Engineering solutions for the Fastener Industry

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Walterboro, SC 29488
Phone: 843.371.5200
Email: Sales@inspec100.com

Our aviation industry has a **problem.**

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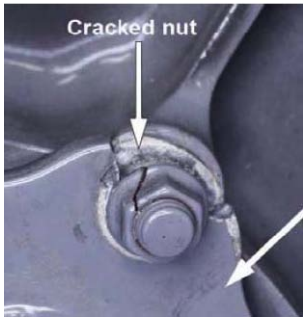

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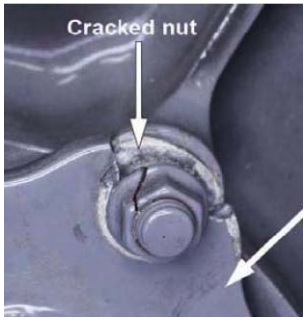

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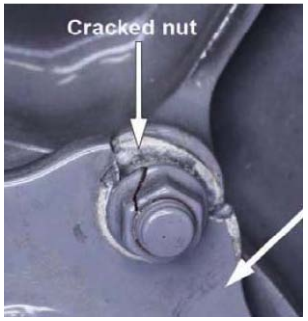

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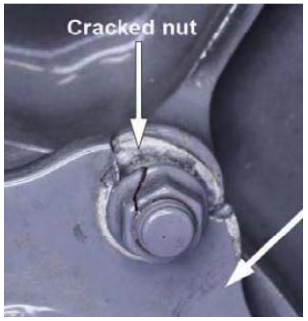
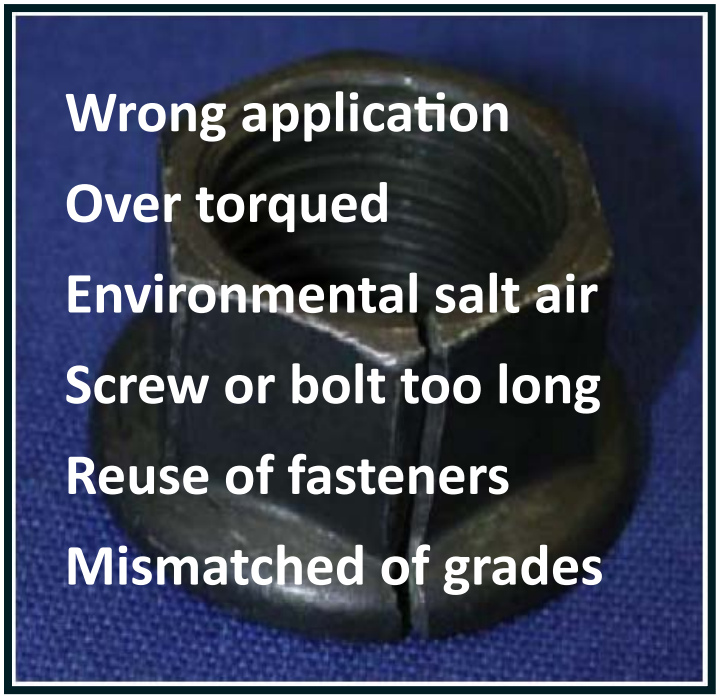


Why do nuts fail?



We *can* fix a **bad** design.

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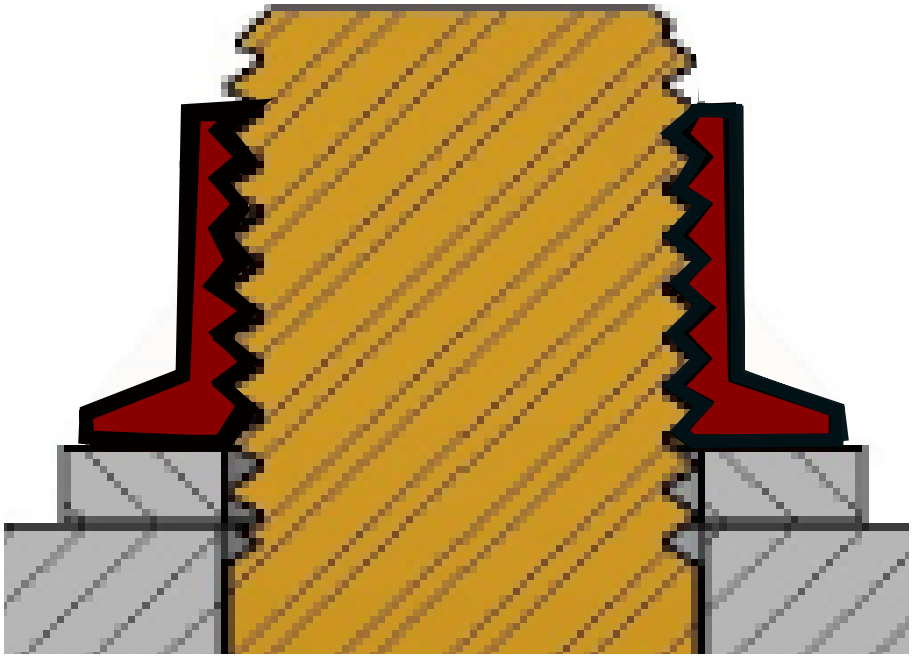
The **first three threads** do most of the work.



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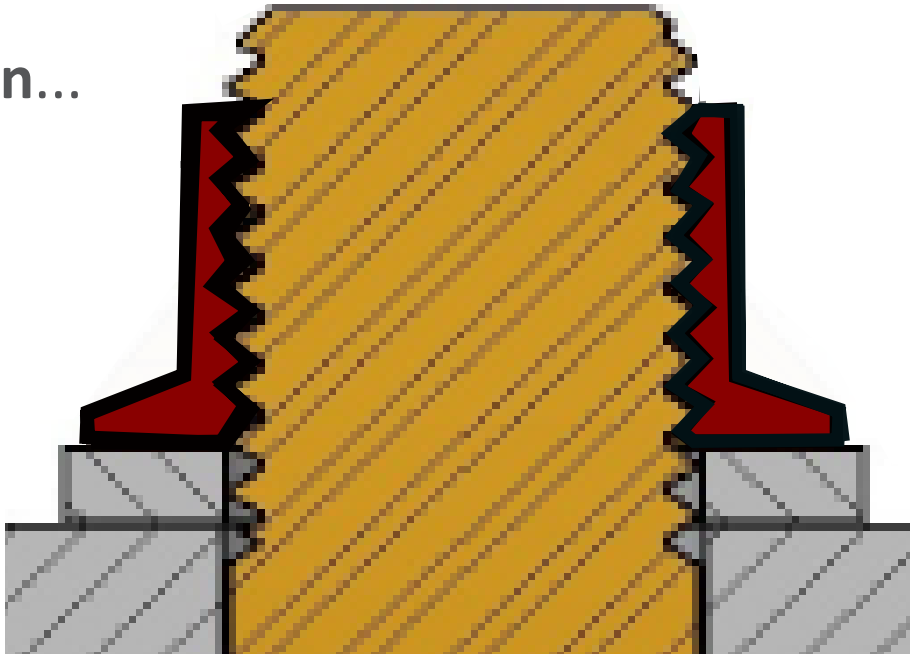
While fighting **Nut Dilation**...



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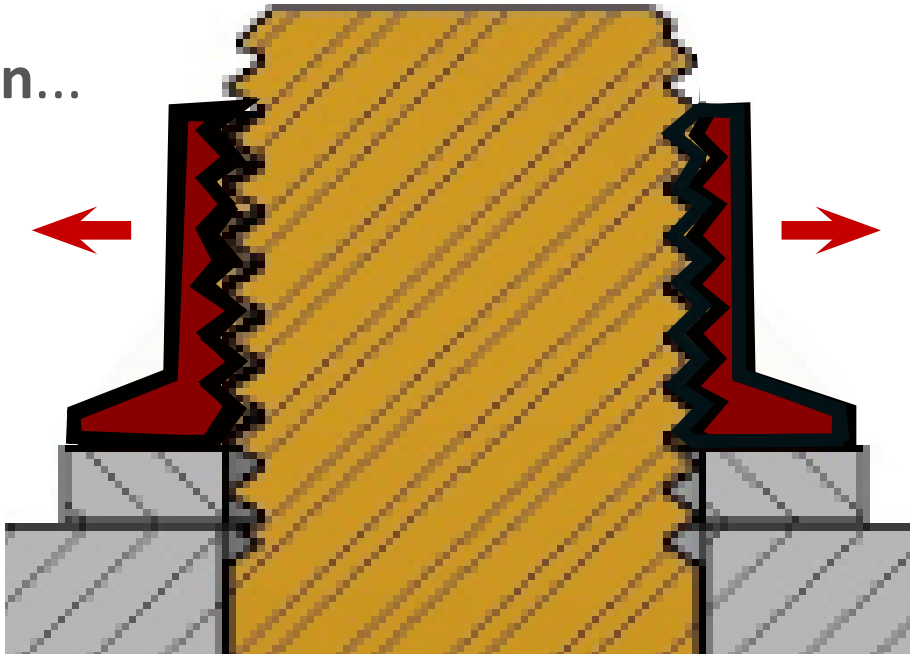

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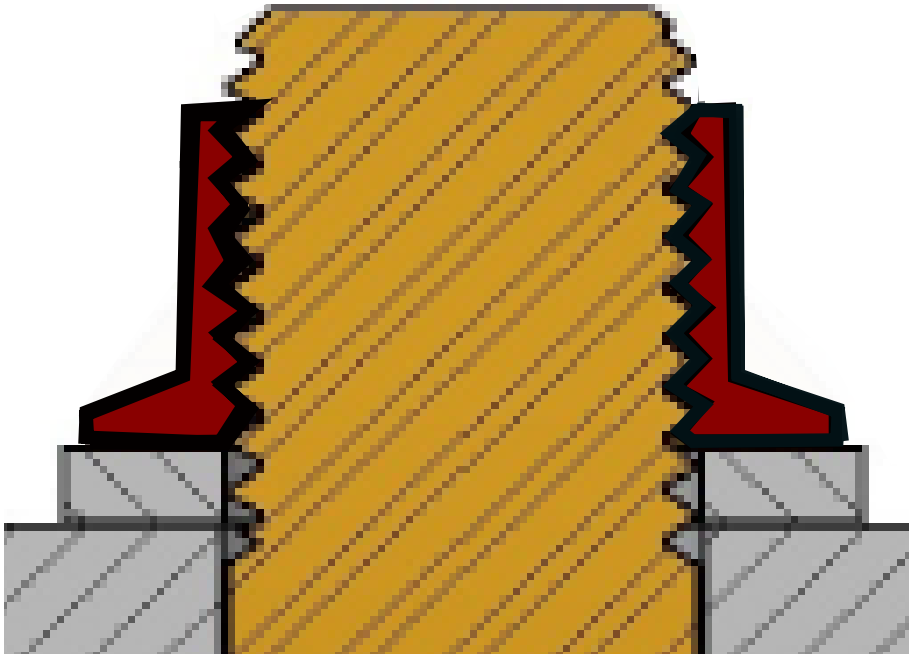

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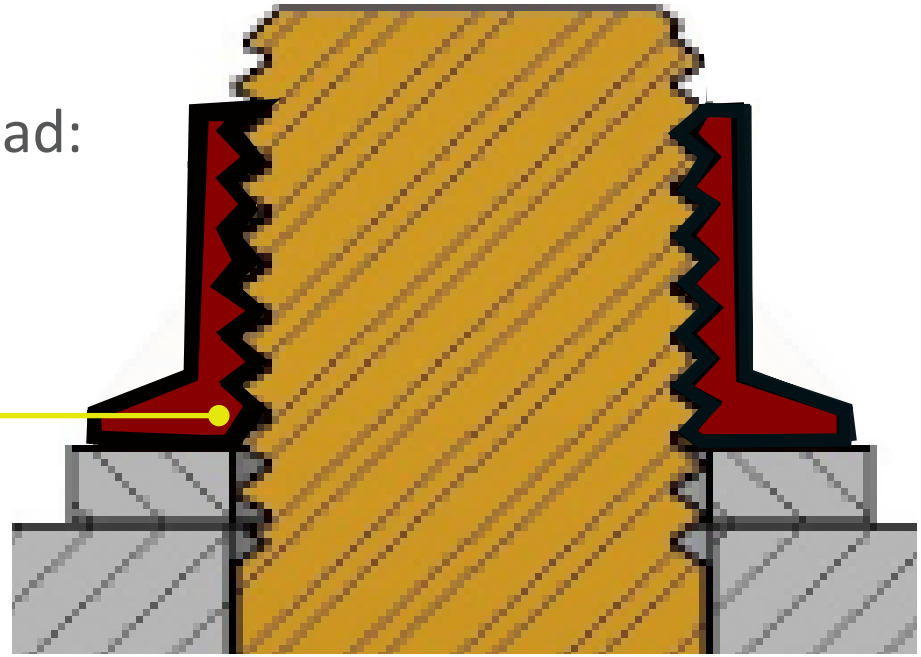
Load percentage per thread:

38%



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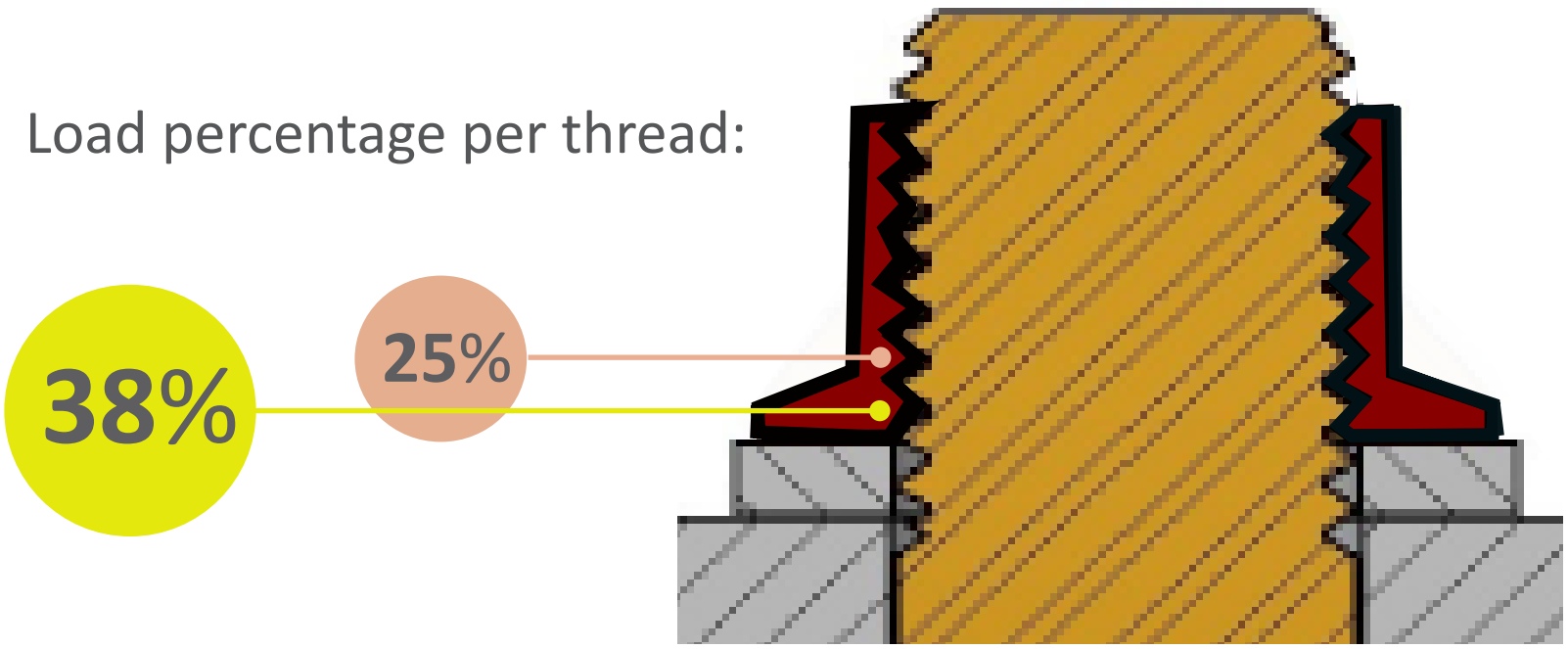

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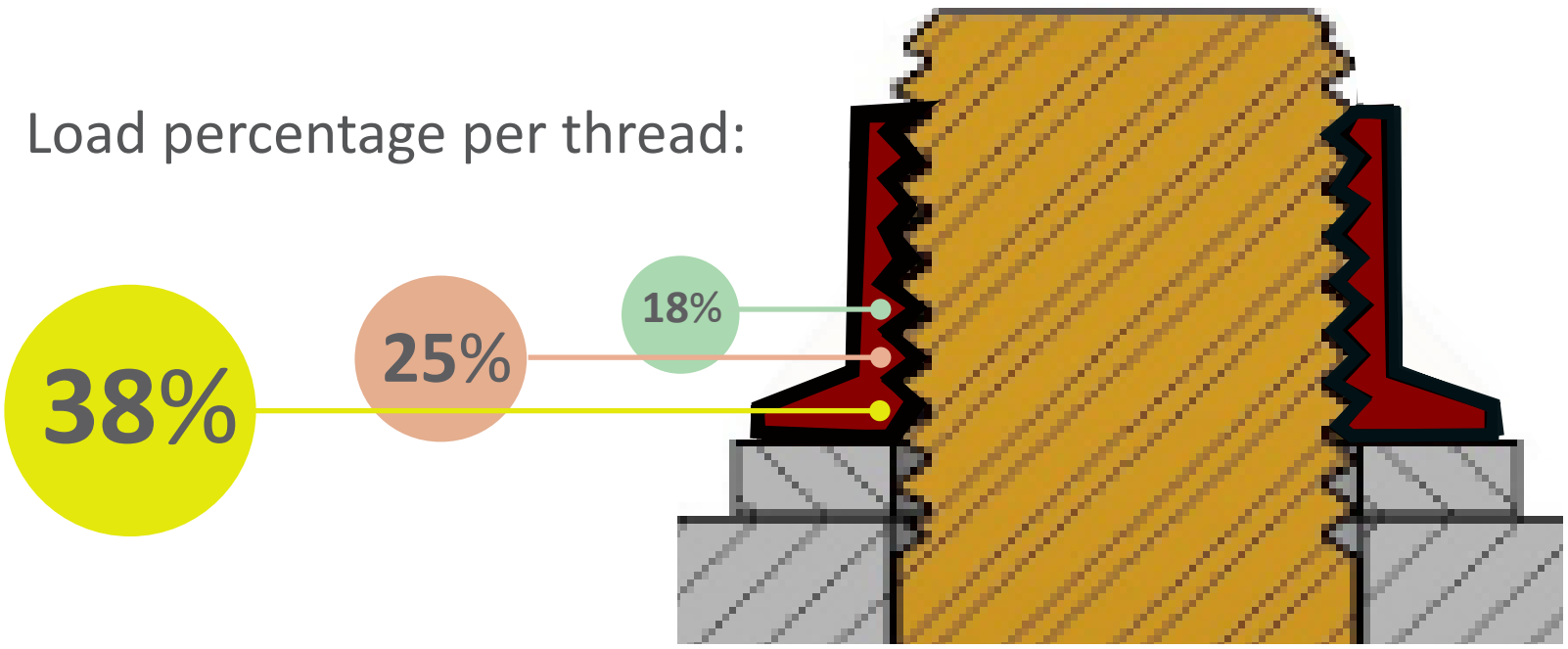

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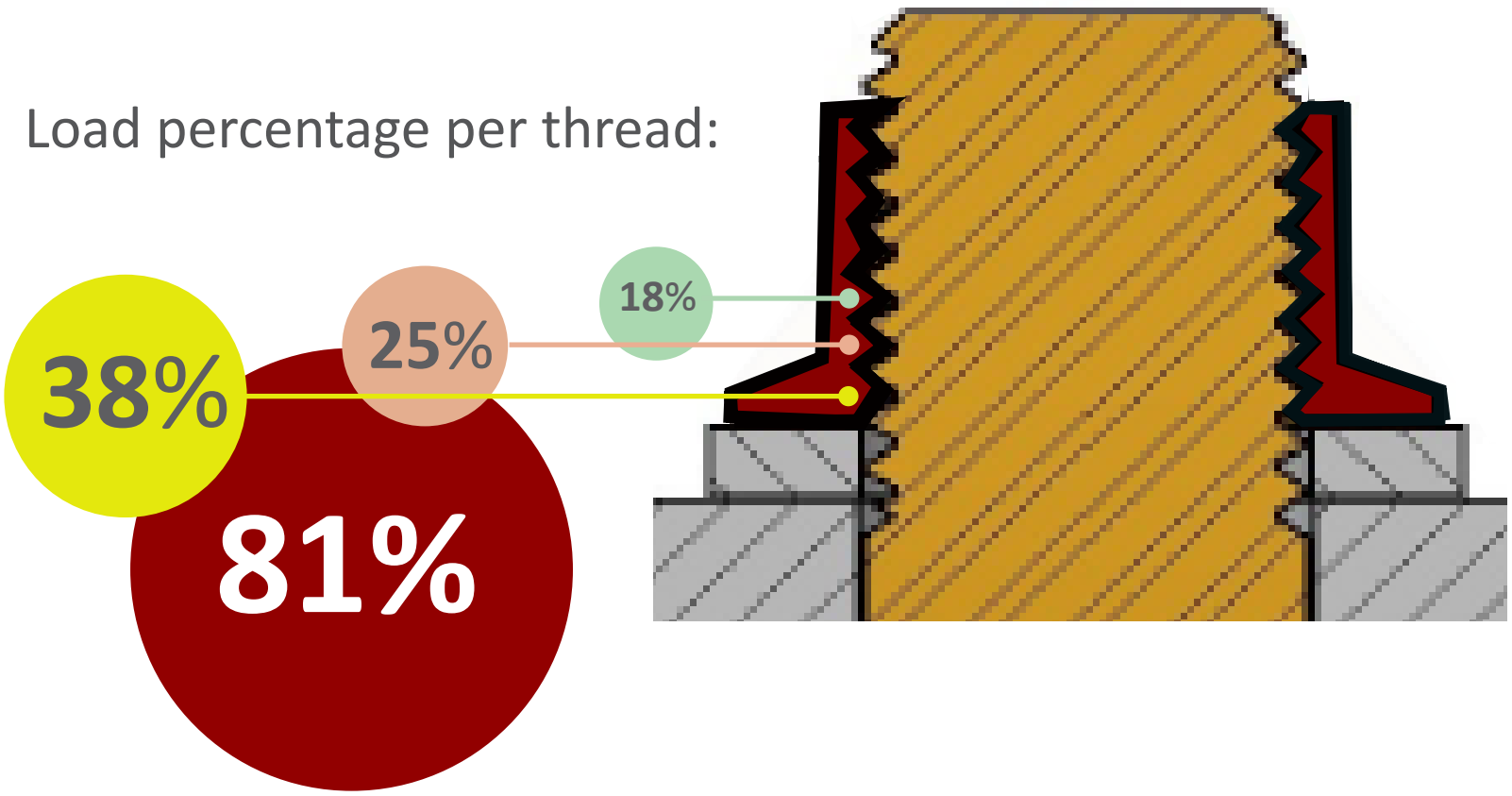
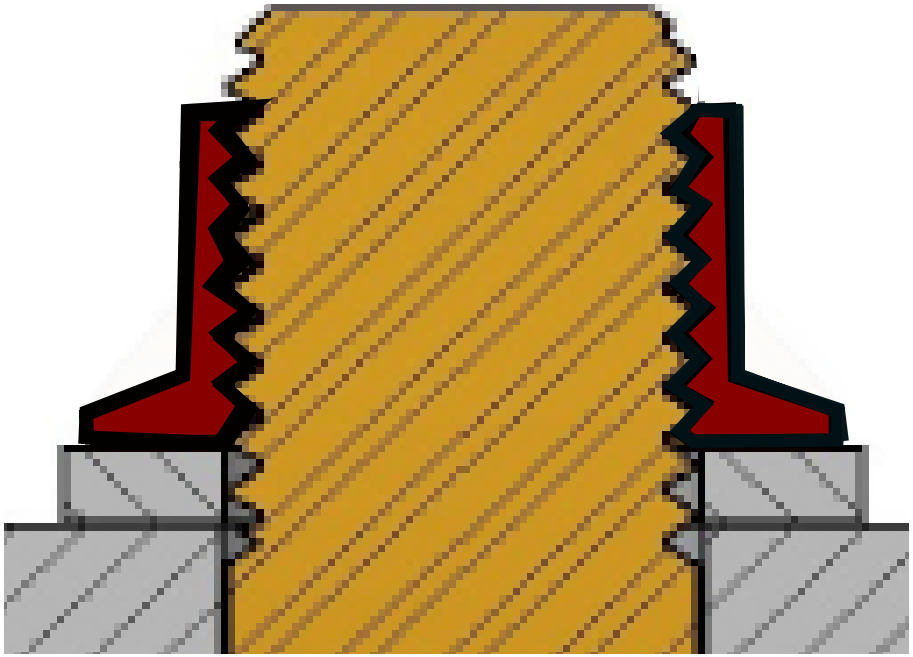


If **81%** of the total load is placed on the first three threads . . .



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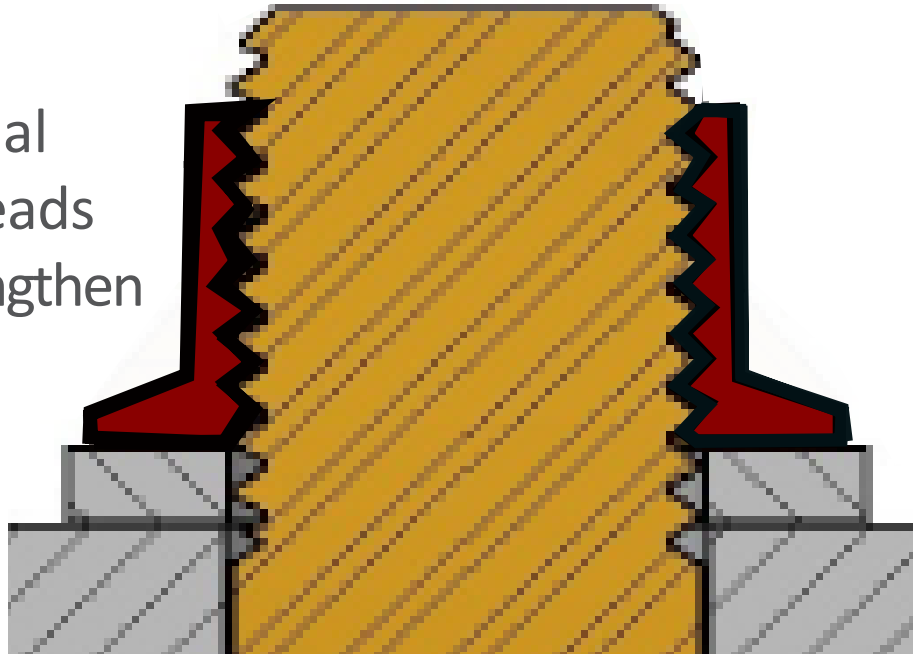

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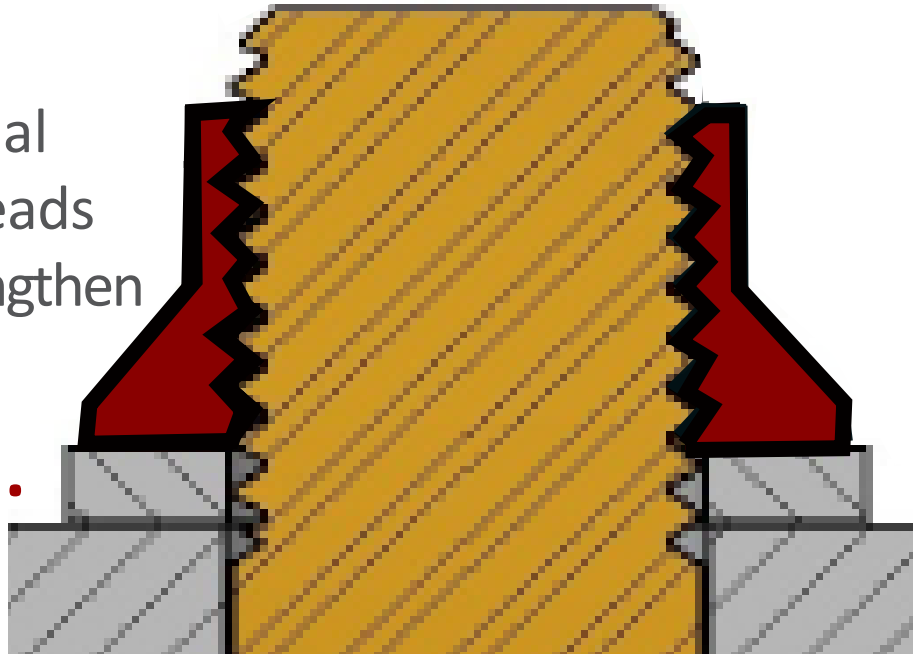
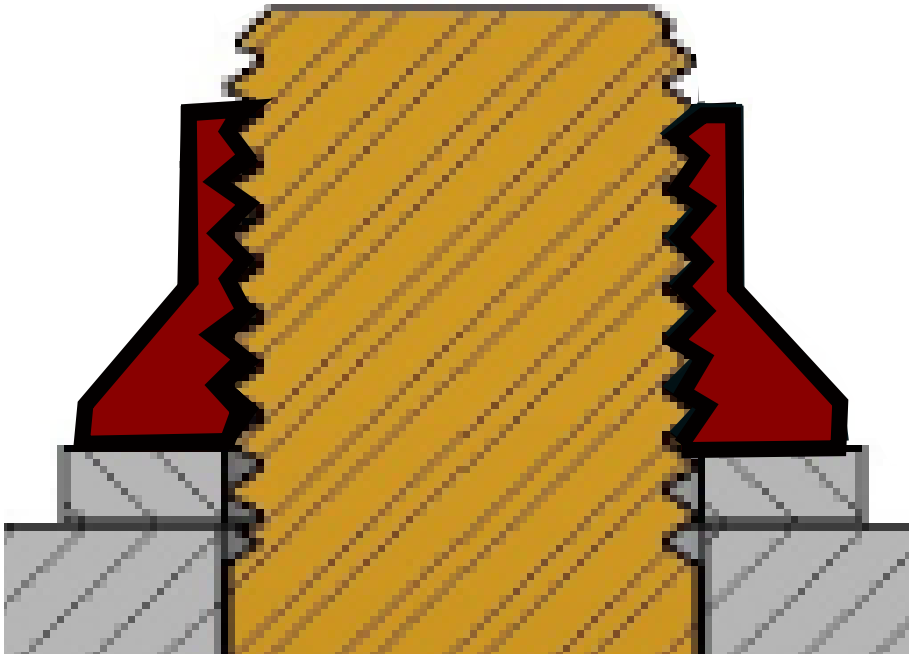


Introducing the Bell style nut.



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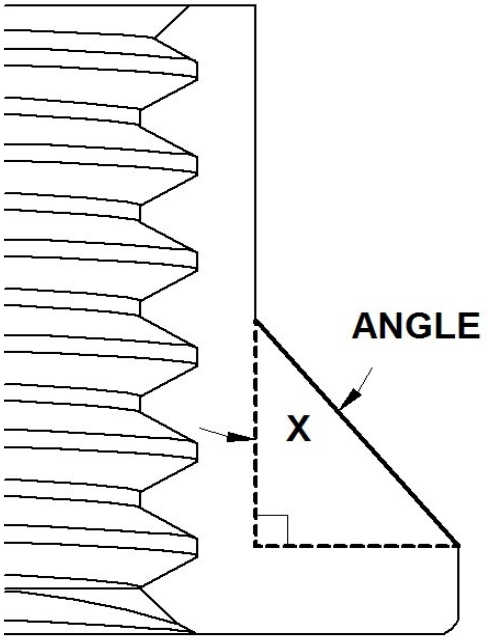

COMMON MS OR NAS PART NUMBERS	THREAD /3/ CUT AS 8879	ANGLE RANGE (DEGREES)		PREFERED ANGLE (DEGREES)
		X MIN	X MAX	X
MS21042L02	.0860-56 UNJC-3B	20	30	25
MS21042L04	.1120-40 UNJC-3B	23	33	28
MS21042L06	.1380-32 UNJC-3B	23	33	28
MS21042L08	.1640-32 UNJC-3B	23	33	28
MS21042L3	.1900-32 UNJF-3B	25	35	30
MS21042L4	.2500-28 UNJF-3B	26	36	31
MS21042L5	.3125-24 UNJF-3B	27	37	32
MS21042L6	.3750-24 UNJF-3B	35	45	40
NAS1291-7	.4375-20 UNJF-3B	35	45	40
NAS1291-8	.5000-20 UNJF-3B	35	45	40
NAS1291-9	.5625-18 UNJF-3B	25	35	30
NAS1291-10	.6250-18 UNJF-3B	25	35	30

CONFORMS TO: NASM21042, MS21042 AND NAS1291

THIN WALLED, HEX FLANGE NUT, SELF LOCKING

450° F ALLOY STEEL, LOW HEIGHT, LIGHT WEIGHT

MS21042 / NAS1291

STYLE B - PATENT PENDING 14/465,290

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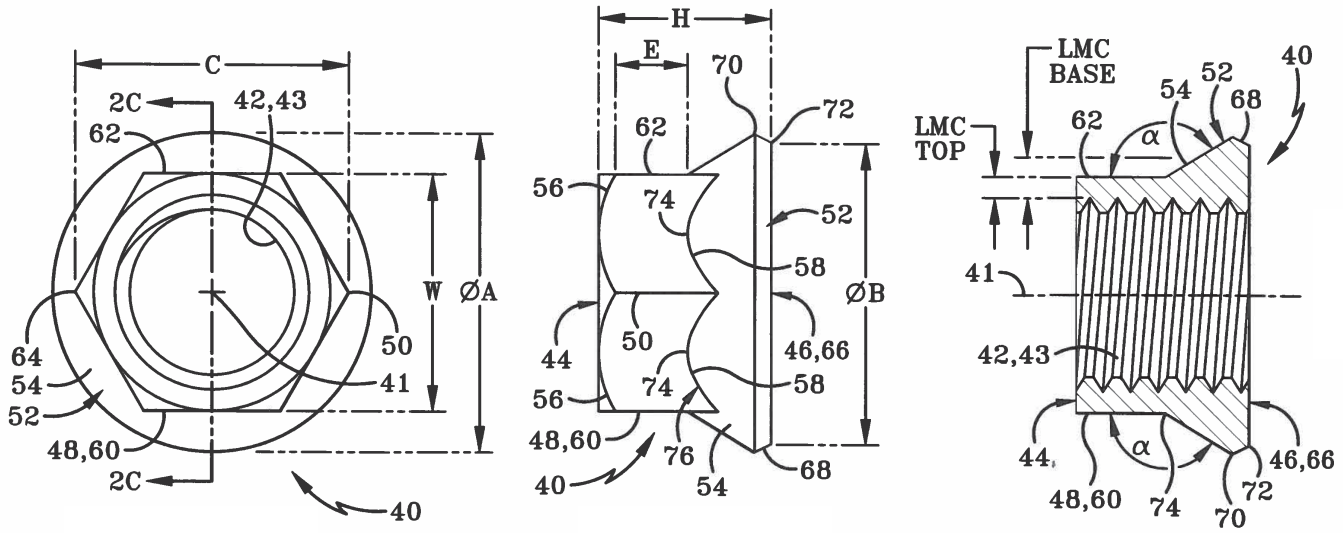

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Heavier wall significantly increases strength of first three threads.

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Less brittle = less chance of cracking.

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Heavier wall **significantly** increases strength of first three threads.

Increased area allows **lower** heat treat values, lessening hardness.

Less brittle = less chance of **cracking.**

The problem of thin walled nut failures is eliminated.

Introducing the Bell style nut.

Entirely conforms to current
NASM21042 and NAS1291 standards.

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Entirely conforms to current NASM21042 and NAS1291 standards.

Uses same part number, so no OEM drawing changes required.

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Entirely **conforms** to current NASM21042 and NAS1291 standards.

Uses **same** part number, so no OEM drawing changes required.

Purchasing only needs to specify **Style 'B"** *(for 'Bell')* with part number when ordering.

Introducing the Bell style nut.

Weight is the same, so no additional material cost.

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Weight is the same, so no additional material cost.

Tooling life doubles with new bell shape, so cheaper to produce.

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Tooling life doubles with new bell shape, so cheaper to produce.

End-users will get a better nut that's less expensive and won't fail.

Nut failures?

Nut failures? No more!

Nut failures solved!

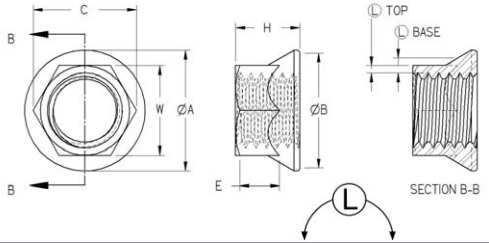
Nut failures solved!

Thanks to the Bell style nut.

Nut failures solved!

Thanks to the Bell style nut.

Engineered by
InSpec100.com



MS21042L6
STYLE B
CADMIUM,
CHROMATE, LUBE

MS21042-6
STYLE B
CADMIUM,
CHROMATE

COMMON MS OR NAS PART NUMBERS	THREAD /3/ CUT AS 8879	THREAD COUNT MAX	DIAMETER TO HEIGHT % RATIO	LEAST MATERIAL CONDITION			A	B	C	E	H - HEIGHT		W - FLATS		AXIAL TENSILE LBS/MIN	TORQUE IN/LBS MIN-MAX	MAX WEIGHT LBS/EACH
				TOP	BASE	% RATIO INCREASE	MAX	MIN	MIN	MIN	MAX	MIN	MAX	MIN			
MS21042L02	.0860-56 UNJC-3B	5.600	116%	0.014	0.022	57%	0.167	0.137	0.138	0.045	0.100	0.080	0.127	0.122	670	.2-2.5	0.0002
MS21042L04	.1120-40 UNJC-3B	5.000	112%	0.015	0.026	73%	0.206	0.176	0.171	0.050	0.125	0.103	0.158	0.150	1,110	.5-5.0	0.0005
MS21042L06	.1380-32 UNJC-3B	4.512	102%	0.020	0.032	60%	0.244	0.214	0.207	0.055	0.141	0.115	0.190	0.181	1,670	1.0-10.0	0.0008
MS21042L08	.1640-32 UNJC-3B	6.016	115%	0.020	0.035	75%	0.290	0.260	0.244	0.060	0.188	0.125	0.221	0.213	2,490	1.5-15.0	0.0015
MS21042L3	.1900-32 UNJF-3B	6.016	99%	0.024	0.043	79%	0.330	0.290	0.277	0.065	0.188	0.154	0.252	0.243	3,470	2.0-18.0	0.0018
MS21042L4	.2500-28 UNJF-3B	6.132	88%	0.024	0.050	108%	0.420	0.386	0.347	0.090	0.219	0.204	0.316	0.304	6,200	3.5-30.0	0.0035
MS21042L5	.3125-24 UNJF-3B	6.384	85%	0.023	0.057	147%	0.520	0.482	0.419	0.120	0.266	0.251	0.378	0.367	9,820	6.5-60.0	0.0060
MS21042L6	.3750-24 UNJF-3B	6.768	75%	0.024	0.066	175%	0.620	0.575	0.491	0.125	0.282	0.267	0.440	0.430	15,200	9.5-80.0	0.0080
NAS1291-7	.4375-20 UNJF-3B	6.560	75%	0.024	0.074	208%	0.708	0.680	0.562	0.160	0.328	0.313	0.504	0.494	20,600	14.0-100	0.0130
NAS1291-8	.5000-20 UNJF-3B	8.200	82%	0.024	0.085	254%	0.814	0.786	0.633	0.225	0.410	0.350	0.566	0.556	27,500	18.0-150	0.0210
NAS1291-9	.5625-18 UNJF-3B	8.640	85%	0.054	0.107	98%	0.912	0.874	0.775	0.320	0.480	0.420	0.692	0.680	34,800	24.0-200	0.0360
NAS1291-10	.6250-18 UNJF-3B	9.900	88%	0.055	0.118	114%	1.014	0.976	0.846	0.365	0.550	0.490	0.755	0.743	43,600	32.0-300	0.0450

DESIGN NOTES: Ⓛ SYMBOL DENOTES LEAST MATERIAL CONDITION.

1. HYDROGEN EMBRITTLEMENT MINIMIZED BY LOWER HRC HARDNESS REQUIREMENTS WITH STYLE B SHAPE DESIGN.
2. PERFORMANCE CONFORMS TO NASM25027 REQUIREMENTS.
3. MATERIAL ALLOY STEEL PER SPECIFICATION RECOMMENDED UNS G40370 PER AMS6300 OR UNS G87400 PER AMS6322.
4. HEAT TREATMENT PER AMS2759, HRC 43 MAX, TO CONFORM AMS-QQ-P-416C, SECTION 6.2.1 PLATING USAGE REQUIREMENTS.
5. FINISH CADMIUM PLATED PER AMS-QQ-P-416, TYPE 2, CLASS 2, RECOMMENDED BAKE WITHIN 1 HOUR AFTER PLATING 24 HOURS 375°F.
6. ADD FINISH CODE OR L TO BASIC PART NUMBER FOR POST LUBE PER AS5272C, TYPE 1 AND BAKE 1 HOUR 375°F.
7. C AND W DIMENSIONS APPLY BEFORE FORMING OF SELF LOCKING FEATURE.
8. STYLE B TO INCREASE LEAST MATERIAL CONDITION Ⓛ AT BASE STRESS LOAD AREA AND REDUCE HRC MECHANICAL REQUIREMENTS.
9. STYLE B PATENT PENDING SERIAL NUMBER 14/465,290, MANUFACTURING LICENSE REQUIRED, INQUIRE EMAIL License@InSpec100.com
10. THESE NUTS SHALL BE USED IN ACCORDANCE WITH THE LIMITATIONS OF NASM33588.
11. THESE NUTS SHALL BE SAMPLE LOT INSPECTED FOR DISCONTINUITIES, NASM25027, SECTION 4.5.4 TABLE LIMITS 7 IN ACCORDANCE WITH ASTM E1444.
12. FREE EVALUATION SAMPLES AVAILABLE UPON REQUEST, INQUIRE EMAIL MS21042B@InSpec100.com

EXAMPLE PART NUMBERS

MS21042 - 02 B - ALLOY STEEL, .0860-56 NUT, 450°F, CADMIUM CHROMATE NO LUBE, STYLE B SHAPE DESIGN
MS21042 L 3 B - ALLOY STEEL, .1900-32 NUT, 450°F, CADMIUM CHROMATE LUBE, STYLE B SHAPE DESIGN
MS21042 L 4 B - ALLOY STEEL, .2500-28 NUT, 450°F, CADMIUM CHROMATE LUBE, STYLE B SHAPE DESIGN
MS21042 L 6 B - ALLOY STEEL, .3750-24 NUT, 450°F, CADMIUM CHROMATE LUBE, STYLE B SHAPE DESIGN
NAS1291 - 7 B - ALLOY STEEL, .4375-20 NUT, 450°F, CADMIUM CHROMATE LUBE, STYLE B SHAPE DESIGN
NAS1291 X 10 B - ALLOY STEEL, .6250-18 NUT, 450°F, CADMIUM CHROMATE NO LUBE, STYLE B SHAPE DESIGN

STYLE B DESIGN
THREAD SIZE
FINISH / LUBE
BASIC PART NUMBER

CONFORMS TO: NASM21042, MS21042 AND NAS1291

THIN WALLED, HEX FLANGE NUT, SELF LOCKING

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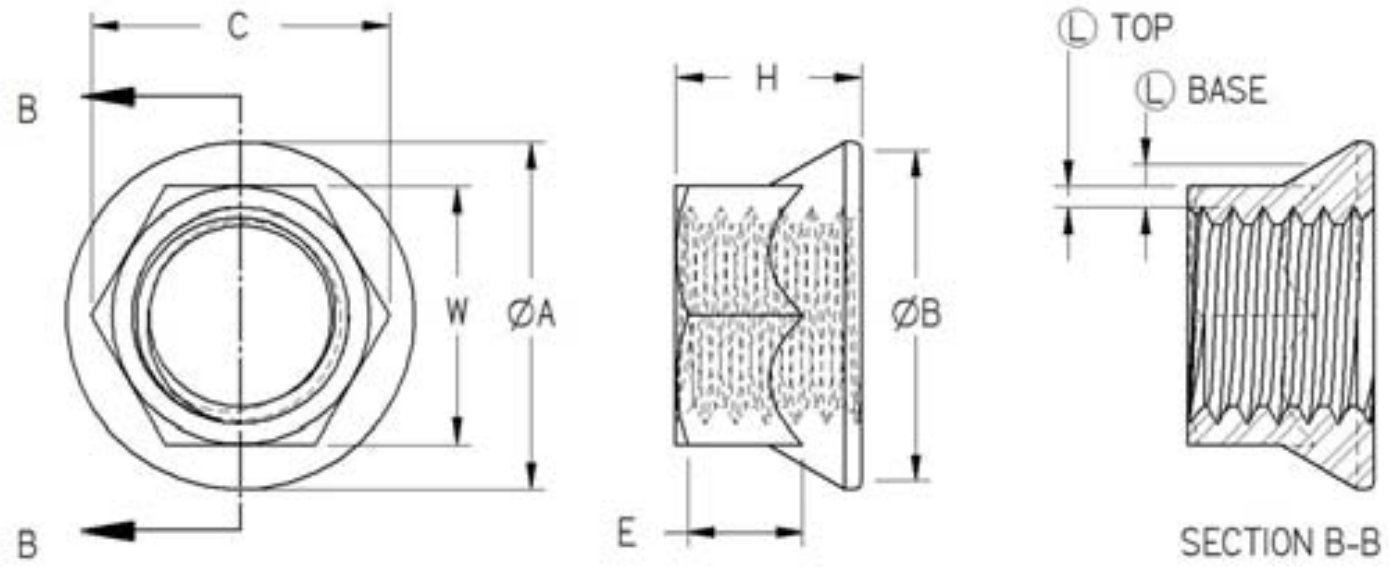

MS21042L6
STYLE B
CADMIUM,
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MS21042-6
STYLE B
CADMIUM,
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