SAE International

SURFACE VEHICLE STANDARD

SAE J485 APR2013

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Reaffirmed 2013-04

Superseding J485 MAY1998

Holes in Bolt and Screw Shanks and Slots in Nuts for Cotter Pins

RATIONALE

J485 has been reaffirmed to comply with the SAE five-year review policy.

1. ***Scope***—SAE J485 specifies the recommended nominal diameters and locations of holes in bolt or screw shanks, and nominal widths and depths of slots in nuts, for use with the recommended sizes of inch-series cotter pins, as shown in Table 1.

TABLE 1—DIMENSIONS FOR COTTER PIN HOLES AND SLOTS (all dimensions are in inches)

Bolt, Screw, and Nut Nominal Size	Bolt, Screw, and Nut Nominal Size	Hole in Bolt or Screw Shank Dia[1]	Hole in Bolt or Screw Shank Distance, Extreme Point of Bolt or Screw to Hole Center[2]	Slot in Nut [3] Width[1]	Slot in Nut[3] Depth[4]	Cotter Pin[5] Nominal Size	Cotter Pin[5] Nominal Size	Cotter Pin[5] Min	Cotter Pin[5] Max
1/4	0.250	0.078	0.109	0.078	0.094	1/16	0.062	0.056	0.060
5/16	0.3125	0.094	0.109	0.094	0.094	5/64	0.078	0.072	0.076
3/8	0.375	0.109	0.141	0.125	0.125	3/32	0.094	0.086	0.090
7/16	0.4375	0.109	0.172	0.125	0.156	3/32	0.094	0.086	0.090
1/2	0.500	0.141	0.172	0.156	0.156	1/8	0.125	0.116	0.120
9/16	0.5625	0.141	0.203	0.156	0.188	1/8	0.125	0.116	0.120
5/8	0.625	0.172	0.234	0.188	0.219	5/32	0.156	0.146	0.150
3/4	0.750	0.172	0.266	0.188	0.250	5/32	0.156	0.146	0.150
7/8	0.875	0.172	0.281	0.188	0.250	5/32	0.156	0.146	0.150
1	1.000	0.203	0.312	0.250	0.281	3/16	0.188	0.172	0.176
1-1/8	1.125	0.203	0.391	0.250	0.344	3/16	0.188	0.172	0.176
1-1/4	1.250	0.234	0.406	0.312	0.375	7/32	0.219	0.202	0.207
1-3/8	1.375	0.234	0.438	0.312	0.375	7/32	0.219	0.202	0.207
1-1/2	1.500	0.266	0.484	0.375	0.438	1/4	0.250	0.220	0.225
1-5/8	1.625	0.266	0.484	0.375	0.438	1/4	0.250	0.220	0.225
1-3/4	1.750	0.312	0.547	0.438	0.500	5/16	0.312	0.275	0.280
1-7/8	1.875	0.312	0.547	0.438	0.562	5/16	0.312	0.275	0.280
2	2.000	0.312	0.641	0.438	0.562	5/16	0.312	0.275	0.280
2-1/4	2.250	0.312	0.641	0.438	0.562	5/16	0.312	0.275	0.280
2-1/2	2.500	0.375	0.750	0.562	0.688	3/8	0.375	0.329	0.335
2-3/4	2.750	0.375	0.750	0.562	0.688	3/8	0.375	0.329	0.335
3	3.000	0.500	0.750	0.625	0.750	1/2	0.500	0.467	0.473

1. Required tolerances are to be specified on the drawing.
2. This dimension is suggested to determine the distance from the cotter pin hole to the bearing face of the bolt or screw head. The drawing should specify the length, with required tolerances or limits, from the under head bearing face to the hole center.
3. See ASME B18.2.2 for dimensions of standard slotted hex nuts, slotted heavy hex nuts, or slotted hex thick nuts.
4. This dimension is suggested to determine the nut unslotted thickness, the distance from the nut bearing face to the bottom of the slots. The drawing should specify the nut unslotted thickness with required tolerances or limits.
5. See ASME B18.8.1 for dimensions of standard cotter pins.

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