



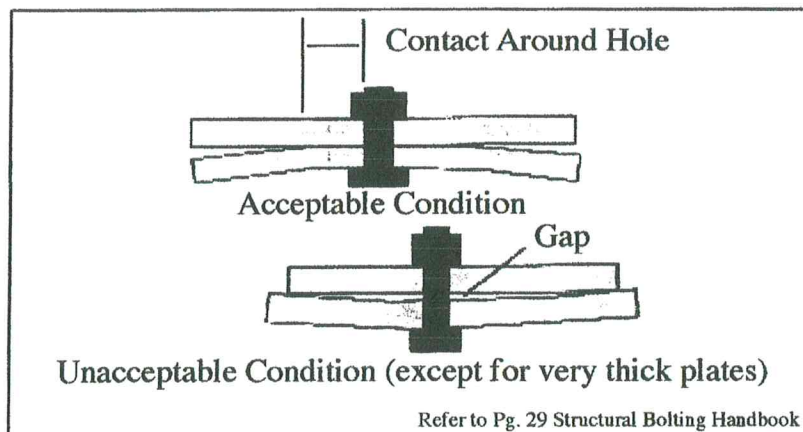
# Turn-of-Nut Quick Reference Guide

**Important Note:**

This guide is intended to serve as a quick reference tool for turn of nut tightening. It is not a substitute for the complete instructions found in the project erection drawings and erection manuals.

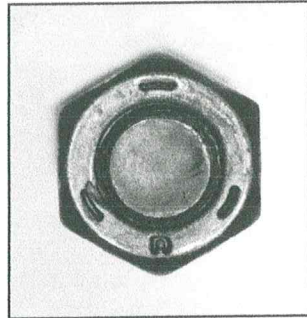
## Snug Tightened Joints

Snug tight is the point at which an impact wrench just begins to impact, or if an impact wrench is not available, snug is the full effort of a man using a spud wrench to bring the connected plies into full contact. The definition of firm contact is the condition that exists on a faying surface when the plies are solidly seated against each other, but not necessarily in continuous contact.

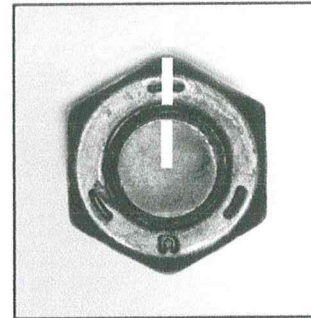


In the snug tight condition, and even in a pretensioned condition, there may be cases where gaps remain between the steel. Gaps along the edges of parts may be caused by member tolerances, misalignment, shear distortion, welding and heat distortion. These types of gaps along the edges of joints should be permitted.

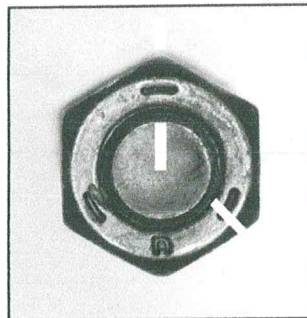
# METAL BUILDINGS INSTITUTE™



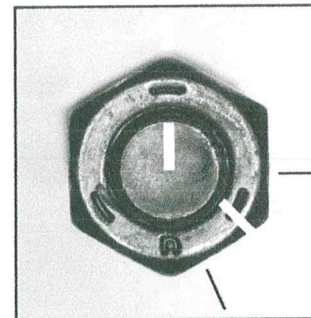
Unmarked A325 Nut



Marked A325 Nut



1/3 Turn A325 Nut



Tolerance +/- 30 °

**Helpful Hint:** If you match mark your fastener at the 12 o'clock position (as shown) your required 1/3 turn will be at the 4 o'clock position, 1/2 required turn will be at the 6 o'clock position and 2/3 turn will be at the 8 o'clock position.

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Turn of Nut Method Required Turns for Pre-Tensioning	
Bolt Diameter & Length	Required Turns
<b>1/2" Bolt</b> through 2"	1/3 turn
Over 2" through 4"	1/2 turn
Over 4" through 6"	2/3 turn
<b>5/8" Bolt</b> through 2 1/2"	1/3 turn
Over 2 1/2" through 5"	1/2 turn
Over 5" through 7 1/2"	2/3 turn
<b>3/4" Bolt</b> through 3"	1/3 turn
Over 3" through 6"	1/2 turn
Over 6" through 9"	2/3 turn
<b>7/8" Bolt</b> through 3 1/2 "	1/3 turn
Over 3 1/2" through 7"	1/2 turn
Over 7" through 10 1/2"	2/3 turn
<b>1" Bolt</b> through 4"	1/3 turn
Over 4" through 8"	1/2 turn
Over 8" through 12"	2/3 turn

Turn of Nut Method Required Turns for Pre-Tensioning	
Bolt Diameter & Length	Required Turns
<b>1 1/8" Bolt</b> through 4 1/2"	1/3 turn
Over 4 1/2" through 9"	1/2 turn
Over 9" through 13 1/2"	2/3 turn
<b>1 1/4" Bolt</b> through 5"	1/3 turn
Over 5" through 10"	1/2 turn
Over 10" through 15"	2/3 turn
<b>1 3/8" Bolt</b> through 5 1/2"	1/3 turn
Over 5 1/2" through 11"	1/2 turn
Over 11" through 16"	2/3 turn
<b>1 1/2" Bolt</b> through 6"	1/3 turn
Over 6" through 12"	1/2 turn
Over 12" through 18"	2/3 turn

## APPLICATION TOLERANCES:

For 1/3 turn, +/- 30°

For 1/2 turn, +/- 30°

For 2/3 turn, +/- 45°