

INSTRUCTIONS FOR INSTALLING A325 BOLTS BY THE "TURN-OF-NUT" METHOD

1. Align the connection holes with enough drift pins to maintain the dimensions and plumbness of the structure.
2. Enough bolts shall be brought to a "snug tight" condition to insure that the parts of the joint are brought into good contact with each other. ("snug tight" is defined as tightness attained by a few impacts of an impact wrench or the full effort of a man using an ordinary spud wrench.)
3. Bolts shall be placed in any remaining holes in the connection and brought to snug tightness. Hardened washers shall be used on nut side of connections.
4. All bolts in the connection shall then be tightened* additionally by the applicable amount of nut rotation specified in table-A, with tightening progressing systematically from the most rigid part of the joint to its free edges. During this operation there shall be no rotation of the part not turned by the wrench.
5. A307 bolts should be brought to a finger tight condition.

A325 BOLTS		NUT ROTATION***	TENSION / KIPS
DIA.	LENGTH**	FROM SNUG TIGHT CONDITION	
1/2"	2" & SHORTER	1/3 TURN	12
5/8"	2" & SHORTER	1/3 TURN	19
5/8"	OVER 2", NOT OVER 4"	1/2 TURN	19
3/4"	3" & SHORTER	1/3 TURN	28
3/4"	OVER 3", NOT OVER 6"	1/2 TURN	28
7/8"	3 1/2" & SHORTER	1/3 TURN	39
7/8"	OVER 3 1/2", NOT OVER 7"	1/2 TURN	39
1"	4" & SHORTER	1/3 TURN	51
1"	OVER 4", NOT OVER 8"	1/2 TURN	51

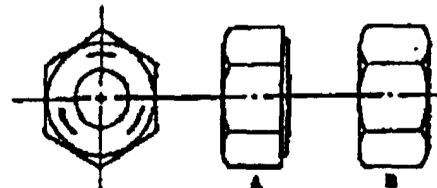
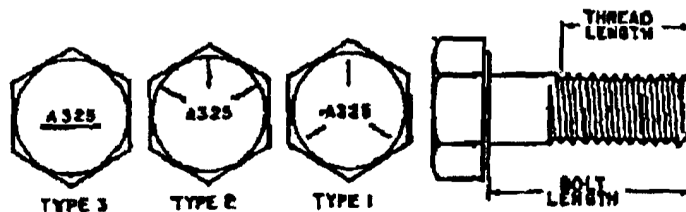
*Impact wrenches, if used, shall be of adequate capacity and sufficiently supplied with air to perform the required tightening of each bolt in approximately 10 seconds.

** Bolt length is measured from the underside of the to the extreme end of the point.

*** Nut rotation is relative to the bolt, regardless of the element (nut or bolt) being turned.
For bolts installed by 1/2 turn or less, the tolerance should be 130°.

AS STATED IN AISC SPECIFICATION FOR "STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS."

A325 BOLT & NUT IDENTIFICATION



NUTS MAY BE WASHER FACED (A) OR DOUBLE CHAMFERED (B)

Turn-of-Nut Method