



# KEY-REX STRUCTURAL NUT

MEETING REQUIREMENTS IN POWER, BRIDGE, PIPELINE , NUCLEAR, MILITARY APPLICATIONS





## INCORPORATING MULTIPLE LAYERS OF THEFT PREVENTION TECHNOLOGY

EACH CAN STOP THEFT ON ITS OWN.





1. HARDENED SHROUD SPINS WHEN ATTACKED BY WRENCHES





## 2. SECURITY CAP HOLES ARE AN ASYMMETRICAL PUZZLE

EACH CUSTOMER HAS A DIFFERENT HOLE PATTERN

ALL PINS ON THE BACK OF THE INSTALLATION TOOL MUST LINE UP TO REMOVE THE SECURITY CAP





### 3. KEY-REX PROTECTOR NUT HAS BILLIONS OF KEYED VARIATIONS.

EACH CUSTOMER RECEIVES THEIR OWN UNIQUE LICENSED KEY CODE THAT NO ONE ELSE HAS.





4. PATENTED KEY-REX KEYWAYS HAVE LOBES THAT ARE SHALLOW, TWISTING, AND TAPERED; REQUIRING A PERFECTLY MATCHED KEY TO REMOVE.

Imperfect unauthorized tools cannot dislodge "protector nut"





## 5. PATENTED STYKFIT® TECHNOLOGY PROVIDES HIGH TORQUE

ONLY THE PERFECTLY MATCHED BIT CAN MAINTAIN COMPLETE CONTACT WITH THE NUT UNDER TORQUE, INSURING IT IS THE ONLY REMOVAL TOOL.





6. INSTALLATION TOOL USES PATENTED AND TRADE SECRETED TECHNOLOGIES, ONLY FOUND AT THE BRYCE FACTORY.

MACHINE SHOPS CANNOT MAKE A COUNTERFEIT



# FASTENERS FOR USE IN STRUCTURAL APPLICATIONS

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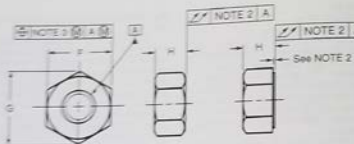


Table 2 Dimensions of Heavy Hex Nuts for Use with Structural Bolts

Nominal Size or Basic Major Diameter of Thread	F			G			H			Runout of Bearing Face FM	
	Width Across Flats			Width Across Corners			Thickness			Heavy Hex Nut	
										Specified Proof Load	
	Nominal	Max	Min	Max	Min	Nominal	Max	Min		Under 150,000 psi	150,000 psi and Greater
1/2	0.5000	0.6875	0.6875	0.8900	0.8900	0.4680	0.5000	0.4680	0.023	0.018	
5/8	0.6250	0.8750	0.8750	1.1250	1.1250	0.5625	0.6250	0.5625	0.025	0.018	
3/4	0.7500	1.0625	1.0625	1.4400	1.4400	0.6875	0.7500	0.6875	0.027	0.020	
7/8	0.8750	1.2500	1.2500	1.6800	1.6800	0.8125	0.8750	0.8125	0.029	0.022	
1	1.0000	1.4375	1.4375	1.9700	1.9700	0.9375	1.0000	0.9375	0.031	0.024	
1-1/8	1.1250	1.6125	1.6125	2.2000	2.2000	1.0625	1.1250	1.0625	0.033	0.027	
1-1/4	1.2500	1.7500	1.7500	2.3900	2.3900	1.1875	1.2500	1.1875	0.035	0.030	
1-3/8	1.3750	1.9375	1.9375	2.5800	2.5800	1.3125	1.3750	1.3125	0.038	0.033	
1-1/2	1.5000	2.1250	2.1250	2.7700	2.7700	1.4375	1.5000	1.4375	0.041	0.036	

NOTES TO TABLE 2:

NOTE: Additional requirements in Section 3. Complete table included in B18.2.2, Square and Hex Nuts (Inch Series).

(1) **Unification.** Only the 9/16 size is not unified dimensionally with British and Canadian standards.

(2) **Top and Bearing Surfaces of Nuts.** Nuts may be double chamfered or have washer faced bearing surface and chamfered top.

The diameter of chamfer circle on double chamfered nuts and diameter of washer face shall be within the limits of the maximum width across flats and 95% of the minimum width across flats.

The top of washer faced nuts shall be flat and the diameter of chamfer circle shall be equal to the maximum width across flats within a tolerance of  $\pm 15\%$ . The length of chamfer at hex corners shall be 5% to 15% of the basic thread diameter. The surface of chamfer may be slightly convex or rounded.

Bearing surfaces shall be flat and, unless otherwise specified,

shall be perpendicular to the axis of the threaded hole within the total runout (FIM) tabulated for the respective nut size, type, and strength level.

(3) **Position of Hexagon to Tapped Hole.** At maximum material condition, the axis of nut body shall be located at true position with respect to the axis of the tapped hole within a tolerance zone having a diameter equivalent to 4% of the maximum width across flats for 1-1/2 in. nominal size nuts or smaller.

(4) **Countersink.** Tapped hole shall be countersunk on the bearing face or faces. The maximum countersink diameter shall be 1.08 times the thread basic (nominal) major diameter. No part of the threaded portion shall project beyond the bearing surface.

(5) **Corner Fill.** A rounding or lack of fill at junction of hex corners with chamfer shall be permissible provided the width across corners is within specified limits at and beyond a distance equal to 17.5% of the basic thread diameter from the chamfered faces.

(6) **Width Across Flats.** Maximum width across flats shall not be exceeded (see exception in Para. 3.1, Width Across

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Flats). No transverse section thickness and 75% of the actual nut thickness bearing surface, shall be less than the flats. For milled-from-bar nuts, Width Across Flats, pertaining used.

(7) **Threads.** Threads shall be in accordance with ASME B1.1, page A-33. When specified, 8 nuts over 1 in. in diameter.

(8) **Dimensional Control.** Nuts shall have the following characteristics: page M-11, to the inspection

Characteristic
Width across corners
Thickness
Visual

If verifiable in-process inspection, the Introductory Notes.

perpendicular to the axis of the site sides of the nut in of Table 2. For milled nominal bar size use commercially available width across flats of

## 3.2 Nut Thickness

The nut thickness measured parallel to the top of the nut shall include the thickness where provided.

## 3.3 Threads

Threads shall be in accordance with Table 2, Note (7).

**3.3.1 Thread Gaging.** Threads shall be gaged by the purchaser with Gaging System B1.3M, page A-6.

**3.3.2 Overtapping.** Nuts shall be coated, they shall

# EACH NUT EXCEEDS STRUCTURAL REQUIREMENTS OF ASTM A325-1

NUT IS ALLOY STEEL HARDENED ABOVE 50 RC.

CORROSION RESISTING COATING IS USUALLY ADDED: DIP SPIN IS RECOMMENDED BUT CAN BE COATED AS CUSTOMER CHOOSES.