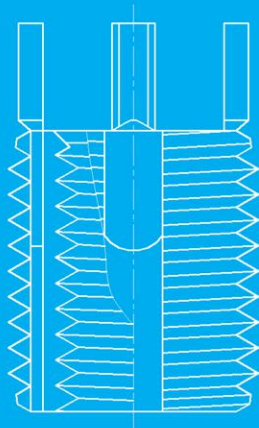




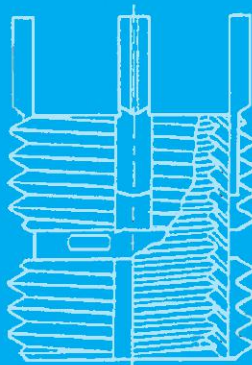
# 飞航紧固系统

## Flight Fastening Systems

钢丝螺套  
THREADED  
INSERTS



自攻螺套  
SELF-TAPPING  
THREADED  
INSERTS




插销螺套  
KEYLOCKING  
THREADED  
INSERTS



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 <https://xxflight.en.alibaba.com>  
<http://www.wirethreadedinserts.com>



## 简介 Introduction

### 特点 characteristic

◆ 特别适合应用于需要高强度内螺纹的环境，可以有效抗震、抗拉拔；

It is especially suitable for the environment requiring high-strength internal thread, and can effectively resist earthquake and drawing;

◆ 让螺纹孔强度更加有效的增强；

Make the strength of threaded hole more effectively enhanced;

◆ 同时具备公英制尺寸；

Both metric and English sizes are available;

◆ 使用简单，安装操作简便。

Simple to use, easy to install and operate.

### 应用 application

插销螺套最基本的功能就是修复内螺纹和增强内螺纹，作为一种螺纹修复手段，可以对被损螺纹进行快速有效的修复，插销螺套应用在低强度的材料上，能极大地增强螺纹孔的强度。

The most basic function of the KeyLocking Threaded Inserts is to repair and strengthen the internal thread, which can quickly and effectively repair the damaged thread. When applied to low strength materials, it can greatly enhance the strength of the threaded hole.

### 分类 classification

● 按照功能分类/function

普通型 (Non-Locking)

锁紧型 (Self-Locking)

● 按照型式尺寸分类/Type size

薄壁型 (Thin wall)

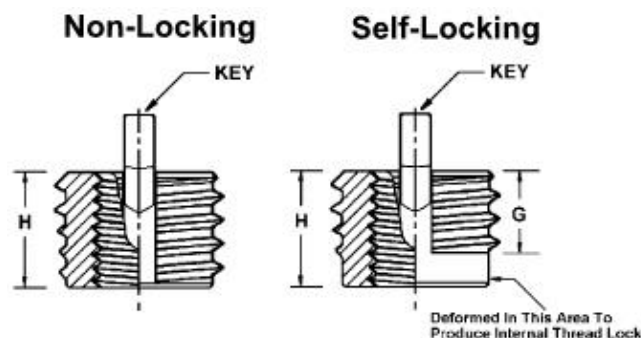
重型 (Heavy duty)



## AVIC-Flight KeyLocking Thread Inserts

...technologies for a reliable hold

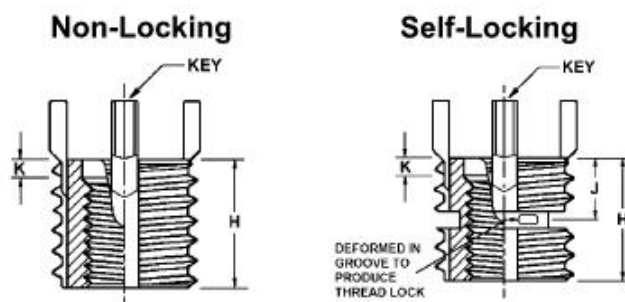
Material: Inserts-303 Keys-302  
 Finish: Passivated  
 Tolerances: + 25 mm unless specified otherwise  
 Internal Threads: Per Fed std H28/21. MJ Form  
 Dimensions: All dimensions below are in millimeters  
 Keys: Miniature Inserts are furnished with 2 locking keys  
 Material Identification Mark: None  
 Lubrication: Dry Film Lube on Self-locking Inserts only  
 Performance: See note on the bottom of page 7



### Miniature - Metric

INSERT				INSTALLATION				REMOVAL	
Internal Thread 4H6H	External Thread 4h	G Thread Length	H Length	Tap Drill Size +0.080 -0.025	C'Sink Dia. +0.25 -0.00	Thread Tap		Drill	
						Size 6H	Min. Depth	Size	Depth
M2x0.4	M4x0.7	2.20	3.00	3.4	4.1	M4x0.7	4.0	2.8	2.00
M2.5x0.45	M4.5x0.75	2.70	3.80	3.9	4.6	M4.5x0.75	5.0	3.0	2.00
M3x0.5	M5x0.8	3.10	4.25	4.4	5.1	M5x0.8	5.5	3.5	2.25
M4x0.7	M6x0.75	4.11	5.25	5.5	6.1	M6x0.75	6.5	4.6	2.50

Material: Inserts-303 Keys-302  
 Finish: Passivated  
 Tolerances: + 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 M6 and smaller are furnished with 2 locking keys.  
 Larger sizes have 4 locking keys.  
 Material Identification Mark: None  
 Lubrication: Dry Film Lube on Self-locking Inserts only  
 Performance: See note on the bottom of page 7



### Lightweight - Metric

INSERT					INSTALLATION				REMOVAL	
Internal Thread 6H	External Thread 6g	H Length	J ±0.76	K C'Bore Depth	Tap Drill Size ①	C'Sink Dia. +0.25 -0.00	Thread Tap		Drill	
							Size 6H	Min. Depth	Size	Depth
M5x0.8	M8x1.25	8.0	3.73	1.27	6.90	8.25	M8x1.25	9.5	5.50	4.00
M5x0.5										
M6x1.0	M10x1.25	10.0	6.02	1.78	8.80	10.25	M10x1.25	11.5	7.50	4.75
M6x0.75										
M8x1.25	M12x1.25	12.0	6.28	1.78	10.8	12.25	M12x1.25	13.5	9.50	4.75
M8x1.0										
M10x1.5	M14x1.5	14.0	6.46	2.29	12.8	14.25	M14x1.5	15.5	11.5	4.75
M10x1.25										
M12x1.75	M16x1.5	16.0	6.46	2.29	14.8	16.25	M16x1.5	17.5	13.5	4.75
M12x1.25										

① Tap Drill Hole Tolerance : 6.90 to 10.80 = + 0.100 / -0,025  
 Over 12.80 = + 0.130 / -0.025

## AVIC-Flight KeyLocking Thread Inserts

...technologies for a reliable hold

Material: Inserts-303 Keys-302

Finish: Passivated

Tolerances: + 25 mm unless specified otherwise

Internal Threads: Per Fed std H28/21. MJ Form

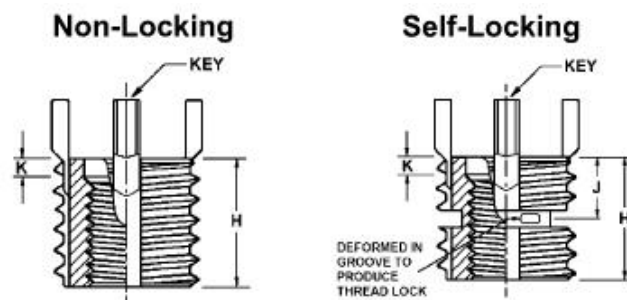
Dimensions: All dimensions below are in millimeters

Keys: Inserts with an internal thread size of M6 and smaller are furnished with 2 locking keys. Larger sizes have 4 locking keys.

Material Identification Mark: None

Lubrication: Dry Film Lube on Self-locking Inserts only

Performance: See note on the bottom of page 7



### Heavy Duty-Metric

INSERT					INSTALLATION				REMOVAL	
Internal Thread 6H	External Thread 6g	H Length	J ±0.76	K C'Bore Depth	Tap Drill Size ①	C'Sink Dia. +0.25 -0.00	Thread Tap		Drill	
							Size 6H	Min. Depth	Size	Depth
M4x0.7	M8x1.25	8.0	5.00	1.27	6.90	8.25	M8x1.25	9.5	5.50	4.00
M5x0.8	M10x1.25	10.0	5.50	1.27	8.80	10.25	M10x1.25	12.5	7.50	4.75
M6x1.0	M12x1.25	12.0	6.46	1.78	10.8	12.25	M12x1.25	14.5	9.50	4.75
M8x1.25	M14x1.5	14.0	6.46	1.78	12.8	14.25	M14x1.5	16.5	11.5	4.75
M8x1.0										
M10x1.5	M16x1.5	16.0	6.46	2.29	14.8	16.25	M16x1.5	18.5	13.5	4.75
M10x1.25										
M12x1.75	M18x1.5	18.0	7.23	2.29	16.8	18.25	M18x1.5	20.5	15.5	4.75
M12x1.25										
M14x2.0	M20x1.5	20.0	7.73	2.79	18.8	20.25	M20x1.5	22.5	17.5	4.75
M14x1.5										
M16x2.0	M22x1.5	22.0	8.50	2.79	20.5	22.25	M22x1.5	24.5	17.8	6.35
M16x1.5										
M18x1.5	M24x2.0	24.0	9.25	2.79	22.5	24.25	M24x2.0	28.5	19.8	6.35
M20x2.5	M30x2.0	30.0	12.51	2.79	28.0	30.25	M30x2.0	34.5	25.8	6.35
M20x1.5										
M22x1.5	M32x2.0	32.0	12.51	2.79	30.0	32.25	M32x2.0	36.5	27.8	6.35
M24x3.0	M33x2.0	33.0	13.97	3.81	31.0	33.25	M33x2.0	37.5	28.8	6.35
M24x2.0										

①.Tap Drill Hole Tolerance : 6.90 to 10.80 = + 0.100 / -0,025  
Over 12.80 = + 0.130 / -0.025

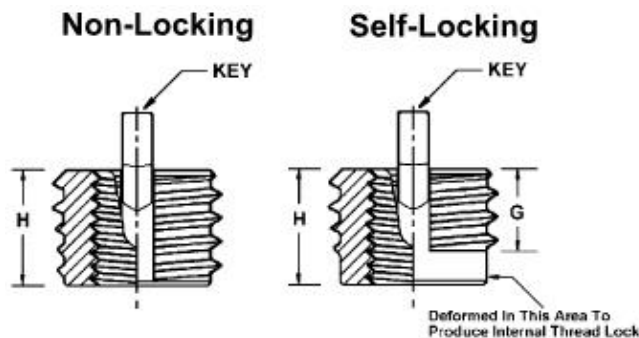
**Note:** There is no National Aerospace Standard for Metric Keylocking Inserts manufactured from 303.

The inserts shown on pages 6 and 7 are compliant with the other requirements of NA0147,NA0149,and NA0151 except for any references to the type of material or performance related to the material.

## AVIC-Flight KeyLocking Thread Inserts

...technologies for a reliable hold

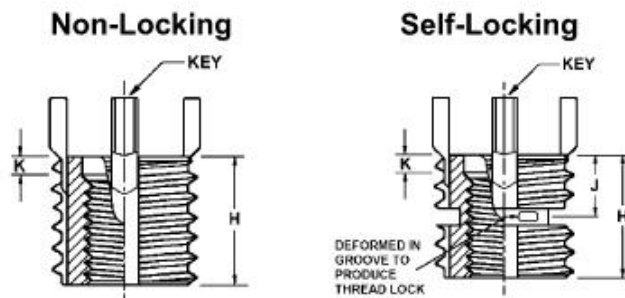
Material: Inserts-303 Keys-302  
 Finish: Passivated  
 Tolerances:  $\pm .010$  inch unless specified otherwise  
 Internal Threads: Per SAE AS8879  
 Dimensions: All dimensions below are in inches  
 Keys: Miniature Inserts are furnished with 2 locking keys  
 Material Identification Mark: None  
 Lubrication: Dry Film Lube on Self-locking Inserts only  
 Performance: MIL-I-45914A(MS51830)



### Miniature - Inch

INSERT				INSTALLATION				REMOVAL	
Internal Thread 3B	External Thread 2A	G Thread Length	H Length	Tap Drill Size +.003 -.001	C'Sink Dia. +.010 -.000	Thread Tap		Drill	
						Size 2B	Min. Depth	Size	Depth
2-56	8-32	.090	.120	.134	.166	8-32	.140	#33	1/16
4-40	10-32	.125	.170	.161	.194	10-32	.160	#29	3/32
6-32	12-28	.125	.170	.187	.220	12-28	.160	#21	3/32
8-32	1/4-28	.175	.220	.228	.255	1/4-28	.210	#8	1/8

Material: Inserts-303 Keys-302  
 Finish: Passivated  
 Tolerances:  $\pm .010$  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: None  
 Lubrication: Dry Film Lube on Self-locking Inserts only  
 Performance: MIL-I-45914A(MS51830 & NAS1394)



### Lightweight - Inch

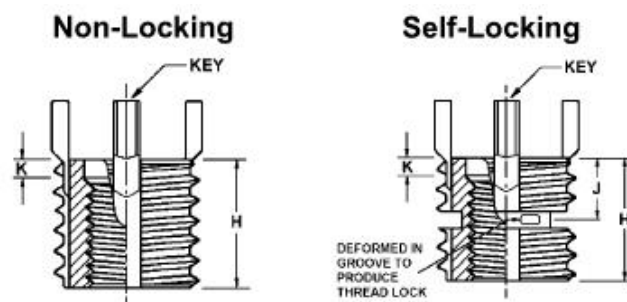
INSERT					INSTALLATION				REMOVAL	
Internal Thread 2B	External Thread 2A	H Length	J $\pm .030$	K C'Bore Depth	Tap Drill Size ①	C'Sink Dia. +.010 -.000	Thread Tap		Drill	
							Size 2B	Min. Depth	Size	Depth
10-24	5/16-18	.31	.22	.07	.272	.323	5/16-18	.37	7/32	5/32
10-32										
1/4-20	3/8-16	.37	.22	.07	.332	.385	3/8-16	.43	9/32	3/16
1/4-28										
5/16-18	7/16-14	.43	.22	.07	.397	.447	7/16-14	.50	11/32	3/16
5/16-24										
3/8-16	1/2-13	.50	.24	.07	.453	.510	1/2-13	.56	13/32	3/16
3/8-24										
7/16-14	9/16-12	.56	.27	.07	.516	.572	9/16-12	.62	15/32	3/16
7/16-20										
1/2-13	5/8-11	.62	.28	.07	.578	.635	5/8-11	.68	17/32	3/16
1/2-20										

① Tap Drill Hole Tolerance : .234 to .500 = + .004 / -.001  
 Over .500 = + .005 / -.001

## AVIC-Flight KeyLocking Thread Inserts

...technologies for a reliable hold

Material: Inserts-303 Keys-302  
 Finish: Passivated  
 Tolerances:  $\pm .010$  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: None  
 Lubrication: Dry Film Lube on Self-locking Inserts only  
 Performance: MIL-I-45914A(MS51831 & NAS1395)



### Heavy Duty-Inch

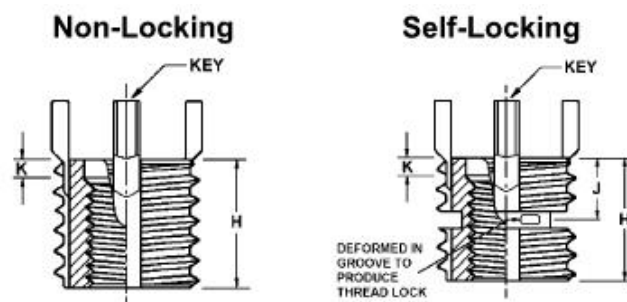
INSERT					INSTALLATION				REMOVAL	
Internal Thread 2B	External Thread 2A	H Length	J $\pm 0.76$	K C'Bore Depth	Tap Drill Size ①	C'Sink Dia. +0.25 -0.00	Thread Tap		Drill	
							Size 6H	Min. Depth	Size	Depth
8-32	5/16-18	.31	.22	.04	.272	.323	5/16-18	.37	7/32	1/8
10-24	3/8-16	.31	.22	.07	.332	.385	3/8-16	.37	9/32	1/8
10-32										
1/4-20	7/16-14	.37	.22	.07	.397	.447	7/16-14	.43	11/32	3/16
1/4-28										
5/16-18	1/2-13	.43	.22	.07	.453	.510	1/2-13	.50	13/32	3/16
5/16-24										
3/8-16	9/16-12	.50	.25	.07	.516	.572	9/16-12	.56	15/32	3/16
3/8-24										
7/16-14	5/8-11	.62	.28	.10	.578	.635	5/8-11	.68	17/32	3/16
7/16-20										
1/2-13	3/4-16	.62	.28	.10	.641	.700	3/4-16	.75	19/32	3/16
1/2-20										
9/16-12	3/4-16	.81	.32	.10	.766	.822	3/4-16	.94	23/32	3/16
9/16-18										
5/8-11	7/8-14	.87	.33	.10	.828	.885	7/8-14	1.00	25/32	3/16
5/8-18										
3/4-10	1 1/8-12	1.12	.49	.10	1.062	1.145	1 1/8-12	1.44	31/32	5/16
3/4-16										
7/8-9	1 1/4-12	1.25	.49	.10	1.187	1.27	1 1/4-12	1.56	1 3/32	5/16
7/8-14										

①.Tap Drill Hole Tolerance : .234 to .500 = + .004 / -.001  
 Over .500 = + .005 / -.001

## AVIC-Flight KeyLocking Thread Inserts

...technologies for a reliable hold

Material: Inserts-303 Keys-302  
 Finish: Passivated  
 Tolerances:  $\pm .010$  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: None  
 Lubrication: Dry Film Lube on Self-locking Inserts only  
 Performance: MIL-I-45914A(MS51832)



The increased wall thickness and larger external thread area of super heavy keyed thread sheath provide stronger and more stable locking force, and the service life is also improved. The application environment of the product should have lower final shear strength, so as to obtain greater thread locking force and clamping force

### Super Heavy Duty-Inch

INSERT		
Internal Thread 2B	External Thread 2A	H Length
6-32	5/16-18	.31
8-32	3/8-16	.31
10-24	7/16-14	.31
10-32		
1/4-20	1/2-13	.37
1/4-28		
5/16-18	9/16-12	.43
5/16-24		
3/8-16	5/8-11	.50
3/8-24		
7/16-14	3/4-16	.62
7/16-20		
1/2-13	7/8-14	.68
1/2-20		
9/16-12	7/8-14	.81
9/16-18		
5/8-11	1-12	.87
5/8-18		
3/4-10	1 1/4-12	1.12
3/4-16		
7/8-9	1 3/8-12	1.25
7/8-14		
1-8	1 1/2-12	1.37
1-12		

①.Tap Drill Hole Tolerance : .234 to .500 = + .004 / -.001  
 Over .500 = + .005 / -.001

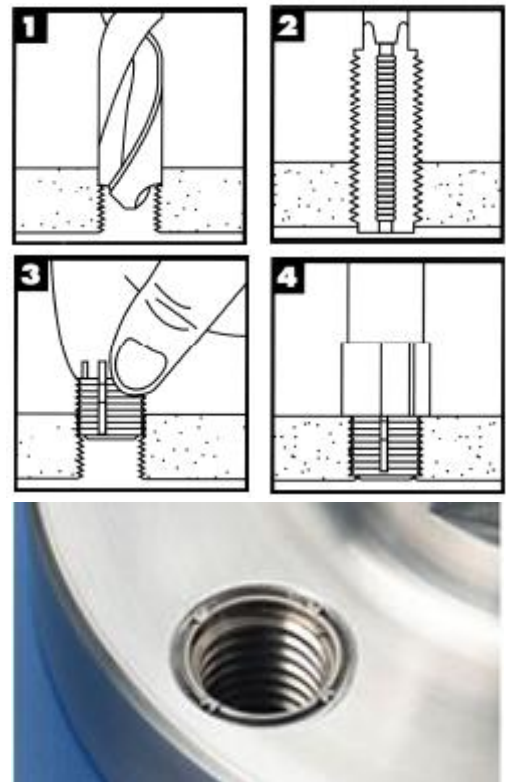
**安装 Install**

1. **Drilling** - when drilling the base part, the drilling depth must be greater than the depth of the KeyLocking Thread Inserts. The selected drilling bit must match the KeyLocking Thread Inserts, and the hole cannot be drilled askew.

2. **Tapping** - tap the screw hole. The tapping length must be longer than that of the KeyLocking Thread Inserts. If it is a through hole, it must be fully tapped. The accuracy of screw hole thread can be detected by using threaded low hole plug gauge.

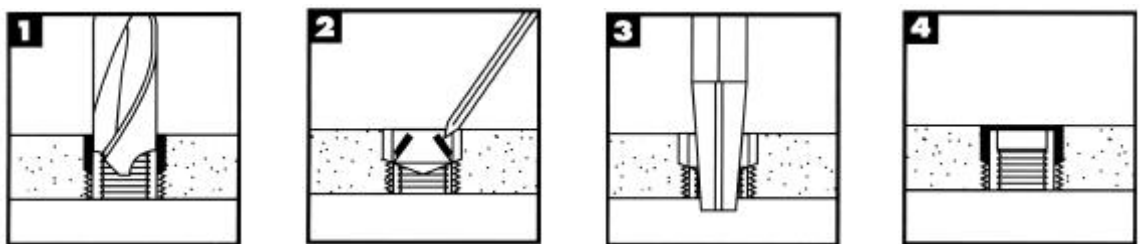
3. **Screw in** - install the KeyLocking Thread Inserts into the tapped screw hole, and the KeyLocking Thread Inserts must be slightly lower than the surface of the product accessories.

4. **Pin press in** - use a tool to press the pin key into the screw hole.



**拆卸 Disassemble**

1. Drill off part of the Key-Locking Thread Inserts;
2. Bend the fixed key inward;
3. Screw out the Key-Locking Thread Inserts with an 'easy to remove tool' or similar tool.





**AVIC-Flight KeyLocking Inserts Tool**

*...technologies for a reliable hold*

