

# 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	

### Taps for Threaded Inserts

Coarse	Fine	Finish
HLTX	HLSX	Coarse Tapping
HLTY	HLSY	Medium Tapping
HLTZ	HLSZ	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	15	1.0	10.33~10.56	10~19	20~49
10	15	1.25	10.33~10.56	10~19	50~100
12	18	1.25	12.38~12.64	10~19	
12	24	1.5	12.38~12.64	10~19	

### Threaded Insert Installation Tools

HLTP

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		10~19	20~49
5	5	67	6	5		10~19	50~100
6	6	65	6.2	5		10~19	
8	8	75	7	5.5		10~19	
10	10	82	8.5	6.5		10~19	
12	12	88	10.5	8		10~19	
16	16	105	14	11		10~19	

### 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
HLSX	8	1.0	75	7	5.5	1~9 pc(s)	10~20
HLSY	10	1.25	82	8.5	6.5	1~9 pc(s)	10~20
HLSZ	12	1.25	88	10.5	8	1~9 pc(s)	10~20

### 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		10~19	20~49
5	5	5			10~19	50~100
6	6	6	165	103		
8	8	8	175			
10	10	10	180			
12	12	12	200			
16	16	16	210			

### 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	10~19	20~49
5	5	5	10	3.5	10~19	50~100
6	6	6	10	4.2	10~19	
8	8	8	12	5.5	10~19	
10	10	10	14	7.5	10~19	
12	12	12	16	8.5	10~19	
16	16	16	20	12	10~19	

Ordering Example: Part Number - L - Pitch  
HLTS3 - 4.5  
HLTX5 - 15 - 1.25  
HLSS10 - 8 - 1.0

### How to Handle Threaded Inserts

1. 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))
2. Tap with "Taps for Threaded Inserts" (Coarse, Medium, Finish Tapping in that order), and completely remove metal chips.
3. 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).
4. 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.
5. 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).
6. 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)

Material: SUS304

Part Number	* (L) After Insertion	Tap Pilot Hole Dia. (Reference)	Unit Price	Volume Discount Rate
2.5	2.5 3.8 5	2.60~2.65	1~49 pc(s)	50~100
3	3 4.5 6	3.12~3.20		
4	4 6 8	4.17~4.30		
5	5 7.5 10	5.16~5.33		
6	6 9 12	6.25~6.42		
8	8 12 16	8.31~8.52		
10	10 15 20	10.37~10.62		

### Tangless Insert Hand Taps

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

Material: HSSV Hardness: 63 ~ 68HRC

### 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			

### Tangless Insert Insertions / Removal Tools

TLTP TLTN

Material: HSSV Hardness: 63 ~ 68HRC

### 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		

### Self-Tapping Inserts Slotted

ENT ENTS

Material: Free-Cutting Steel Chromate SUS303

Part Number	L	Tap Pilot Hole Dia. (Reference)		D	ENT	ENTS
		Softer	Mating Material - 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

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

ENTP

Material: SUM22L

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

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

Ordering Example: Part Number - L  
TLTS2.5 - 6  
ENT3 - 6  
ENTP5 - 6  
TLTP10 - 6

### 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

1. 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.
2. With 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 lag in pitch or looseness, and can damage tools.
  - \* At 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.
3. 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.
4. 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.

## Retaining Ring C Type (External) / Retaining Ring E Type (Boxes)

## Threaded Inserts / Tangless Inserts (Boxes)

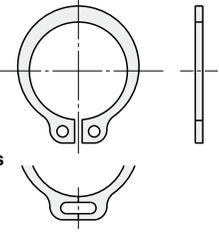
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### Retaining Rings - C Type (External)

Type	Material	Hardness
BOX-STWN	Spring Steel	44~53HRC
BOX-STWS	SUS304-CSP	36~44HRC

**BOX-STWN**  
**BOX-STWS** (Stainless Steel)



No. 8 or Less

- Confirm detailed dimensions. P265
- Can be ordered as a single item. P265
- Installation Tools are available. P266

RoHS




### Retaining Rings - E Type

Type	Material	Hardness	Surface Treatment
BOX-NETW	Spring Steel	44~53HRC	Trivalent Chromate
BOX-NETWS	SUS304-CSP	37~46HRC	-

**BOX-NETW**  
**BOX-NETWS** (Stainless Steel)

- Confirm detailed dimensions. P265
- Can be ordered as a single item. P265

When you order, please specify the box quantity.  
Minimum order is 1 box.

Ordering Example **Part Number**  
**BOX-STWN10**  
**BOX-NETWS3**

Box package is cost-saving for in-house stock or when large quantities are needed.

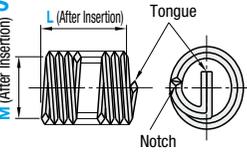
Part Number		Unit Price 1 ~ 10 Box(es)		Pcs./ Box	
Type	No.	Price per PC.	1 Box		
<b>BOX-STWN</b>	3			2,000 pcs./box	
	4				
	5				
	6				
	8				
	10				1,000 pcs./box
12					
15					
20					
<b>BOX-STWS</b> (Stainless Steel)	25			500 pcs./box	
	4				2,000 pcs./box
	5				
	6				
	8				
	10				1,000 pcs./box
12					
15					
20					
25					

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

Part Number		Unit Price 1 ~ 10 Box(es)		Pcs./ Box	
Type	No.	Price per PC.	1 Box		
<b>BOX-NETW</b>	1.2			2,000 pcs./box	
	1.5				
	2				
	2.5				
	3				
	4				
	5				
	6				1,000 pcs./box
7					
<b>BOX-NETWS</b> (Stainless Steel)	8			2,000 pcs./box	
	1.2				2,000 pcs./box
	1.5				
	2				
	2.5				
	3				
4			1,000 pcs./box		
5					
6					
7					
8					

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

RoHS

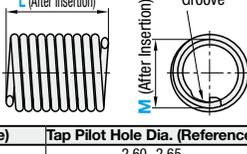
### Threaded Inserts

Type	Material
BOX-HLTS	SUS304

M (Coarse)	Tap Pilot Hole Dia. (Reference)
3	3.11~3.20
4	4.16~4.29
5	5.18~5.33
6	6.22~6.40
8	8.28~8.48

- M and L are sizes when inserted into tapped holes.
- L dimension before insertion is shorter than that after insertion.
- See special wrenches and how to use. P271
- Can be ordered as a single item. P271

RoHS

### Tangless Inserts

Type	Material
BOX-TLTS	SUS304

M (Coarse)	Tap Pilot Hole Dia. (Reference)
2.5	2.60~2.65
3	3.12~3.20
4	4.17~4.30
5	5.16~5.33
6	6.25~6.42
8	8.31~8.52

- M and L are sizes when inserted into tapped holes.
- L dimension before insertion is shorter than that after insertion.
- See special wrenches and how to use. P272
- Can be ordered as a single item. P272

When you order, please specify the box quantity.  
Minimum order is 1 box.

Ordering Example **Part Number**  
**BOX-HLTS5-10**  
**BOX-TLTS2.5-3.8**

Box package is cost-saving for in-house stock or when large quantities are needed.

Part Number		Unit Price 1 ~ 10 Box(es)		Pcs./ Box
Type	*M- L	Price per PC.	1 Box	
<b>BOX-HLTS</b> (Stainless Steel)	3- 3			100 pcs./box
	4.5			
	6			
	4- 4			
	6			
	8			
	5- 5			
	7.5			
	10			
	6- 6			
9				
12				
8- 8				
12				
16				

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

Part Number		Unit Price 1 ~ 10 Box(es)		Pcs./ Box
Type	*M- L	Price per PC.	1 Box	
<b>BOX-TLTS</b> (Stainless Steel)	2.5- 2.5			100 pcs./box
	3.8			
	5			
	3- 3			
	4.5			
	6			
	4- 4			
	6			
	8			
	5- 5			
	7.5			
	10			
	6- 6			
	9			
	12			
	8- 8			
12				
16				

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