

Nominal Bolt Hole Dimensions Table

The decisions about hole size and orientation are decisions which must be made and approved by the engineer. For the assembler's part, you should be aware that burrs or slight imperfections may be fine in snug tight or even pre-tensioned connections, but must be ground off on all slip-critical connections. Hardened washers or finger shims must be used on oversized or slotted holes to ensure adequate bearing surface for the nut or bolt head.

Long-slotted holes are only allowed in one ply of a joint and the other side must be a standard hole. Many States do not allow oversized or slotted holes on bridges at all.

Below is a table of nominal bolt hole dimensions.

Note that some specifications described in the following content may not be the same as the specifications followed by your agency. Always check with your State agency's standards and specifications when using these guidelines.

Table 3.1. Nominal Bolt Hole Dimensions

Nominal Bolt Diameter,	Nominal Bolt Hole Dimensions ^{a,b} , in.			
	Standard (diameter)	Oversized (diameter)	Short-slotted (width × length)	Long-slotted (width × length)
$d_b \geq \frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{9}{16} \times \frac{11}{16}$	$\frac{9}{16} \times 1\frac{1}{4}$
$\frac{5}{8}$	$\frac{11}{16}$	$\frac{13}{16}$	$\frac{11}{16} \times \frac{7}{8}$	$\frac{11}{16} \times 1\frac{9}{16}$
$\frac{3}{4}$	$\frac{13}{16}$	$\frac{15}{16}$	$\frac{13}{16} \times 1$	$\frac{13}{16} \times 1\frac{7}{8}$
$\frac{7}{8}$	$\frac{15}{16}$	$1\frac{1}{16}$	$\frac{15}{16} \times 1\frac{1}{8}$	$\frac{15}{16} \times 2\frac{3}{16}$
1	$1\frac{1}{16}$	$1\frac{1}{4}$	$1\frac{1}{16} \times 1\frac{5}{16}$	$1\frac{1}{16} \times 2\frac{1}{2}$
$\geq 1\frac{1}{8}$	$d_b + \frac{1}{16}$	$d_b + \frac{5}{16}$	$(d_b + \frac{1}{16}) \times (d_b + \frac{3}{8})$	$(d_b + \frac{1}{16}) \times (2.5d_b)$

^a The upper tolerance on the tabulated nominal dimensions shall not exceed $\frac{1}{32}$ -in. Exception: In the width of slotted holes, gouges not more than $\frac{1}{16}$ -in. deep are permitted.

^b The slightly conical hole that naturally results from punching operations with properly matched punches and dies is acceptable.