



**Filtec<sup>®</sup>**



**HELICAL THREAD  
INSERTS**

**specialinsert**

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# A QUALITY INSERT

The FILTEC Standard or Locked helical thread insert is used in all sectors of industry and is an indispensable element for achieving excellent anchoring in high-quality assemblies. The FILTEC insert is made from wire with a lozenge-shaped section generating two precision



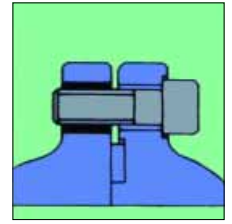
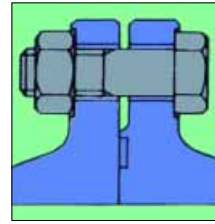
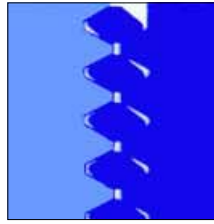
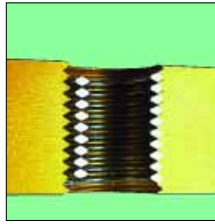
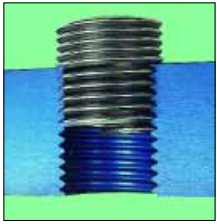
concentric threads, internal and external. The FILTEC insert ends in a tang, known also as a driving tang. The tang is used for mounting the insert and if necessary can be removed after insertion using a special punch, so that a screw can be freely introduced.

## THE FILTEC HELICAL INSERT IS MADE USING THE FOLLOWING MATERIALS

	MATERIAL	MAXIMUM USE TEMPERATURE	SURFACE COATING	APPLICATIONS
STANDARD	Stainless steel 18.8 AISI 304 (1.4301) AISI 302 (1.4310)	Up to peaks of 425°C 315°C in continuous use	<ul style="list-style-type: none"> <li>• Dry lubrication</li> <li>• Cadmium plating</li> <li>• Silver plating</li> <li>• Galvanising</li> <li>• Tin plating</li> </ul>	All normal applications, on any type of material
	Special Stainless steel AISI 304L, 316, 316L, 316Ti, 321	Up to 400°C in continuous use		Special applications. Resistance to acids, corrosion, high temperatures. Non-magnetic
ON REQUEST	Phosphor bronze	Up to peaks of 300°C 250°C in continuous use	<ul style="list-style-type: none"> <li>• Cadmium plating</li> </ul>	Special applications. Copper components. Good hold with some electrolytic couples
	Inconel X 750 Nc 15 Fe Nba	Up to peaks of 750°C	<ul style="list-style-type: none"> <li>• Silver plating</li> </ul>	Thermal power stations Aerospace sector Aeronautics sector Turbocompressors
	Nimonic 90 Nc 20 C. 18Ti	538°C in continuous use		

# Uses and Advantages

Designed to become the effective reinforcement for tapping, the FILTEC helical insert is used in a very broad range of assemblies. It provides total security though being only a simple component. Three types of use: original, repair or modification.



## NOT DEMOUNTABLE

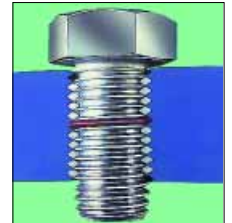
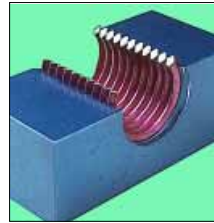
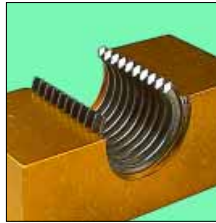
The external diameter of the FILTEC helical insert is bigger than the corresponding threaded seat predisposed for insertion. Once fitted, its adherence to the receiving wall is so tenacious as to be no longer demountable except with special tools.

## EQUAL LOAD DISTRIBUTION

In traditional screw assemblies, stresses are about 50% concentrated on the first threads. The FILTEC insert provides improved distribution of the tensions and loads over the whole length of the screw. Thanks to its elasticity, it functions as a "joint" between the screw and the threaded seat and eliminates natural pitch and angle differences between the threading and the tapping.

## REDUCTION OF MATERIAL AND SIZES

The FILTEC helical insert reduces the weight and size of the parts. Thanks to its special features it requires less space than other systems (threaded bushes) and it can be used on thin walls. This is an especially important requirement for use with soft materials.



## RESISTANCE TO WEAR, CORROSION AND OTHER AGENTS

The FILTEC helical insert eliminates thread deterioration due to unscrewing, vibrations, fatigue, grip, corrosion; it also has good resistance to high temperatures.

## PRACTICALLY INDESTRUCTIBLE

These are threads that last a lifetime in soft materials. Thanks to this feature, the insert satisfies the strictest standards even after many uses.

## LOCK SYSTEM SIMPLIFICATION

The FILTEC self-locking system saves time and money because it does away with the need for cotter pins, special washers, etc.

## FILTEC SELF-LOCKING INSERT

The FILTEC self-locking helical insert is exactly like a standard insert.

Its distinguishing characteristic lies in the way it locks the screw. The lock is achieved by polygonal deforming of one or more coils of the self-locking insert.

This deformation generates a high level of adherence to the flanks of the screw threading and eliminates unscrewing effects caused by dynamic stress, vibrations, heat loads. The screw locking does away with the need for a lock-nut, special washers or other complicated and expensive systems.

The torques obtained using FILTEC self-locking helical inserts are comparable to the specifications indicated in ISO 2320 standards.

Bench testing for tension and torque provide systematic controls and ensure quality. For purposes of easy identification FILTEC self-locking helical inserts are red.






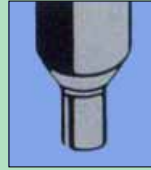

RATED DIAMETER	LOCKING TORQUES (Nm)		
	1st screwing (max)	1st unscrewing (min)	5th unscrewing (min)
M3 x 0,5	0,43	0,12	0,08
M4 x 0,7	0,90	0,18	0,12
M5 x 0,8	1,60	0,29	0,20
M6 x 1	3,00	0,45	0,30
M8 x 1,25	6,00	0,85	0,60
M10 x 1,5	10,50	1,50	1,00
M12 x 1,75	15,50	2,30	1,60
M14 x 2	24,00	3,30	2,30
M16 x 2	32,00	4,50	3,00
M20 x 2,5	54,00	7,50	5,30
M24 x 3	80,00	11,50	8,00

# Fitting method

A very simple application tool makes FILTEC helical inserts easy to fit. The tool can be **manual, semi-automatic** or **automatic**.

For correct application of the insert, the tool must be positioned axially to the specially-prepared threaded seat.

The sequence shown here illustrates the various fitting stages of the FILTEC helical insert.

				
<b>BORING</b> The hole should be larger than the rated diameter of the screw. Do not countersink. (see pages 6, 8, 10)	<b>TAPPING</b> Done with the FILTEC tap (see pages 6, 8, 10, 14, 15). N.B. After tapping, the threaded seat can be inspected with a go/no go plug gauge (see page 18)	<b>FITTING</b> Rotate the fitting tool handle; do not press or force. Screw the insert down to from 1/4 to 1/2 a turn below the fitting plane (see pages 16, 17).	<b>BREAKING OF THE TANG</b> Use the FILTEC punch (see page 18).	<b>INSERT MOUNTED</b>

## List of production

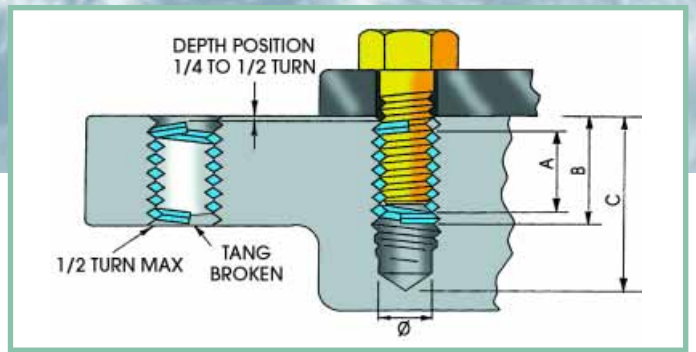
THREADING *	METRIC ISO	METRIC ISO	UNC/UNJC	UNF/UNJF	GAS - BSP - Rohr	BSW	BSF
	NORMAL PITCH	FINE PITCH	(United National Coarse) NORMAL PITCH	(United National Fine) FINE PITCH		(British Standard Whitworth) NORMAL PITCH	(British standard Whitworth) FINE PITCH
STANDARD AND SELF-LOCKING	M2 M48	M4 x 0.5 M64 x 4	2 - 56 1" 1/2 - 6	2 - 64 1" 1/2 - 12	1/8 2"	1/8 1" 1/2	1/4 1" 3/8

\* BA - NPT/NPTF systems on request

## Standardisation

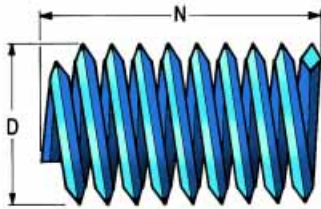
The standard Filtec helical insert does not respond to DIN 8140 specifications. On request however the inserts can be supplied to conform with directives DIN 8140 and EN 2944





# Metric Pitch

Rated diameter d	Pitch mm	Hole dia. mm	Bore dia. mm		Tap ext. dia. min. mm	A - Useful mounted insert length mm						B - Rated length mm						C - Min. bore depth mm										
			min.	max		0,5d	0,75 d	1 d	1,5 d	2 d	2,5 d	3 d	0,5d	0,75 d	1 d	1,5 d	2 d	2,5 d	3 d	0,5d	0,75 d	1 d	1,5 d	2 d	2,5 d	3 d		
M 2	0,4	2,1	2,09	2,18	2,52			1,6	2,6	3,6	4,6	5,6			2,0	3,0	4,0	5,0	6,0			3,6	4,6	5,6	6,6	7,6		
M 2,5	0,45	2,6	2,60	2,70	3,08			2,1	3,3	4,6	5,8	7,1			2,5	3,75	5,0	6,25	7,5			5,1	6,3	7,6	8,9	10,1		
M 3	0,5	3,2	3,11	3,22	3,65			2,5	4,0	5,5	7,0	8,5			3,0	4,5	6,0	7,5	9,0			5,8	7,3	8,8	10,3	11,8		
M 3,5	0,6	3,7	3,63	3,76	4,28			2,9	4,7	6,4	8,2	9,9			3,5	5,25	7,0	8,75	10,5			6,9	8,6	10,4	12,2	13,9		
M 4	0,7	4,2	4,15	4,29	4,91			3,3	5,3	7,3	9,3	11,3			4,0	6,0	8,0	10,0	12,0			7,8	9,8	11,8	13,8	15,8		
M 5	0,8	5,2	5,17	5,33	6,04			4,2	6,7	9,2	11,7	14,2			5,0	7,5	10,0	12,5	15,0			9,2	11,7	14,2	16,7	19,2		
M 6	1,0	6,3	6,22	6,41	7,30			5,0	8,0	11,0	14,0	17,0			6,0	9,0	12,0	15,0	18,0			11,2	14,2	17,2	20,2	23,2		
M 7	1,0	7,3	7,22	7,41	8,30			6,0	9,5	13,0	16,5	20,0			7,0	10,5	14,0	17,5	21,0			12,1	15,6	19,1	22,6	26,1		
M 8 x 1	1,0	8,3	8,22	8,41	9,30			7,0	11,0	15,0	19,0	23,0			8,0	12,0	16,0	20,0	24,0			13,0	17,0	21,0	25,0	29,0		
M 8	1,25	8,4	8,27	8,48	9,62			6,8	10,8	14,8	18,8	22,8			8,0	12,0	16,0	20,0	24,0			14,2	18,2	22,2	26,2	30,2		
M 9	1,25	9,4	9,27	9,48	10,62			7,8	12,3	16,8	21,3	25,8			9,0	13,5	18,0	22,5	27,0			15,2	19,7	24,2	28,7	33,2		
M 10 x 1	1,0	10,25	10,22	10,41	11,30			9,0	14,0	19,0	24,0	29,0			10,0	15,0	20,0	25,0	30,0			15,0	20,0	25,0	30,0	35,0		
M 10 x 1,25	1,25	10,4	10,27	10,48	11,62			8,8	13,8	18,8	23,8	28,8			10,0	15,0	20,0	25,0	30,0			16,2	21,2	26,2	31,2	36,2		
M 10	1,5	10,5	10,32	10,56	11,95			8,5	13,5	18,5	23,5	28,5			10,0	15,0	20,0	25,0	30,0			17,3	22,3	27,3	32,3	37,3		
M 11	1,5	11,5	11,32	11,56	12,95			9,5	15,0	20,5	26,0	31,5			11,0	16,5	22,0	27,5	33,0			18,3	23,8	29,3	34,8	40,3		
M 12 x 1	1,0	12,3	12,22	12,41	13,30			11,0	17,0	23,0	29,0	35,0			12,0	18,0	24,0	30,0	36,0			17,2	23,2	29,2	35,2	41,2		
M 12 x 1,25	1,25	12,4	12,27	12,48	13,62			10,8	16,8	22,8	28,8	34,8			12,0	18,0	24,0	30,0	36,0			18,2	24,2	30,2	36,2	42,2		
M 12 x 1,5	1,5	12,5	12,32	12,56	13,95			10,5	16,5	22,5	28,5	34,5			12,0	18,0	24,0	30,0	36,0			19,3	25,3	31,3	37,3	43,3		
M 12	1,75	12,5	12,38	12,64	14,27			10,3	16,3	22,3	28,3	34,3			12,0	18,0	24,0	30,0	36,0			20,3	26,3	32,3	38,3	44,3		
M 14 x 1,25	1,25	14,4	14,27	14,48	15,62	5,8	9,3	12,8	19,8	26,8	33,8	40,8			14,0	21,0	28,0	35,0	42,0		13,2	16,7	20,2	27,2	34,2	41,2	48,2	
M 14 x 1,5	1,5	14,5	14,32	14,56	15,95		9,0	12,5	19,5	26,5	33,5	40,5			10,5	14,0	21,0	28,0	35,0	42,0		17,7	21,3	28,3	35,3	42,3	49,3	
M 14	2,0	14,5	14,43	14,73	16,60			12,0	19,0	26,0	33,0	40,0			14,0	21,0	28,0	35,0	42,0			23,3	30,3	37,3	44,3	51,3		
M 16 x 1,5	1,5	16,5	16,32	16,56	17,95		10,5	14,5	22,5	30,5	38,5	46,5			16,0	24,0	32,0	40,0	48,0			19,3	23,3	31,3	39,3	47,3		
M 16	2,0	16,5	16,43	16,73	18,60			14,0	22,0	30,0	38,0	46,0			16,0	24,0	32,0	40,0	48,0			25,3	33,3	41,3	49,3	57,3		
M 18 x 1,5	1,5	18,5	18,32	18,56	19,95	7,5	12,0	16,5	25,5	34,5				9,0	13,5	18,0	27,0	36,0			16,3	20,8	25,3	34,3	43,3			
M 18 x 2	2,0	18,5	18,43	18,73	20,60	7,0	11,5	16,0	25,0	34,0	43,0	52,0			9,0	13,5	18,0	27,0	36,0	45,0	54,0	18,3	22,8	27,3	36,3	45,3	54,3	62,0
M 18	2,5	18,75	18,54	18,90	21,25	6,5	11,0	15,5	24,5	33,5	42,5	51,5			9,0	13,5	18,0	27,0	36,0	45,0	54,0	20,2	24,7	29,2	38,2	47,2	56,2	64,0
M 20 x 1,5	1,5	20,5	20,32	20,56	21,95	8,5	13,5	18,5	28,5	38,5				10,0	15,0	20,0	30,0	40,0			17,3	22,3	27,3	37,3	47,3			
M 20 x 2	2,0	20,5	20,43	20,73	22,60	8,0	13,0	18,0	28,0	38,0				10,0	15,0	20,0	30,0	40,0			19,3	24,3	29,3	39,3	49,3			
M 20	2,5	20,75	20,54	20,90	23,25	7,5	12,5	17,5	27,5	37,5	47,5	57,5			10,0	15,0	20,0	30,0	40,0	50,0	60,0	21,2	26,2	31,2	41,2	51,2	61,2	71,2
M 22 x 1,5	1,5	22,5	22,32	22,56	23,95	9,5	15,0	20,5	31,5	42,5				11,0	16,5	22,0	33,0	44,0			18,3	23,8	29,3	40,3	51,3			
M 22 x 2	2,0	22,5	22,43	22,73	24,60	9	14,5	20	31	42				11,0	16,5	22,0	33,0	44,0			20,3	25,8	31,3	42,3	53,3			
M 22	2,5	22,75	22,54	22,90	25,25	8,5	14,0	19,5	30,5	41,5	52,2			11,0	16,5	22,0	33,0	44,0	55,0			22,2	27,7	33,2	44,2	55,2	66,2	
M 24 x 1,5	1,5	24,5	24,32	24,56	25,95	10,5	16,5	22,5	34,5	46,5				12,0	18,0	24,0	36,0	48,0			19,3	25,3	31,3	43,3	55,3			
M 24 x 2	2,0	24,5	24,43	24,73	26,60	10,0	16,0	22,0	34,0	46,0				12,0	18,0	24,0	36,0	48,0			21,3	27,3	33,3	45,3	57,3			
M 24	3,0	24,75	24,65	25,05	27,90	9,0	15,0	21,0	33,0	45,0	57,0			12,0	18,0	24,0	36,0	48,0	60,0			25,1	31,1	37,1	49,1	61,1	73,1	
M 26 x 1,5	1,5	26,5	26,32	26,56	27,95	11,5	18,0	24,5	37,5	50,5				13,0	19,5	26,0	39,0	52,0			20,3	26,8	33,3	46,3	59,3			
M 27 x 1,5	1,5	27,5	27,32	27,56	28,95	12,0	18,8	25,5	39,0	52,5				13,5	20,3	27,0	40,5	54,0			20,8	27,6	34,3	47,8	61,3			
M 27 x 2	2,0	27,5	27,43	27,73	29,60	11,5	18,3	25,0	38,5	52,0				13,5	20,3	27,0	40,5	54,0			22,8	29,6	36,3	49,8	63,3			
M 27	3,0	27,75	27,65	28,05	30,90	10,5	17,3	24,0	37,5	51,0				13,5	20,3	27,0	40,5	54,0			26,6	33,4	40,1	53,6	67,1			
M 28 x 1,5	1,5	28,5	28,32	28,56	29,95	12,5	19,5	26,5	40,5	54,5				14,0	21,0	28,0	42,0	56,0			21,3	28,3	35,3	49,3	63,3			
M 30 x 1,5	1,5	30,5	30,22	30,56	31,95	13,5	21,0	28,5	43,5	58,5				15,0	22,5	30,0	45,0	60,0			22,3	29,8	37,3	52,3	67,3			
M 30 x 2	2,0	30,5	30,43	30,73	32,60	13,0	20,5	28,0	43,0	58,0				15,0	22,5	30,0	45,0	60,0			24,3	31,8	39,3	54,3	69,3			
M 30	3,5	31,0	30,76	31,21	34,55	11,5	19,0	26,5	41,5	56,5				15,0	22,5	30,0	45,0	60,0			30,3	37,8	45,3	60,3	75,3			
M 33 x 2	2,0	33,5	33,43	33,73	35,60	14,5	22,8	31,0	47,5	64,0				16,5	24,8	33,0	49,5	66,0			25,8	34,1	42,3	58,8	75,3			
M 33	3,5	34,0	33,76	34,21	37,55	13,0	21,3	29,5	46,0	62,5				16,5	24,8	33,0	49,5	66,0			31,7	40,0	48,2	64,7	81,2			
M 34 x 1,5	1,5	34,5	34,32	34,56	35,95	15,5	24,0	32,5	49,5	66,5				17,0	25,5	34,0	51,0	68,0			24,3	32,8	41,3	58,3	75,3			
M 36 x 1,5	1,5	36,5	36,32	36,56	37,95	16,5	25,5	34,5	52,5	70,5				18,0	27,0	36,0	54,0	72,0			25,3	34,3	43,3	61,3	79,3			
M 36 x 2	2,0	36,5	36,43	36,73	38,60	16,0	25,0	34,0	52,0	70,0				18,0	27,0	36,0	54,0	72,0			27,3	36,3	45,3	63,3	81,3			
M 36 x 3	3,0	37,0	36,65	37,05	39,90	15,0	24,0	33,0	51,0	69,0				18,0	27,0	36,0	54,0	72,0			31,1	40,1	49,1	67,1	85,1			
M 36	4,0	37,0	36,87	37,34	41,20	14,0	23,0	32,0	50,0	68,0				18,0	27,0	36,0	54,0	72,0			34,8	43,8	52,8	70,8	88,8			
M 39 x 3	3,0	40,0	39,65	40,05	42,90	16,5	26,3	36,0	55,5	75,0				19,5	29,3	39,0	58,5	78,0			32,6	42,4	52,1	71,6	91,1			
M 39	4,0	40,0	39,87	40,34	44,20	15,5	25,3	35,0	54,5	74,0				19,5	29,3													



**DESIGNATION:**

- Code no. (see codes column in table).
- Method: (Add "F" only if self-locking).
- Material (see table on page 3).
- Surface coating (Only if requested, see table on page 3).

**EXAMPLE:**

Standard insert M 8 x 1,25 L = 12 mm, in stainless steel

= **08 x 125 x 12**

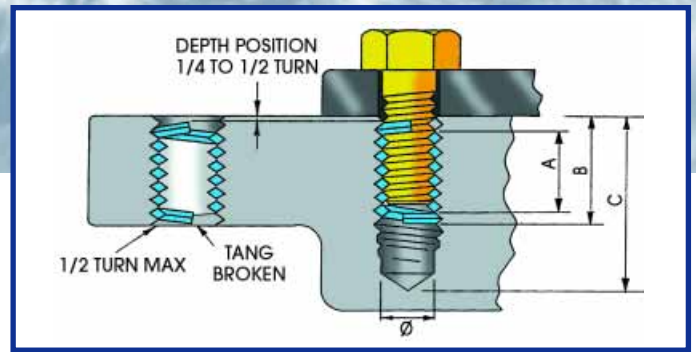
Self-locking insert M 5 x 0,8 L = 10 mm in cadmium-plated bronze (article on request)

= **F05 x 80 x 10 BC**

**OTHER SIZES ON REQUEST**

Ext. dia. D mm in free state		N - number of turns in free state (estimated, variable according to D)							CODE							Rated diameter d	Pitch mm	
min.	max.	0,5d	0,75 d	1 d	1,5 d	2 d	2,5 d	3 d	0,5 d	0,75 d	1 d	1,5 d	2 d	2,5 d	3 d			
2,5	2,7			3,5	5,7	7,8	10,0	12,0			02x40x2	02x40x3	02x40x4	02x40x5	02x40x6	M 2	0,4	
3,3	3,5			3,5	5,9	8,1	10,5	12,9			02,5x45x2,5	02,5x45x3,75	02,5x45x5	02,5x45x6,25	02,5x45x7,5	M 2,5	0,45	
3,8	4,0			3,9	6,3	8,7	11,1	13,5			03x50x3	03x50x4,5	03x50x6	03x50x7,5	03x50x9	M 3	0,5	
4,55	4,75			3,7	6,3	8,7	11,2	13,3			03,5x60x3,5	03,5x60x5,25	0,35x60x7	03,5x60x8,75	03,5x60x10,5	M 3,5	0,6	
5,15	5,35			3,7	6,1	8,4	10,9	13,2			04x70x04	04x70x06	04x70x08	04x70x10	04x70x12	M 4	0,7	
6,35	6,6			4,3	6,9	9,7	12,3	14,8			05x80x05	05x80x07,5	05x80x10	05x80x12,5	05x80x15	M 5	0,8	
7,6	7,85			4,2	6,9	9,6	12,3	14,6			06x100x06	06x100x09	06x100x12	06x100x15	06x100x18	M 6	1,0	
8,65	8,9			5,3	8,2	11,1	14,3	17,4			07x100x07	07x100x10,5	07x100x14	07x100x17,5	07x100x21	M 7	1,0	
9,85	10,1			6,1	9,5	12,9	16,5	19,9			08x100x08	08x100x12	08x100x16	08x100x20	08x100x24	M 8 x 1	1,0	
9,85	10,1			4,7	7,4	10,6	13,5	16,4			08x125x08	08x125x12	08x125x16	08x125x20	08x125x24	M 8	1,25	
10,85	11,1			5,3	8,6	11,9	15,3	18,1			09x125x09	09x125x13,5	09x125x18	09x125x22,5	09x125x27	M 9	1,25	
12,1	12,5			7,6	12,1	16,3	20,7	25,0			10x100x10	10x100x15	10x100x20	10x100x25	10x100x30	M 10 x 1	1,0	
12,1	12,5			6,0	9,7	13,1	16,9	20,1			10x125x10	10x125x15	10x125x20	10x125x25	10x125x30	M 10 x 1,25	1,25	
12,1	12,5			5,0	8,1	11,2	14,2	17,2			10x150x10	10x150x15	10x150x20	10x150x25	10x150x30	M 10	1,5	
13,1	13,5			5,6	9,0	12,3	15,7	18,9			11x150x11	11x150x16,5	11x150x22	11x150x27,5	11x150x33	M 11	1,5	
14,4	14,8			9,3	14,5	19,5	24,8	30,0			12x100x12	12x100x18	12x100x24	12x100x30	12x100x36	M 12 x 1	1,0	
14,4	14,8			7,4	11,6	15,9	20,7	24,8			12x125x12	12x125x18	12x125x24	12x125x30	12x125x36	M 12 x 1,25	1,25	
14,4	14,8			6,2	9,8	13,5	15,7	20,8			12x150x12	12x150x18	12x150x24	12x150x30	12x150x36	M 12 x 1,5	1,5	
14,4	14,8			5,2	8,4	11,7	14,7	18,0			12x175x12	12x175x18	12x175x24	12x175x30	12x175x36	M 12	1,75	
17,2	17,7	3,6	6,2	8,4	13,3	18,2	23,1	28,0		14x125x07,5	14x125x10,5	14x125x14	14x125x21	14x125x28	14x125x35	M 14 x 1,25	1,25	
17,2	17,7		5,1	7,1	11,2	15,3	19,0	23,2			14x150x10,5	14x150x14	14x150x21	14x150x28	14x150x35	14x150x42	M 14 x 1,5	1,5
17,2	17,7			5,2	8,3	11,5	14,6	17,6			14x200x14	14x200x21	14x200x28	14x200x35	14x200x42	M 14	2,0	
19,4	19,9		5,9	8,3	13,0	17,7	22,4				16x150x12	16x150x16	16x150x24	16x150x32	16x150x40	16x150x48	M 16 x 1,5	1,5
19,4	19,9			6,1	9,7	13,3	16,8	19,6			16x200x16	16x200x24	16x200x32	16x200x40	16x200x48	M 16	2,0	
21,5	22,0	4,2	7,0	9,5	14,9	20,2				18x150x09	18x150x13,5	18x150x18	18x150x27	18x150x36	18x150x45	M 18 x 1,5	1,5	
21,5	22,0	3,1	5,1	7,1	11,2	15,1	19,1	23,2		18x200x09	18x200x13,5	18x200x18	18x200x27	18x200x36	18x200x45	M 18 x 2	2,0	
21,5	22,0	2,3	3,8	5,6	9,0	12,3	15,5	18,8		18x250x09	18x250x13,5	18x250x18	18x250x27	18x250x36	18x250x45	M 18	2,5	
23,7	24,2	4,9	7,9	10,7	16,7	22,4				20x150x10	20x150x15	20x150x20	20x150x30	20x150x40		M 20 x 1,5	1,5	
23,7	24,2	3,5	5,8	8,0	12,5	16,8				20x200x10	20x200x15	20x200x20	20x200x30	20x200x40		M 20 x 2	2,0	
23,7	24,2	2,7	4,5	6,3	10,0	13,7	17,4	21,0		20x250x10	20x250x15	20x250x20	20x250x30	20x250x40	20x250x50	20x250x60	M 20	2,5
26,3	26,8	5,5	8,6	11,7	18,1	24,5				22x150x11	22x150x16,5	22x150x22	22x150x33	22x150x44		M 22 x 1,5	1,5	
26,3	26,8	3,9	6,4	8,7	13,6	18,4				22x200x11	22x200x16,5	22x200x22	22x200x33	22x200x44		M 22 x 2	2,0	
26,3	26,8	3,0	5,0	6,9	10,9	15,0	18,8			22x250x11	22x250x16,5	22x250x22	22x250x33	22x250x44	22x250x55		M 22	2,5
28,6	29,1	6,0	9,5	12,9	19,8	26,7				24x150x12	24x150x18	24x150x24	24x150x36	24x150x48		M 24 x 1,5	1,5	
28,6	29,1	4,3	7,0	9,6	15,0	20,2				24x200x12	24x200x18	24x200x24	24x200x36	24x200x48		M 24 x 2	2,0	
28,6	29,1	2,6	4,5	6,2	10,0	14,0	17,5			24x300x12	24x300x18	24x300x24	24x300x36	24x300x48	24x300x60		M 24	3,0
31,0	31,5	6,5	10,3	14,0	21,6	29,1				26x150x13	26x150x19,5	26x150x26	26x150x39	26x150x52		M 26 x 1,5	1,5	
32,2	32,7	6,7	10,7	14,6	22,6	30,0				27x150x13,5	27x150x20,25	27x150x27	27x150x40,5	27x150x54		M 27 x 1,5	1,5	
32,2	32,7	5,1	7,9	10,8	16,8	22,6				27x200x13,5	27x200x20,25	27x200x27	27x200x40,5	27x200x54		M 27 x 2	2,0	
32,2	32,7	3,2	5,0	7,1	11,4	15,4				27x300x13,5	27x300x20,25	27x300x27	27x300x40,5	27x300x54		M 27	3,0	
33,1	33,6	7,1	11,1	15,2	23,3	31,4				28x150x14	28x150x21	28x150x28	28x150x42	28x150x56		M 28 x 1,5	1,5	
35,2	35,7	7,8	12,2	16,5	25,3	34,0				30x150x15	30x150x22,5	30x150x30	30x150x45	30x150x60		M 30 x 1,5	1,5	
35,2	35,7	5,7	9,0	12,3	19,0	25,5				30x200x15	30x200x22,5	30x200x30	30x200x45	30x200x60		M 30 x 2	2,0	
35,2	35,7	3,0	4,9	7,0	11,0	14,9				30x350x15	30x350x22,5	30x350x30	30x350x45	30x350x60		M 30	3,5	
38,3	38,8	6,4	10,1	13,7	21,2	28,4				33x200x16,5	33x200x24,75	33x200x33	33x200x49,5	33x200x66		M 33 x 2	2,0	
38,3	38,8	3,4	5,6	7,8	12,2	16,5				33x350x16,5	33x350x24,75	33x350x33	33x350x49,5	33x350x66		M 33	3,5	
39,1	39,4	9,2	12,3	19,4	29,0	39,5				34x150x17	34x150x25,5	34x150x34	34x150x51	34x150x68		M 34 x 1,5	1,5	
42,1	42,6	8,2	11,2	18,8	26,7	37,8				36x150x18	36x150x27	36x150x36	36x150x54	36x150x72		M 36 x 1,5	1,5	
42,1	42,6	6,8	10,3	14,1	21,9	31,1				36x200x18	36x200x27	36x200x36	36x200x54	36x200x72		M 36 x 2	2,0	
42,1	42,6	4,4	7,2	9,9	15,3	20,5				36x300x18	36x300x27	36x300x36	36x300x54	36x300x72		M 36 x 3	3,0	
42,1	42,6	3,2	5,0	7,0	11,1	15,2				36x400x18	36x400x27	36x400x36	36x400x54	36x400x72		M 36	4,0	
45,1	45,6	4,9	7,8	10,8	16,8	22,5				39x300x19,5	39x300x29,25	39x300x39	39x300x58,5	39x300x78		M 39 x 3	3,0	
45,1	45,6		5,5	7,7	12,2	16,6				39x400x19,5	39x400x29,25	39x400x39	39x400x58,5	39x400x78		M 39	4,0	
48,5	49,0	5,4	8,5	11,7	18,8	21,1				42x300x21	42x300x31,5	42x300x42	42x300x63	42x300x84		M 42 x 3	3,0	
48,5	49,0		5,8	7,3	11,6	15,6				42x450x21	42x450x31,5	42x450x42	42x450x63	42x450x84		M 42	4,5	
52,0	52,5	5,7	9,1	12,5	19,3	26,2				45x300x22,5	45x300x33,75	45x300x45	45x300x67,5	45x300x90		M 45 x 3	3,0	
53,5	54,0		5,6	8,0	12,4	16,8				45x450x22,5	45x450x33,75	45x450x45	45x450x67,5	45x450x90		M 45	4,5	



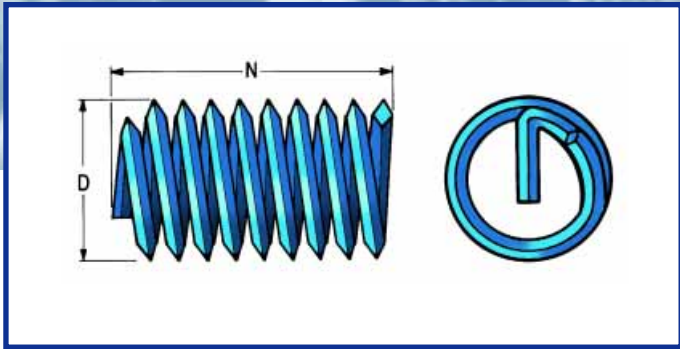


## UNC Pitch

Rated diameter d	Pitch mm	Hole dia. mm	Bore dia. mm		Tap ext. dia. min. mm	A - Useful mounted insert length mm					B - Rated length mm					C - Min. hole depth mm				
			min.	max		1 d	1.5 d	2 d	2.5 d	3 d	1 d	1.5 d	2 d	2.5 d	3 d	1 d	1.5 d	2 d	2.5 d	3 d
2 - 56	0,453	2,4	2,30	2,50	2,77	1,7	2,8	3,9	5,0	6,1	2,18	3,28	4,37	5,46	6,55	4,2	5,3	6,4	7,5	8,6
3 - 48	0,529	2,7	2,65	2,80	3,20	2,0	3,2	4,5	5,8	7,0	2,51	3,76	5,03	6,30	7,54	4,9	6,2	7,4	8,7	10,0
4 - 40	0,635	3,1	3,00	3,15	3,67	2,2	3,6	5,1	6,5	7,9	2,84	4,27	5,69	7,11	8,53	5,7	7,1	8,6	10,0	11,4
5 - 40	0,635	3,4	3,33	3,50	4,00	2,5	4,1	5,7	7,3	8,9	3,17	4,75	6,35	7,92	9,52	6	7,6	9,2	10,8	12,4
6 - 32	0,794	3,8	3,68	3,89	4,54	2,7	4,5	6,2	8,0	9,7	3,50	5,26	7,01	8,76	10,51	7,1	8,8	10,6	12,3	14,1
8 - 32	0,794	4,4	4,34	4,52	5,20	3,4	5,5	7,5	9,6	11,7	4,16	6,25	8,33	10,41	12,50	7,7	9,8	11,9	14,0	16,1
10 - 24	1,058	5,2	5,06	5,28	6,20	3,8	6,2	8,6	11,0	13,4	4,82	7,24	9,65	12,06	14,48	9,6	12,0	14,4	16,8	19,2
12 - 24	1,058	5,8	5,72	5,92	6,86	4,4	7,1	9,9	12,6	15,4	5,48	8,23	10,97	13,71	16,46	10,3	13,0	15,7	18,5	21,3
1/4 - 20	1,270	6,7	6,62	6,86	8,00	5,1	8,2	11,4	14,6	17,8	6,35	9,52	12,70	15,87	19,05	12,1	15,2	18,4	21,6	24,8
5/16 - 18	1,411	8,4	8,24	8,49	9,77	6,5	10,5	14,5	18,4	22,4	7,92	11,91	15,87	19,83	23,80	14,3	18,3	22,2	26,2	30,2
3/8 - 16	1,588	10,0	9,89	10,12	11,59	7,9	12,7	17,5	22,2	27,0	9,52	14,27	19,05	23,80	28,57	16,7	21,4	26,2	31,0	35,7
7/16 - 14	1,814	11,6	11,51	11,78	13,47	9,3	14,9	20,4	26,0	31,5	11,11	16,66	22,22	27,78	33,32	19,3	24,8	30,4	35,9	41,5
1/2 - 13	1,954	13,2	13,12	13,40	15,24	10,7	17,1	23,4	29,8	36,1	12,70	19,05	25,40	31,75	38,10	21,5	27,8	34,2	40,5	46,9
9/16 - 12	2,117	14,9	14,75	15,03	17,04	12,2	19,3	26,5	33,6	40,7	14,27	21,43	28,57	35,71	42,85	23,8	31,0	38,1	45,2	52,4
5/8 - 11	2,309	16,5	16,38	16,68	18,88	13,6	21,5	29,4	37,4	45,3	15,87	23,80	31,75	39,67	47,62	26,3	34,2	42,1	50,1	58,0
3/4 - 10	2,540	19,8	19,60	19,91	22,35	16,5	26,0	35,5	45,1	54,6	19,05	28,57	38,10	47,62	57,15	30,5	40,0	49,5	59,0	68,6
7/8 - 9	2,822	23,0	22,84	23,18	25,89	19,4	30,5	41,6	52,7	63,8	22,22	33,32	44,45	55,55	66,67	34,9	46,0	57,2	68,3	79,4
1" - 8	3,175	26,4	26,09	26,47	29,53	22,2	34,9	47,6	60,3	73,0	25,40	38,10	50,80	63,50	76,20	39,7	52,4	65,1	77,8	90,5
1 1/8 - 7	3,629	29,5	29,36	29,74	33,29	24,9	39,2	53,2	67,8	82,0	28,57	42,85	57,15	71,42	85,72	44,9	59,2	73,5	87,8	102,0
1 1/4 - 7	3,629	32,8	32,54	32,92	36,46	28,1	44	59,9	75,7	91,6	31,75	47,62	63,50	79,37	95,25	48,1	64,0	79,8	96,0	111,8
1 3/8 - 6	4,234	36,2	35,84	36,35	40,42	30,7	48,2	65,7	83,0	100,5	34,92	52,37	69,85	87,30	104,77	54,0	71,4	88,9	106,0	124,0
1 1/2 - 6	4,234	39,5	39,02	39,53	43,62	33,9	52,9	72	91,0	110,0	38,10	57,15	76,20	95,25	114,30	57,2	76,2	95,3	115,0	133,0

## UNF Pitch

Rated diameter d	Pitch mm	Hole dia. mm	Bore dia. mm		Tap ext. dia. min. mm	A - Useful mounted insert length mm					B - Rated length mm					C - Min. hole depth mm				
			min.	max		1 d	1.5 d	2 d	2.5 d	3 d	1 d	1.5 d	2 d	2.5 d	3 d	1 d	1.5 d	2 d	2.5 d	3 d
2 - 64	0,396	2,3	2,44	2,99	2,70	1,8	2,9	4,0	5,0	6,2	2,18	3,28	4,37	5,46	6,55	4,0	5,0	6,2	7,3	8,3
3 - 56	0,453	2,7	2,62	2,77	3,10	2,0	3,3	4,6	5,8	7,1	2,51	3,76	5,03	6,30	7,54	4,6	5,8	7,1	8,4	9,6
4 - 48	0,529	3,0	2,97	3,14	3,53	2,3	3,7	5,2	6,6	8,0	2,84	4,27	5,69	7,11	8,53	5,2	6,7	8,1	9,5	10,9
6 - 40	0,635	3,8	3,66	3,81	4,33	2,9	4,6	6,4	8,1	9,9	3,50	5,26	7,01	8,76	10,51	6,4	8,1	9,9	11,6	13,4
8 - 36	0,706	4,4	4,32	4,47	5,08	3,4	5,5	7,6	9,7	11,8	4,16	6,25	8,33	10,41	12,50	7,3	9,4	11,5	13,6	15,7
10 - 32	0,794	5,1	5,00	5,16	5,86	4,0	6,5	8,9	11,3	13,7	4,82	7,24	9,65	12,06	14,48	8,4	10,8	13,2	15,6	18,0
1/4 - 28	0,907	6,7	6,55	6,72	7,53	5,5	8,6	11,8	15,0	18,1	6,35	9,52	12,70	15,87	19,05	10,4	13,6	16,8	20,0	23,2
5/16 - 24	1,058	8,3	8,17	8,35	9,31	6,9	10,9	14,9	18,8	22,7	7,92	11,91	15,87	19,83	23,80	12,7	16,7	20,6	24,6	28,6
3/8 - 24	1,058	9,9	9,75	9,93	10,90	8,4	13,2	18,0	22,8	27,5	9,52	14,27	19,05	23,80	28,57	14,3	19,1	23,8	28,6	33,3
7/16 - 20	1,270	11,5	11,39	11,59	12,76	9,8	15,4	20,9	26,5	32,0	11,11	16,66	22,22	27,78	33,32	16,8	22,4	27,9	33,5	39,0
1/2 - 20	1,270	13,1	12,97	13,16	14,35	11,4	17,8	24,1	30,5	36,8	12,70	19,05	25,40	31,75	38,10	18,4	24,8	31,1	37,5	43,8
9/16 - 18	1,411	14,7	14,59	14,79	16,12	12,9	20,1	27,2	34,4	41,4	14,27	21,43	28,57	35,71	42,85	20,6	27,8	34,9	42,1	49,2
5/8 - 18	1,411	16,3	16,18	16,38	17,71	14,5	22,4	30,4	38,3	46,2	15,87	23,80	31,75	39,67	47,62	22,2	30,2	38,1	46,0	54,0
3/4 - 16	1,588	19,5	19,39	19,60	21,11	17,5	27,0	36,5	46,0	55,6	19,05	28,57	38,10	47,62	57,15	26,2	35,7	45,2	54,8	64,3
7/8 - 14	1,814	22,7	22,62	22,84	24,58	20,4	31,5	42,7	53,8	64,8	22,22	33,32	44,45	55,55	66,67	30,4	41,5	52,6	63,7	74,8
1" - 14	1,814	26,0	25,86	26,11	27,76	23,6	36,3	49,0	61,7	74,4	25,40	38,10	50,80	63,50	76,20	33,6	46,3	59,0	71,7	84,4
1" - 12	2,117	26,0	25,86	26,11	28,15	23,3	36,0	48,7	61,4	74,0	25,40	38,10	50,80	63,50	76,20	34,9	47,6	60,3	73,0	85,7
1 1/8 - 12	2,117	29,2	29,03	29,29	31,33	26,5	40,7	55,0	69,3	83,6	28,57	42,85	57,15	71,42	85,72	38,1	52,4	66,7	81,0	95,3
1 1/4 - 12	2,117	32,4	32,21	32,46	34,50	29,7	45,5	61,4	77,2	93,1	31,75	47,62	63,50	79,37	95,25	41,3	57,2	73,0	88,9	104,8
1 3/8 - 12	2,117	35,5	35,38	35,63	37,68	32,8	50,3	67,8	85,2	102,6	34,92	52,37	69,85	87,30	104,77	44,5	61,9	79,4	96,8	114,3
1 1/2 - 12	2,117	38,7	38,56	38,81	40,85	36,0	55,1	74,1	93,1	112,2	38,10	57,15	76,20	95,25	114,30	47,6	66,7	85,7	104,8	123,8



**DESIGNATION:**

- Code no. (see codes column in table).
- Method: (Add "F" only if self-locking).
- Material (see table on page 3).
- Surface coating (Only if requested, see table on page 3).

**EXAMPLE:**

Standard insert in inches: 1/2 - 13 UNC L = 1,5 D (19,05 mm) in stainless steel  
 = **P 1/2.13 x 1,5 D**

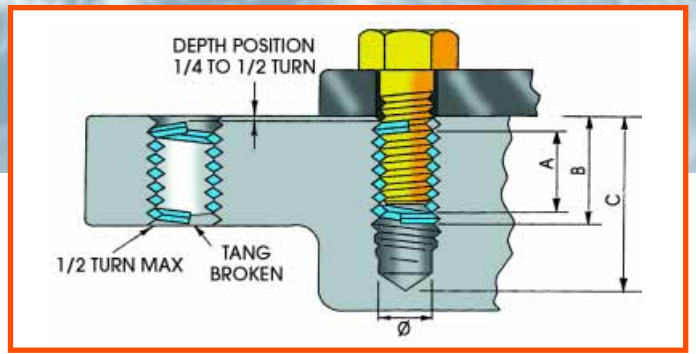
Self-locking insert in inches 1/4 - 28 UNF L = 1 D (6,35 mm) in silver-plated inconel (article on request)  
 = **PF 1/4.28 x 1 D IA**

**OTHER SIZES ON REQUEST**

Ext. dia. D mm in free state		N - number of turns in free state (estimated, variable according to D)					CODE					Rated diameter d	Pitch mm
min.	max.	1 d	1,5 d	2 d	2,5 d	3 d	1 d	1,5 d	2 d	2,5 d	3 d		
2,8	3,0	3,0	5,2	7,4	9,6	11,8	P 02.56 x 1 D	P 02.56 x 1,5 D	P 02.56 x 2 D	P 02.56 x 2,5 D	P 02.56 x 3 D	2 - 56	0,453
3,2	3,5	2,8	5,0	7,2	9,4	11,5	P 03.48 x 1 D	P 03.48 x 1,5 D	P 03.48 x 2 D	P 03.48 x 2,5 D	P 03.48 x 3 D	3 - 48	0,529
3,6	4,0	2,8	4,8	6,8	8,8	10,8	P 04.40 x 1 D	P 04.40 x 1,5 D	P 04.40 x 2 D	P 04.40 x 2,5 D	P 04.40 x 3 D	4 - 40	0,635
4,0	4,4	3,3	5,5	7,8	10,0	12,2	P 05.40 x 1 D	P 05.40 x 1,5 D	P 05.40 x 2 D	P 05.40 x 2,5 D	P 05.40 x 3 D	5 - 40	0,635
4,5	4,9	2,8	4,8	6,7	8,7	10,8	P 06.32 x 1 D	P 06.32 x 1,5 D	P 06.32 x 2 D	P 06.32 x 2,5 D	P 06.32 x 3 D	6 - 32	0,794
5,2	5,6	3,5	5,9	8,3	10,7	13,2	P 08.32 x 1 D	P 08.32 x 1,5 D	P 08.32 x 2 D	P 08.32 x 2,5 D	P 08.32 x 3 D	8 - 32	0,794
6,2	6,6	2,9	5,0	7,1	9,2	11,4	P 10.24 x 1 D	P 10.24 x 1,5 D	P 10.24 x 2 D	P 10.24 x 2,5 D	P 10.24 x 3 D	10 - 24	1,058
6,8	7,2	3,5	5,9	8,3	10,7	13,2	P 12.24 x 1 D	P 12.24 x 1,5 D	P 12.24 x 2 D	P 12.24 x 2,5 D	P 12.24 x 3 D	12 - 24	1,058
8,0	8,4	3,4	5,7	8,0	10,3	12,7	P 1/4.20 x 1 D	P 1/4.20 x 1,5 D	P 1/4.20 x 2 D	P 1/4.20 x 2,5 D	P 1/4.20 x 3 D	1/4 - 20	1,270
9,7	10,2	4,0	6,6	9,3	11,9	14,7	P 5/16.18 x 1 D	P 5/16.18 x 1,5 D	P 5/16.18 x 2 D	P 5/16.18 x 2,5 D	P 5/16.18 x 3 D	5/16 - 18	1,411
11,5	12,0	4,4	7,2	10,0	12,9	15,7	P 3/8.16 x 1 D	P 3/8.16 x 1,5 D	P 3/8.16 x 2 D	P 3/8.16 x 2,5 D	P 3/8.16 x 3 D	3/8 - 16	1,588
13,4	14,0	4,5	7,4	10,3	13,1	16,1	P 7/16.14 x 1 D	P 7/16.14 x 1,5 D	P 7/16.14 x 2 D	P 7/16.14 x 2,5 D	P 7/16.14 x 3 D	7/16 - 14	1,814
15,2	15,8	4,8	7,9	10,9	13,9	17,1	P 1/2.13 x 1 D	P 1/2.13 x 1,5 D	P 1/2.13 x 2 D	P 1/2.13 x 2,5 D	P 1/2.13 x 3 D	1/2 - 13	1,954
17,0	17,6	5,1	8,3	11,5	14,7	17,8	P 9/16.12 x 1 D	P 9/16.12 x 1,5 D	P 9/16.12 x 2 D	P 9/16.12 x 2,5 D	P 9/16.12 x 3 D	9/16 - 12	2,117
18,9	19,5	5,3	8,3	11,8	15,0	18,4	P 5/8.11 x 1 D	P 5/8.11 x 1,5 D	P 5/8.11 x 2 D	P 5/8.11 x 2,5 D	P 5/8.11 x 3 D	5/8 - 11	2,309
22,4	23,0	5,9	9,4	13,0	16,5	20,2	P 3/4.10 x 1 D	P 3/4.10 x 1,5 D	P 3/4.10 x 2 D	P 3/4.10 x 2,5 D	P 3/4.10 x 3 D	3/4 - 10	2,540
26,0	26,7	6,3	10,0	13,7	17,5	21,3	P 7/8.9 x 1 D	P 7/8.9 x 1,5 D	P 7/8.9 x 2 D	P 7/8.9 x 2,5 D	P 7/8.9 x 3 D	7/8 - 9	2,822
29,6	30,4	6,4	10,2	14,0	17,7	21,6	P 1.8 x 1 D	P 1.8 x 1,5 D	P 1.8 x 2 D	P 1.8 x 2,5 D	P 1.8 x 3 D	1" - 8	3,175
33,4	34,4	6,3	9,9	13,6	17,5	21,3	P 1 1/8.7 x 1 D	P 1 1/8.7 x 1,5 D	P 1 1/8.7 x 2 D	P 1 1/8.7 x 2,5 D	P 1 1/8.7 x 3 D	1 1/8 - 7	3,629
36,7	37,7	7,0	11,2	15,4	19,5	23,7	P 1 1/4.7 x 1 D	P 1 1/4.7 x 1,5 D	P 1 1/4.7 x 2 D	P 1 1/4.7 x 2,5 D	P 1 1/4.7 x 3 D	1 1/4 - 7	3,629
40,6	41,7	6,5	10,5	14,4	18,4	22,3	P 1 3/8.6 x 1 D	P 1 3/8.6 x 1,5 D	P 1 3/8.6 x 2 D	P 1 3/8.6 x 2,5 D	P 1 3/8.6 x 3 D	1 3/8 - 6	4,234
43,9	45,0	7,2	11,5	15,9	20,2	24,5	P 1 1/2.6 x 1 D	P 1 1/2.6 x 1,5 D	P 1 1/2.6 x 2 D	P 1 1/2.6 x 2,5 D	P 1 1/2.6 x 3 D	1 1/2 - 6	4,234

**OTHER SIZES ON REQUEST**

Ext. dia. D mm in free state		N - number of turns in free state (estimated, variable according to D)					CODE					Rated diameter d	Pitch mm
min.	max.	1 d	1,5 d	2 d	2,5 d	3 d	1 d	1,5 d	2 d	2,5 d	3 d		
2,79	3,02	3,5	5,6	8,0	10,4	12,5	P 02.64 x 1 D	P 02.64 x 1,5 D	P 02.64 x 2 D	P 02.64 x 2,5 D	P 02.64 x 3 D	2 - 64	0,396
3,3	3,7	3,4	5,6	8,0	10,4	12,6	P 03.56 x 1 D	P 03.56 x 1,5 D	P 03.56 x 2 D	P 03.56 x 2,5 D	P 03.56 x 3 D	3 - 56	0,453
3,7	4,1	3,4	5,6	7,9	10,2	12,5	P 04.48 x 1 D	P 04.48 x 1,5 D	P 04.48 x 2 D	P 04.48 x 2,5 D	P 04.48 x 3 D	4 - 48	0,529
4,5	4,9	3,8	6,0	8,4	10,8	13,2	P 06.40 x 1 D	P 06.40 x 1,5 D	P 06.40 x 2 D	P 06.40 x 2,5 D	P 06.40 x 3 D	6 - 40	0,635
5,3	5,7	4,0	6,6	9,1	11,7	14,2	P 08.36 x 1 D	P 08.36 x 1,5 D	P 08.36 x 2 D	P 08.36 x 2,5 D	P 08.36 x 3 D	8 - 36	0,706
6,1	6,5	4,1	6,8	9,5	12,1	14,9	P 10.32 x 1 D	P 10.32 x 1,5 D	P 10.32 x 2 D	P 10.32 x 2,5 D	P 10.32 x 3 D	10 - 32	0,794
7,8	8,3	5,0	8,1	11,3	14,4	17,6	P 1/4.28 x 1 D	P 1/4.28 x 1,5 D	P 1/4.28 x 2 D	P 1/4.28 x 2,5 D	P 1/4.28 x 3 D	1/4 - 28	0,907
9,7	10,2	5,5	8,9	12,2	15,6	19,0	P 5/16.24 x 1 D	P 5/16.24 x 1,5 D	P 5/16.24 x 2 D	P 5/16.24 x 2,5 D	P 5/16.24 x 3 D	5/16 - 24	1,058
11,4	11,9	6,9	10,9	14,9	19,0	23,2	P 3/8.24 x 1 D	P 3/8.24 x 1,5 D	P 3/8.24 x 2 D	P 3/8.24 x 2,5 D	P 3/8.24 x 3 D	3/8 - 24	1,058
13,4	13,9	6,6	10,6	14,5	18,4	22,5	P 7/16.20 x 1 D	P 7/16.20 x 1,5 D	P 7/16.20 x 2 D	P 7/16.20 x 2,5 D	P 7/16.20 x 3 D	7/16 - 20	1,270
15,1	15,7	7,8	12,3	16,8	21,3	25,9	P 1/2.20 x 1 D	P 1/2.20 x 1,5 D	P 1/2.20 x 2 D	P 1/2.20 x 2,5 D	P 1/2.20 x 3 D	1/2 - 20	1,270
16,9	17,6	7,9	12,5	17,1	21,6	26,2	P 9/16.18 x 1 D	P 9/16.18 x 1,5 D	P 9/16.18 x 2 D	P 9/16.18 x 2,5 D	P 9/16.18 x 3 D	9/16 - 18	1,411
18,6	19,3	8,9	14,1	19,1	24,3	29,4	P 5/8.18 x 1 D	P 5/8.18 x 1,5 D	P 5/8.18 x 2 D	P 5/8.18 x 2,5 D	P 5/8.18 x 3 D	5/8 - 18	1,411
22,2	22,9	9,7	15,1	20,6	26,0	31,5	P 3/4.16 x 1 D	P 3/4.16 x 1,5 D	P 3/4.16 x 2 D	P 3/4.16 x 2,5 D	P 3/4.16 x 3 D	3/4 - 16	1,588
26,0	26,7	9,9	15,4	21,0	26,6	32,2	P 7/8.14 x 1 D	P 7/8.14 x 1,5 D	P 7/8.14 x 2 D	P 7/8.14 x 2,5 D	P 7/8.14 x 3 D	7/8 - 14	1,814
29,4	30,1	11,5	17,9	24,3	30,6	37,0	P 1.14 x 1 D	P 1.14 x 1,5 D	P 1.14 x 2 D	P 1.14 x 2,5 D	P 1.14 x 3 D	1" - 14	1,814
29,7	30,4	9,7	15,1	20,6	26,1	31,5	P 1.12 x 1 D	P 1.12 x 1,5 D	P 1.12 x 2 D	P 1.12 x 2,5 D	P 1.12 x 3 D	1" - 12	2,117
33,2	33,9	11,1	17,3	23,4	29,6	35,7	P 1 1/8.12 x 1 D	P 1 1/8.12 x 1,5 D	P 1 1/8.12 x 2 D	P 1 1/8.12 x 2,5 D	P 1 1/8.12 x 3 D	1 1/8 - 12	2,117
36,6	37,3	12,4	19,3	26,1	33,0	39,8	P 1 1/4.12 x 1 D	P 1 1/4.12 x 1,5 D	P 1 1/4.12 x 2 D	P 1 1/4.12 x 2,5 D	P 1 1/4.12 x 3 D	1 1/4 - 12	2,117
40,0	40,9	13,8	21,3	28,9	36,5	44,0	P 1 3/8.12 x 1 D	P 1 3/8.12 x 1,5 D	P 1 3/8.12 x 2 D	P 1 3/8.12 x 2,5 D	P 1 3/8.12 x 3 D	1 3/8 - 12	2,117
43,4	44,3	15,2	23,4	31,6	39,8	48,2	P 1 1/2.12 x 1 D	P 1 1/2.12 x 1,5 D	P 1 1/2.12 x 2 D	P 1 1/2.12 x 2,5 D	P 1 1/2.12 x 3 D	1 1/2 - 12	2,117



## BSW Pitch

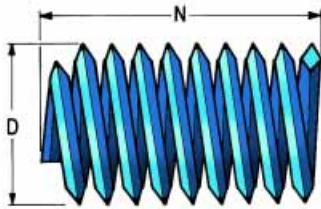
Rated diameter d	Pitch mm	Hole dia. mm	Bore dia. mm		Tap ext. dia. min. mm	A - Useful mounted insert length mm					B - Rated length mm					C - Min. hole depth mm				
			min.	max		1 d	1.5 d	2 d	2.5 d	3 d	1 d	1.5 d	2 d	2.5 d	3 d	1 d	1.5 d	2 d	2.5 d	3 d
1/8 - 40	0.635	3.4	3.28	3.43	3.93	2.5	4.1	5.7	7.3	8.9	3.2	4.8	6.3	7.9	9.5	6.0	7.6	9.2	10.8	12.4
3/16 - 24	1.058	5.1	4.98	5.13	6.01	3.7	6.1	8.5	10.9	13.2	4.8	7.1	9.5	11.9	14.3	9.5	11.9	14.3	16.7	19.1
1/4 - 20	1.270	6.7	6.63	6.78	7.84	5.1	8.2	11.4	14.6	17.8	6.4	9.5	12.7	15.9	19.1	12.1	15.2	18.4	21.6	24.8
5/16 - 18	1.411	8.4	8.33	8.48	9.59	6.5	10.5	14.5	18.4	22.4	7.9	11.9	15.9	19.8	23.8	14.3	18.3	22.2	26.2	30.1
3/8 - 16	1.588	10.0	9.91	10.11	11.39	7.9	12.7	17.5	22.2	27.0	9.5	14.3	19.1	23.8	28.6	16.7	21.4	26.2	31.0	35.7
7/16 - 14	1.814	11.6	11.51	11.76	13.24	9.3	14.9	20.4	26.0	31.5	11.1	16.7	22.2	27.8	33.3	19.3	24.8	30.4	35.9	41.5
1/2 - 12	2.117	13.2	13.08	13.34	15.17	10.6	17.0	23.3	29.7	36.0	12.7	19.1	25.4	31.8	38.1	22.2	28.6	34.9	41.3	47.6
9/16 - 12	2.117	14.8	14.68	14.94	16.76	12.2	19.3	26.5	33.6	40.8	14.3	21.5	28.6	35.7	42.9	23.8	31.0	38.1	45.2	52.4
5/8 - 11	2.309	16.7	16.59	16.84	18.57	13.6	21.5	29.4	37.4	45.3	15.9	23.8	31.8	39.7	47.6	26.3	34.2	42.1	50.1	58.0
11/16 - 11	2.309	18.3	18.21	18.47	20.16	15.2	23.9	32.6	41.3	50.0	17.5	26.2	34.9	43.6	52.4	27.9	36.6	45.3	54.0	62.8
3/4 - 10	2.540	20.0	19.84	20.09	22.02	16.5	26.0	35.5	45.1	54.6	19.1	28.6	38.1	47.6	57.2	30.5	40.0	49.5	59.0	68.6
7/8 - 9	2.822	23.0	23.01	23.27	25.52	19.4	30.5	41.6	52.7	63.9	22.2	33.3	44.5	55.5	66.7	34.9	46.0	57.2	68.3	79.4
1" - 8	3.175	26.5	26.19	26.52	29.10	22.2	34.9	47.6	60.3	73.0	25.4	38.1	50.8	63.5	76.2	39.7	52.4	65.1	77.8	90.5
1 1/8 - 7	3.629	30.0	29.74	30.12	32.80	24.9	39.2	53.5	67.8	82.7	28.6	42.9	57.2	71.4	85.7	44.9	59.2	73.5	87.8	102.0
1 1/4 - 7	3.629	33.0	32.92	33.30	35.97	28.1	44.0	59.9	75.8	91.6	31.8	47.6	63.5	79.4	95.2	48.1	64.0	79.8	95.7	111.6
1 1/2 - 6	4.234	39.7	39.27	39.90	43.02	33.9	52.9	72.0	91.0	100.0	38.1	57.2	76.2	95.2	114.3	57.2	76.2	95.3	114.3	133.3

## BSF Pitch

Rated diameter d	Pitch mm	Hole dia. mm	Bore dia. mm		Tap ext. dia. min. mm	A - Useful mounted insert length mm					B - Rated length mm					C - Min. hole depth mm				
			min.	max		1 d	1.5 d	2 d	2.5 d	3 d	1 d	1.5 d	2 d	2.5 d	3 d	1 d	1.5 d	2 d	2.5 d	3 d
1/4 - 26	0.977	6.7	6.53	6.71	7.51	5.4	8.6	11.7	14.9	18.1	6.4	9.5	12.7	15.9	19.1	10.7	13.9	17.1	20.3	23.5
5/16 - 22	1.155	8.3	8.20	8.38	9.30	6.8	10.8	14.7	18.7	22.7	7.9	11.9	15.9	19.8	23.8	13.1	17.1	21.1	25.0	29.0
3/8 - 20	1.270	9.9	9.78	9.96	11.02	8.3	13.0	17.8	22.5	27.3	9.5	14.3	19.1	23.8	28.6	15.2	20.0	24.8	29.5	34.3
7/16 - 18	1.411	11.5	11.43	11.63	12.78	9.7	15.2	20.8	26.3	31.9	11.1	16.7	22.2	27.8	33.3	17.5	23.0	28.6	34.1	39.7
1/2 - 16	1.588	13.2	13.03	13.26	14.57	11.1	17.5	23.8	30.2	36.5	12.7	19.1	25.4	31.8	38.1	19.8	26.2	32.5	38.9	45.3
9/16 - 16	1.588	14.7	14.66	14.88	16.16	12.7	19.9	27.0	34.1	41.3	14.3	21.5	28.6	35.7	42.9	21.4	28.6	35.7	42.9	50.0
5/8 - 14	1.814	16.4	16.26	16.49	18.01	14.1	22.0	30.0	37.9	45.8	15.9	23.8	31.8	39.7	47.6	24.0	32.0	39.9	47.8	55.8
3/4 - 12	2.117	19.5	19.43	19.69	21.53	16.9	26.5	36.0	45.5	55.1	19.1	28.6	38.1	47.6	57.2	28.6	38.1	47.6	57.2	66.7
7/8 - 11	2.309	22.7	22.61	22.86	24.94	18.7	30.8	40.9	52.0	64.4	22.2	33.3	44.5	55.6	66.7	32.6	43.7	54.8	65.9	70.1
1" - 10	2.540	26.5	26.19	26.52	28.38	22.9	35.6	48.3	61.0	73.7	25.4	38.1	50.8	63.5	76.2	36.8	49.5	62.2	74.9	87.6
1 1/8 - 9	2.822	29.5	29.36	29.72	31.88	25.8	40.0	54.3	68.6	82.9	28.6	42.9	57.2	71.4	85.7	41.3	55.6	69.9	84.1	98.5
1 1/4 - 9	2.822	32.7	32.54	32.89	35.06	28.9	44.8	60.7	76.6	92.4	31.8	47.6	63.5	79.4	95.3	44.5	60.3	76.2	92.1	108.0
1 3/8 - 8	3.175	36.0	35.71	36.07	38.64	31.7	49.2	66.7	84.1	101.6	34.9	52.4	69.6	87.3	104.8	49.2	66.7	84.1	101.6	119.0

## BSP pitch

Rated diameter d	Pitch mm	Hole dia. mm	Bore dia. mm		Tap ext. dia. min. mm	A - Useful mounted insert length mm					B - Rated length mm					C - Min. hole depth mm				
			min.	max		1 d	1.5 d	2 d	2.5 d	3 d	1 d	1.5 d	2 d	2.5 d	3 d	1 d	1.5 d	2 d	2.5 d	3 d
1/8 - 28	0.907	10.0	9.91	10.16	10.82	2.3	3.8	5.4	7	8.6	3.2	4.8	6.4	7.9	9.5	7.3	8.9	10.5	12	13.7
1/4 - 19	1.337	13.6	13.46	13.72	14.74	5	8.2	11.4	14.5	17.7	6.4	9.5	12.7	15.9	19.1	12.4	15.6	18.7	21.9	25.1
3/8 - 19	1.337	17.2	17.02	17.27	18.25	8.2	12.9	17.7	22.5	27.2	9.5	14.3	19.1	23.8	28.6	15.6	20.3	25.1	29.8	34.6
1/2 - 14	1.814	21.5	21.34	21.59	23.09	10.9	17.3	23.6	30.0	36.3	12.7	19.1	25.4	31.8	38.1	20.8	27.2	33.5	39.9	46.3
5/8 - 14	1.814	23.5	23.24	23.55	25.05	14.1	22.0	30.0	37.9	45.8	15.9	23.8	31.8	39.7	47.6	24.0	31.9	39.9	47.8	55.7
3/4 - 14	1.814	27.0	26.75	27.08	28.59	17.3	26.8	36.3	45.8	55.3	19.1	28.6	38.1	47.6	57.2	27.2	36.7	46.2	55.8	65.3
7/8 - 14	1.814	30.7	30.48	30.81	32.35	20.4	31.5	42.7	53.7	64.9	22.2	33.3	44.5	55.5	66.7	30.4	41.5	52.6	63.4	74.8
1" - 11	2.309	33.7	33.53	33.91	35.96	23.1	35.8	48.5	61.2	73.9	25.4	38.1	50.8	63.5	76.2	35.8	48.5	61.3	73.9	86.6
1 1/4 - 11	2.309	42.5	42.29	42.67	44.63	29.4	45.3	61.2	77.1	92.9	31.8	47.6	63.5	79.4	95.2	42.2	58.0	73.9	89.9	105.7
1 1/2 - 11	2.309	48.5	48.41	48.79	50.53	35.8	54.8	73.9	92.9	112.0	38.1	57.2	76.2	95.2	114.2	48.5	67.6	86.7	105.7	124.7



**DESIGNATION:**

- Code no. (see codes column in table).
- Method: (Add "F" only if self-locking).
- Material (see table on page 3).
- Surface coating (Only if requested, see table on page 3).

**EXAMPLE**

Standard WITHWORTH insert 5/8 - 11 BSW L = 2 D (31,8 mm) in stainless steel  
 = **W 5/8.11 x 2 D**  
 Standard WITHWORTH insert 1/8 BSP L = 1 D (3,2 mm) in stainless steel  
 = **W 1/8 x 1 D**

**OTHER SIZES ON REQUEST**

Ext. dia. D mm in free state		N - number of turns in free state (estimated, variable according to D)					CODE					Rated diameter d	Pitch mm
min.	max.	1 d	1,5 d	2 d	2,5 d	3 d	1 d	1,5 d	2 d	2,5 d	3 d		
4,0	4,4	3,4	5,6	7,9	10,3	12,4	W 1/8.40 x 1 D	W 1/8.40 x 1,5 D	W 1/8.40 x 2 D	W 1/8.40 x 2,5 D	W 1/8.40 x 3 D	1/8 - 40	0,635
6,1	6,5	2,9	5,1	7,1	9,3	11,5	W 3/16.24 x 1 D	W 3/16.24 x 1,5 D	W 3/16.24 x 2 D	W 3/16.24 x 2,5 D	W 3/16.24 x 3 D	3/16 - 24	1,058
7,9	8,4	3,4	5,9	8,1	10,5	12,8	W 1/4.20 x 1 D	W 1/4.20 x 1,5 D	W 1/4.20 x 2 D	W 1/4.20 x 2,5 D	W 1/4.20 x 3 D	1/4 - 20	1,270
9,7	10,2	4,1	6,7	9,4	12,0	14,8	W 5/16.18 x 1 D	W 5/16.18 x 1,5 D	W 5/16.18 x 2 D	W 5/16.18 x 2,5 D	W 5/16.18 x 3 D	5/16 - 18	1,411
11,5	12,0	4,5	7,3	10,2	13,0	15,8	W 3/8.16 x 1 D	W 3/8.16 x 1,5 D	W 3/8.16 x 2 D	W 3/8.16 x 2,5 D	W 3/8.16 x 3 D	3/8 - 16	1,588
13,5	14,0	4,6	7,5	10,4	13,3	16,3	W 7/16.14 x 1 D	W 7/16.14 x 1,5 D	W 7/16.14 x 2 D	W 7/16.14 x 2,5 D	W 7/16.14 x 3 D	7/16 - 14	1,814
15,4	16,0	4,4	7,3	10,1	13,0	16,0	W 1/2.12 x 1 D	W 1/2.12 x 1,5 D	W 1/2.12 x 2 D	W 1/2.12 x 2,5 D	W 1/2.12 x 3 D	1/2 - 12	2,117
17,0	17,6	5,2	8,4	11,6	14,8	17,9	W 9/16.12 x 1 D	W 9/16.12 x 1,5 D	W 9/16.12 x 2 D	W 9/16.12 x 2,5 D	W 9/16.12 x 3 D	9/16 - 12	2,117
18,9	19,5	5,4	8,7	11,9	15,3	18,5	W 5/8.11 x 1 D	W 5/8.11 x 1,5 D	W 5/8.11 x 2 D	W 5/8.11 x 2,5 D	W 5/8.11 x 3 D	5/8 - 11	2,309
20,5	21,1	6,1	9,7	13,3	16,9	20,2	W 11/16.11 x 1 D	W 11/16.11 x 1,5 D	W 11/16.11 x 2 D	W 11/16.11 x 2,5 D	W 11/16.11 x 3 D	11/16 - 11	2,309
22,4	23,0	6,0	9,6	13,2	16,8	20,4	W 3/4.10 x 1 D	W 3/4.10 x 1,5 D	W 3/4.10 x 2 D	W 3/4.10 x 2,5 D	W 3/4.10 x 3 D	3/4 - 10	2,540
26,0	26,7	6,4	10,1	13,9	17,7	21,5	W 7/8.9 x 1 D	W 7/8.9 x 1,5 D	W 7/8.9 x 2 D	W 7/8.9 x 2,5 D	W 7/8.9 x 3 D	7/8 - 9	2,822
27,7	30,4	6,5	10,3	14,1	17,9	21,7	W 1.8 x 1 D	W 1.8 x 1,5 D	W 1.8 x 2 D	W 1.8 x 2,5 D	W 1.8 x 3 D	1" - 8	3,175
33,5	34,4	6,4	10,1	13,9	17,6	21,5	W 1 1/8.7 x 1 D	W 1 1/8.7 x 1,5 D	W 1 1/8.7 x 2 D	W 1 1/8.7 x 2,5 D	W 1 1/8.7 x 3 D	1 1/8 - 7	3,629
36,7	37,7	7,3	11,4	15,6	19,8	24,0	W 1 1/4.7 x 1 D	W 1 1/4.7 x 1,5 D	W 1 1/4.7 x 2 D	W 1 1/4.7 x 2,5 D	W 1 1/4.7 x 3 D	1 1/4 - 7	3,629
43,9	45,1	7,4	11,8	16,1	20,4	24,7	W 1 1/2.6 x 1 D	W 1 1/2.6 x 1,5 D	W 1 1/2.6 x 2 D	W 1 1/2.6 x 2,5 D	W 1 1/2.6 x 3 D	1 1/2 - 6	4,234

**OTHER SIZES ON REQUEST**

Ext. dia. D mm in free state		N - number of turns in free state (estimated, variable according to D)					CODE					Rated diameter d	Pitch mm
min.	max.	1 d	1,5 d	2 d	2,5 d	3 d	1 d	1,5 d	2 d	2,5 d	3 d		
7,9	8,4	4,6	7,6	10,4	13,4	16,5	W 1/4.26 x 1 D	W 1/4.26 x 1,5 D	W 1/4.26 x 2 D	W 1/4.26 x 2,5 D	W 1/4.26 x 3 D	1/4 - 26	0,977
9,8	10,3	5,0	8,1	11,2	14,3	17,7	W 5/16.22 x 1 D	W 5/16.22 x 1,5 D	W 5/16.22 x 2 D	W 5/16.22 x 2,5 D	W 5/16.22 x 3 D	5/16 - 22	1,155
11,6	12,1	5,6	9,0	12,4	15,8	19,2	W 3/8.20 x 1 D	W 3/8.20 x 1,5 D	W 3/8.20 x 2 D	W 3/8.20 x 2,5 D	W 3/8.20 x 3 D	3/8 - 20	1,270
13,6	14,1	5,9	9,5	13,1	16,6	20,2	W 7/16.18 x 1 D	W 7/16.18 x 1,5 D	W 7/16.18 x 2 D	W 7/16.18 x 2,5 D	W 7/16.18 x 3 D	7/16 - 18	1,411
15,5	16,0	6,1	9,7	13,3	16,9	20,5	W 1/2.16 x 1 D	W 1/2.16 x 1,5 D	W 1/2.16 x 2 D	W 1/2.16 x 2,5 D	W 1/2.16 x 3 D	1/2 - 16	1,588
17,2	17,8	7,0	11,1	15,1	19,3	23,4	W 9/16.16 x 1 D	W 9/16.16 x 1,5 D	W 9/16.16 x 2 D	W 9/16.16 x 2,5 D	W 9/16.16 x 3 D	9/16 - 16	1,588
19,1	19,7	6,8	10,8	14,8	18,7	22,8	W 5/8.14 x 1 D	W 5/8.14 x 1,5 D	W 5/8.14 x 2 D	W 5/8.14 x 2,5 D	W 5/8.14 x 3 D	5/8 - 14	1,814
22,9	23,5	7,0	11,1	15,2	19,3	23,4	W 3/4.12 x 1 D	W 3/4.12 x 1,5 D	W 3/4.12 x 2 D	W 3/4.12 x 2,5 D	W 3/4.12 x 3 D	3/4 - 12	2,117
26,5	27,3	7,6	11,9	16,4	20,8	25,2	W 7/8.11 x 1 D	W 7/8.11 x 1,5 D	W 7/8.11 x 2 D	W 7/8.11 x 2,5 D	W 7/8.11 x 3 D	7/8 - 11	2,309
30,2	31,0	7,9	12,5	17,1	21,6	26,2	W 1 10 x 1 D	W 1 10 x 1,5 D	W 1 10 x 2 D	W 1 10 x 2,5 D	W 1 10 x 3 D	1" - 10	2,540
33,9	34,7	8,1	12,7	17,3	21,9	26,5	W 1 1/8.9 x 1 D	W 1 1/8.9 x 1,5 D	W 1 1/8.9 x 2 D	W 1 1/8.9 x 2,5 D	W 1 1/8.9 x 3 D	1 1/8 - 9	2,822
37,3	38,1	9,1	14,3	19,4	24,6	29,8	W 1 1/4.9 x 1 D	W 1 1/4.9 x 1,5 D	W 1 1/4.9 x 2 D	W 1 1/4.9 x 2,5 D	W 1 1/4.9 x 3 D	1 1/4 - 9	2,822
41,2	42,1	8,8	13,9	18,9	23,9	28,8	W 1 3/8.8 x 1 D	W 1 3/8.8 x 1,5 D	W 1 3/8.8 x 2 D	W 1 3/8.8 x 2,5 D	W 1 3/8.8 x 3 D	1 3/8 - 8	3,175

**OTHER SIZES ON REQUEST**

Ext. dia. D mm in free state		N - number of turns in free state (estimated, variable according to D)					CODE					Rated diameter d	Pitch mm
min.	max.	1 d	1,5 d	2 d	2,5 d	3 d	1 d	1,5 d	2 d	2,5 d	3 d		
11,5	12,0	1,9	3,6	5,1	6,7	7,9	G 1/8 x 1 D	G 1/8 x 1,5 D	G 1/8 x 2 D	G 1/8 x 2,5 D	G 1/8 x 3 D	1/8 - 28	0,907
15,7	16,2	3,1	5,3	7,4	9,6	11,9	G 1/4 x 1 D	G 1/4 x 1,5 D	G 1/4 x 2 D	G 1/4 x 2,5 D	G 1/4 x 3 D	1/4 - 19	1,337
19,5	20,0	5,3	8,5	11,8	15,0	17,4	G 3/8 x 1 D	G 3/8 x 1,5 D	G 3/8 x 2 D	G 3/8 x 2,5 D	G 3/8 x 3 D	3/8 - 19	1,337
24,6	25,2	5,2	8,4	11,6	14,8	18,0	G 1/2 x 1 D	G 1/2 x 1,5 D	G 1/2 x 2 D	G 1/2 x 2,5 D	G 1/2 x 3 D	1/2 - 14	1,814
26,7	27,4	6,8	10,8	14,8	18,8	22,8	G 5/8 x 1 D	G 5/8 x 1,5 D	G 5/8 x 2 D	G 5/8 x 2,5 D	G 5/8 x 3 D	5/8 - 14	1,814
30,5	31,2	8,4	13,3	18,1	23,0	28,0	G 3/4 x 1 D	G 3/4 x 1,5 D	G 3/4 x 2 D	G 3/4 x 2,5 D	G 3/4 x 3 D	3/4 - 14	1,814
34,6	35,3	10,0	15,6	21,3	26,8	32,5	G 7/8 x 1 D	G 7/8 x 1,5 D	G 7/8 x 2 D	G 7/8 x 2,5 D	G 7/8 x 3 D	7/8 - 14	1,814
38,4	39,2	8,9	13,9	19,0	24,0	29,1	G 1 x 1 D	G 1 11 x 1,5 D	G 1 11 x 2 D	G 1 11 x 2,5 D	G 1 11 x 3 D	1" - 11	2,309
47,7	48,5	11,4	17,8	24,1	30,5	36,9	G 1 1/4 x 1 D	G 1 1/4 x 1,5 D	G 1 1/4 x 2 D	G 1 1/4 x 2,5 D	G 1 1/4 x 3 D	1 1/4 - 11	2,309
54,1	54,9	13,9	21,6	29,3	37,0	44,7	G 1 1/2 x 1 D	G 1 1/2 x 1,5 D	G 1 1/2 x 2 D	G 1 1/2 x 2,5 D	G 1 1/2 x 3 D	1 1/2 - 11	2,309



# The System

## Boring

A normal drill bit is used to perform the pilot bore. Refer to pages 5 to 10 for the correct diameter and depth. To facilitate mounting the helical inserts, do not countersink.



## Tapping

FILTEC taps can be used manually or by machine.

### TAPER TAP

4 threads.  
For through-holes and blind holes.  
Usable with hard metals and high-precision tapping.  
Prepares the threading for subsequent tapping with the bottoming tap.



### BOTTOMING TAP

2 threads.  
For through-holes and blind holes.  
Manual or machine tapping.



### STRAIGHT-GROOVED MACHINE TAP. "GUN" CUT ENTRANCE

4 threads.  
For through-holes.  
The "GUN" cut forces the shavings downwards.



### 35° TO 39° RIGHT HELICAL-GROOVED MACHINE TAP

2-3-threads.  
For blind holes.  
For all materials that are hard to work.



### SPECIAL TAPS ON REQUEST

## Control

### PLUG GAUGE

For checking tapping before mounting the FILTEC helical insert using go/no go plug gauge. Class 5H.



For threading on hard material or with pitches of 2mm or larger we advise use of the taper + bottoming tap.  
For materials harder than 21.5 HRC order special taps.

## Fitting equipment

### Manual fitting tools

#### MULTI-SIZE FITTING TOOL WITH SMOOTH DRIVER

For fitting inserts of dia. from 2.5 to 16



#### MULTI-SIZE FITTING TOOL WITH THREADED DRIVER

For fitting inserts of dia from 2.5 to 5.



#### MULTI-SIZE FITTING TOOL WITH THREADED DRIVER AND EXTENDED PRONG

For fitting inserts of dia. from 2 to 4

#### MULTI-SIZE FITTING TOOL WITH THREADED DRIVER AND PRONG FOR PLASTIC STRIP

For fitting plastic strip inserts of dia. from 4 to 5

#### SINGLE-SIZE FITTING TOOL WITH SLEEVE AND SMOOTH OR THREADED DRIVER

There is a tool for each insert size. Intended in particular for large diameters.



#### SINGLE-SIZE WITH CHUCK

There is a tool for each insert size. Intended in particular for large diameters.

### Pneumatic fitting tools

#### MULTI-SIZE ITH THREADED OR SMOOTH DRIVER

Powered by reversible pneumatic motor. Equipment interchangeable for various sizes.



RMF\_x\_SR



## Accessories

#### BREAKING PUNCH

For breaking the FILTEC helical insert tang, enabling the screw to pass.

#### STANDARD PM



#### AUTOMATIC PMA



#### EXTRACTOR

This enables extraction of the helical insert in case of wrong fitting.

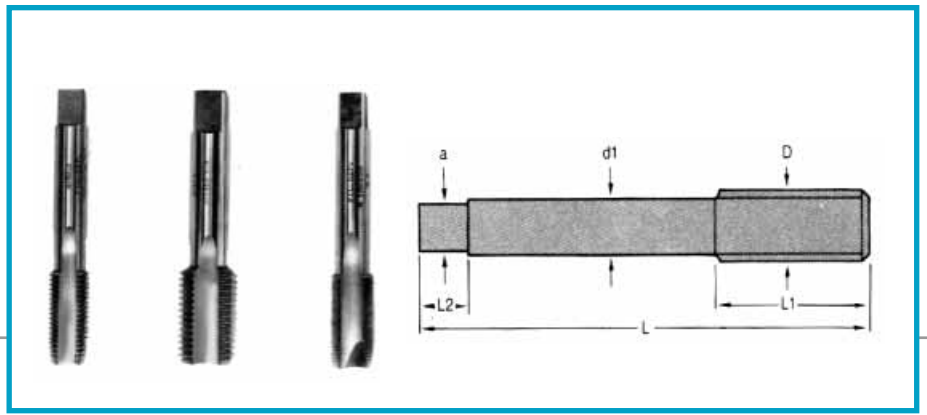


#### PLASTIC STRIP PACKS

Mounted on plastic strip. FILTEC helical inserts (standard or self-locking) help to considerably reduce series mounting times: better performance, elimination of risks due to any mixing of the inserts, reduction in labour costs, etc.

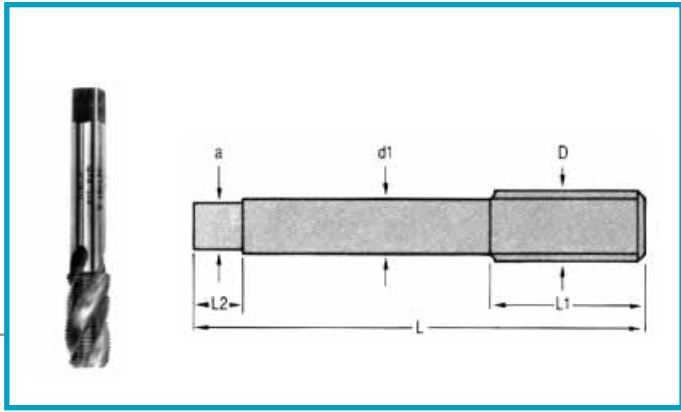


For threading on hard materials or with pitches of or above 2mm, we advise using the taper + bottoming tap.  
For materials harder than 21.5 HRC request special taps.



## Taps

Rated dia. per pitch	CODE			SIZE IN mm					
	TAPER	BOTTOMING	GUN	D	d1	L1	L	a	L2
M 2 x 0,40	MMS 02 x 40	MM 02 x 40	MMG 02 x 40	2,5	2,8	9,5	44	2,25	5
M 2,5 x 0,45	MMS 02,5 x 45	MM 02,5 x 45	MMG 02,5 x 45	3,1	3,15	11	48	2,5	5
M 3 x 0,50	MMS 03 x 50	MM 03 x 50	MMG 03 x 50	3,7	4	13	53	3,15	6
M 3,5 x 0,60	MMS 03,5 x 60	MM 03,5 x 60	MMG 03,5 x 60	4,3	4	13	53	3,15	6
M 4 x 0,70	MMS 04 x 70	MM 04 x 70	MMG 04 x 70	4,9	5	16	58	4	7
M 5 x 0,80	MMS 05 x 80	MM 05 x 80	MMG 05 x 80	6,0	6,3	19	66	5	8
M 6 x 1	MMS 06 x 100	MM 06 x 100	MMG 06 x 100	7,3	8	22	72	6,3	9
M 7 x 1	MMS 07 x 100	MM 07 x 100	MMG 07 x 100	8,3	9	22	72	7,1	10
M 8 x 1	MMS 08 x 100	MM 08 x 100	MMG 08 x 100	9,3	10	24	80	8	11
M 8 x 1,25	MMS 08 x 125	MM 08 x 125	MMG 08 x 125	9,6	10	24	80	8	11
M 9 x 1,25	MMS 09 x 125	MM 09 x 125	MMG 09 x 125	10,6	8	25	85	6,3	9
M 10 x 1	MMS 10 x 100	MM 10 x 100	MMG 10 x 100	11,3	9	29	89	7,1	10
M 10 x 1,25	MMS 10 x 125	MM 10 x 125	MMG 10 x 125	11,6	9	29	89	7,1	10
M 10 x 1,50	MMS 10 x 150	MM 10 x 150	MMG 10 x 150	12,0	9	29	89	7,1	10
M 11 x 1,50	MMS 11 x 150	MM 11 x 150	MMG 11 x 150	13,0	11,2	30	95	9	12
M 12 x 1	MMS 12 x 100	MM 12 x 100	MMG 12 x 100	13,3	11,2	30	95	9	12
M 12 x 1,25	MMS 12 x 125	MM 12 x 125	MMG 12 x 125	13,6	11,2	30	95	9	12
M 12 x 1,50	MMS 12 x 150	MM 12 x 150	MMG 12 x 150	14,0	11,2	30	95	9	12
M 12 x 1,75	MMS 12 x 175	MM 12 x 175	MMG 12 x 175	14,3	11,2	30	95	9	12
M 14 x 1,25	MMS 14 x 125	MM 14 x 125	MMG 14 x 125	15,6	12,5	32	102	10	13
M 14 x 1,50	MMS 14 x 150	MM 14 x 150	MMG 14 x 150	16,0	12,5	32	102	10	13
M 14 x 2	MMS 14 x 200	MM 14 x 200	MMG 14 x 200	16,6	12,5	32	102	10	13
M 16 x 1,50	MMS 16 x 150	MM 16 x 150	MMG 16 x 150	18,0	14	37	112	11,2	14
M 16 x 2	MMS 16 x 200	MM 16 x 200	MMG 16 x 200	18,6	14	37	112	11,2	14
M 18 x 1,50	MMS 18 x 150	MM 18 x 150	MMG 18 x 150	20,0	14	37	112	11,2	14
M 18 x 2	MMS 18 x 200	MM 18 x 200	MMG 18 x 200	20,6	14	37	112	11,2	14
M 18 x 2,50	MMS 18 x 250	MM 18 x 250	MMG 18 x 250	21,3	14	37	112	11,2	14
M 20 x 1,50	MMS 20 x 150	MM 20 x 150	MMG 20 x 150	22	16	38	118	12,5	16
M 20 x 2	MMS 20 x 200	MM 20 x 200	MMG 20 x 200	22,6	16	38	118	12,5	16
M 20 x 2,50	MMS 20 x 250	MM 20 x 250	MMG 20 x 250	23,3	16	38	118	12,5	16
M 22 x 1,50	MMS 22 x 150	MM 22 x 150	MMG 22 x 150	24,0	18	45	130	14	18
M 22 x 2	MMS 22 x 200	MM 22 x 200	MMG 22 x 200	24,6	18	45	130	14	18
M 22 x 2,50	MMS 22 x 250	MM 22 x 250	MMG 22 x 250	25,3	18	45	130	14	18
M 24 x 1,50	MMS 24 x 150	MM 24 x 150	MMG 24 x 150	26,0	20	45	135	16	20
M 24 x 2	MMS 24 x 200	MM 24 x 200	MMG 24 x 200	26,6	20	45	135	16	20
M 24 x 3	MMS 24 x 300	MM 24 x 300	MMG 24 x 300	27,9	20	45	135	16	20
M 26 x 1,50	MMS 26 x 150	MM 26 x 150	MMG 26 x 150	28,0	20	45	135	16	20
M 27 x 1,50	MMS 27 x 150	MM 27 x 150	MMG 27 x 150	29,0	20	48	138	16	20
M 27 x 2	MMS 27 x 200	MM 27 x 200	MMG 27 x 200	29,6	20	48	138	16	20
M 27 x 3	MMS 27 x 300	MM 27 x 300	MMG 27 x 300	30,9	22,4	51	151	18	22
M 28 x 1,50	MMS 28 x 150	MM 28 x 150	MMG 28 x 150	30	20	37	127	16	21
M 30 x 1,50	MMS 30 x 150	MM 30 x 150	MMG 30 x 150	32,0	22,4	37	137	18	22
M 30 x 2	MMS 30 x 200	MM 30 x 200	MMG 30 x 200	32,6	22,4	37	137	18	22
M 30 x 3,50	MMS 30 x 350	MM 30 x 350	MMG 30 x 350	34,5	25	57	162	20	24
M 33 x 2	MMS 33 x 200	MM 33 x 200	MMG 33 x 200	35,6	25	39	144	20	24
M 33 x 3,50	MMS 33 x 350	MM 33 x 350	MMG 33 x 350	37,5	28	60	170	22,4	26
M 34 x 1,50	MMS 34 x 150	MM 34 x 150	MMG 34 x 150	36	25	39	144	20	24
M 36 x 1,50	MMS 36 x 150	MM 36 x 150	MMG 36 x 150	38,0	28	39	149	22,4	26
M 36 x 2	MMS 36 x 200	MM 36 x 200	MMG 36 x 200	38,6	28	39	149	22,4	26
M 36 x 3	MMS 36 x 300	MM 36 x 300	MMG 36 x 300	39,9	28	60	170	22,4	26
M 36 x 4	MMS 36 x 400	MM 36 x 400	MMG 36 x 400	41,2	28	60	170	22,4	26
M 39 x 3	MMS 39 x 300	MM 39 x 300	MMG 39 x 300	42,9	31,5	67	187	25	28
M 39 x 4	MMS 39 x 400	MM 39 x 400	MMG 39 x 400	44,3	31,5	67	187	25	30
M 42 x 3	MMS 42 x 300	MM 42 x 300	MMG 42 x 300	45,9	31,5	67	187	25	28
M 42 x 4,50	MMS 42 x 450	MM 42 x 450	MMG 42 x 450	47,9	31,5	67	187	25	28
M 45 x 3	MMS 45 x 300	MM 45 x 300	MMG 45 x 300	48,3	31,5	67	187	25	28
M 45 x 4,50	MMS 45 x 450	MM 45 x 450	MMG 45 x 450	51,2	35,5	70	200	28	32



For threading on hard materials  
or with pitches of or above 2mm,  
we advise using the taper + bottoming tap.  
For materials harder than  
21.5 HRC request special taps.

Rated dia. per pitch	CODE	SIZE IN mm					
	HELICAL GROOVE	D	d1	L1	L	a	L2
M 2 x 0,40	MME 02 x 40	2,5	2,8	4	50	2,1	5
M 2,5 x 0,45	MME 02,5 x 45	3,1	3,5	5	56	2,7	6
M 3 x 0,50	MME 03 x 50	3,7	4	6	56	2,7	6
M 3,5 x 0,60	MME 03,5 x 60	4,3	4,5	7	63	3,1	6
M 4 x 0,70	MME 04 x 70	4,9	6	8	70	4,9	8
M 5 x 0,80	MME 05 x 80	6,0	6	10	80	4,9	8
M 6 x 1	MME 06 x 100	7,3	8	12	90	6,2	9
M 7 x 1	MME 07 x 100	8,3	9	12	90	7	10
M 8 x 1	MME 08 x 100	9,3	9	12	90	7	10
M 8 x 1,25	MME 08 x 125	9,6	10	14	100	8	11
M 9 x 1,25	MME 09 x 125	10,6	8	15	100	6,2	9
M 10 x 1	MME 10 x 100	11,3	9	16	100	7	10
M 10 x 1,25	MME 10 x 125	11,6	9	16	100	7	10
M 10 x 1,50	MME 10 x 150	12	9	16	110	7	10
M 11 x 1,50	MME 11 x 150	13	11	20	100	9	11
M 12 x 1	MME 12 x 100	13,3	11	20	100	9	12
M 12 x 1,25	MME 12 x 125	13,6	11	20	100	9	12
M 12 x 1,50	MME 12 x 150	14	11	20	100	9	12
M 12 x 1,75	MME 12 x 175	14,3	11	20	110	9	12
M 14 x 1,25	MME 14 x 125	15,6	12	20	100	9	12
M 14 x 1,50	MME 14 x 150	16	12	20	100	9	12
M 14 x 2	MME 14 x 200	16,6	12	20	110	9	12
M 16 x 1,50	MME 16 x 150	18	14	25	110	11	14
M 16 x 2	MME 16 x 200	18,6	14	25	125	11	14
M 18 x 1,50	MME 18 x 150	20	16	25	125	12	15
M 18 x 2	MME 18 x 200	20,6	16	25	140	12	15
M 18 x 2,50	MME 18 x 250	21,3	16	25	140	12	15
M 20 x 1,50	MME 20 x 150	22	18	25	125	14,5	17
M 20 x 2	MME 20 x 200	22,6	18	28	140	14,5	17
M 20 x 2,50	MME 20 x 250	23,3	18	25	140	14,5	17
M 22 x 1,50	MME 22 x 150	24	18	28	140	14,5	17
M 22 x 2	MME 22 x 200	24,6	18	28	140	14,5	17
M 22 x 2,50	MME 22 x 250	25,3	18	30	160	14,5	17
M 24 x 1,50	MME 24 x 150	26	18	28	140	14,5	17
M 24 x 2	MME 24 x 200	26,6	20	28	140	16	19
M 24 x 3	MME 24 x 300	27,9	20	30	160	16	19
M 26 x 1,50	MME 26 x 150	28	20	28	140	16	19
M 27 x 1,50	MME 27 x 150	29	22	28	150	18	21
M 27 x 2	MME 27 x 200	29,6	22	28	150	18	21
M 27 x 3	MME 27 x 300	30,9	22	50	180	18	21
M 28 x 1,50	MME 28 x 150	30	22	28	150	18	21
M 30 x 1,50	MME 30 x 150	32	22	28	150	18	21
M 30 x 2	MME 30 x 200	32,6	25	28	160	20	23
M 30 x 3,50	MME 30 x 350	34,5	28	56	200	22	25
M 33 x 2	MME 33 x 200	35,6	28	30	170	22	25
M 33 x 3,50	MME 33 x 350	37,5	28	56	200	22	25
M 34 x 1,50	MME 34 x 150	36	28	30	170	22	25
M 36 x 1,50	MME 36 x 150	38	28	30	170	22	25
M 36 x 2	MME 36 x 200	38,6	32	30	170	24	27
M 36 x 3	MME 36 x 300	39,9	32	60	200	24	27
M 36 x 4	MME 36 x 400	41,2	32	60	200	24	27
M 39 x 3	MME 39 x 300	42,9	36	50	200	29	34
M 39 x 4	MME 39 x 400	44,3	36	65	220	29	32
M 42 x 3	MME 42 x 300	45,9	36	50	225	29	32
M 42 x 4,50	MME 42 x 450	47,9	36	50	225	29	32
M 45 x 3	MME 45 x 300	48,3	36	50	225	29	32
M 45 x 4,50	MME 45 x 450	51,2	40	70	250	32	35

# Manual fitting tools

## MULTI-SIZE TOOLS

### WITH SMOOTH DRIVER

Fitting tool with prong and smooth driver.  
Interchangeable for all sizes.

### WITH THREADED DRIVER

Fitting tool with prong and threaded driver.  
Interchangeable for all sizes.  
The threaded driver guides the insert during fitting.  
Versions for loose inserts and plastic strip inserts.

### WITH THREADED DRIVER AND EXTENDED PRONG

Fitting tool with small-diameter and extended prong and threaded driver. Interchangeable for all sizes.  
The threaded driver guides the insert during fitting.  
Versions for loose inserts and plastic strip inserts.

## SINGLE-SIZE TOOLS

### WITH SMOOTH DRIVER

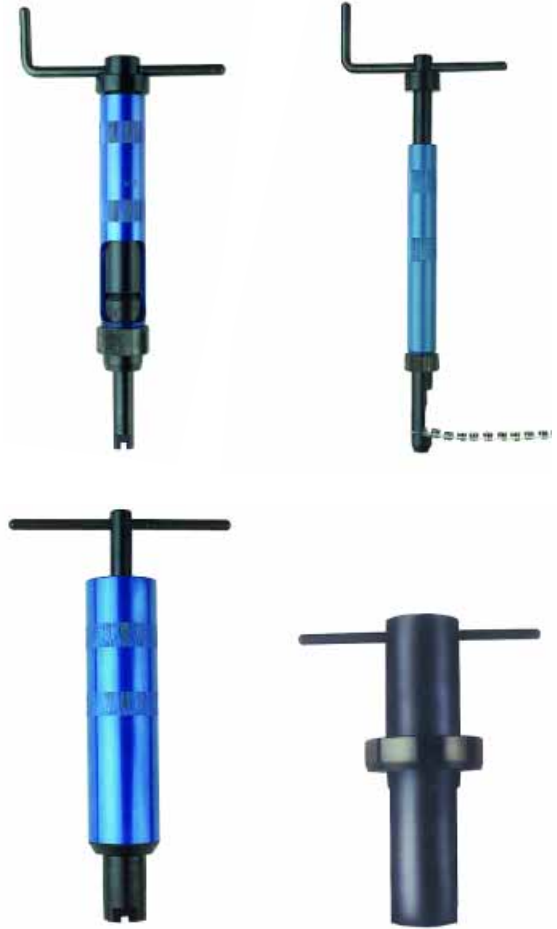
Fitting tool with one size only.

### WITH THREADED DRIVER

Fitting tool with one size only.  
The threaded driver guides the insert during fitting.

### WITH CHUCK

Fitting tool with one size only for large diameters.



## MULTI-SIZE TOOLS

WITH SMOOTH DRIVER		WITH THREADED DRIVER			WITH THREADED DRIVER AND EXTENDED PRONG		
Rated dia. per pitch	CODE	Rated dia. per pitch	CODE	CODE FOR PLASTIC STRIP	Rated dia. per pitch	CODE	CODE FOR PLASTIC STRIP
M 2,5 x 0,45	AM 02,5 x 45	M 2,5 x 0,45	AMTF 2,5 x 45		M 2 x 0,40	AMBIS 2 x 40	AMBB 2 x 40
M 3 x 0,50	AM 03 x 50	M 3 x 0,50	AMTF 3 x 50		M 2,5 x 0,45	AMBIS 2,5 x 45	AMBB 2,5 x 45
M 3,5 x 0,60	AM 03,5 x 60	M 3,5 x 0,60	AMTF 3,5 x 60		M 3 x 0,50	AMBIS 3 x 50	AMBB 3 x 50
M 4 x 0,70	AM 04 x 70	M 4 x 0,70	AMTF 4 x 70	AMB 4 x 70	M 3,5 x 0,60	AMBIS 3,5 x 60	AMBB 3,5 x 60
M 5 x 0,80	AM 05 x 80	M 5 x 0,80	AMTF 5 x 80	AMB 5 x 80	M 4 x 0,70	AMBIS 4 x 70	
M 6 x 1	AM 06 x 100						
M 7 x 1	AM 07 x 100						
M 8 x 1	AM 08 x 100						
M 8 x 1,25	AM 08 x 125						
M 9 x 1,25	AM 09 x 125						
M 10 x 1	AM 10 x 100						
M 10 x 1,25	AM 10 x 125						
M 10 x 1,50	AM 10 x 150						
M 11 x 1,50	AM 11 x 150						
M 12 x 1	AM 12 x 100						
M 12 x 1,25	AM 12 x 125						
M 12 x 1,50	AM 12 x 150						
M 12 x 1,75	AM 12 x 175						
M 14 x 1,25	AM 14 x 125						
M 14 x 1,50	AM 14 x 150						
M 14 x 2	AM 14 x 200						
M 16 x 1,50	AM 16 x 150						
M 16 x 2	AM 16 x 200						

EXCHANGE PARTS FOR DRIVER + PRONG CAN BE SUPPLIED FOR ALL SIZES IN THE TABLE.  
DESIGNATION: RM dia. per p

## SINGLE-SIZE TOOLS

WITH SMOOTH DRIVER		WITH THREADED DRIVER		WITH CHUCK	
Rated dia. per pitch	CODE	Rated dia. per pitch	CODE	Rated dia. per pitch	CODE
M18 x 1,5	AM 18 x 150	M26 x 1,5	AMTF 26x150	M27 x 3	AM 27 x 3
M18 x 2	AM 18 x 200	M27 x 1,5	AMTF 27x150	M30 x 3,5	AM 30 x 3,5
M18 x 2,5	AM 18 x 250	M28 x 1,5	AMTF 28x150	M33 x 3,5	AM 33 x 3,5
M20 x 1,5	AM 20 x 150	M30 x 1,5	AMTF 30x150	M36 x 3	AM36 x 3
M20 x 2	AM 20 x 200	M34 x 1,5	AMTF 34x150	M36 x 4	AM 36 x 4
M20 x 2,5	AM 20 x 250	M36 x 1,5	AMTF 36x150	M39 x 3	AM 39 x 3
M22 x 1,5	AM 22 x 150			M39 x 4	AM 39 x 4
M22 x 2	AM 22 x 200			M42 x 3	AM 42 x 3
M22 x 2,5	AM 22 x 250			M42 x 4,5	AM 42 x 4,5
M24 x 1,5	AM 24 x 150			M45 x 3	AM 45 x 3
M24 x 2	AM 24 x 200			M45 x 4,5	AM 45 x 4,5
M24 x 3	AM 24 x 300				
M26 x 1,5	AM 26 x 150				
M27 x 1,5	AM 27 x 150				
M27 x 2	AM 27 x 200				
M30 x 2	AM 30 x 200				
M33 x 2	AM 33 x 200				
M36 x 2	AM 36 x 200				

OTHER SIZES ON REQUEST

# Pneumatic fitting tools

Tools are available for rapid and easy fitting of FILTEC helical inserts.

## MULTI-SIZE TOOLS WITH THREADED OR SMOOTH DRIVER

Pneumatic tool with threaded or smooth driver.  
Reversible motor.  
Driver return by unscrewing (with threaded driver).  
Interchangeable equipment for the various sizes.



FR 850

## SR THREADED DRIVER FOR FITTING PLASTIC STRIP INSERTS AND OTHER INSERTS

Easy to use, when applied to a tool it can be used to fit standard and self-locking inserts, including plastic strip inserts.



RMF SR

TOOL WITH THREADED OR SMOOTH DRIVER			SR THREADED DRIVER FOR FITTING PLASTIC STRIP INSERTS AND OTHER INSERTS	
RATED DIA. PER PITCH	CODE EQUIPMENT FR 850 THREADED DRIVER	CODE EQUIPMENT FR 850 SMOOTH DRIVER	RATED DIA. PER PITCH	CODE THREADED DRIVER
M 4 x 0,7	EPTF 04 x 70	EP 04 x 70	M 2,5 x 0,45	RMF 025 x 45 SR*
M 5 x 0,8	EPTF 05 x 80	EP 05 x 80	M 3 x 0,5	RMF 03 x 50 SR*
M 6 x 1	EPTF 06 x 100	EP 06 x 100	M 4 x 0,7	RMF 04 x 70 SR*
M 7 x 1			M 5 x 0,8	RMF 05 x 80 SR*
M 8 x 1,25	EPTF 08 x 125	EP 08 x 125	M 6 x 1	RMF 06 x 100 SR*
M 10 x 1,5	EPTF 10 x 150	EP 10 x 150	M 8 x 1,25	RMF 08 x 125 SR
M 12 x 1,75	EPTF 12 x 175	EP 12 x 175	M 10 x 1,25	RMF 10 x 125 SR
M 14 x 2		EP 14 x 200	M 10 x 1,5	RMF 10 x 150 SR
M 16 x 2		EP 16 x 200	M 12 x 1,5	RMF 12 x 150 SR
			M 12 x 1,75	RMF 12 x 175 SR
			M 14 x 2	RMF 14 x 200 SR
			M 16 x 2	RMF 16 x 200 SR
			M 18 x 2,5	RMF 18 x 250 SR
			M 20 x 2,5	RMF 20 x 250 SR
			M 22 x 2,5	RMF 22 x 250 SR
			M 24 x 3	RMF 24 x 300 SR

\* For fitting SR self-locking inserts up to size M6, request part RMFF\_x\_SR

Other threading are available on request.

# Plastic strip inserts

RATED DIA. PER PITCH	SIZE OF THE PLASTIC STRIP Width x height (mm)	MAXIMUM NUMBER OF INSERTS PER REEL			CODE *
		1 d	1,5 d	2 d	
M2 x 0,40	4,7 x 0,8		6000	4500	2 x 40 x .. BP
M2,5 x 0,45	6,5 x 1	5000	4000	3000	2,5 x 45 x .. BP
M3 x 0,50	6,5 x 1	4000	2800	2200	3 x 50 x .. BP
M4 x 0,70	9 x 1,4	2200	1500	1300	4 x 70 x .. BP
M5 x 0,80	9 x 1,4	1500	1000	800	5 x 80 x .. BP
M6 x 1	12 x 2	1000	750	500	6 x 100 x .. BP
M7 x 1	12 x 2	800	600	400	7 x 100 x .. BP
M8 x 1	16 x 3	650	400	300	8 x 100 x .. BP
M8 x 1,25	16 x 3	650	400	300	8 x 125 x .. BP
M10 x 1	16 x 3	400	250	200	10x100 x .. BP
M10 x 1,25	16 x 3	400	250	200	10x125 x .. BP
M10 x 1,50	16 x 3	400	250	200	10x150 x .. BP



\* add length **d**. to the code in the table.  
Example: 4 x 70 x 1 BP.  
For self-locking inserts the code must be preceded by the letter "F".

FILTEC helical inserts made of plastic strip are produced in the standard and self-locking versions. They are fitted using manual or pneumatic tools. The tools can be used manually or can be supported by pantograph units.

# Accessories



## PLUG GAUGE

We advise periodical checking of the tapping before fitting the helical insert using the FILTEC plug. The plug is a threaded check gauge of the 5H class go/no go type. It can be supplied in class 4H on request.

### DESIGNATION

TM dia. per p.



## PM BREAKING PUNCH

The FILTEC punch is used to break the tang when the insert has been fitted, enabling free passage of the screw. This operation is performed by resting the punch on the tang and giving it a sharp tap.

### DESIGNATION

PM DIA.



## PMA BREAKING PUNCH

The automatic PMA FILTEC punch uses a manual preload system. This means that the tang can be broken off without the use of further tools.

### DESIGNATION

PMA DIA.



## EXTRACTOR

FILTEC extractors are used when a helical insert has been wrongly fitted. The extractor is inserted in the threading of the fitted insert and forcefully pressed and rotated in an anticlockwise direction. If the tapping has not been damaged another insert can be fitted.

FIELD OF APPLICATION	CODE
From M 2 to M 8	EM No. 1
From M 5 to M 12	EM No. 2
From M 10 to M 24	EM No. 3
From M 22 to M 30	EM No. 4
From M 30 to M 39	EM No. 5

# Repair packs

## MULTI-SIZE PACKS

These packs are indispensable for repairing any worn threading. They are vital workshop accessories, necessary for maintenance and assistance.

*Pack contains:*

*1 tap for each diameter.*

*1 fitting tool and parts covering all diameters comprised in the pack.*

*1 punch for each diameter.*

*Standard FILTEC helical inserts.*

*Extractors.*



SPECIAL PACKS AVAILABLE ON REQUEST.

TYPE OF PACK	HELICAL INSERTS		QUANTITY OF INSERTS	CODE
	DIA. PER PITCH	LENGHT		
No. 5	M6 x 1	9	10	PACK No. 5
	M8 x 1,25	12	10	
	M10 x 1,25	15	10	
	M12 x 1,75	18	10	
No. 5/A	M6 x 1	9	10	PACK No. 5/A
	M8 x 1,25	12	10	
	M10 x 1,25	15	10	
	M12 x 1,50	18	10	
No. 5/B	M6 x 1	9	10	PACK No. 5/B
	M8 x 1,25	12	10	
	M10 x 1,50	15	10	
	M12 x 1,50	18	10	
No. 5/C	M6 x 1	9	10	PACK No. 5/C
	M8 x 1,25	12	10	
	M10 x 1,50	15	10	
	M12 x 1,75	18	10	
No. 5/D	M6 x 1	9	10	PACK No. 5/D
	M8 x 1,25	12	10	
	M10 x 1,25	15	10	
	M12 x 1,25	18	10	
No. 6	M6 x 1	9	10	PACK No. 6
	M8 x 1	12	10	
	M8 x 1,25	12	10	
	M10 x 1,25	15	10	
	M10 x 1,50	15	10	
	M12 x 1,50	18	10	
No. 7	M6 x 1	9	10	PACK No. 7
	M8 x 1,25	12	10	
	M10 x 1,25	15	10	
	M10 x 1,50	15	10	
	M12 x 1,50	18	10	
	M14 x 1,50	21	10	
No. 1/A	M5 x 0,8	7,5	15	PACK No. 1A
	M6 x 1	9	15	
	M8 x 1,25	12	15	
	M10 x 1,50	15	15	
	M12 x 1,75	18	15	
No. 1/B	M6 x 1	9	15	PACK No. 1B
	M8 x 1,25	12	15	
	M10 x 1,50	15	15	
	M12 x 1,75	18	15	
	M14 x 2	21	15	

## SPARK-PLUG PACKS

These packs enable rapid repair, in just a few minutes, of spark-plug threading. They are indispensable in garages and repair workshops.

Pack contains:  
 1 fitting tool with relative drivers.  
 1 stepped tap  
 FILTEC helical inserts



HELICAL INSERTS		QUANTITY OF INSERTS	CODE
DIA. PER PITCH	LENGHT		
M 10 x 1	10	25	PACK 10 x 100 N
M 12 x 1,25	10,5	10	PACK 12 x 125 N
	18	10	
M 14 x 1,25	7,5	10	PACK 14 x 125 N
	10,5	20	
	18	10	

\* OTHER LENGTHS ON REQUEST

## MINIKIT PACKS

Single-size small packs for repairing at all times.

Pack contains:  
 1 fitting tool.  
 1 tap  
 1 drill bit  
 (only up to dia. M8)  
 5 standard FILTEC helical inserts



HELICAL INSERTS		CODE
DIA. PER PITCH	LENGHT	
M 4 x 0,7	6	KIT 04 x 70
M 5 x 0,8	7,5	KIT 05 x 80
M 6 x 1	9	KIT 06 x 100
M 7 x 1	10,5	KIT 07 x 100
M 8 x 1,25	12	KIT 08 x 125
M 10 x 1	15	KIT 10 x 100
M 10 x 1,25	15	KIT 10 x 125
M 10 x 1,5	15	KIT 10 x 150
M 12 x 1,25	12	KIT 12 x 125
M 12 x 1,5	18	KIT 12 x 150
M 12 x 1,75	18	KIT 12 x 175
M 14 x 1,5	14	KIT 14 x 150
M 14 x 2	21	KIT 14 x 200
M 16 x 1,5	16	KIT 16 x 150
M 16 x 2	24	KIT 16 x 200
M 12 x 1,25	10,5	KITC 12 x 125 C
M 12 x 1,25	18	KITC 12 x 125 M
M 14 x 1,25	10,5	KITC 14 x 125 C
M 14 x 1,25	18	KITC 14 x 125 M

For UNC – UNF – BSW – BSF – BSP sizes ask the technical office for codification tables for the articles required for fitting respective FILTEC helical inserts.

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- **CAGE - NUT®**
- NUTS AND STUDS
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