

# Threaded Inserts / Tools for Inserts

# Tangless Inserts / Self-Tapping Inserts

Slotted

When large quantities are needed, box package sales is more economical. P274

### Threaded Inserts

HLTS (Coarse)  
HLSS (Fine)

Material: SUS304

Part Number	* (L) After Insertion	Pitch	Tap Pilot Hole Dia. (Reference)	Unit Price	Volume Discount Rate
3	4.5	0.5	3.11~3.20	1~9 pc(s)	10~19
4	6	0.7	4.16~4.29	10~19	20~49
5	7.5	0.8	5.18~5.33	10~19	50~100
6	9	1.0	6.22~6.40	10~19	
8	12	1.25	8.28~8.48	10~19	
10	15	1.5	10.33~10.56	10~19	
12	18	1.75	12.38~12.64	10~19	
16	24	2.0	16.44~16.73	10~19	

For orders larger than indicated quantity, please check with WOS.

### Taps for Threaded Inserts

Coarse	Fine	Finish
HLTX	HL SX	Coarse Tapping
HLTY	HL SY	Medium Tapping
HLTZ	HL SZ	Finish Tapping

(M3-5)  
(M6 or More)

Material: SKH Hardness: 61 ~ 64HRC

Part Number	* (L) After Insertion	Pitch	Tap Pilot Hole Dia. (Reference)	Unit Price	Volume Discount Rate
8	16	1.0	8.28~8.48	1~9 pc(s)	10~19
10	20	1.0	10.33~10.56	10~19	20~49
12	24	1.25	12.38~12.64	10~19	50~100
12	24	1.5	12.38~12.64	10~19	

M and L are sizes when inserted into tapped holes. For orders larger than indicated quantity, please check with WOS. L dimension before insertion is shorter than that after the insertion.

### Threaded Insert Installation Tools

HLTP

No.	M Material	Sleeve	Mandrel	S Surface Treatment
3-6	PPS		SCM435	Black Oxide (for SCM435 part)
8-16	SCM435		SCM435	

Material: SKH Hardness: 61 ~ 64HRC

### Taps for Threaded Inserts

Part Number	No.	Applicable Threaded Insert M	L	D	K	Unit Price	Volume Discount Rate
3	3	55	5	4		1~9 pc(s)	10~20
4	4	61	5.5	4.5			
5	5	67	6	5			
6	6	65	6.2	5			
8	8	75	7	5.5			
10	10	82	8.5	6.5			
12	12	88	10.5	8			
16	16	105	14	11			

For orders larger than indicated quantity, please check with WOS.

### Threaded Insert Tang Break-Off Tools

HLTB

Material: SCM435  
Surface Treatment: Black Oxide

### Threaded Insert Installation Tools

Part Number	No.	Pitch	L	D	K	Unit Price	Volume Discount Rate
HL SX	8	1.0	75	7	5.5	1~9 pc(s)	10~20
HL SY	10	1.25	82	8.5	6.5		
HL SZ	12	1.25	88	10.5	8		

For orders larger than indicated quantity, please check with WOS.

### Threaded Insert Removal Tools

HLTN (No.1)  
HLTN (No.2·3)

Material: S45C  
Surface Treatment: Black Oxide

### Tang Break-Off Tools

Part Number	No.	Applicable Threaded Insert M	L	A	Unit Price	Volume Discount Rate
3	3	3	80		1~9 pc(s)	10~20
4	4	4	150			
5	5	5				
6	6	6	165	103		
8	8	8	175			
10	10	10	180			
12	12	12	200			
16	16	16	210			

For orders larger than indicated quantity, please check with WOS.

### Threaded Insert Removal Tools

Part Number	No.	Applicable Threaded Insert M	L	A	Unit Price	Volume Discount Rate
3	3	3	6	1.8	1~9 pc(s)	10~20
4	4	4	9	2.6		
5	5	5	10	3.5		
6	6	6	10	4.2		
8	8	8	12	5.5		
10	10	10	14	7.5		
12	12	12	16	8.5		
16	16	16	20	12		

For orders larger than indicated quantity, please check with WOS.

### Threaded Insert Removal Tools

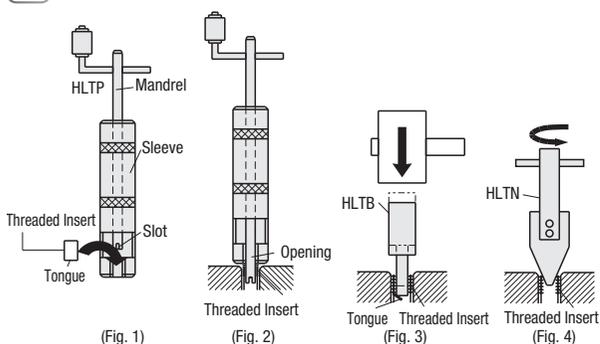
Part Number	No.	Applicable Threaded Insert M	L	A	Unit Price	Volume Discount Rate
1	1	3·4·5	92	60	1~9 pc(s)	10~20
2	2	6·8·10	109	75		
3	3	12·16	117	100		

For orders larger than indicated quantity, please check with WOS.

Ordering Example

Part Number	L	Pitch
HLTS3	4.5	
HLTS5		1.25
HLSS10	15	1.25
HLSS8	8	1.0

### How to Handle Threaded Inserts



- Drill a pilot hole in the workpiece within the appropriate limit of tap pilot hole diameters shown in the above table. (Hole Depth > Length after Insertion + 2.5xP (Pitch))
- Tap with "Taps for Threaded Inserts" (Coarse, Medium, Finish Tapping in that order), and completely remove metal chips.
- Insert Threaded Inserts to tip of sleeve of the Insert Tool (with tang on the tip side), and clip on the tang at the mandrel slot (Fig. 1). Turn the handle and insert Threaded Insert into the guide of thread part on the tool tip. Set it so that the threaded insert does not protrude more than the sleeve tip (leaving 1 or 2 pitches).
- Turn the handle to install Threaded Inserts by positioning the insert tool perpendicular to the work (Fig. 2). Check the insertion condition from the opening of the sleeve tip. Remove the tool from the work when insertion is complete. \*Inserting while pressing the handle hard in the insertion direction causes damages such as skipped threads. Always turn the handle lightly in the horizontal direction. Do not reverse the rotation during the insertion as that will cause damages.
- After the insertion is complete, insert the tang break-off tool, and break off the tang from the notch by striking the head sharply with a hammer (Fig. 3).
- When removing Threaded Inserts, press an Insert Removal Tool onto the insert, and slowly turn counterclockwise to remove it (Fig. 4). When reinserting the Threaded Insert into the removed hole, use special tap again before inserting.

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### Tangless Inserts

TLTS (SUS304)

Part Number	* (L) After Insertion	Tap Pilot Hole Dia. (Reference)	Unit Price	Volume Discount Rate
2.5	2.5	2.60~2.65	1~49 pc(s)	50~100
3	3	3.12~3.20		
4	4	4.17~4.30		
5	5	5.16~5.33		
6	6	6.25~6.42		
8	8	8.31~8.52		
10	10	10.37~10.62		

M (Coarse Thread) and L are the sizes after insertion. For orders larger than indicated quantity, please check with WOS.

L dimension before insertion is shorter than that after insertion.

These specialized tools allow insertion and removal of tangless inserts, reducing working human hours.

### Tangless Insert Hand Taps

TLTK (Set of a plug tap and a bottom tap)

### Hand Taps for Tangless Inserts

Part Number	No.	Applicable Threaded Insert M	L	D	K	Unit Price	Volume Discount Rate
2.5	2.5	46	4	3.2	1~3 pc(s)	4 pcs.	
3	3	52	4	3.2			
4	4	60	5.5	4.5			
5	5	62	6	4.5			
6	6	70	6.2	5			
8	8	75	7	5.5			
10	10	82	8.5	6.5			

For orders larger than indicated quantity, please check with WOS.

### Tangless Insert Insertions / Removal Tools

TLTP TLTN

### Insertions / Removal Tools

Part Number	No.	D	L	Unit Price	Volume Discount Rate
2.5	2.5	6.0	69.0	1~3 pc(s)	4 pcs.
3	3	6.8	68.5		
4	4	9.0	75.8		
5	5	9.7	78.6		
6	6	11.0	78.1		
8	8	13.0	98.4		
10	10	15.5	104.4		

TLTP and TLTN are not RoHS compliant, but the content of hex chrome for surface treatment is within threshold value. For orders larger than indicated quantity, please check with WOS.

No damages on the threads and bodies at removal.

No need for breaking tangs off and looking for broken tangs, or checking gauge positions.

### Self-Tapping Inserts Slotted

Type	Material	Surface Treatment
ENT	Free-Cutting Steel	Chromate
ENTS	SUS303	-

Part Number	L	Tap Pilot Hole Dia. (Reference)		D (Outer Screw)	ENT	ENTS
		Softer	Harder			
3	6	4.5	4.6	4.7	4.8	5
4	8	5.9	6.0	6.1	6.2	6.5
5	10	7.2	7.3	7.5	7.6	8
6	14	8.8	9.0	9.2	9.4	10
8	15	10.8	11.0	11.2	11.4	12
10	18	12.8	13.0	13.2	13.4	14
12	22	14.8	15.0	15.2	15.4	16

Do not use this for difficult-to-cut high strength Aluminum (Duralumin etc.). For orders larger than indicated quantity, please check with WOS.

When the tapped material has high hardness, drill a pilot hole of slightly larger diameter within the range.

### Self-Tapping Inserts Hand Tools for Self-Tapping Inserts

ENTP

Part Number	No.	Applicable Threaded Insert M	L	B1	B2	Unit Price	Volume Discount Rate
3	3	55	5	7	1~9 pc(s)	10~20	
4	4	60	5	7			
5	5	75	8	13			
6	6	75	8	13			
8	8	75	8	13			
10	10	95	12.5	19			
12	12	95	12.5	19			

For orders larger than indicated quantity, please check with WOS.

Ordering Example

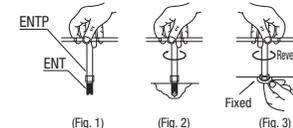
Part Number	L
TLTS2.5	2.5
ENT3	3
ENTP5	5
TLTP10	10

### Features of Self-Tapping Inserts

- Slotted tap inserts with both external and internal threads.
- This fastener components reinforce relatively low mechanical thread strength and allow skipping of the pre-tapping.

### Machining Procedure and Precautions for Use

- Drill a pilot hole in the workpiece within the appropriate limit of tap pilot hole diameters shown in the above table. When the tapped material has high hardness, drill a pilot hole of slightly larger diameter within the range.
- If the slot facing down, fit the self-tapping insert all the way onto the tip of the hand tool (Fig. 1). Put the insert vertically into the pilot hole by turning the tool handle. (Fig. 2)
  - If the pilot hole diameter is too small, it may cause a bag in pitch or looseness, and can damage tools.
  - If the start of tapping (1 to 2 pitches), check to see if the tools are aligned straight with the pilot hole.
  - If the insert is going in slanted, stop turning the tool and re-align. Realignment after inserting almost halfway (1/3 to 1/2) is too late. Do not reverse the rotation during the insertion as that will cause damages.
- When the insert has arrived at a predetermined depth, tighten the hex part of the tool with a wrench, and then turn the handle counterclockwise to separate the tool from the workpiece. (Fig. 3)
  - Further turning a tool when already in contact with the workpiece can damage the self-tapping part of the insert and result in a loose fit.
- Before the first use, please select a proper pilot hole dia. through trials.



### How to Use a Bolt and a Nut

- Use a hex nut and a Self-Tapping Insert in a double-nut arrangement as shown below.
- Do not obstruct the first thread or the 3-holes with the bolt. After the insertion is complete, loosen the hex nut while holding the bolt head.

