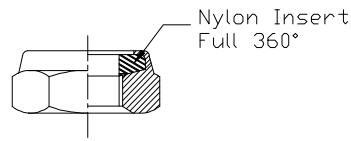
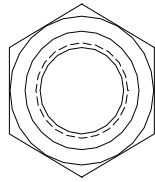


Thin Nylon Insert Lock Nut

NTE Series



Earnest Machine Products line of NTE series nylon insert lock nuts are made to the dimensional requirements of the US military standard MS21083. The NTE series nuts are commonly called jam lock nuts and are basically half the thickness of the standard NE series style. T

Earnest offers NTE series nylon insert lock nut in several strength levels. Typically inch (or imperial) sizes of lock nuts are supplied to the strength levels specified by the IFI 100/107 of grades of A, B or C instead of the more common nut grade designations per the Society of Automotive Engineers standard SAE J995 for grades 2, 5 and 8.

Comparison of strength levels specified by IFI 100/107 and SAE J995

IFI Grade	for Sizes	Proof Load Strength	SAE Grade	for Sizes	Proof Load Strength	Maximum Grade of Cap Screw to be used with
Grade A	1/4 - 1 1/2, NC & NF	45,000 psi	Grade 2 Carbon Steel	1/4 - 1 1/2	45,000 psi	Grade 2
Grade B	1/4 - 1, NC & NF	60,000 psi	Grade 5 E5	1/4 - 1 NC	60,000 psi	Grade 5
	>1 - 1 1/2, NC & NF	52,000 psi		1/4 - 1 NF	54,000 psi	
Grade C	1/4 - 1 1/2, NC & NF	75,000 psi	Grade 8	>1 - 1 1/2 NC	52,000 psi	Grade 8
				>1 - 1 1/2 NF	47,000 psi	

The performance requirement of Earnest's nylon insert lock nuts are per the requirements of IFI 100/107 (see page 3 for requirements).

Earnest nylon insert lock nuts use a ring of Nylon 66 as the locking element. The physical characteristics of Nylon 66 make it an excellent choice as a self-locking material. The combination of its tensile strength, elastic recovery, chemical resistance, temperature resistance and impact resistance enables nylon insert lock nuts to resist vibrations and impact forces while maintaining the applied preload on the fastener.

When the mating bolt is inserted into the nylon insert, the threads compress the nylon (they do not cut into it). The elastic properties of the nylon then cause the nylon to flow into the threads creating a locking action a full 360° around the thread. This full engagement of the threads by the nylon material provides a dampening effect when subjected to vibration and impact loading.

Physical Properties of Nylon 66

Resistance to Chemical: Organic Acids Solvents Caustics
 Oil Organic Salts Mineral Salts

Operating Temperature: 250° F

Earnest offers various platings and coatings for its line of nylon insert lock nuts.

Standard stock finishes are:

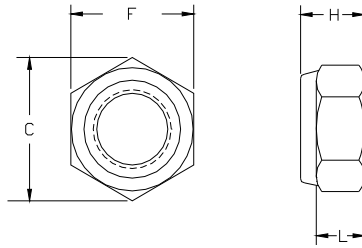
Zinc/Yellow – zinc base plating with a yellow chromate top coat per ASME B633 SC1 Type II

Zinc/Clear – zinc base coat with a clear chromate top coat per ASME B633 SC1 Type III

Both of these platings have a .0002" (or 5 micron) coating and provide uniform torque tension performance along with corrosion resistance.

Thin Nylon Insert Lock Nut

NTE Series



Dimensions for NTE Series

Nominal Diameter	F Width Across Flats	C Width Across Corners Ref.	H Thickness	L Hex Height Ref.
1/4	.439/.428	.482	.218/.188	.125
5/16	.502/.489	.552	.265/.235	.158
3/8	.564/.551	.622	.281/.251	.150
7/16	.627/.616	.698	.328/.298	.225
1/2	.752/.736	.837	.328/.298	.190
9/16	.877/.861	.978	.374/.344	.225
5/8	.940/.922	1.051	.406/.376	.265
3/4	1.064/1.052	1.191	.421/.391	.288
7/8	1.252/1.239	1.403	.484/.454	.340
1	1.440/1.427	1.615	.578/.516	.405
1 1/8	1.627/1.614	1.826	.672/.610	.500
1 1/4	1.815/1.788	2.038	.765/.703	.523
1 3/8	2.008/1.973	2.232	.821/.759	.493
1 1/2	2.197/2.159	2.444	.828/.766	.565

The recommended torques listed below are based on using the zinc plated locknuts on a bolt or stud of equal strength. Torques are listed in ft-lbs unless otherwise noted.

Coarse Thread (UNC)

Size	Thread Pitch	Grade A or 2	Grade B or 5	Grade C or 8
1/4	20	2	3	6
5/16	18	4.5	7.5	10
3/8	16	8	13	18
7/16	14	13	21	28
1/2	13	21	36	44
9/16	12	29	43	62
5/8	11	39	60	88
3/4	10	70	107	150
7/8	9	74	174	246
1	8	99	250	359
1 1/8	7	137	320	550
1 1/4	7	187	445	710
1 3/8	6	252	573	938
1 1/2	6	347	794	1277

Fine Thread (UNF)

Size	Thread Pitch	Grade A or 2	Grade B or 5	Grade C or 8
1/4	28	3	4	6
5/16	24	5	8	12
3/8	24	8	15	21
7/16	20	14	24	30
1/2	20	22	34	47
9/16	18	31	49	70
5/8	18	45	67	102
3/4	16	75	140	174
7/8	14	80	194	280
1	14	114	295	395
1 1/8	12	112	355	595
1 1/4	12	220	485	767
1 3/8	12	287	675	1062
1 1/2	12	385	929	1359



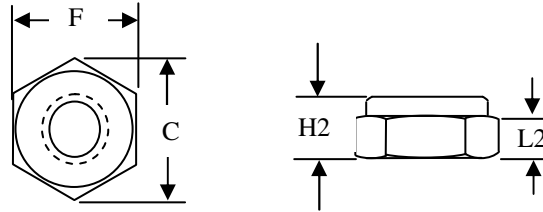
Thin Nylon Insert Lock Nut

NTE Series

Nut Size and Threads per Inch	Carbon Steel, Grade 2 & Grade A Nuts					Grade 5 & Grade B Nuts					Grade 8 & Grade C Nuts				
	Prevailing Torque					Prevailing Torque					Prevailing Torque				
	First Install in-lb max	First Removal		Fifth Removal		First Install in-lb max	First Removal		Fifth Removal		First Install in-lb max	First Removal		Fifth Removal	
High-est Reading min in-lb		Low-est Reading min in-lb	High-est Reading min in-lb	Low-est Reading min in-lb	High-est Reading min in-lb		Low-est Reading min in-lb	High-est Reading min in-lb	Low-est Reading min in-lb	High-est Reading min in-lb		Low-est Reading min in-lb	High-est Reading min in-lb	Low-est Reading min in-lb	
Coarse Thread Series															
4 – 40	3.0	1.0	0.5	0.5	0.2	3.0	1.0	0.5	0.5	0.2	4.0	1.0	0.5	0.5	0.2
6 – 32	6.0	1.5	0.5	1.0	0.5	8.0	1.5	0.5	1.0	0.5	8.0	2.0	1.0	1.5	0.5
8 – 32	9.0	2.0	1.0	1.5	0.5	12	2.0	1.0	1.5	0.5	12	2.5	1.0	2.0	1.0
10 – 24	13	2.5	1.0	2.0	1.0	13	2.5	1.0	2.0	1.0	17	3.5	1.5	2.5	1.0
12 – 24	20	3.5	1.5	2.5	1.0	20	3.5	1.5	2.5	1.0	27	4.5	2	3.0	1.5
1/4 – 20	30	5.0	2.5	3.5	1.5	30	5.0	2.5	3.5	1.5	40	6.0	6	4.5	2
5/16 – 18	60	8.0	4	5.5	2.5	60	8.0	4	5.5	2.5	80	10.5	5	7.5	3
3/8 – 16	80	12	5	8.5	4	80	12	5	8.5	4	110	16	7.5	11.5	5
7/16 – 14	100	17	7.5	12	5	100	17	7.5	12	5	135	23	10	16	7.5
1/2 – 13	150	22	10	15	7.5	150	22	10	15	7.5	17*	30	15	20	10
9/16 – 12	*ft-lb 17*	30	15	21	10	*ft-lb 17*	30	15	21	10	*ft-lb 25*	40	20	28	12.5
5/8 – 11	25*	39	17.5	27	12.5	25*	39	17.5	27	12.5	35*	52	25	36	15
3/4 – 10	35*	58	25	41	20	35*	58	25	41	20	45*	78	35	54	25
7/8 – 9	50*	88	40	62	30	50*	88	40	62	30	70*	117	50	82	40
1 – 8	70*	120	60	84	40	70*	120	60	84	40	90*	160	80	112	50
1 1/8 – 7	75*	150	70	105	50	75*	150	70	105	50	100*	200	100	140	70
1 1/4 – 7	85*	188	90	132	60	85*	188	90	132	60	110*	250	120	176	80
1 3/8 – 6	100*	220	110	154	70	100*	220	110	154	70	135*	293	140	205	100
1 1/2 – 6	110*	260	130	182	90	110*	260	130	182	90	150*	346	170	242	120
Fine Thread Series															
4 – 48	3.0	1.0	0.5	0.5	0.2	3.0	1.0	0.5	0.5	0.2	4.0	1.0	0.5	0.5	0.2
6 – 40	6.	1.5	0.5	1.0	0.5	8.0	1.5	0.5	1.0	0.5	8.0	2.0	1.0	1.0	0.5
8 – 36	9.0	2.0	1.0	1.5	0.5	12	2.0	1.0	1.5	0.5	12	2.5	1.0	2.0	1.0
10 – 32	13	2.5	1.0	2.0	1.0	13	2.5	1.5	2.0	1.0	17	3.5	1.5	2.5	1.0
12 – 28	20	3.5	1.5	2.5	1.0	20	3.5	1.5	2.5	1.0	27	4.5	2	3.0	1.5
1/4 – 28	30	5	2.5	3.5	1.5	30	5.0	2.5	3.5	1.5	40	6.0	3	4.5	2
5/16 – 24	60	8	4	5.5	2.5	60	8.0	4	5.5	2.5	80	10.5	5	7.5	3
3/8 – 24	80	12	5	8.5	4	80	12	5	8.5	4	110	16	7.5	11.5	5
7/16 – 20	100	17	7.5	12	5	100	17	7.5	12	5	135	23	10	16	7.5
1/2 – 20	150	22	10	15	7.5	150	22	10	15	7.5	17*	30	15	20	10
9/16 – 18	*ft-lb 17*	30	15	21	10	*ft-lb 17*	30	15	21	10	*ft-lb 25*	40	20	28	12.5
5/8 – 18	25*	39	17.5	27	12.5	25*	39	17.5	27	12.5	35*	52	25	36	15
3/4 – 16	35*	58	25	41	20	35*	58	25	41	20	45*	78	35	54	25
7/8 – 14	50*	88	40	62	30	50*	88	40	62	30	70*	117	50	82	40
1 – 14	70*	120	60	84	40	70*	120	60	84	40	90*	160	80	112	50
1 – 12	70*	120	60	84	40	70*	120	60	84	40	90*	160	80	112	50
1 1/8 – 12	75*	150	70	105	50	75*	150	70	105	50	100*	200	100	140	70
1 1/4 – 12	85*	188	90	132	60	85*	188	90	132	60	110*	250	120	176	80
1 3/8 – 12	100*	220	110	154	70	100*	220	110	154	70	135*	293	140	205	100
1 1/2 – 12	110*	260	130	182	90	110*	260	130	182	90	150*	346	170	242	120

Thin Nylon Insert Lock Nut

NTM and NTE Series


Dimensions for Thin Nylon Insert Lock Nuts (NTM and NTE Series)

	Nominal Diameter	F Width Across Flats	C Width Across Corners Ref.	H2 Thickness (NTM & NTE)	L2 Hex Height Ref.
NTM Sizes	#1	.251/.241	.268	.124/.094	.075
	#2	.251/.241	.268	.124/.094	.075
	#3	.251/.241	.268	.124/.094	.075
	#4	.251/.241	.268	.124/.094	.075
	#5	.251/.241	.268	.124/.094	.075
	#6	.313/.302	.339	.140/.110	.090
	#8	.345/.332	.374	.187/.157	.110
	#10	.376/.362	.410	.187/.157	.110
NTE Sizes	#12	.439/.423	.482	.218/.188	.125
	1/4	.439/.428	.482	.218/.188	.125
	5/16	.502/.489	.552	.265/.235	.158
	3/8	.564/.551	.622	.281/.251	.150
	7/16	.627/.616	.698	.328/.298	.225
	1/2	.752/.736	.837	.328/.298	.190
	9/16	.877/.861	.978	.374/.344	.225
	5/8	.940/.922	1.051	.406/.376	.265
	3/4	1.064/1.052	1.191	.421/.391	.288
	7/8	1.252/1.239	1.403	.484/.454	.340
	1	1.440/1.427	1.615	.578/.516	.405
	1 1/8	1.627/1.614	1.826	.672/.610	.500
	1 1/4	1.815/1.788	2.038	.765/.703	.523
	1 3/8	2.008/1.973	2.232	.821/.759	.493
1 1/2	2.197/2.159	2.444	.828/.766	.565	