



SELF TAPPING THREAD INSERT

- ▶ **Inch & Metric**
- ▶ **Stainless & Carbon Steel**
- ▶ **Cutting Slot (302) & Cutting Bores (307/308)**



Introduction Of Self Tapping Thread Insert

SELF TAPPING THREAD INSERT (302/307/308)

With Cutting Slot & Bores

Fastening technology from ABA is in successful application in a wide variety of different industrial sectors around the world. ABA technology provide a self-tapping threaded insert with external and internal thread, cutting slots or cutting bores. A continuous process of further development has brought about a number of major improvements to product characteristics.

Self tapping insert 302(with cutting slot) is recommended for most application cases. In certain materials, this insert demonstrates a minimal inward springing action, so creating a certain screw locking effect.If this effect is not required, we recommend using Self tapping insert 307/308.

Self tapping insert 307/308(with cutting bores) was developed for materials with difficult cutting properties. This insert has a thick wall and the cutting force is distributed over three cutting edges.

Features :

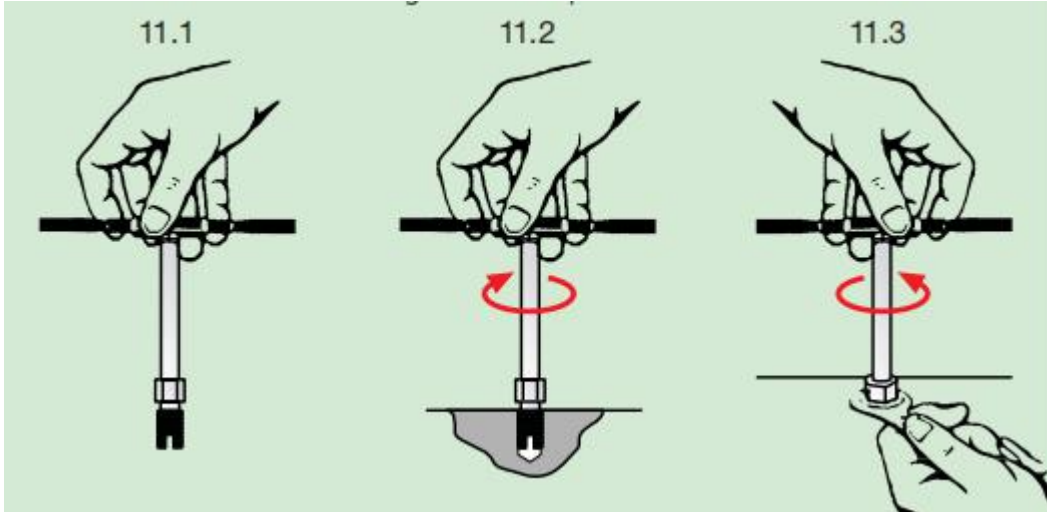
- Self tapping insert has a large effective shearing surface, so ensuring a higher degree of pull-out strength.
- Self tapping insert is driven subsequently into the finished work piece. This means a higher casting machine output, no rejects due to incorrectly cast-in insert components, no moulding sand trapped in the thread.
- A pre-cast or pre-drilled retaining hole with normal tolerance requirements is sufficient for driving in the self tapping insert. The thread is always precisely positioned.
- Self tapping insert is insensitive to small areas of shrinkage. The self tapping insert prevents damage caused by torn threads.

Typical Applications :

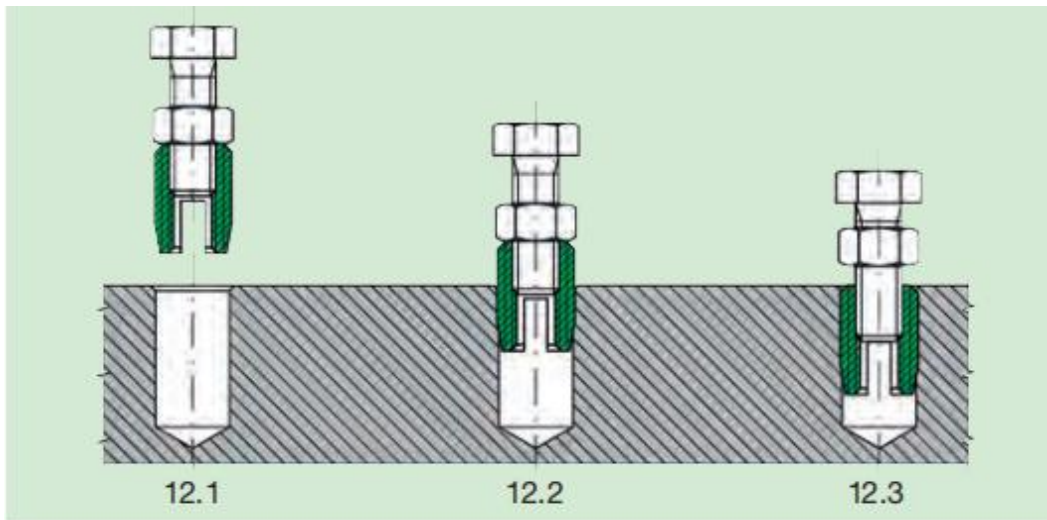
- Automotive
- Plant and equipment construction
- Railway supply industry
- Electro-technics and laboratory techniques
- Household appliance
- Medical engineering

Manual Insertion Process

Manual installation with driving tool and tap wrench:



Emergency installation using screw and nut:



The manual insertion is usually carried out using the manual tool via the female thread or in the case of the tools using the hexagon socket. You can of course also use power tools for the manual assembly. If doing so, it needs to be ensured that the rotatable sleeve is in the corresponding correct position.

Image 11.1/12.1

Thread the insert, cutting geometry (slit or bore) has to be pointing downward. Attention needs to be paid while doing so that the screw with nut does not face in the direction of the cutting geometry after locking with a counter nut, as the shavings are otherwise not discharged.

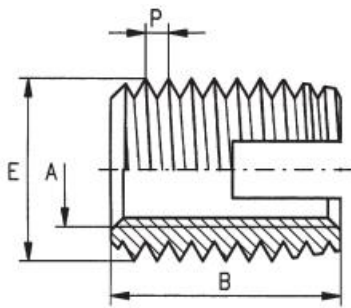
Image 11.2/12.2

Screw in the insert until approx. 0.1-0.2 mm underneath the surface of the work piece(during temporary assembly using screw and nut, the insert should be processed until flat). Vertical assembly must be ensured.

Image 11.3/12.3

Loosen the counter nut, otherwise the insert could possibly become unscrewed. Subsequently screw out the screw/screw-in tool.

Self Tapping Thread Insert With Cutting Slot (302 Type)



The self tapping threaded with cutting slot is a fastener for the creation of wear-free, vibration resistant screw joints with high loading capacity in materials with low shearing strength. (Metric ,UNC or UNF)

It is suitable for installation in the following materials:

- Light alloys
- Cast iron, brass, bronze NF metals
- Plastics, laminates
- Hardwoods

Material & Finish :

- Stainless steel 303, passivated
- Case-hardened steel, zinc-plated, yellow chromated

Other materials, designs and finishes on request :

- Brass
- Case-hardened steel, zinc-plated, blue passivated
- Case-hardened steel, zinc/nickel plated, transparent passivated

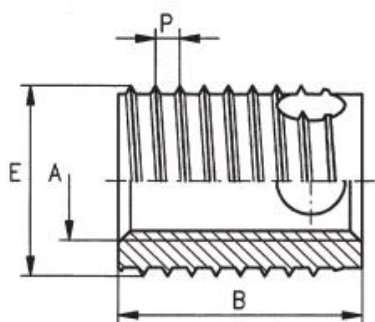
Technical Parameters :

Dimensions in mm

Metric Series							
Carbon Steel Part No.	Stainless Steel Part No.	Internal Thread	External Thread		Length	Guideline values for receiving hole diameter	Minimum borehole depth for blind holes
Carbon steel (1215)	SUS303	A	E	P	B	L	T
302020001	302020002	M2	4.5	0.5	6	4.2 to 4.3	8
302025001	302025002	M2.5	4.5	0.5	6	4.2 to 4.3	8
302030001	302030002	M3	5	0.5	6	4.7 to 4.8	8
302035001	302035002	M3.5	6	0.75	8	5.6 to 5.7	10
302040001	302040002	M4	6.5	0.75	8	6.1 to 6.2	10
302050001	302050002	M5	8	1	10	7.5 to 7.6	13
302060001	302060002	M6(a)	9	1	12	8.5 to 8.6	15
302061001	302061002	M6	10	1.5	14	9.2 to 9.4	17
302080001	302080002	M8	12	1.5	15	11.2 to 11.4	18
302100001	302100002	M10	14	1.5	18	13.2 to 13.4	22
302120001	302120002	M12	16	1.5	22	15.2 to 15.4	26
302140001	302140002	M14	18	1.5	24	17.2 to 17.4	28
302160001	302160002	M16	20	1.5	22	19.2 to 19.4	26
302180001	302180002	M18	22	1.5	24	21.2 to 21.4	29
302200001	302200002	M20	26	1.5	27	25.2 to 25.4	32
302200001	302200002	M22	26	1.5	30	25.2 to 25.4	36
302240001	302240002	M24	30	1.5	30	29.2 to 29.4	36
302270001	302270002	M27	34	1.5	30	33.2 to 33.4	36

UNC & UNF Series								
	Carbon Steel Part No.	Stainless Steel Part No.	Internal Thread	External Thread		Length	Guideline values for receiving hole diameter	Minimum borehole depth for blind holes
UNC	Carbon steel (1215)	SUS303	A	E	P	B	L	T
Unified Coarse Thread ANSI B1.1/BS 1580 Internal thread	302604001	302604002	4 - 40	5	0.5	6	4.5 to 4.8	8
	302606001	302606002	6 - 32	6	0.75	8	5.6 to 5.7	10
	302608001	302608002	8 - 32	6.5	0.75	8	6.1 to 6.2	10
	302610001	302610002	10 - 32	8	1	10	7.5 to 7.6	13
	302625001	302625002	1/4 - 20	10	1.5	14	9.2 to 9.4	17
	302631001	302631002	5/16 - 18	12	1.5	15	11.2 to 11.4	18
	302637001	302637002	3/8 - 16	14	1.5	18	13.2 to 13.4	22
	302644001	302644002	7/16 - 14	16	1.5	22	15.2 to 15.4	26
	302650001	302650002	1/2 - 13	18	1.5	22	17.2 to 17.4	26
	302662001	302662002	5/8 - 11	20	1.5	22	19.2 to 19.4	26
UNF	302704001	302704002	4 - 48	5	0.5	6	4.5 to 4.8	8
Unified Fine Thread ANSI B1.1/BS1 580 Internal thread	302706001	302706002	6 - 40	6	0.75	8	5.6 to 5.7	10
	302708001	302708002	8 - 36	6.5	0.75	8	6.1 to 6.2	10
	302710001	302710002	10 - 32	8	1	10	7.5 to 7.6	13
	302725001	302725002	1/4 - 28	10	1.5	14	9.2 to 9.4	17
	302731001	302731002	5/16 - 24	12	1.5	15	11.2 to 11.4	18
	302737001	302737002	3/8 - 24	14	1.5	18	13.2 to 13.4	22
	302744001	302744002	7/16 - 20	16	1.5	22	15.2 to 15.4	26
	302750001	302750002	1/2 - 20	18	1.5	22	17.2 to 17.4	26
	302762001	302762002	5/8 - 18	20	1.5	22	19.2 to 19.4	26

Self Tapping Thread Insert With Cutting Bores (307/308 Type)



Self tapping threaded insert with cutting bores is a self-tapping fastener for the creation of wear free, vibration resistant screw joints with high loading capacity in materials with higher shearing strength.

It is suitable for installation in the following materials:

- Cast iron
- Magnesium alloys
- Aluminium and aluminium alloys
- Duroplastics, thermoplastics

(with the exception of rubber-soft thermoplastics < 100 Shore A)

Short design : Works Standard 307

Long design : Works Standard 308

Material & Finish :

- Stainless steel 303, passivated
- Case-hardened steel, zinc-plated, yellow chromated

Other materials, designs and finishes on request :

- Brass
- Case-hardened steel, zinc-plated, blue passivated
- Case-hardened steel, zinc/nickel plated, transparent passivated

Thread Internal thread A: As per ISO 6H

External thread E : Special thread with flattened thread root, tolerances in accordance with works Standard .

Technical Parameters :

Dimensions in mm

Metric Series							
Carbon Steel Part No.	Stainless Steel Part No.	Internal Thread	External Thread		Length	Guideline values for receiving hole diameter	Minimum borehole depth for blind holes
Carbon steel (1215)	SUS303	A	E	P	B	L	T
307030001	307030002	M3	5	0.6	4	4.7 to 4.8	6
308030001	308030002	M3	5	0.6	6	4.7 to 4.8	8
307035001	307035002	M3.5	6	0.8	5	5.6 to 5.7	7
308035001	308035002	M3.5	6	0.8	8	5.6 to 5.7	10
307040001	307040002	M4	6.5	0.8	6	6.1 to 6.2	8
308040001	308040002	M4	6.5	0.8	8	6.1 to 6.2	10
307050001	307050002	M5	8	1	7	7.6 to 7.7	9
308050001	308050002	M5	8	1	10	7.6 to 7.7	13
307060001	307060002	M6	10	1.25	8	9.5 to 9.6	10
308060001	308060002	M6	10	1.25	12	9.5 to 9.6	15
307080001	307080002	M8	12	1.5	9	11.3 to 11.5	11
308080001	308080002	M8	12	1.5	14	11.3 to 11.5	17
307100001	307100002	M10	14	1.5	10	13.3 to 13.5	13
308100001	308100002	M10	14	1.5	18	13.3 to 13.5	22
307120001	307120002	M12	16	1.75	12	15.2 to 15.4	15
308120001	308120002	M12	16	1.75	22	15.2 to 15.4	26
307140001	307140002	M14	18	2	14	17.2 to 17.4	17
308140001	308140002	M14	18	2	24	17.2 to 17.4	28
307160001	307160002	M16	20	2	14	19.2 to 19.4	17
308160001	308160002	M16	20	2	24	19.2 to 19.4	28
307180001	307180002	M18	22	2	18	21.2 to 21.4	21
308180001	308180002	M18	22	2	24	21.2 to 21.4	28
308200001	308200002	M20	26	2	27	25.2 to 25.4	31
308220001	308220002	M22	26	2	30	25.2 to 25.4	34
308240001	308240002	M24	30	2	30	29.2 to 29.4	34