

Material Additive Types

SELF LOCKING FASTENERS

Long-Lok® Strip Type

- -320°F to +500°F
- Reusability per IFI 124, IFI 524 and MIL-DTL-18240



The Long-Lok strip fastener is a universally accepted, prevailing torque type self-locking fastener, with excellent vibration resistance. Over 35 years of use in thousands of proven applications attest to the wide acceptance of the Long-Lok strip. These fasteners are available in a wide range of sizes — from miniature eyeglass screws to fasteners for the heaviest of highway equipment.

Long-Lok strip fasteners are manufactured by forming a narrow longitudinal slot long enough to assure engagement with the female thread in an otherwise normal bolt or screw,

and compressing a special locking material in the slot. The resiliency of the locking insert holds it in place without adhesives or thread distortion, allows it to recover slightly when disengaged, and provides vibration resistance on re-installation. This prevailing torque characteristic can provide re-usability performance in excess of 5 installation/removal cycles.

Several insert materials are available for operating temperatures ranging from -400°F to +500°F. Long-Lok also offers a specially designed stainless steel, rolled-tube insert for temperature requirements in excess of 1200°F.

Strip Materials

Materials	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
Vespel®	Brown	-450°F to +500°F	—
Hot-Lok™* (Stainless Steel Tube)	Silver	-400°F to +1200°F	—

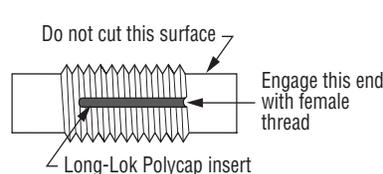
*These inserts are not recommended for reuse. Consult factory for technical details.

How to Specify

Please turn to the inside back cover of this catalog for standard product selection and Part Number specification.

For application of Long-Lok strip type locking inserts to special threaded components, please follow the recommendations below. Remember, Long-Lok Fasteners can manufacture the complete fastening component, or if you prefer, send your parts for processing.

1. Specify “Long-Lok [Polycap, Kel-F®, or Vespel®] Insert.” Add to drawing notes: “to be installed by Long-Lok Fasteners Corporation.”
2. If part could be engaged from either end, note intended direction of engagement.

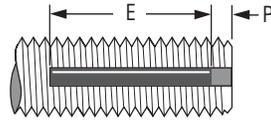


3. If there are any surfaces which should not be cut by Long-Lok slotting mills, denote same on drawing.

- a. Normally maximum depth of slot is 0.020 below thread minor diameter. If depth must be less than this amount, contact Long-Lok.
4. If insert length “L” is to be greater than the lengths for standard parts (See “Standard ‘L’ Dimensions” tabulated on next page), specify as length “E”. It is not necessary to specify “L” if standard length is satisfactory.

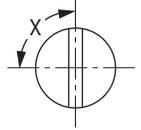
How to Specify — continued

- If insert is to be placed in a special location, specify "P" Dimension, where P = Distance from thread-engagement end of part to start



of locking insert .

- If insert must be located diametrically in relation to another point, this location should be dimensioned as in "X".
- If special torque is required, please consult with factory.
- No dimensions are to be specified for the width and depth of slot, or for the size of insert.



Standard "L" Dimensions

Thread Size	#0	#1	#2	#3	#4	#6	#8	#10	1/4
"L" Insert Length	.125	.125	.185	.185	.240	.285	.320	.320	.355
Thread Size	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8	1
"L" Insert Length	.420	.480	.530	.562	.562	.625	.750	.750	.75

The locking element dimensions shown are approximate and for engineering information only. Consult factory for insert lengths on fasteners with diameters greater than 1 inch.

Design Notes

- Long-Lok strip type, self-locking fasteners have been tested and approved to the following standards and specifications:
 - Military Specifications: MIL-DTL-18240, MIL-F-5577, QPL-18240
 - Military Standards: MS15981, MS16995-16998, MS18063-18068, MS18153, MS18154, MS21090-21099, MS21262, MS21295, MS51021, MS51023, MS51029, MS51031, MS51095, MS51096, MS90727, MS90728
 - Aerospace Standards: NAS662, NAS1081, NAS1161-1168, NAS1171-1178, NAS1181-1188, NAS1189, NAS1190, NAS1191, NAS1223-1235, NAS1283, NAS1351, NAS1352, NAS1635, NAS4104-4116, NAS4204-4216, NAS4304-4316, NAS4400-4416, NAS4500-4516, NAS4600-4616, NAS5000-5006, NAS5100-5106, NAS5200-5206, NAS5300-5306, NAS5400-5406, NAS5500-5506, NAS5600-5606, NAS5700-5706, NAS5800-5806, NAS6203-6220, NAS6303-6320, NAS6403-6420, NAS6500-6506, NAS6603-6620, NAS6704-6720, NAS6804-6820, NAS6900-6906
 - Commercial Standard: IFI 124, IFI 524 (Metric)
- Plating:** Users should consider the following in planning plating or replating of Long-Lok strip type fasteners or threaded components after locking device is inserted.
 - Locking devices must never be removed by the end user. Removal and replacement of the insert destroys its effectiveness.
 - Locking inserts can be damaged by some plating process or surface treatments. As such, they should never be applied after insert installation. Consult the factory for appropriate processing procedures.
- Manufacture of some commercial strip type fasteners may produce a very slight metal burr at the engagement end of the longitudinal slot. These parts are usually acceptable for 90% of self-locking applications. By adding the suffix "E" to the part numbers when ordering Long-Lok strip type fasteners, end burrs will be removed. (See "Options", Page 46; also see definition of Burr Free in "Glossary of Terms").
- Extensive, independent test data demonstrates that when used properly, the tensile strength of Long-Lok strip type fasteners are **not** adversely affected by the milled slots used to accommodate the locking element.

Sizes of 1/4" diameter and smaller may exhibit a very slight reduction directly in the slotted area. However, similar test data has shown that a high tensile strength margin remains; all parts still meet minimum specification requirements. Torsional strength for these parts is only affected in sizes smaller than #8, and then only when tightened beyond yield strength. Shear strength is not lost in any size; high shear bolt grips are not altered. Ends of the insert slot are radiused to prevent "notch effect" or stress risers.
- See Appendix for hole preparation and other installation information.

SELF-LOCKING FASTENERS

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.