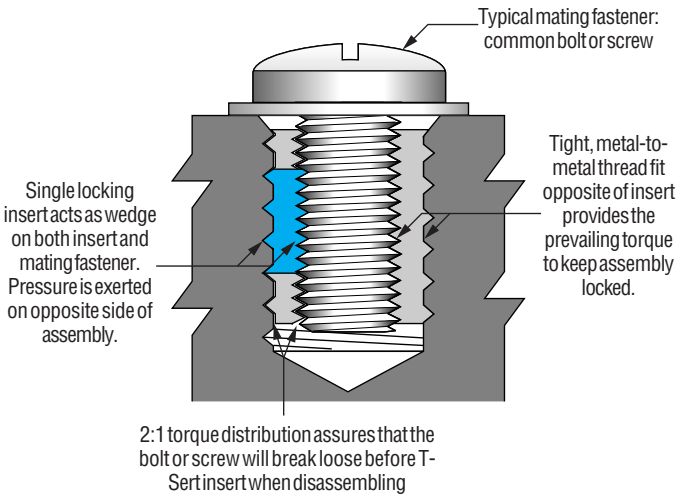
T-Sert® Self-Locking Inserts

Provide...

- **Additional joint strength in low tensile materials such as aluminum, magnesium and plastics.**
- **Self-locking internal threads.**
- **Wear-resistant internal threads in soft materials.**

T-Sert® inserts require no locking rings or other separate locking devices. An integral, self-locking element extends longitudinally through the wall of the insert, and provides simultaneous locking action for both internal and external threads in accordance with MIL- I-45932. The torque developed by the T-Sert locking element provides approximately twice as much torque on the external as on the internal diameter, precluding the possibility of unintentional rotation after installation.

During installation of the mating fastener the T-Sert self-locking element flows into the thread root, forcing the fastener threads into metal-to-metal contact with the threads of the T-Sert insert, thus holding it securely. Because the T-Sert locking action is prevailing, and does not depend upon the seating of the mating fastener, it does not loosen with severe vibration or shock. Mating fasteners need no lockwashers, adhesives or lock wiring or any other expensive additional devices.



What Makes T-Sert Inserts Superior to Other Threaded Inserts?

Economical

Because of inherent simplicity of design, T-Sert inserts cost substantially less than all other types of solid wall, self-locking inserts. And with easy installation the installed cost of T-Sert inserts is less than that of all other inserts; particularly wire-type inserts. Either-end installation means that T-Sert inserts can be installed more quickly than other insert types since they do not have to be oriented, permitting additional economy in time-saving. All this makes T-Sert inserts the most economical insert available.

Reusable

T-Sert inserts internal thread lock can be reused a minimum of fifteen times. Extremely low cold flow and exceptional memory in the T-Sert locking element assures reusability that meets the requirements of MIL-I-45932.

High Strength

One piece, solid wall construction gives T-Sert inserts the ultimate in both torque and tensile strength.

Excellent Corrosion Protection

T-Sert inserts do not break the surface coating on the parent material as do key, ring, swage-locked or self-tapping inserts.

Easier, Quicker To Install

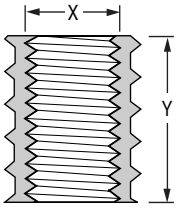
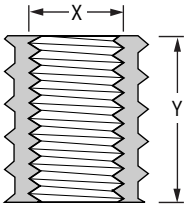
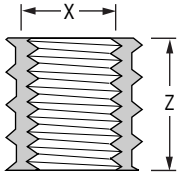
T-Serts inserts require no special hole preparation, no special counterbores, tapes or gages, no indexing or referencing operations. The inserts are installed by utilizing the internal thread of the insert and a simple driving tool. And, because they do not require a swaging or ramming home of keys or rings, T-Sert inserts cause no undue stresses due to installation.

Locking Element Material

Material	Color Code	Operating Temperature Range	Material Specification
Polycap Nylon	Green	-60° F to +250° F	ASTM-D-4066
Kel-F®	Blue	-320° F to +390° F	AMS 3650

Size Variations

For each thread size offered, T-Sert inserts are available in the three variations illustrated here.

Variation	Standard	Heavy Wall	Short
T-Sert Prefix*	T	TH	TS
T-Sert Form Cutaway			
Comparable MIL-I-45932 Series Number	100	200	400

*These prefixes are seen in Table 2, and used in the final Part Number.

Installation Procedure

It's easy as one-two-three. Drill, countersink and tap the mating hole. Then use recommended T-Sert driver to install the T-Sert quickly and easily.

1. T-Sert insert is threaded onto the driver.
2. The T-Sert driver installs T-Sert flush to .010-.020 below the surface of the parent material.
3. Driver is backed off, leaving the insert permanently installed.

See for Yourself

Send us a sample of your part or fastener, along with a brief description of its application and performance requirements, and we'll process it using the most appropriate Long-Lok thread locking or sealing method. Or, to sample a standard Long-Lok fastener, simply supply us with a Part Number. Samples are provided free of charge. Call your nearest Long-Lok facility for assistance.

Material Additive Types

How To Specify

Use the material tabulated in Tables 1 below, and Table 2 opposite, to build complete Part Number for T-Sert inserts per the example shown here. Please do not use spaces or dashes.

Example:

T02117P59

- **Size and Variation** — T02 = Standard T-Sert; 10-32 Internal Thread
- **MIL-I-45932** — Reference
- **Finish** — 9 = Dry Film Lube
- **Insert Material** — 5 = 303 Stainless Steel
- **Locking Element Material** — P = Polycap Nylon

Table 1

T02117P59

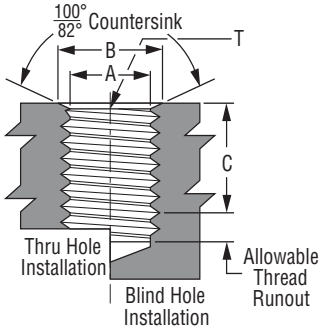
Size and Variation	MIL-I-45932 Reference	Locking Element Material	Code	Insert Material	Code	Finish	Code
See Table 2	See Table 2	Polycap Nylon	P	303 CRES In Accordance with FED. STD. No. 66	5	Cadmium per QQ-P-416, Type II, Class 3	5
		Kel-F®	L	17-4 CRES per AMS 5643	7	Plain	7
						Dry Film Lube per MIL-L-46010	9

Hole Preparation

Hole preparation for T-Sert inserts is accomplished with standard drills and taps. For added wall strength, however, T-Sert inserts are manufactured with a modified external minor thread diameter. To ensure proper fit and function use the drill and tap sizes specified in Table 2 for each T-Sert insert size.

1. Locate and drill with standard drill to “A” Dia.
2. Countersink with standard countersink (82° - 100°), to “B” Dia.
3. Tap with standard unified thread series tap, “T” dimension.

Figure 1



T-Sert Driver

Hand- or power tool-operated, T-Sert Drivers are simple and trouble free. Made of heat treated steel.

How To Specify: Recommended driver number for each T-Sert size is shown in Table 2.

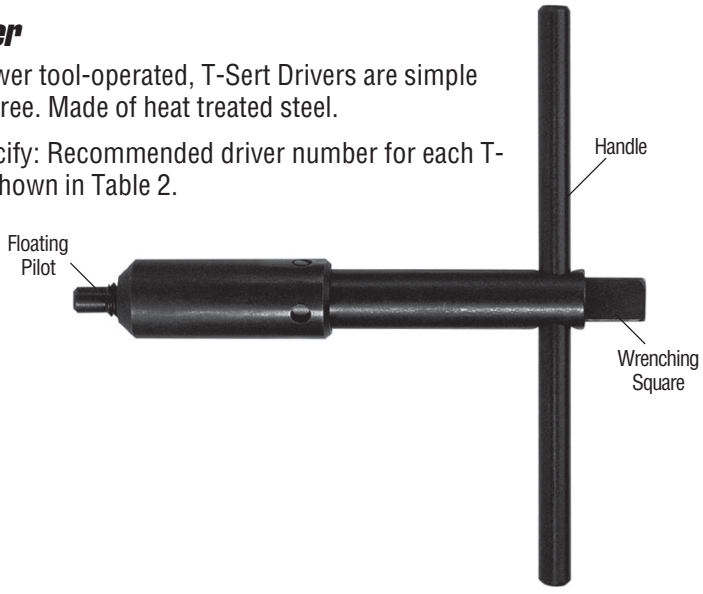


Table 2

T-Sert Sizes				Hole Preparation (See Figure 1)						T-Sert Driver Part No.
Internal Thread UNJ-3B	Length ±.010	T-Sert Size and Variation Code	MIL-I-45932 Type A Reference	A Tap Drill Dia.	B C'Sink Dia. x 90° ±.010	Minimum Drill Depth			T Thread Tap Size UN-3B	
						C Min. Full Thd. Depth	Bottoming Tap	Plug Tap		
.086-56	.19	T26	104	.112-.117	.178	.220	.280	.340	.138-40	TSDR-26
	.19	TH26	204	.139-.144	.204	.220	.300	.360	.164-32	
	.15	TS26	404	.112-.117	.178	.180	.240	.300	.138-40	
.112-40	.19	T40	108	.139-.144	.204	.220	.300	.360	.164-32	TSDR-40
	.19	TH40	208	.165-.170	.230	.220	.320	.381	.190-32	
	.15	TS40	408	.139-.144	.204	.180	.260	.321	.164-32	
.138-32	.21	T62	112	.165-.170	.230	.240	.320	.381	.190-32	TSDR62
	.21	TH62	212	.190-.195	.256	.240	.330	.401	.216-28	
	.15	TS62	412	.165-.170	.230	.180	.260	.321	.190-32	
.164-32	.25	T82	114	.190-.195	.256	.280	.370	.441	.216-28	TSDR82
	.25	TH82	214	.220-.225	.290	.280	.370	.446	.250-28	
	.21	TS82	414	.190-.195	.256	.240	.330	.401	.216-28	
.190-24	.29	T04	116	.220-.225	.290	.325	.410	.486	.250-28	TSDR04
	.29	TH04	216	.280-.285	.372	.325	.430	.510	.3125-24	
	.21	TS04	416	.220-.225	.290	.240	.330	.406	.250-28	
.190-32	.29	T02	117	.220-.225	.290	.325	.410	.486	.250-28	TSDR02
	.29	TH02	217	.280-.285	.372	.325	.430	.510	.3125-24	
	.21	TS02	417	.220-.225	.290	.240	.330	.406	.250-28	
.250-20	.38	T040	118	.280-.285	.372	.415	.519	.602	.3125-24	TSDR040
	.38	TH040	218	.342-.347	.435	.415	.519	.602	.375-24	
	.25	TS040	418	.280-.285	.372	.280	.389	.472	.3125-24	
.250-28	.38	T048	119	.280-.285	.372	.415	.519	.602	.3125-24	TSDR048
	.38	TH048	219	.342-.347	.435	.415	.519	.602	.375-24	
	.25	TS048	419	.280-.285	.372	.280	.389	.472	.3125-24	
.3125-18	.47	T058	120	.342-.347	.435	.505	.609	.693	.375-24	TSDR058
	.47	TH058	220	.403-.408	.497	.505	.630	.730	.4375-20	
	.31	TS058	420	.342-.347	.435	.345	.450	.530	.375-24	
.3125-24	.47	T054	121	.342-.347	.435	.505	.609	.693	.375-24	TSDR054
	.47	TH054	221	.403-.408	.497	.505	.609	.730	.4375-20	
	.31	TS054	421	.342-.347	.435	.345	.450	.530	.375-24	
.375-16	.56	TH066	222	.467-.472	.560	.595	.720	.820	.500-20	TSDR066
.375-24	.56	TH064	223	.467-.472	.560	.595	.720	.820	.500-20	TSDR064
.500-13	.75	TH083	226	.577-.582	.685	.795	.889	1.035	.625-18	TSDR083
.500-20	.75	TH080	227	.577-.582	.685	.795	.890	1.035	.625-18	TSDR080