



Shenzhen Boerane Technology Co., Ltd

Self-tapping Threaded Insert



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Shenzhen Boerane Technology Co., Ltd was established in 2004 as a proficient production and manufacturing enterprise that seamlessly integrates technology research, product manufacturing, and sales. Their product range includes Key Locking Inserts, Self Tapping Inserts, Wire Thread Inserts, Tailless Thread Inserts, Installation Tools, and Thread Repair Kits. With robust technical capabilities, advanced design standards, cutting-edge production equipment, and precision testing tools, the company specializes in offering comprehensive technical support throughout the entire process of threaded insert design and utilization.

Boerane is committed to technological innovation and refined product processing, having achieved success in fundamental research, new product development, process innovation, equipment enhancement, production control, quality management, and market expansion.

Their threaded insert products adhere to various international standards, catering to the aerospace, shipbuilding, high-voltage electrical components, and general mechanical sectors. The company also customizes products for European, American, and other foreign customers, following global standards. Boerane holds certifications for the "ISO9001:2015 Quality Management System" and "IATF 16949:2016", demonstrating its commitment to responsible business practices.

Operating across 7000 square meters, the company comprises two plants covering 2000 and 1000 square meters, boasting an annual output exceeding 5 million USD. With over 80 employees, including 5 senior executives and a 12-member R&D team, Boerane remains dedicated to professionalism and quality.

Business goal centers on "Professional Focus, Building a Brand," and business purpose revolves around "Quality Assurance, Reliable Price." Upholding the values of integrity and pioneering, Boerane promises customers high-quality products and services in line with their commitment to excellence.

Product Capability



Auto-lathe turning
OD 0.5–20mm Tol.±0.01mm
CNC lathe turning
OD 0.5–250mmTol.±0.05mm
CNC Milling
800X600mm (LxW), Tol.±0.05mm
Grinding: Tol.±0.002mm
Screw heading & rolling:
Metric M8-M36
Unified Imperial #0-2"
Stamping: 1200 T max



- 01 Automatic Lathe
- 02 CNC Lathe
- 03 CNC Machine
- 04 Screw Machine
- 05 Stamping Equipment
- 06 Injection machine
- 07 Ultraprecision Machining
- 08 Precision Grinding

Fields of application:

Self-tapping threaded inserts are used throughout the whole of the metal and plastics processing industry.

- Automotive industry, passenger and commercial vehicles. Engines, transmissions, wide range of supply parts such as wing mirrors, radiators, bumpers etc.
- Plant and equipment construction. Flange joints, construction equipment, oilburners etc.
- Household appliance and office machinery production. Vacuum cleaners, cameras, sun lamps, drills etc.
- Electrical and laboratory supplies. Capacitors, heavy current, radio and telecommunication systems, dental technology equipment.
- Military applications. Tanks, aircraft etc.

Product features:

- Self-tapping threaded insert has a large effective shearing surface, so ensuring a higher degree of pull-out strength, self-tapping threaded inserts M4 is often sufficient instead of a cut M5 thread.
- Self-tapping threaded 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 threaded insert. The thread is always precisely positioned.
- Self-tapping threaded insert is insensitive to small areas of shrinkage. Special eye tem prevents damage caused by torn threads.

Example for finding the article number:

- Self-tapping threaded insert to work standard series L3020 with internal thread A = M4 made of case-hardened zinc plated and yellow chromated steel: L302005.SYZ; with hexagonal socket: L302205SYZ.

Tolerances Thread:

- ISO 2768-m

Materials:

- | | |
|-------------------|-------------------------|
| ■ Brass C3604 | Article No.... |
| SUS303 | B Article No.... |
| SUS430F | SS Article No.....SS430 |
| Carbon steel 1215 | Article No....S |

Finish:

- | | |
|---|-------------------|
| ■ Plain | Article No.... |
| Blue zinc plated | Article No. ...BZ |
| Yellow zinc plated | Article No. ...YZ |
| Color zinc plated | Article No. ...CZ |
| White zinc plated | Article No. ...WZ |
| Zinc-nickel alloy plated | Article No....ZN |
| Other materials, designs and finishes on request. | |

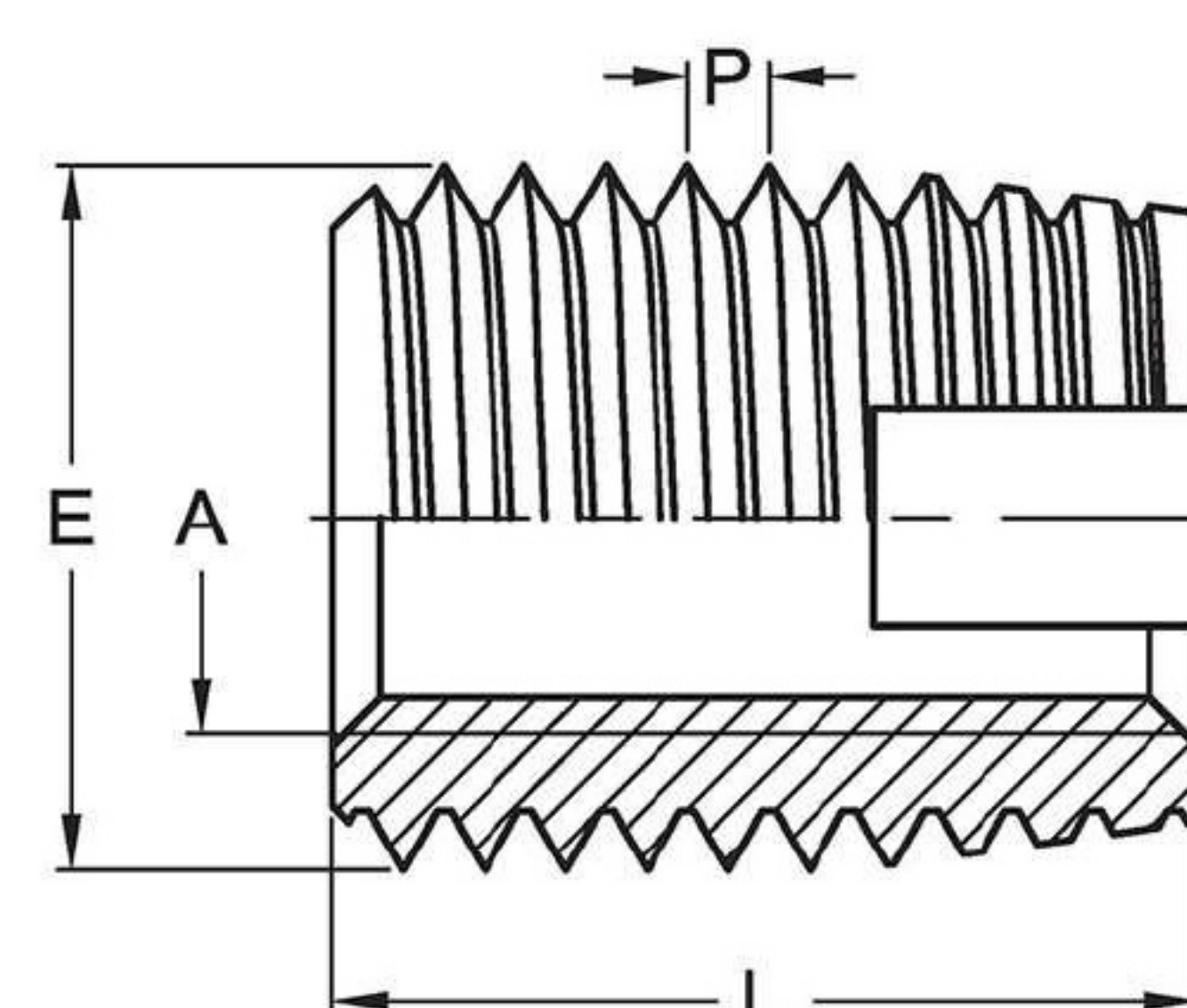
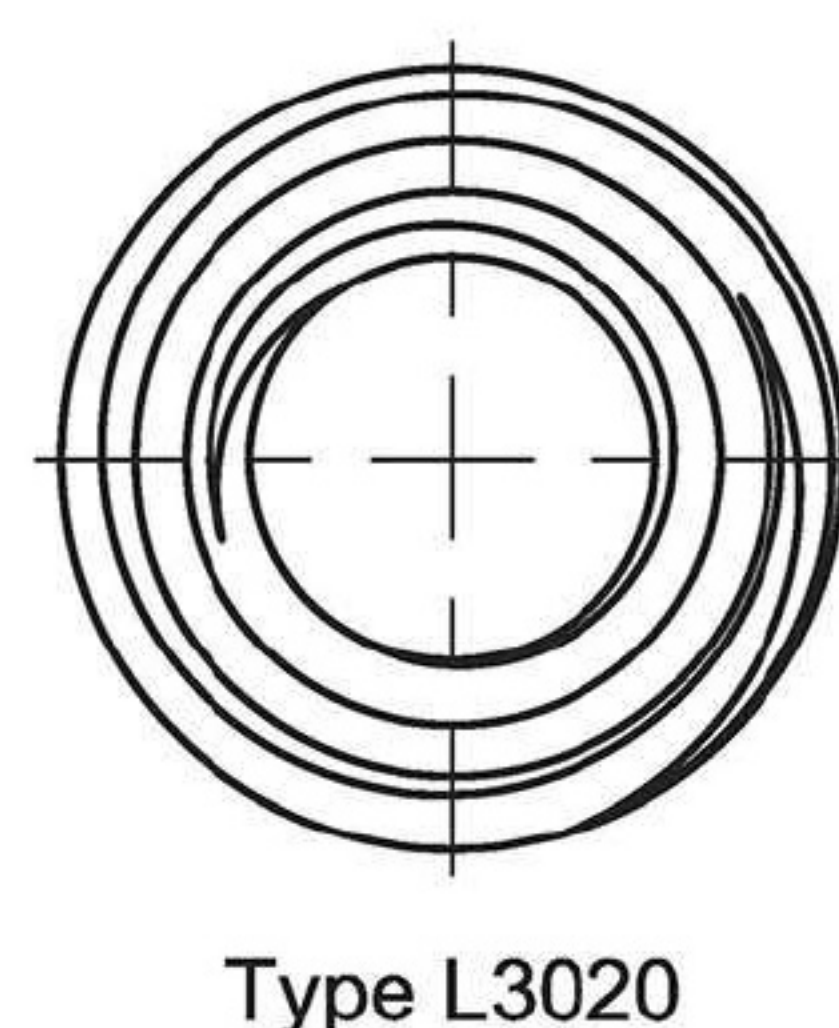
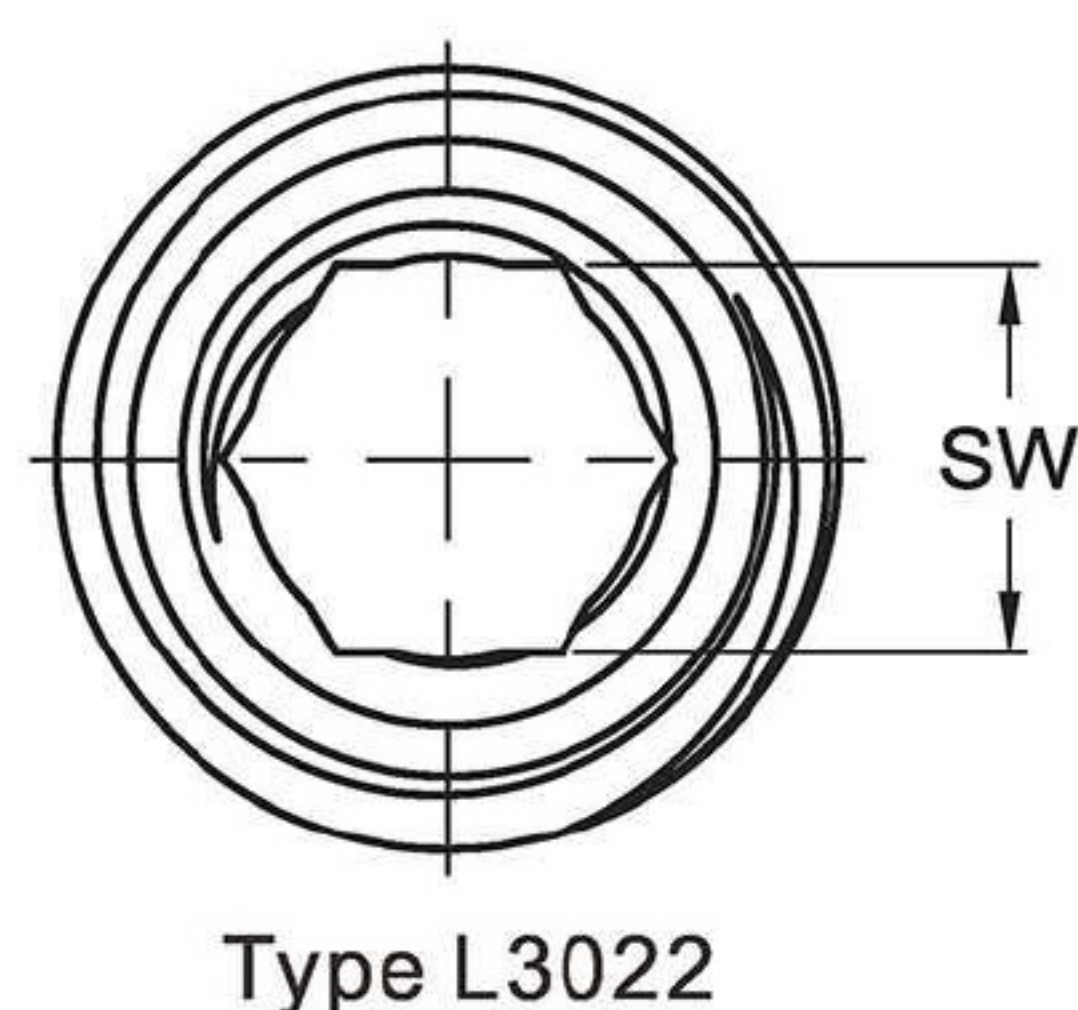
L3020 / L3022

Features

- L3020/L3022 series inserts are most widely used, slots work as cutting edges, it has a slight inward screw locking performance.



Technical Data



Drawing No. ..0...	A Internal thread	E External thread	P Pitch	L Length	SW ^{+0.1} ₀ Hexagonal socket ...2...	D Minimum borehole depth for blind holes
L302...01	M2	4.5	0.5	6	—	8
L302...02	M2.5	4.5	0.5	6	—	8
L302...03	M3	5	0.5	6	—	8
L302...04	M3.5	6	0.75	8	—	10
L302...05	M4	6.5	0.75	8	3.2	10
L302...06	M5	8	1	10	4.1	13
L302...07	M6(a)	9	1	12	—	15
L302...08	M6	10	1.5	14	4.9	17
L302...09	M8	12	1.5	15	6.6	18
L302...10	M10	14	1.5	18	8.3	22
L302...11	M12	16	1.5	22	10.1	26
L302...12	M14	18	1.5	24	—	28
L302...13	M16	20	1.5	22	—	27
L302...14	M18	22	1.5	24	—	29
L302...15	M20	26	1.5	27	—	32
L302...16	M22	26	1.5	30	—	36
L302...17	M24	30	1.5	30	—	36
L302...18	M27	34	1.5	30	—	36
L302...19	M30	36	1.5	40	—	46

Dimensions in mm; Other sizes, special designs and materials on request.

M2/M2.5 are only suitable for low-strength materials, as the shear resistance of studs in the driving tools may be insufficient.

Part number designation

Model code - A (Internal thread) x L (Length) - E (External thread) + Material + Finish

L3020-M3x6.0-E5.0B L3020 Insert, M3x6.0-E5.0, Brass C3604

L3020-M3x6.0-E5.0SBZ L3020 Insert, M3x6.0-E5.0, Steel 1215, Blue zinc plated

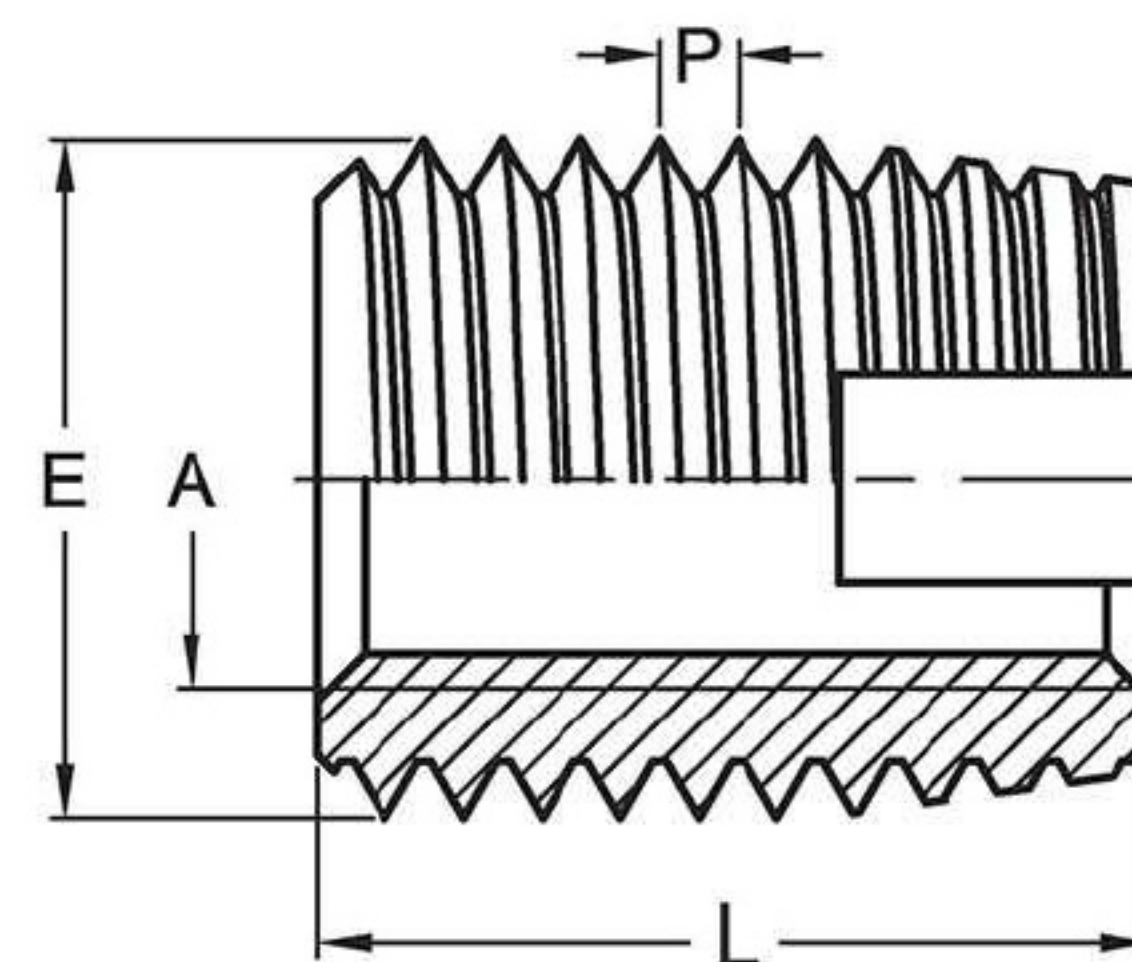
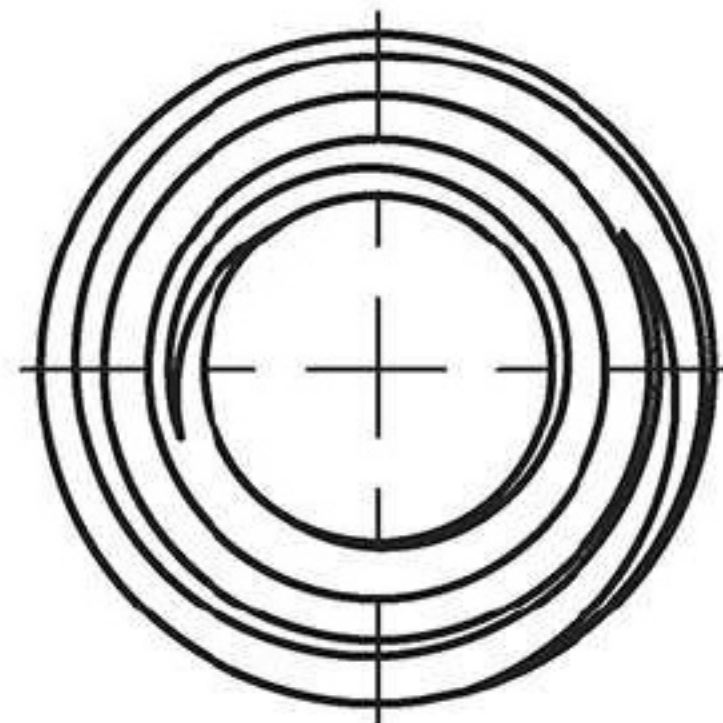


L302

Features

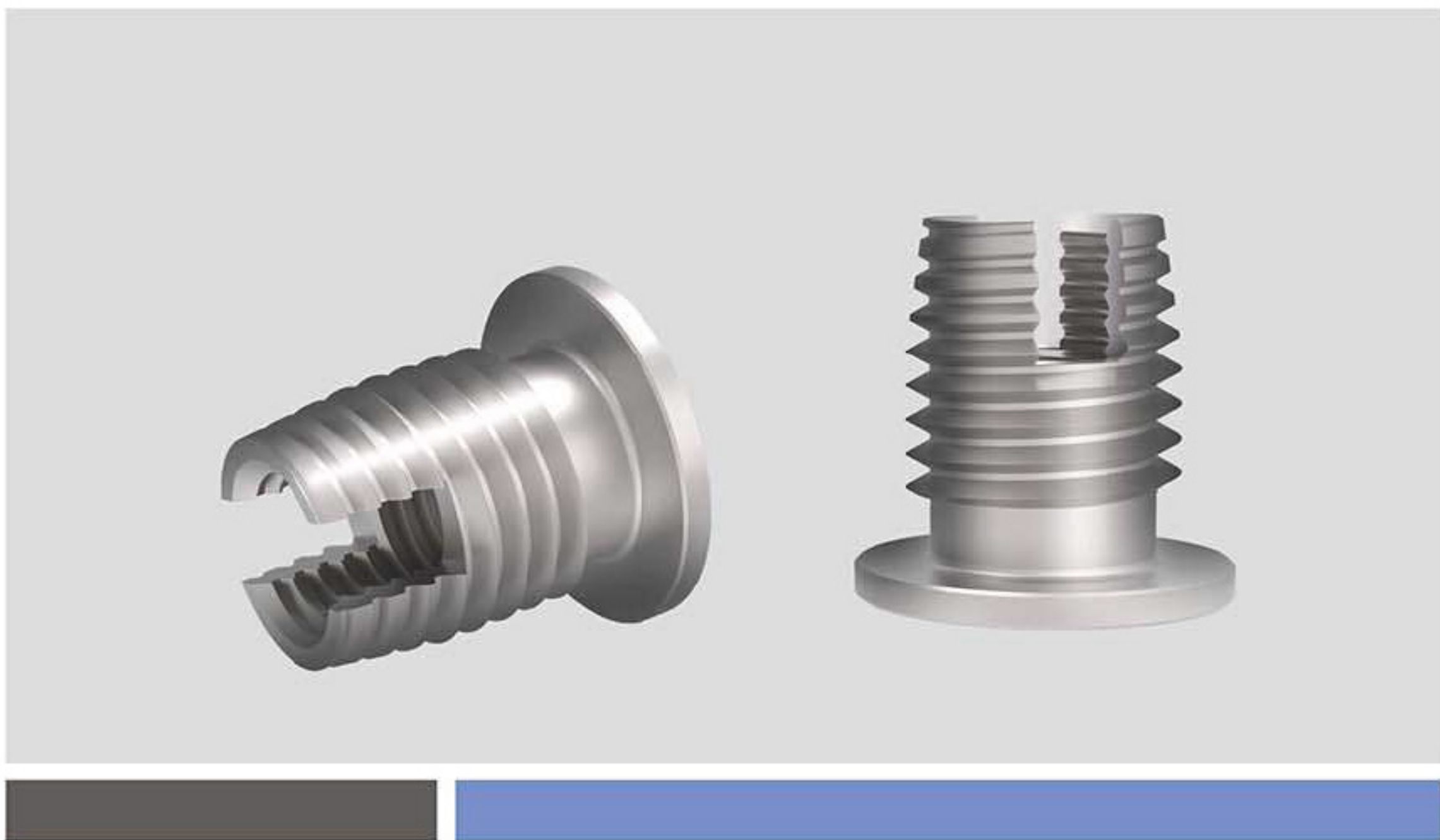
- L302 series inserts are most widely used, slots work as cutting edges,it has a slight inward screw locking performance.

Technical Data



	Drawing No.	A Internal thread	E External thread	P Pitch	L Length	D Minimum borehole depth for blind holes
Whitworth B.S.84 Internal Thread Tolerance: medium	L302020	1/4	10	1.5	14	17
	L302021	5/16	12	1.5	15	18
	L302022	3/8	14	1.5	18	22
	L302023	7/16	16	1.5	22	26
	L302024	1/2	18	1.5	22	26
	L302025	5/8	20	1.5	22	27
UNC Unified Coarse Thread ANSI B1.1/BS 1580 Internal Thread Tolerance:2B	L302026	4-40	5	0.5	6	8
	L302027	6-32	6	0.75	8	10
	L302028	8-32	6.5	0.75	8	10
	L302029	10-24	8	1	10	13
	L302030	1/4-20	10	1.5	14	17
	L302031	5/16-18	12	1.5	15	18
	L302032	3/8-16	14	1.5	18	22
	L302033	7/16-14	16	1.5	22	26
	L302034	1/2-13	18	1.5	22	28
	L302035	5/8-11	20	1.5	22	27
UNF Unified Fine Thread ANSI B1.1/BS 1580 Internal Thread Tolerance:2B	L302036	4-48	5	0.5	6	8
	L302037	6-40	6	0.75	8	10
	L302038	8-36	6.5	0.75	8	10
	L302039	10-32	8	1	10	13
	L302040	1/4-28	10	1.5	14	17
	L302041	5/16-24	12	1.5	15	18
	L302042	3/8-24	14	1.5	18	22
	L302043	7/16-20	16	1.5	22	26
	L302044	1/2-20	18	1.5	22	28
	L302045	5/8-18	20	1.5	22	27

Dimensions in mm.
Other sizes, special designs and materials on request.

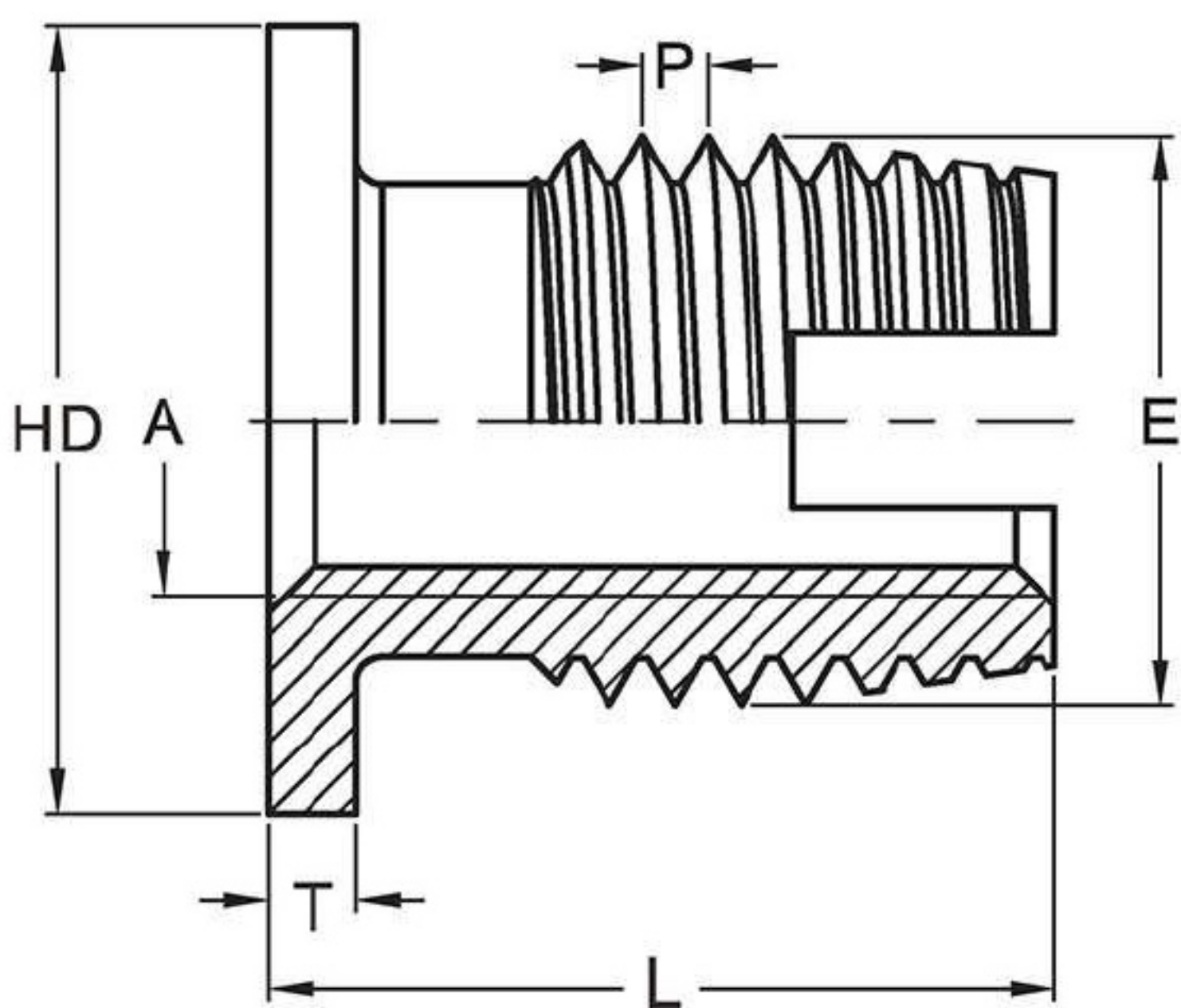
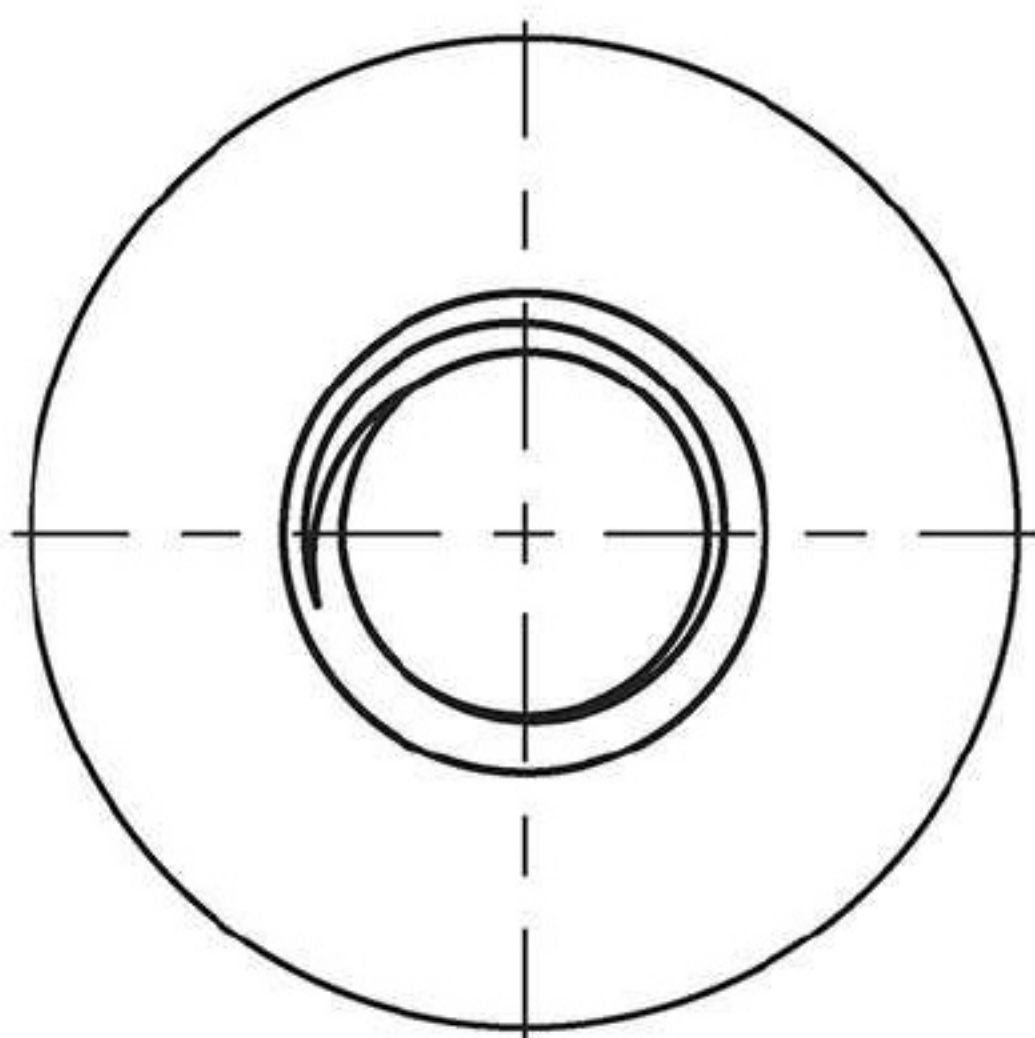


L3021

Features

- Headed version of L3020 series Insert, to be used in some applications for higher pull-out strength.

Technical Data



Drawing No. ..0...	A Internal thread	E External thread	P Pitch	HD Head diameter	T Head height	L Length	D Minimum borehole depth for blind holes
L302101	M4	6.5	0.75	9	1	9	10
L302102	M5	8	1	11	1	11	12
L302103	M6	10	1.5	13	1.5	15.5	16
L302104	M8	12	1.5	15	1.5	16.5	17
L302105	M10	14	1.5	17	1.5	19.5	20

Dimensions in mm.
Other sizes, special designs and materials on request.

Part number designation

Model code - A (Internal thread) x L (Length) - HD (Head diameter) + Material + Finish
L3021-M4x9.0-HD9.0B L3021 Insert,M4x9.0-HD9.0,Brass C3604
L3021-M4x9.0-HD9.0SBZ L3021 Insert,M4x9.0-HD9.0,Steel 1215,Blue zinc plated

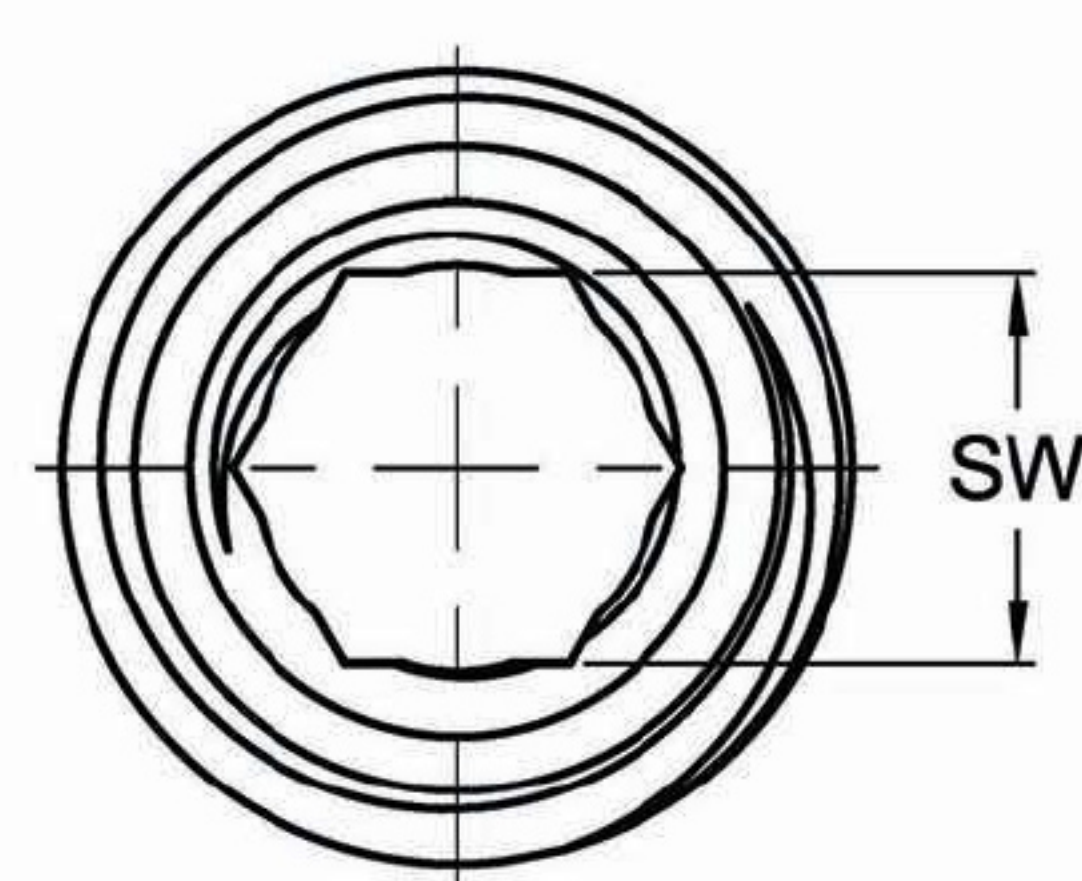
L3070 / L3072 / L3080 / L3082

Features

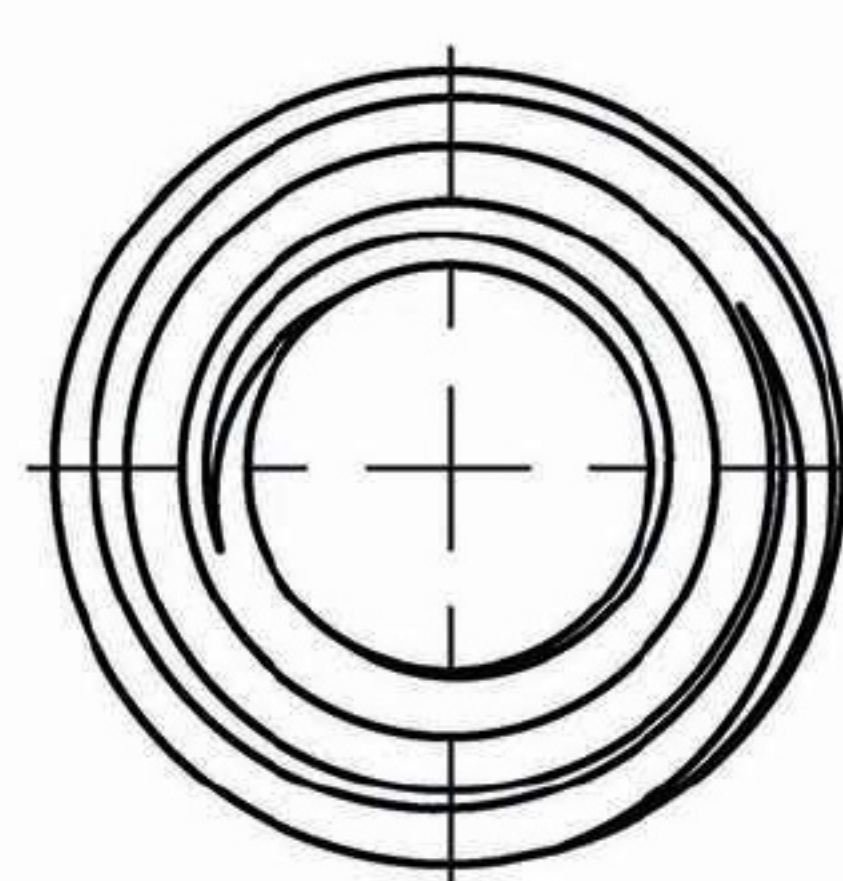
- L3070/L3072/L3080/L3082 series are used in difficult-cutting materials three cutting holes perform the self-tapping action.



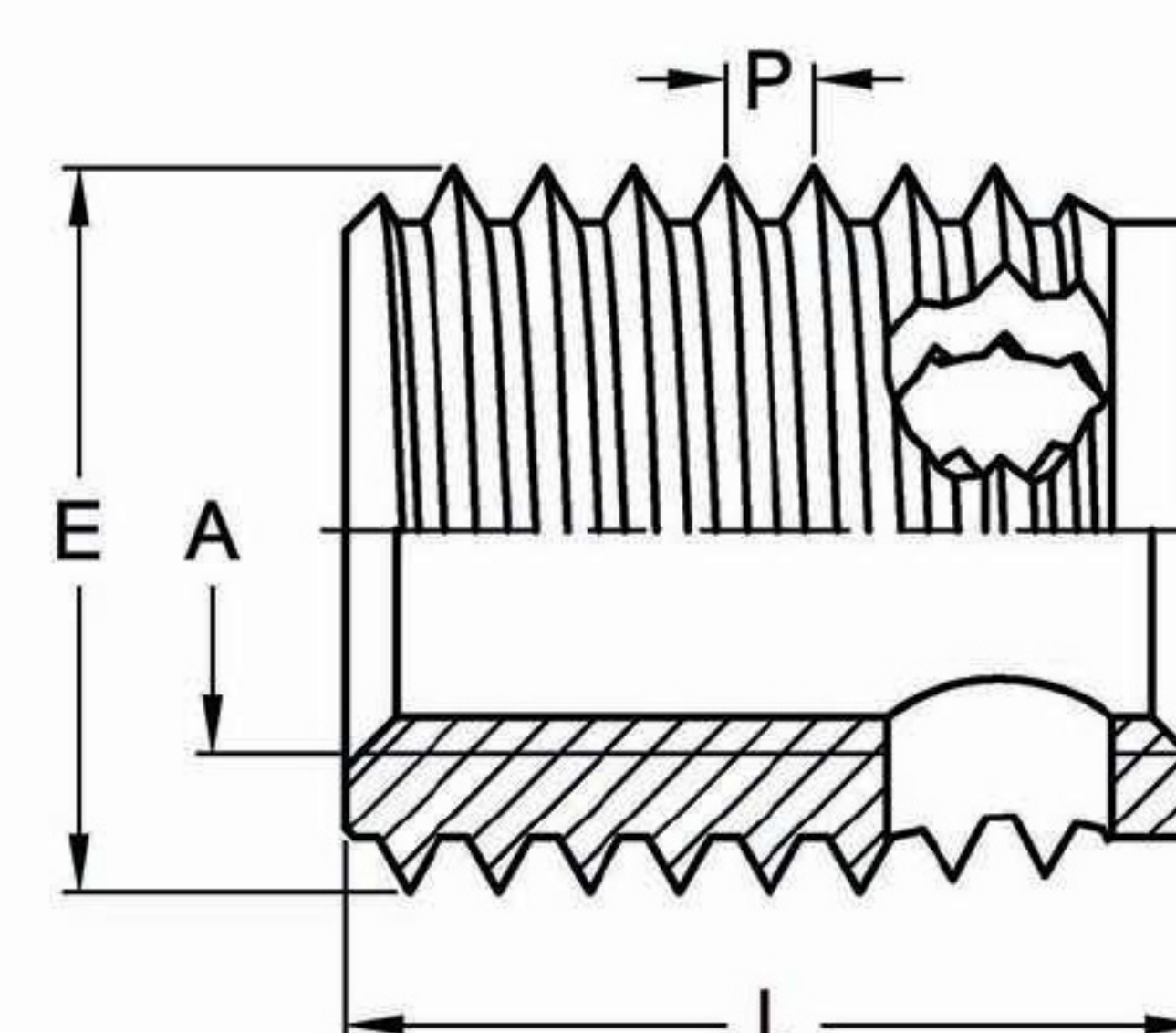
Technical Data



Type L3072/L3082



Type L3070/L3080



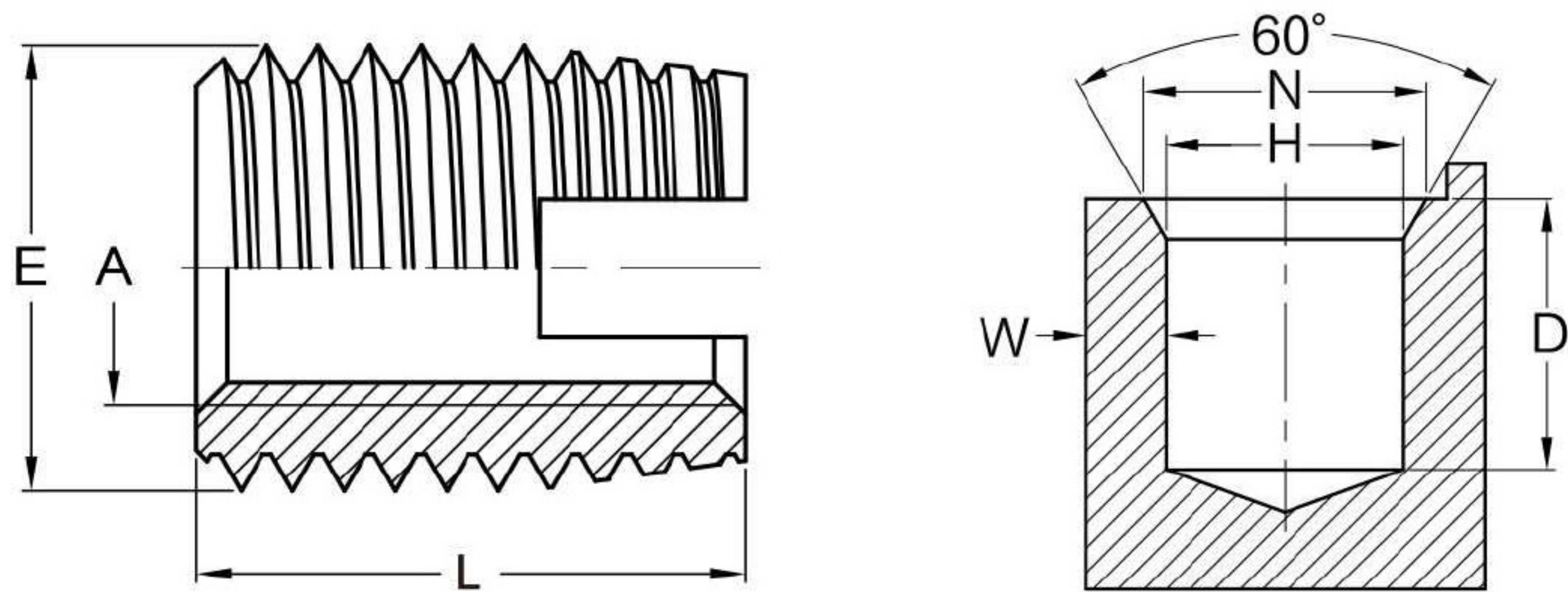
Drawing No. ..0...	A Internal thread	E External thread	P Pitch	L Length	SW ^{+0.1} ₀ Hexagonal socket ...2...	D Minimum borehole depth for blind holes
L307...01	M3	5	0.6	4	-	6
L308...01				6		8
L307...02	M3.5	6	0.8	5	-	7
L308...02				8		10
L307...03	M4	6.5	0.8	6	3.2	8
L308...03				8		10
L307...04	M5	8	1	7	4.1	9
L308...04				10		13
L307...05	M6	10	1.25	8	4.9	10
L308...05				12		15
L307...06	M8	12	1.5	9	6.6	11
L308...06				14		17
L307...07	M10	14	1.5	10	8.3	13
L308...07				18		22
L307...08	M12	16	1.75	12	10.1	15
L308...08				22		26
L307...09	M14	18	2	14	-	17
L308...09				24		28
L307...10	M16	20	2	14	-	17
L308...10				24		28

Dimensions in mm; Other sizes, special designs and materials on request.

Part number designation

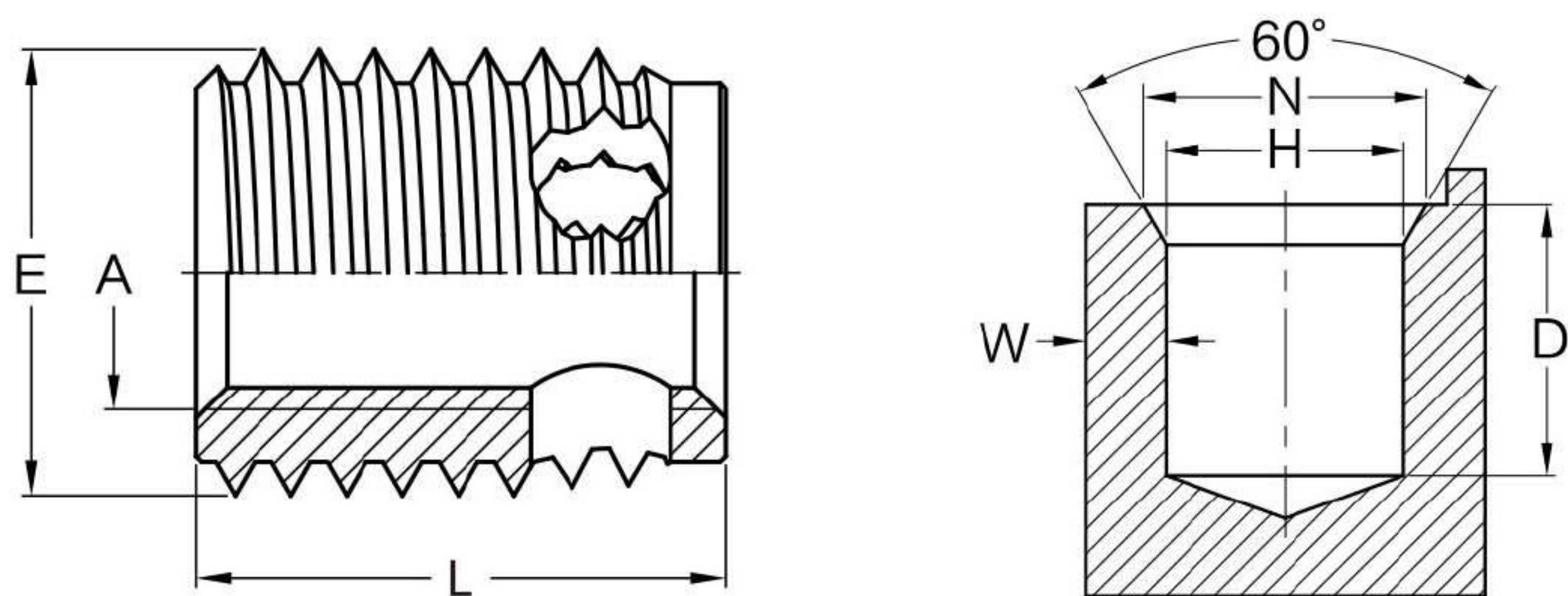
Model code - A (Internal thread) x L (Length) - E (External thread) + Material + Finish

L3070-M3x4.0-E5.0B L3070 Insert,M3x4.0-E5.0,Brass C3604



Type 302

A Internal thread Metric	A Internal thread Inch	L Length	E External thread	H Rec. borehole diameter			D Minimum borehole depth for blind holes
				Plastic	Aluminum	Cast iron	
M2.5X0.45	2-56	6	M4.5X0.5	4.0-4.1	4.1-4.2	4.2-4.3	8
M3X0.5	4-40	6	M5X0.5	4.5-4.6	4.6-4.7	4.7-4.8	8
M3.5X0.6	6-32	8	M6X0.75	5.3-5.4	5.5-5.6	5.6-5.7	10
M4X0.7	8-32	8	M6.5X0.75	5.8-5.9	6.0-6.1	6.1-6.2	10
M5X0.8	10-24	10	M8X1.0	7.1-7.2	7.3-7.5	7.5-7.6	13
M6X1.0	12-24	12	M9X1.0	8.1-8.2	8.3-8.5	8.5-8.6	15
M6X1.0	1/4-20	14	M10X1.5	9.0-9.2	9.2-9.3	9.3-9.4	17
M8X1.25	5/16-18	15	M12X1.5	10.6-10.8	11.0-11.2	11.2-11.4	18
M10X1.5	3/8-16	18	M14X1.5	12.6-12.8	13.0-13.3	13.2-13.4	22
M12X1.75	7/16-14	22	M16X1.5	14.6-14.8	15.0-15.3	15.2-15.4	26
M14X2.0	1/2-13	24	M18X1.5	16.6-16.8	17.0-17.3	17.2-17.5	28
M16X2.0	5/8-11	22	M20X1.5	18.6-18.8	19.0-19.3	19.2-19.5	27
M18X2.5	3/4-10	24	M22X1.5	20.6-20.8	21.0-21.3	21.2-21.5	29
M20X2.5	7/8-9	27	M26X1.5	24.6-24.8	25.0-25.3	25.2-25.5	32



Type 307/308/337/338

A Internal thread Metric	A Internal thread Inch	L Length		E External thread	H Rec. borehole diameter		D Min. hole depth for blind holes	
		L307 L337	L308 L338		Plastic	Aluminum	L307 L337	L308 L338
M3X0.5	4-40	4	6	M5X0.6	4.6-4.7	4.7-4.8	6	8
M4X0.7	8-32	6	8	M6.5X0.8	6.0-6.1	6.1-6.2	8	10
M5X0.8	10-24	7	10	M8X1.0	7.4-7.5	7.6-7.7	9	13
M6X1.0	1/4-20	8	12	M10X1.25	9.3-9.4	9.5-9.6	10	15
M8X1.25	5/16-18	9	14	M12X1.5	11.1-11.3	11.3-11.5	11	17
M10X1.5	3/8-16	10	18	M14X1.5	13.1-13.3	13.3-13.5	13	22
M12X1.75	7/16-14	12	22	M16X1.75	15.0-15.2	15.3-15.5	15	26
M14X2.0	1/2-13	14	24	M18X2.0	17.0-17.2	17.3-17.5	17	28
M16X2.0	5/8-11	14	24	M20X2.0	19.0-19.2	19.3-19.5	17	28

Guideline values for countersink: $N=0.06$ to $0.08 \times E + E$
Guideline values for light alloys: $W=0.2$ to $0.6 \times E$
Guideline values for cast iron: $W=0.3$ to $0.5 \times E$
 E =External thread[mm]
Other dimensions and specials on request.

Self-tapping thread inserts installation information

Installing by hand

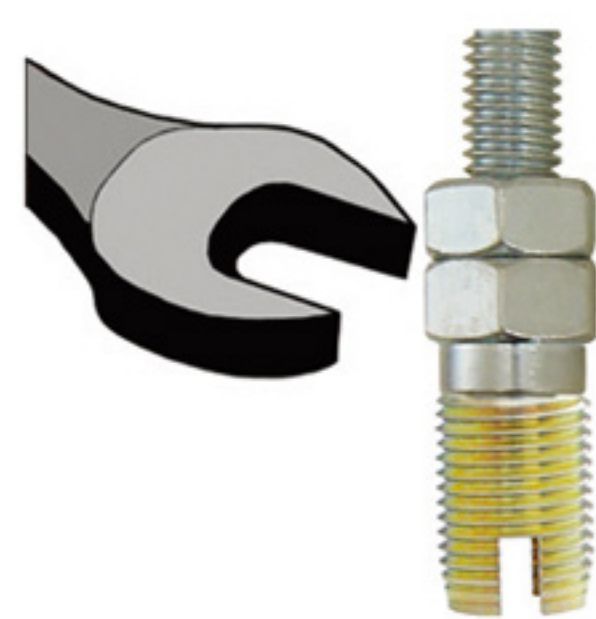
1. Drilling

Drill out the old hole with a core drill.
If necessary, countersink the hole.



2. Screw threaded insert onto the installation tool

Screw the thread insert onto the installation tool with the slot or hole downwards and lock in place with the lock nut using a spanner.



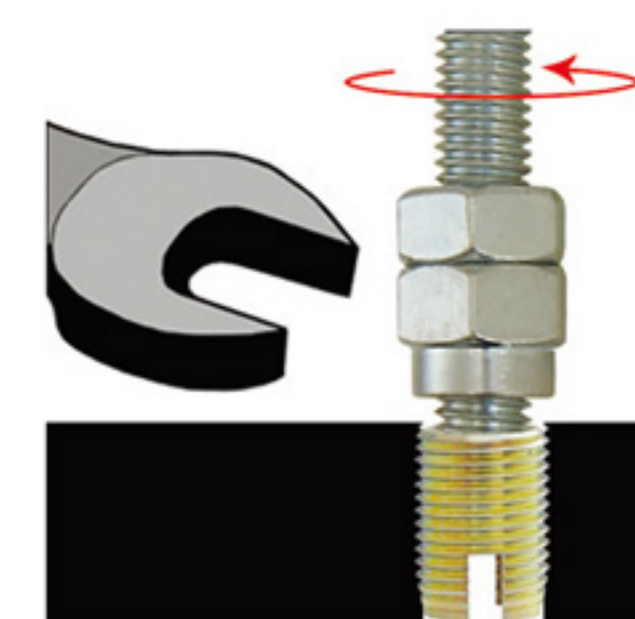
3. Screw in the thread insert

Screw in thread insert into the hole. The thread insert cuts its own thread. The installation tool has a 1/4" hexagon spigot and can be driven by a cordless driver, ratchet and socket etc.



4. Screw out the installation tool

Loosen the lock nuts with a spanner and screw the installation tool out. With the thread insert the thread is now more wear resistant, more durable and vibration resistant than the original thread.



Installation on a machine

1. Drilling

Drill out the old hole with a core drill. If necessary, countersink the borehole.



2. Machine settings and positioning

Position the workpiece under the machine. Set the machine to the screw in depth. Turn the outer sleeve so that the stop pin makes contact and carries the sleeve when screwing in begins. Screw the threaded insert 2 to 4 turns onto the threaded pin.



3. Screw in the thread insert

Allow the machine to run until the threaded insert is screwed into the workpiece. Introduce the tool gently to the workpiece down to prevent damaging or breaking the thread insert or the installation tool.



4. Screw the tool out

Set the machine into reverse. The outer sleeve is carried by the stop pin and counters the thread insert.



Recommended drilling diameter

		Threaded inserts with cutting slot case-hardened steel, galvanized				Threaded inserts with cutting holes case-hardened steel, galvanized			
Materials	Light metal alloys tensile strength [N/mm ²]	< 250 N/mm ²				< 300 N/mm ²			
		< 300 N/mm ²				< 350 N/mm ²			
		< 350 N/mm ²				> 350 N/mm ²			
Materials	Brass, non-ferrous metals, bronze	> 350 N/mm ²				> 350 N/mm ²			
	Cast iron Brinell hardness [HB]	< 150 HB				< 150 HB			
		< 200 HB				< 200 HB			
Internal thread D	M3 x 0,5	-	4,6 mm	4,7 mm	4,8 mm	4,6 mm	4,7 mm	4,8 mm	
	M4 x 0,7	5,9 mm	6,0 mm	6,1 mm	6,2 mm	6,0 mm	6,1 mm	6,2 mm	
	M5 x 0,8	7,2 mm	7,3 mm	7,5 mm	7,6 mm	7,4 mm	7,5 mm	7,6 mm	7,7 mm
	M6 x 1,0	8,8 mm	9,0 mm	9,2 mm	9,4 mm	9,3 mm	9,4 mm	9,5 mm	9,6 mm
	M8 x 1,25	10,8 mm	11,0 mm	11,2 mm	11,4 mm	11,1 mm	11,2 mm	11,3 mm	11,5 mm
	M10 x 1,5	12,8 mm	13,0 mm	13,2 mm	13,4 mm	13,1 mm	13,2 mm	13,3 mm	13,5 mm
	M12 x 1,75	14,8 mm	15,0 mm	15,2 mm	15,4 mm	15,0 mm	15,1 mm	15,2 mm	15,4 mm
	M16 x 2,0	18,8 mm	19,0 mm	19,2 mm	19,4 mm	19,0 mm	19,1 mm	19,2 mm	19,4 mm
Flank coverage		ca. 60%	ca. 50%	ca. 40%	ca. 30%	ca. 80%	ca. 70%	ca. 60%	ca. 50%

Lubrication may be required

Lubrication may be required