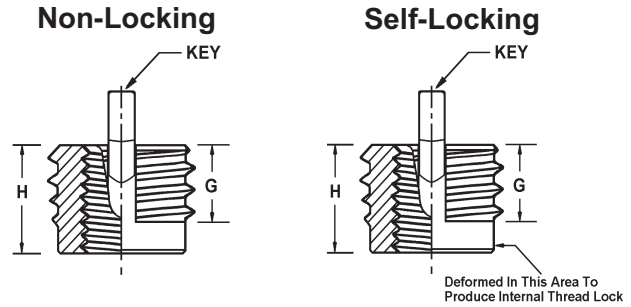


Material: Inserts - 4140 Alloy Steel (160 KSI Min)  
 Keys - 302 CRES  
 Finish: Cadmium Plate (QQ-P-416 Type II, Cl. 2)  
 Tolerances:  $\pm 0.010$  inch unless specified otherwise  
 Internal Threads: Per SAE AS8879  
 Dimensions: All dimensions below are in inches  
 Keys: Miniature Inserts are furnished with 2 locking keys  
 Material Identification Mark: None  
 Lubrication: Dry Film Lube on Self-Locking Inserts only  
 Performance: MIL-I-45914A (MS51830)



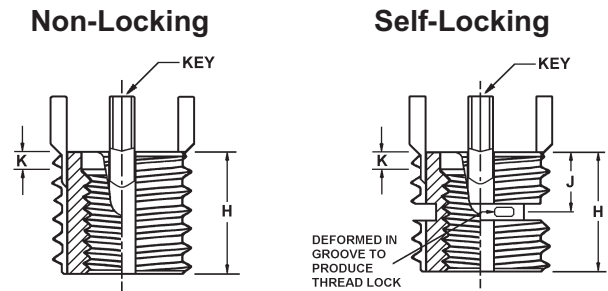
## Miniature - Inch (See Page 5 for MS Part Number Cross Reference)

PART NUMBER*		INSERT				INSTALLATION					REMOVAL	
Non-Locking	Self-Locking	Internal Thread Class 3B	External Thread Class 2A	G Thread Length	H Length	Install Tool Part No.*	Tap Drill Size $+0.003$ $-0.001$	C'Sink Dia. $+0.010$ $-0.000$	Thread Tap		Drill	
									Size Class 2B	Min. Depth	Size	Depth
80283	81283	2 - 56	8 - 32	.090	.120	72552	.134	.166	8 - 32	.140	#33	1/16
80284	81284	4 - 40	10 - 32	.125	.170	72554	.161	.194	10 - 32	.160	#29	3/32
80285	81285	6 - 32	12 - 28	.125	.170	72556	.187	.220	12 - 28	.160	#21	3/32
80286	81286	8 - 32	1/4 - 28 <sup>†</sup>	.175	.220	72558	.228	.255	1/4 - 28	.210	#8	1/8

\* To complete the abbreviated part number in the table above use the prefix "217-0"

<sup>†</sup> Modified Minor Diameter

Material: Inserts - 4140 Alloy Steel (160 KSI Min)  
 Keys - 302 CRES  
 Finish: Cadmium Plate (QQ-P-416 Type II, Cl. 2)  
 Tolerances:  $\pm 0.010$  inch unless specified otherwise.  
 Internal Threads: Per SAE AS8879  
 Dimensions: All dimensions below are in inches  
 Keys: Inserts with an internal thread size of 5/16 and larger are furnished with 4 locking keys. Smaller sizes have 2 locking keys.  
 Material Identification Mark: Two lines on top of Insert  
 Lubrication: Dry Film Lube on Self-Locking Inserts only  
 Performance: MIL-I-45914A (MS51830 & NAS1394)



## Lightweight - Inch (See Page 5 for MS/NAS Part Number Cross Reference)

PART NUMBER*		INSERT					INSTALLATION				REMOVAL		
Non-Locking	Self-Locking	Internal Thread Class 3B	External Thread (Mod.) Class 2A	H Length	J $\pm 0.030$	K C'Bore Depth	Install Tool Part No.*	Tap Drill Size <sup>1</sup>	C'Sink Dia. $+0.010$ $-0.000$	Thread Tap		Drill	
										Size Class 2B	Min. Depth	Size	Depth
80321	81321	10 - 24	5/16 - 18	.312	.22	.07	72568	.272	.323	5/16 - 18	.37	7/32	5/32
80521	81521	10 - 32					72569						
80322	81322	1/4 - 20	3/8 - 16	.375	.22	.07	72570	.332	.385	3/8 - 16	.43	9/32	3/16
80522	81522	1/4 - 28					72571						
80323	81323	5/16 - 18	7/16 - 14	.437	.22	.07	72572	.397	.447	7/16 - 14	.50	11/32	3/16
80523	81523	5/16 - 24					72573						
80324	81324	3/8 - 16	1/2 - 13	.500	.24	.07	72574	.453	.510	1/2 - 13	.56	13/32	3/16
80524	81524	3/8 - 24					72575						
80325	81325	7/16 - 14	9/16 - 12	.562	.27	.07	72576	.516	.572	9/16 - 12	.62	15/32	3/16
80525	81525	7/16 - 20					72577						
80326	81326	1/2 - 13	5/8 - 11	.625	.28	.07	72578	.578	.635	5/8 - 11	.68	17/32	3/16
80526	81526	1/2 - 20					72579						

\* To complete the abbreviated part number in the table above use the prefix "217-0"

<sup>1</sup> Tap Drill Hole Tolerance: .234 to .500 =  $+0.004/-0.001$   
 Over .500 =  $+0.005/-0.001$

# MS/NAS Style - 4140 Alloy Steel Keylocking Threaded Inserts



Material: Inserts - 4140 Alloy Steel (160 KSI Min)  
Keys - 302 CRES

Finish: Cadmium Plate (QQ-P-416 Type II, Cl. 2)

Tolerances: ±.010 inch unless specified otherwise.

Internal Threads: Per SAE AS8879

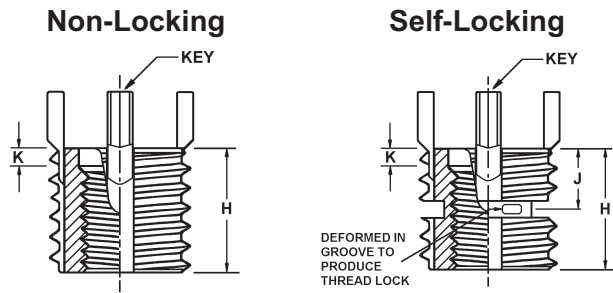
Dimensions: All dimensions below are in inches

Keys: Inserts with an internal thread size of 5/16 and larger are furnished with 4 locking keys. Smaller sizes have 2 locking keys.

Material Identification Mark: Two lines on top of Insert

Lubrication: Dry Film Lube on Self-Locking Inserts only

Performance: MIL-I-45914A (MS51831 & NAS1395)



## Heavy Duty - Inch (See Page 5 for MS/NAS Part Number Cross Reference)

PART NUMBER*		INSERT					INSTALLATION					REMOVAL	
Non-Locking	Self-Locking	Internal Thread Class 3B	External Thread (Mod.) Class 2A	H Length	J ±.030	K C'Bore Depth	Install Tool Part No.*	Tap Drill Size <sup>1</sup>	C'Sink Dia. +.010 -0.000	Thread Tap		Drill	
										Size Class 2B	Min. Depth	Size	Depth
80300	81300	8 - 32	5/16 - 18	.312	.22	.04	72590	.272	.323	5/16 - 18	.37	7/32	1/8
80301	81301	10 - 24	3/8 - 16	.312	.22	.07	72591	.332	.385	3/8 - 16	.37	9/32	1/8
80501	81501	10 - 32					72592						
80302	81302	1/4 - 20	7/16 - 14	.375	.22	.07	72593	.397	.447	7/16 - 14	.43	11/32	3/16
80502	81502	1/4 - 28					72594						
80303	81303	5/16 - 18	1/2 - 13	.437	.22	.07	72595	.453	.510	1/2 - 13	.50	13/32	3/16
80503	81503	5/16 - 24					72596						
80304	81304	3/8 - 16	9/16 - 12	.500	.25	.07	72597	.516	.572	9/16 - 12	.56	15/32	3/16
80504	81504	3/8 - 24					72598						
80305	81305	7/16 - 14	5/8 - 11	.625	.28	.10	72599	.578	.635	5/8 - 11	.68	17/32	3/16
80505	81505	7/16 - 20					72600						
80306	81306	1/2 - 13	11/16-11 NS	.688	.28	.10	72601	.641	.700	11/16-11 NS	.75	19/32	3/16
80506	81506	1/2 - 20					72602						
80307	81307	9/16 - 12	13/16 - 16	.812	.32	.10	72603	.766	.822	13/16-16	.94	23/32	3/16
80507	81507	9/16 - 18					72604						
80308	81308	5/8 - 11	7/8 - 14	.875	.33	.10	72605	.828	.885	7/8 - 14	1.00	25/32	3/16
80508	81508	5/8 - 18					72606						
80309	-	3/4 - 10	1-1/8 - 12	1.125	-	.10	72607	1.062	1.145	1-1/8 - 12	1.31	31/32	5/16
80509	-	3/4 - 16					72608						
-	81309	3/4 - 10					72607						
-	81509	3/4 - 16					72608						
80310	-	7/8 - 9	1-1/4 - 12	1.250	-	.10	72609	1.187	1.270	1-1/4 - 12	1.44	1-3/32	5/16
80510	-	7/8 - 14					72610						
-	81310	7/8 - 9					72609						
-	81510	7/8 - 14					72610						
80311	-	1" - 8	1-3/8 - 12	1.375	-	.10	72611	1.312	1.395	1-3/8 - 12	1.56	1-7/32	5/16
80511	-	1" - 12					72612						
-	81311	1" - 8					72611						
-	81511	1" - 12					72612						

\* To complete the abbreviated part number in the table above use the prefix "217-0"

<sup>1</sup> Tap Drill Hole Tolerance:  
.234 to .500 = +.004/-0.001  
Over .500 = +.005/-0.001

Material: Inserts - 4140 Alloy Steel (160 KSI Min)  
Keys - 302 CRES

Finish: Cadmium Plate (QQ-P-416 Type II, Cl. 2)

Tolerances: ±.010 inch unless specified otherwise.

Internal Threads: Per SAE AS8879

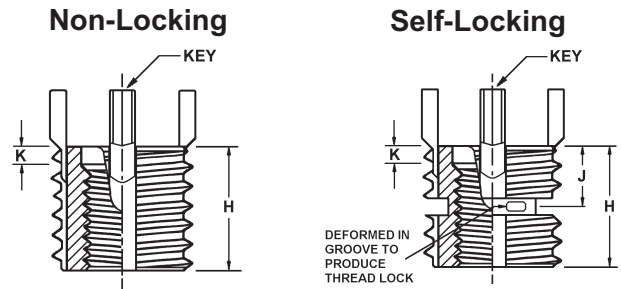
Dimensions: All dimensions below are in inches

Keys: Inserts with an internal thread size of 1/4 and larger are furnished with 4 locking keys. Smaller sizes have 2 locking keys.

Material Identification Mark: Two lines on top of Insert

Lubrication: Dry Film Lube on Self-Locking Inserts only

Performance: MIL-I-45914A (MS51832)



## Extra Heavy Duty - Inch (See Page 5 for MS Part Number Cross Reference)

PART NUMBER*		INSERT					INSTALLATION					REMOVAL	
Non-Locking	Self-Locking	Internal Thread Class 3B	External Thread (Mod.) Class 2A	H Length	J ±.030	K C'Bore Depth	Install Tool Part No. *	Tap Drill Size <sup>1</sup>	C'Sink Dia. +.010 -.000	Thread Tap		Drill	
										Size Class 2B	Min. Depth	Size	Depth
80333	81333	10 - 24	7/16 - 14	.312	.22	.07	72628	.397	.447	7/16 - 14	.37	11/32	3/16
80533	81533	10 - 32					72629						
80334	81334	1/4 - 20	1/2 - 13	.375	.22	.07	72630	.453	.510	1/2 - 13	.44	13/32	3/16
80534	81534	1/4 - 28					72631						
80335	81335	5/16 - 18	9/16 - 12	.437	.22	.07	72632	.516	.572	9/16 - 12	.50	15/32	3/16
80535	81535	5/16 - 24					72633						
80336	81336	3/8 - 16	5/8 - 11	.500	.25	.07	72634	.578	.635	5/8 - 11	.56	17/32	3/16
80536	81536	3/8 - 24					72635						
80337	81337	7/16 - 14	11/16-11 NS	.625	.28	.10	72636	.641	.700	11/16-11 NS	.68	19/32	3/16
80537	81537	7/16 - 20					72637						
80338	81338	1/2 - 13	13/16 - 16	.688	.28	.10	72638	.766	.822	13/16-16	.75	23/32	3/16
80538	81538	1/2 - 20					72639						
80339	81339	9/16 - 12	7/8 - 14	.812	.32	.10	72640	.828	.885	7/8 - 14	.94	25/32	3/16
80539	81539	9/16 - 18					72641						
80340	81340	5/8 - 11	1" - 12	.875	.33	.10	72642	.937	1.020	1" - 12	1.00	27/32	5/16
80540	81540	5/8 - 18					72643						
80341	-	3/4 - 10	1-1/4 - 12	1.125	-	.10	72644	1.187	1.270	1-1/4 - 12	1.31	1-3/32	5/16
80541	-	3/4 - 16					72645						
-	81341	3/4 - 10					72644						
-	81541	3/4 - 16					72645						
80342	-	7/8 - 9	1-3/8 - 12	1.250	-	.10	72646	1.312	1.395	1-3/8 - 12	1.44	1-7/32	5/16
80542	-	7/8 - 14					72647						
-	81342	7/8 - 9					72646						
-	81542	7/8 - 14					72647						
80343	-	1" - 8	1-1/2 - 12	1.375	-	.10	72648	1.437	1.520	1-1/2 - 12	1.56	1-11/32	5/16
80543	-	1" - 12					72649						
-	81343	1" - 8					72648						
-	81543	1" - 12					72649						

\* To complete the abbreviated part number in the table above use the prefix "217-0"

<sup>1</sup> Tap Drill Hole Tolerance:  
.234 to .500 = +.004/-0.001  
Over .500 = +.005/-0.001

# MS/NAS Style - 4140 Alloy Steel Keylocking Threaded Inserts



Material: Inserts - 4140 Alloy Steel (160 KSI Min)  
Keys - 302 CRES

Finish: Cadmium Plate (QQ-P-416 Type II, Cl. 2)

Tolerances:  $\pm .25$  mm unless specified otherwise

Internal Threads: Per Fed Std H28/21, MJ Form

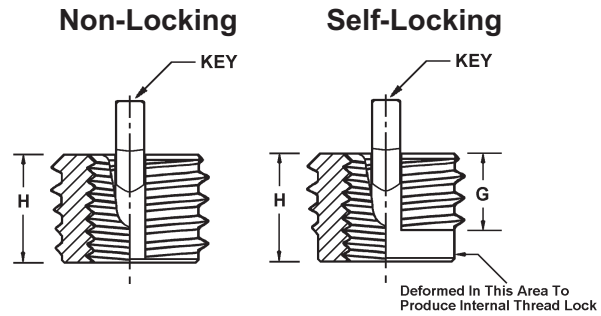
Dimensions: All dimensions below are in millimeters

Keys: Miniature Inserts are furnished with 2 locking keys

Material Identification Mark: None

Lubrication: Dry Film Lube on Self-Locking Inserts only

Performance: NA0146



## Miniature - Metric (See Bottom of Page 6 for NA Part Number Cross Reference)

PART NUMBER*		INSERT				INSTALLATION					REMOVAL	
Non-Locking	Self-Locking	Internal Thread Class 4H6H	External Thread Class 4h	G Thread Length	H Length	Install Tool Part No.*	Tap Drill Size $+0.00$ $-0.025$	C'Sink Dia. $+0.25$ $-0.00$	Thread Tap		Drill	
									Size Class 6H	Min. Depth	Size	Depth
80382	81382	M 2x0.4	M 4x0.7	2.20	3.00	72682	3.4	4.1	M 4x0.7	4.0	2.8	2.00
80383	81383	M 2.5x0.45	M 4.5x0.75	2.70	3.81	72683	3.9	4.6	M 4.5x0.75	5.0	3.0	2.00
80384	81384	M 3x0.5	M 5x0.8	3.10	4.25	72684	4.4	5.1	M 5x0.8	5.5	3.5	2.25
80386	81386	M 4x0.7	M 6x0.75	4.11	5.25	72686	5.5	6.1	M 6x0.75	6.5	4.6	2.50

\* To complete the abbreviated part numbers in the table above use the prefix "217-0"

Material: Inserts - 4140 Alloy Steel (160 KSI Min)  
Keys - 302 CRES

Finish: Cadmium Plate (QQ-P-416 Type II, Cl. 2)

Tolerances:  $\pm .25$  mm unless specified otherwise.

Internal Threads: Per Fed Std H28/21, MJ Form

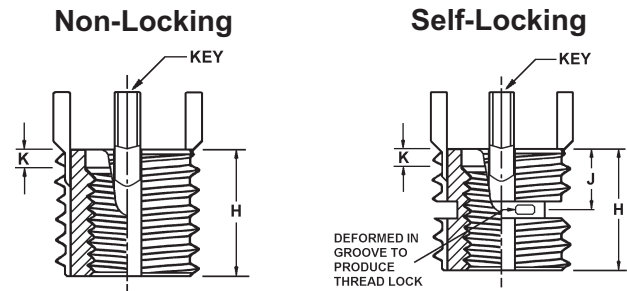
Dimensions: All dimensions below are in millimeters

Keys: Inserts with an internal thread size of M 6 and smaller are furnished with 2 locking keys. Larger sizes have 4 locking keys.

Material Identification Mark: Two lines on top of Insert

Lubrication: Dry Film Lube on Self-Locking Inserts only

Performance: NA0148



## Lightweight - Metric (See Bottom of Page 6 for NA Part Number Cross Reference)

PART NUMBER*		INSERT					INSTALLATION					REMOVAL	
Non-Locking	Self-Locking	Internal Thread <sup>1</sup> Class 4H5H	External Thread Class 4h	H Length	J $\pm .76$	K C'Bore Depth	Install Tool Part No.*	Tap Drill Size <sup>2</sup>	C'Sink Dia. $+0.25$ $-0.00$	Thread Tap		Drill	
										Size Class 6H	Min. Depth	Size	Depth
80351	81351	M 5x0.8	M 8x1.25	8.0	3.73	1.27	72651	6.90	8.25	M 8x1.25	9.5	5.50	4.00
80551	81551	M 5x0.5											
80352	81352	M 6x1.0	M 10x1.25	10.0	6.02	1.78	72652	8.80	10.25	M 10x1.25	11.5	7.50	4.75
80552	81552	M 6x0.75											
80353	81353	M 8x1.25	M 12x1.25	12.0	6.28	1.78	72653	10.80	12.25	M 12x1.25	13.5	9.50	4.75
80553	81553	M 8x1.0											
80355	81355	M 10x1.5	M 14x1.5	14.0	6.46	2.29	72655	12.80	14.25	M 14x1.5	15.5	11.50	4.75
80555	81555	M 10x1.25											
80356	81356	M 12x1.75	M 16x1.5	16.0	6.46	2.29	72656	14.75	16.25	M 16x1.5	17.5	13.50	4.75
80556	81556	M 12x1.25											

\* To complete the abbreviated part numbers in the table above use the prefix "217-0"

<sup>1</sup> Thread Class on M 5 Internal Thread is 4H6H

<sup>2</sup> Tap Drill Hole Tolerance: 6.90 to 10.80 =  $+0.100/-0.025$   
Over 12.80 =  $+0.130/-0.025$

Material: Inserts - 4140 Alloy Steel (160 KSI Min)  
Keys - 302 CRES

Finish: Cadmium Plate (QQ-P-416 Type II, Cl. 2)

Tolerances:  $\pm .25$  mm unless specified otherwise.

Internal Threads: Per Fed Std H28/21, MJ Form

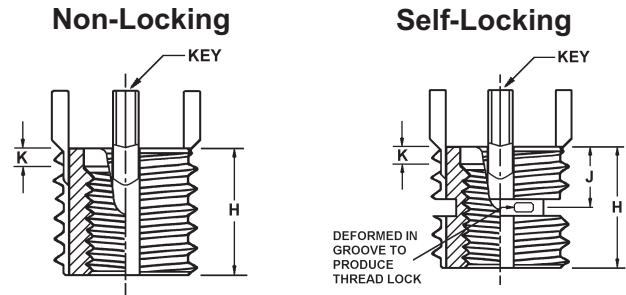
Dimensions: All dimensions below are in millimeters

Keys: Inserts with an internal thread size of M 6 and smaller are furnished with 2 locking keys. Larger sizes have 4 locking keys.

Material Identification Mark: Two lines on top of Insert

Lubrication: Dry Film Lube on Self-Locking Inserts only

Performance: NA0150



## Heavy Duty - Metric (See Bottom of Page 6 for NA Part Number Cross Reference)

PART NUMBER*		INSERT					INSTALLATION					REMOVAL	
Non-Locking	Self-Locking	Internal Thread <sup>1</sup> Class 4H5H	External Thread Class 4h	H Length	J $\pm .76$	K C'Bore Depth	Install Tool Part No.*	Tap Drill Size <sup>2</sup>	C'Sink Dia. $+.25$ $-.00$	Thread Tap		Drill	
										Size Class 6H	Min. Depth	Size	Depth
80363	81363	M 4x0.7	M 8x1.25	8.0	5.00	1.27	72663	6.90	8.25	M 8x1.25	9.5	5.50	4.00
80364	81364	M 5x0.8	M 10x1.25	10.0	5.50	1.27	72664	8.80	10.25	M 10x1.25	12.5	7.50	4.75
80365	81365	M 6x1.0	M 12x1.25	12.0	6.46	1.78	72665	10.80	12.25	M 12x1.25	14.5	9.50	4.75
80366	81366	M 8x1.25	M 14x1.5	14.0	6.46	1.78	72666	12.80	14.25	M 14x1.5	16.5	11.50	4.75
80566	81566	M 8x1.0											
80367	81367	M 10x1.5	M 16x1.5	16.0	6.46	2.29	72667	14.75	16.25	M 16x1.5	18.5	13.50	4.75
80567	81567	M 10x1.25											
80369	81369	M 12x1.75	M 18x1.5	18.0	7.23	2.29	72669	16.75	18.25	M 18x1.5	20.5	15.50	4.75
80569	81569	M 12x1.25											
80370	81370	M 14x2.0	M 20x1.5	20.0	7.73	2.79	72670	18.75	20.25	M 20x1.5	22.5	17.50	4.75
80570	81570	M 14x1.5											
80371	81371	M 16x2.0	M 22x1.5	22.0	8.50	2.79	72671	20.50	22.25	M 22x1.5	24.5	17.75	6.35
80571	81571	M 16x1.5											
80572	81572	M 18x1.5	M 24x2.0	24.0	9.25	2.79	72672	22.50	24.25	M 24x2.0	28.5	19.75	6.35
80373	81373	M 20x2.5	M 30x2.0	30.0	12.51	2.79	72673	28.00	30.25	M 30x2.0	34.5	25.75	6.35
80573	81573	M 20x1.5											
80574	81574	M 22x1.5	M 32x2.0	32.0	12.51	2.79	72674	30.00	32.25	M 32x2.0	36.5	27.75	6.35
80375	81375	M 24x3.0	M 33x2.0	33.0	13.97	3.81	72675	31.00	33.25	M 33x2.0	37.5	28.75	6.35
80575	81575	M 24x2.0											

\* To complete the abbreviated part numbers in the table above use the prefix "217-0"

<sup>1</sup> Thread Class on M 4 and M 5 Internal Thread is 4H6H

<sup>2</sup> Tap Drill Hole Tolerance: 6.90 to 10.80 =  $+0.100/-0.025$   
Over 12.80 =  $+0.130/-0.025$