Removal “Heavy Duty” design
1	1st insertion	Nominal hole	A	45 (Class I, II) ^{1 6} 75 (Class III) ^{1 6}		
2	1st removal	Nominal hole	B		110 (min) ^{2 8}	220 (min) ^{2 8}
3	2nd removal	Nominal hole	Removed		N/A ⁵	N/A ⁵
4	1st insertion	Smallest hole	C	45 (Class I, II) ^{1 6} 75 (Class III) ^{1 6}		
5	1st removal	Largest hole	D		110 (min) ²	220 (min) ²
6	Removal while at elev. temp	Nominal hole	E		75 (min) ²	150 (min) ²
7	Removal after endurance	Nominal hole	G		77 (min) ^{2, 3}	144 (min) ^{2, 3}

¹ For tests with 30 or more samples, apply criteria to calculated value of (X-3s) for max values and (X+3s) for min values (where X is the sample mean and “s” is the standard deviation). Criteria are based on USCAR-25. Refer to that document for details on which criteria apply, if unclear.

² For tests with fewer than 30 samples, all CUTs must meet the value shown.

³ Criteria for post-environmental extraction is reduced 30% from the specification for unaged parts. The 77 N in row 7 is calculated as = 70% X 110 N = 77 N.

~~⁴ Criteria do not apply for nominal holes. Test is for information only. But test is often performed since process statistics often require information on values in a nominal hole.~~

⁵ Does not apply since parts are not designed for a second removal. This is an optional test for information.

⁶ Class I, II, or III is determined by the ergonomic class per USCAR-25 Table 3.1. Match push surface of the CUT to the “Minimum Contact Surface Area” in the table.

⁷ Use of “Heavy Duty” criteria is requested by the customer in the test request. Any part can be deemed heavy duty by fulfilling the higher force requirements on pull and shear tests. Typically, larger parts are requested to be evaluated per the heavy-duty criteria.

⁸ Note that for item 2, Sequence “B” can only be used if the tolerance range of the hole opening is less than 0.6 mm.