



Threaded Inserts (Plastics, Timber & Metal)

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Introduction

TFC Europe Ltd is one of the leading suppliers of technical fastener components to industry, with an unrivalled reputation for delivering innovative products, supply solutions, and exemplary service, to help our customers achieve breakthroughs in product development and productivity. With a customer centric approach, experienced Product Managers and Logistics Specialists, TFC can support a wide range of projects from product design to vendor reduction. [TFC Brings it Together](#)

This is our comprehensive catalogue of inserts for plastic, timber and metals. Including technical details for over 40 product ranges covering every conceivable insert from post moulding into thermo plastics to screw-in inserts for chipboard.

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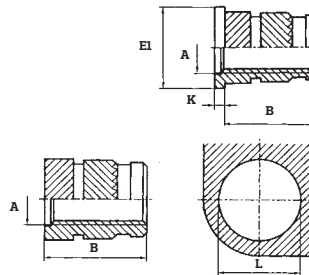
Ultrasonic Inserts

Type IHU Standard, IHS Short, IHH Headed

For post moulding into thermoplastic materials these ultrasonic inserts provide strong wear-resistant threads. Can also be installed by heat transfer.

Material: Brass
Stainless steel

Note: Stainless steel to special order only



Head Thickness K	Size A	Length B	Hole Size L + 0.1	Short Length 861 B	Head Dia. E1
0.6	M2	4.0	3.2	-	4.8
0.6	M2.5	5.8	4.0	4.0	5.6
0.6	M3	5.8	4.0	4.0	5.6
0.8	M3.5	7.2	4.8	5.8	6.4
0.8	M4	8.2	5.6	4.7 / 7.2	7.2

Head Thickness K	Size A	Length B	Hole Size L + 0.1	Short Length 861 B	Head Dia. E1
1.0	M5	9.5	6.4	8.2	8.0
1.3	M6	12.7	8.0	9.5	9.5
1.3	M8	12.7	9.6	9.5	11.0
1.3	M10	12.7	11.7	9.5	14.0

Solid Compression Limiters

Type ICL

Solid compression limiters provide a strong and reliable defence against the stresses caused by fastener torque. Installed by heat transfer or simple press-in.

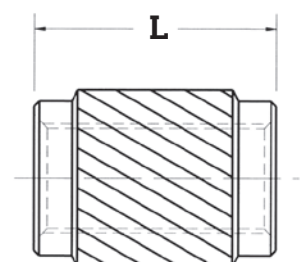
Material: Brass

Finish: Self-colour

Length & wall thickness: To suit any application



Std Nom. Bolt size	Internal Diameter	Recommended Hole Size ± 0.05	Length $+0 / - 0.15 L$
M6	6.8	11.30	4.0 - 20
M8	8.8	14.50	6.0 - 22
M10	10.8	17.65	6.0 - 24



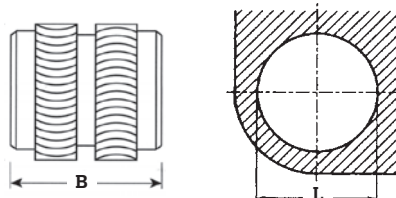
Symmetrical Heat-installed Inserts

Type ISH

Heat-installed inserts for use in stress-sensitive materials.

Material: Brass

Note: Headed version available to special order only



Size	Length B	Hole Size L + 0.1
M2	4.0	3.2
M2.5	5.8	4.0
M3	5.8	4.0
M3.5	7.2	4.8
M4	8.2	5.6

Size	Length B	Hole Size L + 0.1
M5	9.5	6.4
M6	12.7	8.0
M8	12.7	9.6
M10	12.7	11.9



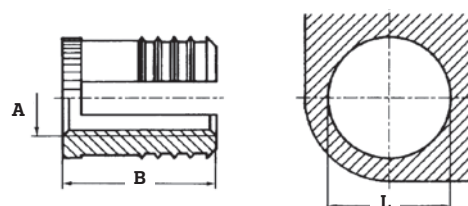
Vaned Expansion Inserts

Type IVE

Push-in inserts with self-locking action for use in thermoplastic materials.

Material: Brass

Size A	Length B	No. of Vanes	Recommended Hole Size L
M2	4.0	2	3.2
M2.5	4.8	3	4.0
M3	4.8	3	4.0
M3.5	6.4	3	4.8
M4	8.0	4	5.6
M5	9.5	5	6.4
M6	12.7	5	8.0
M8	12.7	5	9.5

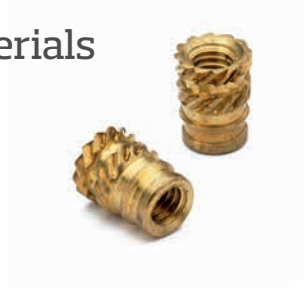


Heat Transfer or Cold Insertion

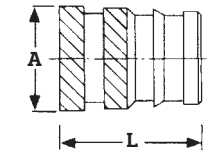
Long Type INL & ILH Headed

For post-mounting into thermoplastic materials via heat transfer or cold press-in.

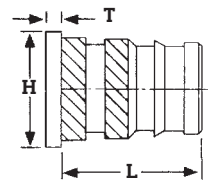
Material: Brass



Thread Size mm	A	T	H	L	Hole Size +0.1 - 0.0
M2	3.65	0.45	4.7	4.0	3.2
M2.5	4.75	0.55	5.5	5.75	4.0
M3	4.75	0.55	5.5	5.75	4.0
M3.5	5.55	0.7	6.25	7.15	4.8
M4	6.4	0.85	7.05	8.15	5.6
M5	7.15	1.0	7.85	9.55	6.4
M6	8.75	1.25	9.45	12.7	8.0
M8	10.35	1.25	11.05	12.7	9.6



INL



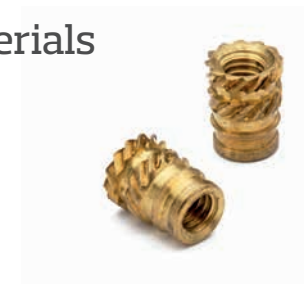
ILH

Heat Transfer or Cold Insertion

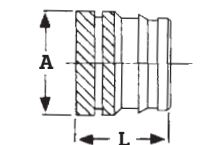
Short Type INS & INH Headed

For post-mounting into thermoplastic materials via heat transfer or cold press-in.

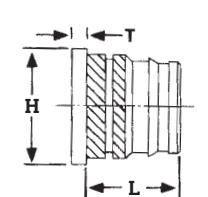
Material: Brass



Thread Size mm	A	T	H	L	Hole Size +0.1 - 0.0
M1.6	2.5	0.4	3.0	2.5	0.3
M2	3.6	0.45	4.7	3.2	3.2
M2.5	4.6	0.55	5.5	3.55	4.0
M3	4.6	0.55	5.5	3.55	4.0
M3.5	5.4	0.7	6.25	3.8	4.8
M4	6.25	0.85	7.05	4.7	5.6
M5	7.05	1.0	7.85	6.35	6.4
M6	8.65	1.25	9.45	7.9	8.0



INS



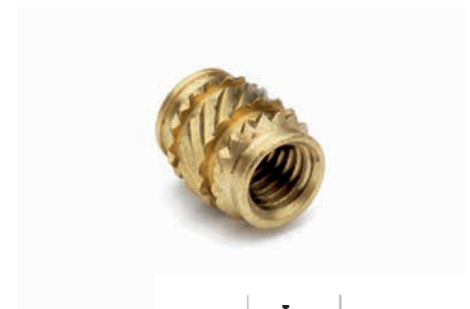
INH

Symmetrical Inserts

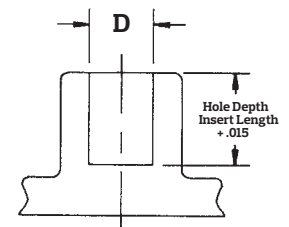
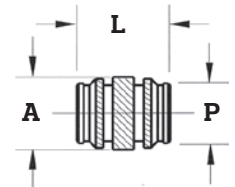
Type ISL – Standard Length & ISS – Short Length

For post moulding into thermoplastic materials, where a symmetrical insert is required.

Material: Brass



Thread Size Metric	A	L		Hole Size +.008 - .000
		ISL	ISS	
M1.6	2.95	3.2	2.95	2.55
M2	3.65	4.0	3.2	3.2
M2.5	4.75	5.75	3.55	4.0
M3	4.75	5.75	3.55	4.0
M3.5	5.55	7.15	3.8	4.8
M4	6.4	8.15	4.7	5.6
M5	7.15	9.55	6.35	6.4
M6	8.75	12.7	7.9	8.0
M8	10.35	12.7	N/A	9.6



Press-in Inserts for Plastic

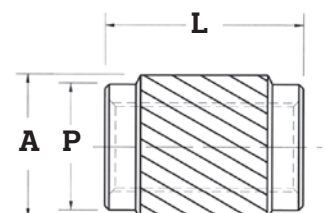
Type ISP

A symmetrical insert, quick to install either cold, or by heat transfer.

Material: Brass

Finish: Self-colour

Thread Size		L	A	P	Recommended Hole Size ± 0.05
Metric	Unified				
M2	2-56	3.18	3.45	3.10	3.18
M2.5 M3	4-40	3.56	4.24	3.89	3.96
M3.5	6-32	3.81	5.05	4.70	4.78
M4	8-32	4.7	5.84	5.49	5.56
M5	10-24,32	6.35	6.63	6.27	6.35
M6	1/4-20	7.92	8.23	7.87	7.95
M8	5/16-18	9.53	9.80	9.45	9.53



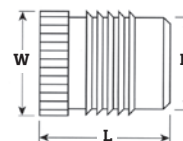
Vaned Inserts

Type IVS

For use in most plastics including thermosetting, providing high and consistent pull-out strength.

Material: Brass

Finish: Self-colour



Thread Size	Length L	Diameter W	Pilot End Diameter N	No. of Fins	Rec. Hole -0.000 +0.004	Minimum Wall
M2	4.0	3.7	3.1	2	3.2	1.6
M2.5	4.7	4.5	3.9	3	4.0	2.0
M3	4.7	4.5	3.9	3	4.0	2.0
M3.5	6.4	5.3	4.7	4	4.8	2.4
M4	7.9	6.1	5.5	5	5.6	2.8
M5	9.5	7.0	6.3	5	6.4	3.3
M6	12.7	8.6	7.9	7	8.0	4.0
M8	12.7	10.2	9.5	7	9.6	4.8

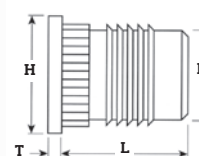
Headed Vaned Inserts

Type IVH

For use in most plastics including thermosetting, providing high and consistent pull-out strength.

Material: Brass

Finish: Self-colour



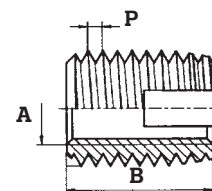
Thread Size	Length L	Head Thickness T	Head Diameter H	Diameter W	Pilot End Diameter N	No. of Fins	Rec. Hole -0.000 +0.004	Minimum Wall
M2	4.0	0.46	4.8	3.7	3.1	2	3.2	1.6
M2.5	4.7	0.58	5.5	4.5	3.9	3	4.0	2.0
M3	4.7	0.58	5.5	4.5	3.9	3	4.0	2.0
M3.5	6.4	0.74	6.4	5.3	4.7	4	4.8	2.4
M4	7.9	0.89	7.1	6.1	5.5	5	5.6	2.8
M5	9.5	1.07	7.9	7.0	6.3	5	6.4	3.3
M6	12.7	1.32	9.5	8.6	7.9	7	8.0	4.0
M8	12.7	1.32	11.0	10.2	9.5	7	9.6	4.8

Self-tapping Inserts

Type IST

Provides a strong thread and high pull-out in plastics and low core strength materials.

Material: Steel yellow zinc plated
Steel case hardened and yellow zinc plated
Brass
Stainless steel 1.4104
Stainless steel 1.4305



Internal Thread A	Length B	External Thread P	Hole Size - Hard Plastics and Metals	Hole Size - Soft Plastics and Timber
M3	6	M5 x 0.5	4.68 - 4.74	4.56 - 4.62
M4	8	M6.5 x 0.75	6.01 - 6.11	5.81 - 5.91
M5	10	M8 x 1	7.36 - 7.48	7.12 - 7.24
M6	14	M10 x 1.5	9.0 - 9.2	8.6 - 8.8
M8	15	M12 x 1.5	11.0 - 11.2	10.6 - 10.8
M10	18	M14 x 1.5	13.0 - 13.2	12.6 - 12.8
M12	22	M16 x 1.5	15.0 - 15.2	14.6 - 14.8
M14	24	M18 x 1.5	17.0 - 17.4	16.6 - 16.8
M16	25	M20 x 1.5	19.0 - 19.6	18.6 - 18.8

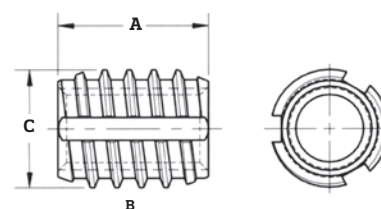
Self-tapping Inserts

Type IQS

For use in most plastics including thermosetting, providing high and consistent pull-out strength.

Material: Brass

Finish: Self-colour



Thread Size	Outside Diameter C	Length A	External Pitch B	Hole Diameter	Minimum Wall	Hole Depth
M3	4.73	5.25	1.06	4.1	1.55	5.3
M3.5	5.52	6.2	1.15	5.0	1.9	6.9
M4	6.31	7.1	1.27	5.6	2.2	7.6
M5	7.5	8.4	1.4	6.9	2.6	9.3
M6	8.69	9.8	1.6	8	3.0	10.6
M8	11.06	12.4	1.96	10.1	3.8	13.7
M10	13.95	16.0	1.96	13.0	4.9	17.6



Self-tapping Brass Inserts

Type ITF & ITC

Type ITF – Thread-forming insert for ductile materials

Type ITC – Thread-cutting insert for brittle materials

Material: Brass

Thread Size mm	A	$L \pm 0.25$	Hole Size
3.0 x 0.5	4.80	6.35	4.30
3.5 x 0.6	5.56	7.15	5.05
4.0 x 0.7	6.35	7.90	5.80
5.0 x 0.8	7.15	9.55	6.35
6.0 x 1.0	8.75	11.15	7.90



Whatever your needs,
we're number one

No.

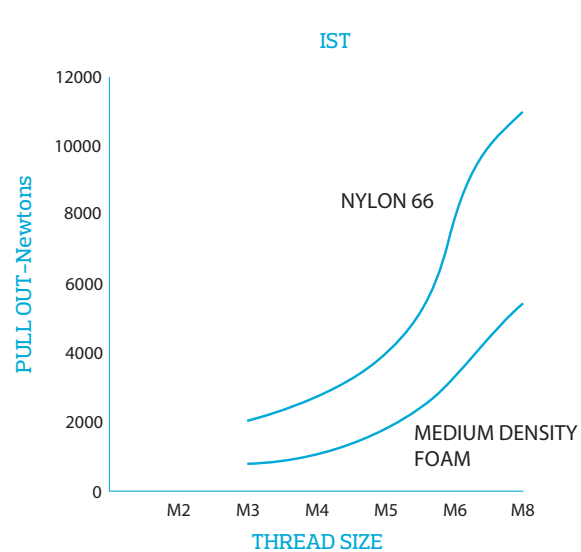
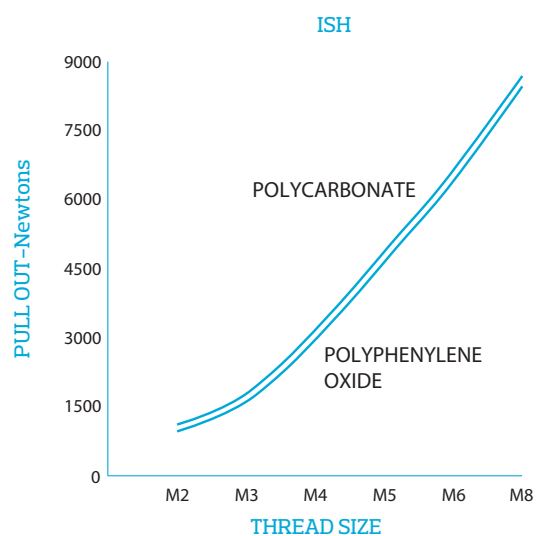
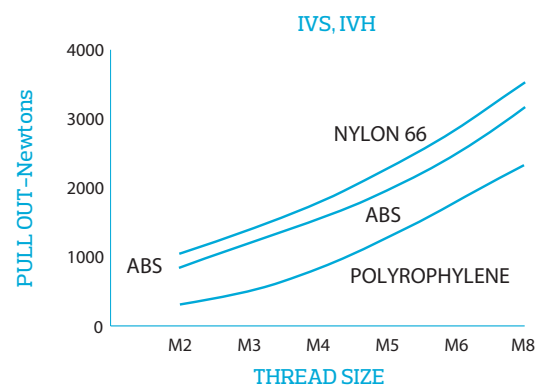
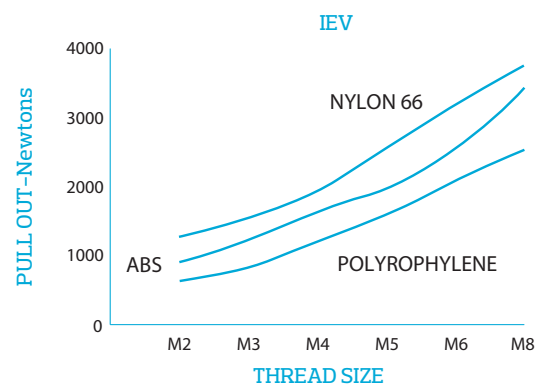
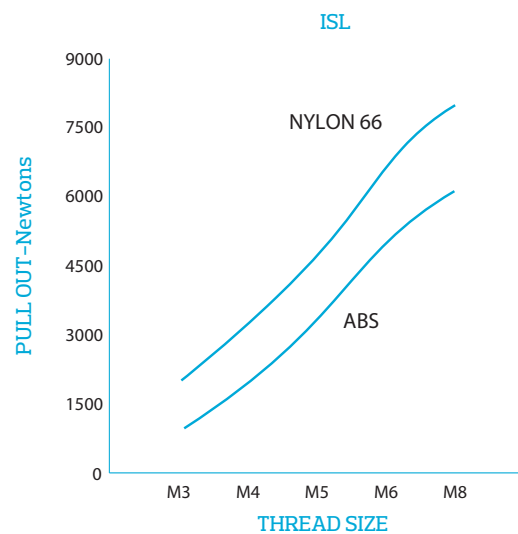
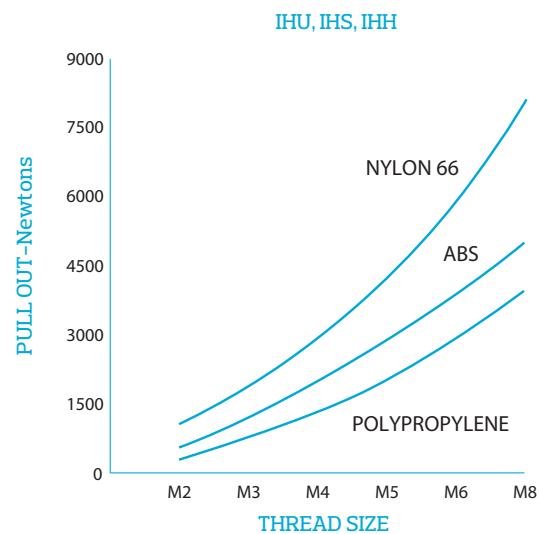


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Insert Performance Data

Thermoplastic Materials



Self-broaching Inserts

Type IBU & IBH

For use in thermosetting plastics providing strong, wear-resistant threads. Installation is by simple press-in method.

Material: Brass
Finish: Self-colour



Size A	Head Diameter E1	Head Thickness K	Length B	Hole Size L
M2	4.8	0.9	4.0	3.1
M2.5	5.6	0.6	5.3	3.8
M3	5.6	0.6	5.3	3.8
M3.5	6.4	0.8	6.3	4.6
M4	7.2	0.8	7.4	5.4

Size A	Head Diameter E1	Head Thickness K	Length B	Hole Size L
M5	8.0	1.0	8.3	6.2
M6	9.5	1.3	9.2	7.8
M8	11.0	1.3	9.2	9.3
M10	14.0	1.6	9.2	12.3

Vaned Expansion Inserts

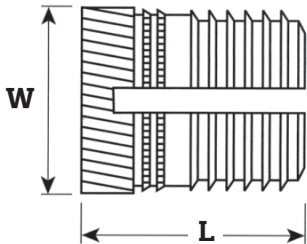
Type IEV

For use in most plastics including thermosetting, providing high and consistent pull-out strength.

Material: Brass CZ121
Finish: Self-colour



Thread Size	Length L	Diameter W	Rec. Hole -0.000 +0.004	Minimum Wall
M2	4.0	3.7	3.2	1.6
M2.5	5.8	4.5	4.0	2.0
M3	5.8	4.5	4.0	2.0
M3.5	7.2	5.3	4.8	2.4
M4	8.2	6.1	5.6	2.8
M5	9.5	6.9	6.4	3.2
M6	12.7	8.5	8.0	4.0
M8	12.7	10.1	9.6	4.8

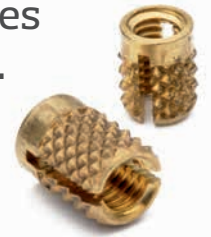


Knurled Expansion Inserts

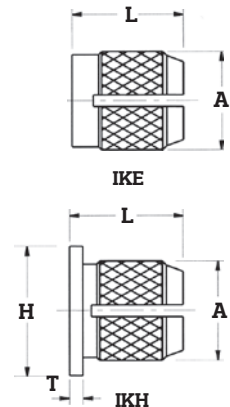
Type IKE – Plain, IKH – Headed

Headed and unheaded expansion type inserts for use in all types of plastic, also gives a self-locking action to the inserted screw.

Material: Brass



	Internal Thread Size mm	A ± 0.1	L ± 0.25	H ± 0.08	T ± 0.1	Hole Size	Min Wall Thickness
	M2	3.45	4.0	4.8	0.6	3.2 to 3.3	2.4
	M2.5	4.2	4.8	5.6	0.6	4.0 to 4.1	3.2
	M3	4.2	4.8	5.6	0.6	4.0 to 4.1	3.2
	M3.5	5.0	6.4	6.4	0.8	4.7 to 4.8	3.6
	M4	5.85	8.0	7.2	0.8	5.5 to 5.6	4.0
	M5	6.6	9.5	8.0	1.0	6.3 to 6.4	4.8
	M6	8.3	12.7	9.5	1.3	7.9 to 8.0	6.0
	M8	9.9	12.7	11.0	1.3	9.5 to 9.6	7.0



Knurled Expansion Inserts

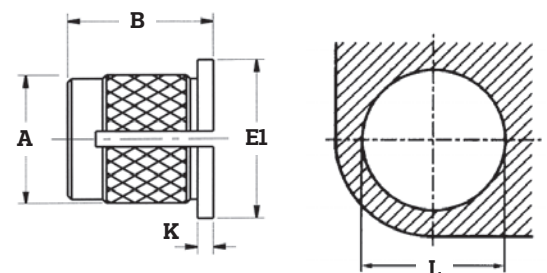
Type IKR – Reversed Head

Reverse head push-in inserts with self-locking action for use in thermoset materials.

Material: Brass

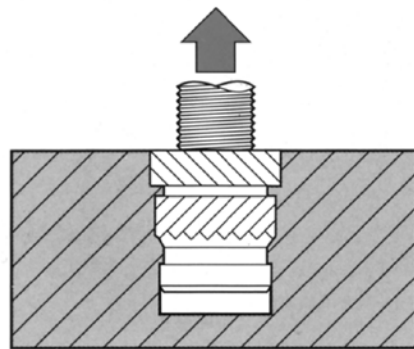
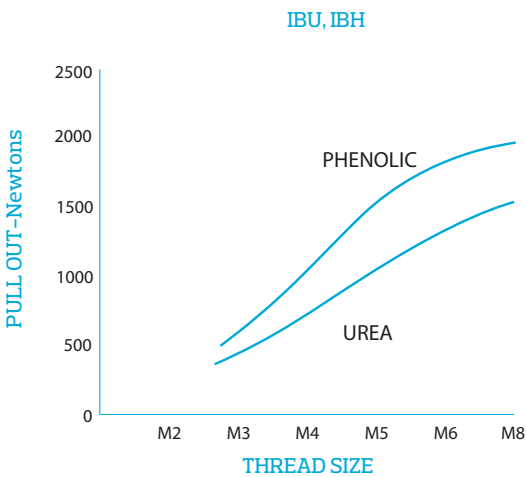
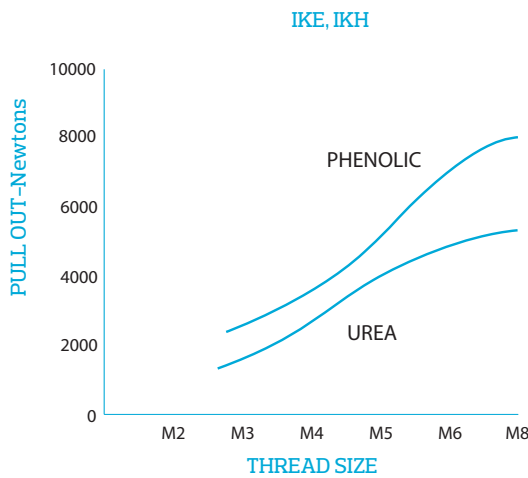
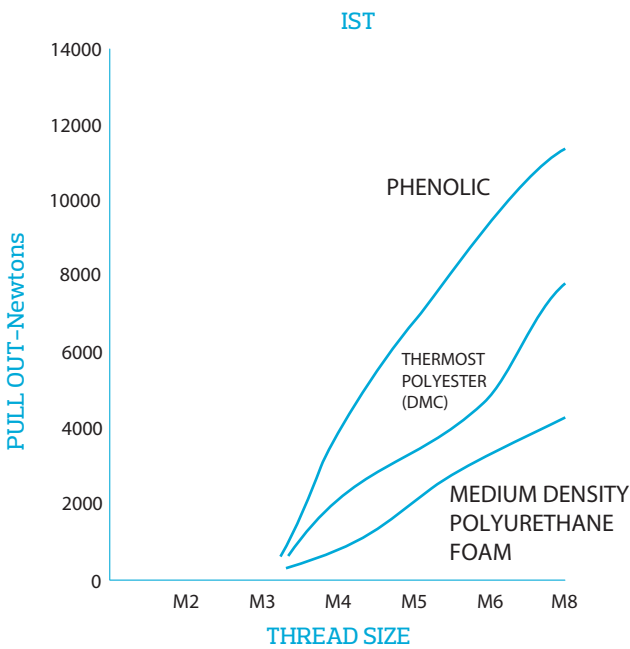


	Thread Size	Length B	Head Diameter K	Head Thickness K	Recmd. Hole Size L
	M2	4.0	4.8	0.6	3.2 to 3.3
	M2.5	4.8	5.6	0.6	4.0 to 4.1
	M3	4.8	5.6	0.6	4.0 to 4.1
	M3.5	6.4	6.4	0.8	4.7 to 4.8
	M4	8.0	7.2	0.8	5.5 to 5.6
	M5	9.5	8.0	1.0	6.3 to 6.4
	M6	12.7	9.5	1.3	7.9 to 8.0
	M8	12.7	11.0	1.3	9.5 to 9.6



Insert Performance Data

Thermosetting Plastics



PULL-OUT is the axial force exerted on the insert in the direction opposite to the insertion

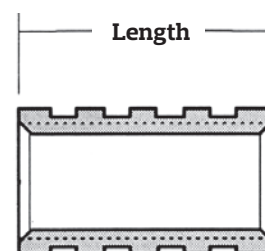
Note: The information given in the performance data graphs on pages 9 & 12 is for guidance only. We recommend that you carry out individual tests for each application prior to ordering.

Moulded-in Range (Hexagon Style)

Type IMH & IMB Blind

A hexagonal grooved insert offering an economic alternative to the more traditional round knurled insert. The hexagon size is typically 2mm larger than the thread size. Available in both blind and thru' styles.

Material: Brass



Thread	M3	M4	M5	M6	M8	M10	M12	M14	M16
Length mm	6	8.5	10	10 & 15	16 & 19	16 & 19	19	19	19

Moulded-in Range (Round Style)

Type IMR & IMS Blind

A round, knurled and grooved insert, suitable for most applications and processes, giving an excellent uniform grip. Available in both blind and thru' styles.

Material: Brass



Thread	M2	M3	M4	M5	M6	M8	M10
Length mm	5.6	7.4	10.3	11.3	14	16	18

Note: A full range of steel inserts are available to order

Self-tapping Threaded Inserts

Type ITE

Application: The ENSAT® 307/308 series is designed to provide maximum pull-out strength and wear-resistant threads in aluminium, aluminium alloy, magnesium and mild steel. Three lateral cutting holes provide the means for an easy self-tapping installation and the resulting connection is highly resistant to vibration.

Description of a self-cutting threaded insert, works standard 307 with internal thread **A**=M5, in steel, case hardened, zinc plated and yellow chromated:

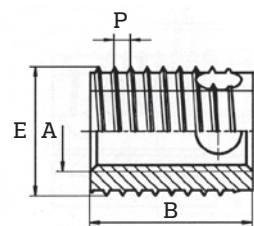
Material:	Steel, unhardened	9S Mn PB 28 K
	Steel, case hardened, zinc plated, yellow chromate	9S Mn PB 28 K
	Stainless steel 1.4105	X 4 Cr Mo S 18
	Stainless steel 1.4305	X10 Cr Ni S 18 9

Other materials and dimensions on request

Tolerances: DIN 7168 – medium/DIN 7151 – IT 12

Thread: Internal thread **A**: ISO 6H
External thread **E**: Metric, tolerances in accordance with works standard.

Also available: With 3 blind holes for chip-free installation.
Works standard 377/388



Dimensions in mm

	Internal Thread	External Thread		Length	Recommended Hole Diameter L and Flange Cover				Minimum Hole Depth (Blind Bores)
	A	E	P	B	R _m <250 <150 HB 80%	Light Alloy Cast Iron 70%	R _m <350 <200 HB 60%	R _m >350 >200 HB 50%	T
	M3	5	0.6	4 6	4.6	4.7	4.7	4.8	6 8
	M3.5	6	0.8	5 8	5.5	5.6	5.6	5.7	7 10
	M4	6.5	0.8	6 8	6.0	6.1	6.1	6.2	8 10
	M5	8	1	7 10	7.4	7.5	7.6	7.7	9 13
	M6	10	1.25	8 12	9.3	9.4	9.5	9.6	10 15
	M8	12	1.5	9 14	11.1	11.2	11.3	11.5	11 17
	M10	14	1.5	10 18	13.1	13.2	13.3	13.5	13 22
	M12	16	1.75	12 22	15.0	15.1	15.2	15.4	15 26
	M14	18	2	14 22	17.0	17.1	17.2	17.4	17 28
	M16	20	2	14 24	19.0	19.1	19.2	19.4	17 28

Precision Hardened Inserts

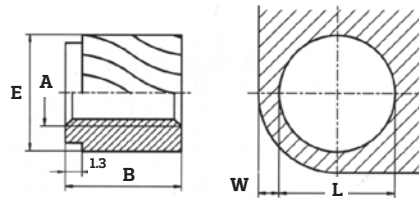
Type IHM

Provides strong and wear-resistant screw connections in moulded or cast parts made of metal alloy. Suitable for through or blind holes.

Material: Steel - hardened

Finish: Zinc plated and yellow chromated

Thread: Internal 6H ISO Metric



Internal Thread A	External Ø E	Length B	Recommended Retaining Hole ¹ L	Distance from Edge ¹ ≥ W
M2	3.9	5.6	3.7	2.9
M2.5	5.3	4.5	4.8	3.8
M3	5.3	4.5	4.8	3.8
M4	7.7	6.9	7.2	6.0
M5	7.7	6.9	7.2	6.0
M6	10.3	9.5	9.6	7.4

1) Reference values only. Specific material trials are recommended



Sheet Metal Fasteners

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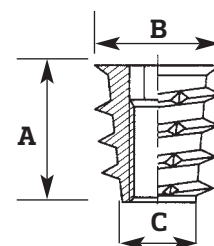


Screw-in Die-cast Inserts

Type IDH

A low cost screw-in insert for timber and plastics with hexagon drive.

Material: Die-cast Zinc Alloy



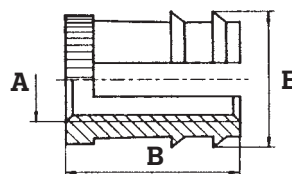
Thread Size	Dimensions in mm			Recommended Hole Size
	A	B	C	
M4	10	8.5	5.0	5.7 - 6.0
M5	10	11.5	6.5	7.7 - 8.0
M5	13	11.5	6.5	7.7 - 8.0
M6	10	12.5	8.0	8.7 - 9.0
M6	13	12.5	7.5	8.7 - 9.0
M6	20	12.5	7.5	8.7 - 9.0
M8	13	14.5	9.5	10.7 - 11.0
M8	20	14.5	9.5	10.7 - 11.0
M8	25	14.5	9.5	10.7 - 11.0
M10	13	16.0	11.0	12.2 - 12.5
M10	25	16.0	11.0	12.2 - 12.5

Expansion Type Self-locking Inserts

Type IEH

Provides a strong, wear-resistant and vibration-proof fastening in soft plastics, timber/fibre materials and composite materials.

Material: Brass



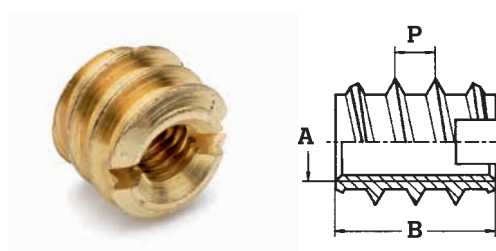
Internal Thread A	External Dia. E	Length B	Number of Fins	Recommended Hole Size
M2.5	5.35	4.8	1	4.5 to 4.7
M3	5.35	4.8	1	4.5 to 4.7
M3.5	6.00	4.8	1	5.2 to 5.4
M4	6.65	9.5	2	5.8 to 6.0
M5	7.35	9.5	2	6.5 to 6.7
M6	9.05	9.5	2	8.2 to 8.4
M8	12.5	14.3	3	11.8 to 12.0

Self-tapping Inserts

Type ITT – for Timber and Plastic

Application: High pull-out self-tapping insert giving high resistance to vibration.

Material code: Brass
Steel



Internal Thread A	Internal Thread (Special Thread)		Length B	Recommended Hole Diameter		Minimum Hole Depth (Blind Holes)
	E	P		Softwood	Plastic/Hardwood	
M 2.5	5	1.6	6	3.5	3.6 to 3.8	8
M 3	5.5	1.6	6	4.1	4.2 to 4.3	8
M 3.5	6.5	2.5	8	4.6	4.7 to 4.8	10
M 4	7	2.5	10	5.1	5.2 to 5.3	13
M 5	9	3	12	6.6	6.7 to 6.9	15
M 6	10	4	14	7.6	7.7 to 7.9	17
M 8	13	4	20	9.9	10.1 to 10.3	23
M 10	16	5	23	12.4	12.6 to 12.8	26
M 12	19	5	26	15.4	15.6 to 15.8	30
M 16	24	5	26	20.4	20.6 to 20.8	30

Self-tapping Inserts

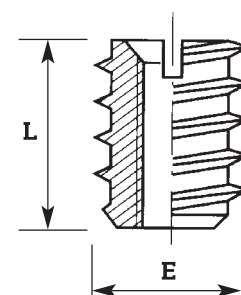
Type ISB – for Timber and Plastic

Application: Self-tapping inserts for hard plastic, metals, alloys and timber.

Material code: Brass
Steel
Steel zinc plated



External Ø E	Length L	Internal Thread	Hole Sizes	
			Softwood	Hardwood
6	6	M3	4.6 - 4.9	4.9 - 5.2
6.5	8	M4	5.3 - 5.6	5.6 - 5.8
6.5	10	M4	5.3 - 5.6	5.6 - 5.8
8	6	M4	5.7 - 6.1	6.1 - 6.6
8	10	M4*	5.7 - 6.1	6.1 - 6.6
8	12	M4	5.7 - 6.1	6.1 - 6.6
10	10	M5	7.6 - 8.0	8.0 - 8.5
10	12	M5	7.6 - 8.0	8.0 - 8.5
12	10	M6	9.4 - 9.9	9.9 - 10.4
12	12	M6*	9.4 - 9.9	9.9 - 10.4
12	18	M6	9.4 - 9.9	9.9 - 10.4
14	12	M8	11.4 - 11.9	11.9 - 12.4
14	15	M8*	11.4 - 11.9	11.9 - 12.4
14	20	M8	11.4 - 11.9	11.9 - 12.4
18.5	12	M10	15.1 - 15.8	15.8 - 16.5
18.5	25	M10	15.1 - 15.8	15.8 - 16.5



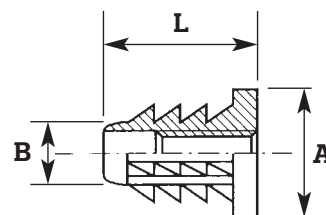
Knock-in Inserts

Type IHK

A quick, low cost insert which cuts its way into all types of timber and plastic.

Material: Die-cast Zinc Alloy

Finish: Self-colour



Head Ø A	Shank Ø B	Total Length L	Internal Thread	Drill Hole Ø
8.5	6	8	M3	4.1 - 4.5
10.5	8	9.5	M4	5.6 - 6.0
10.5	8	11.5	M4	5.6 - 6.0
12.5	10	12	M5	7.1 - 7.5
12.5	10	15	M5	7.1 - 7.5
16	12	10.5	M6	8.6 - 9.0
14.5	12	12.5	M6	8.6 - 9.0
14.5	12	15.5	M6	8.6 - 9.0
19	13	13.5	M8	9.6 - 10.0
19	13	15.5	M8	9.6 - 10.0
25	13	20.5	M8	9.6 - 10.0

Knock-in Inserts

Type IKD

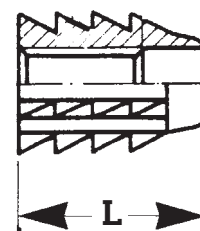
A quick, low cost insert which cuts its way into all types of timber and plastic.

Material: Die-cast Zinc Alloy

Finish: Self-colour



Length	Internal Thread	Hole Size
10	M5	6.2 - 6.4
10.5	M6	8.0 - 8.2



Semi-automatic Manual Inserter

Semi-automatic manual inserters are designed to install post-moulded brass inserts into thermoplastic by the heat transfer method. They offer a low cost and flexible solution to insert installation.

Inserts are pre-heated and automatically fed to the workpiece allowing optimum insertion rates and increased productivity.



Features:

- Inserts pre-heated prior to insertion
- Tube feed for ease of insert loading
- Automatic insertion height adjustment
- Adjustable electronic temperature controller
- Fully automatic and easy to upgrade

Specification:

- Temperature range 0°C-500°C
- Insert range from M2-M8
- Power requirements 240V, 50 cycle
- Cycle rate 25-50 inserts per minute
- Dimensions: Length 450mm, width 400mm, height 540mm



*Optional bowl feeder

Manual Heat Insert Driver

Manual heat insert drivers are designed to install post-moulded brass inserts into thermoplastic by the heat transfer method. They offer a low cost and flexible solution to insert installation.

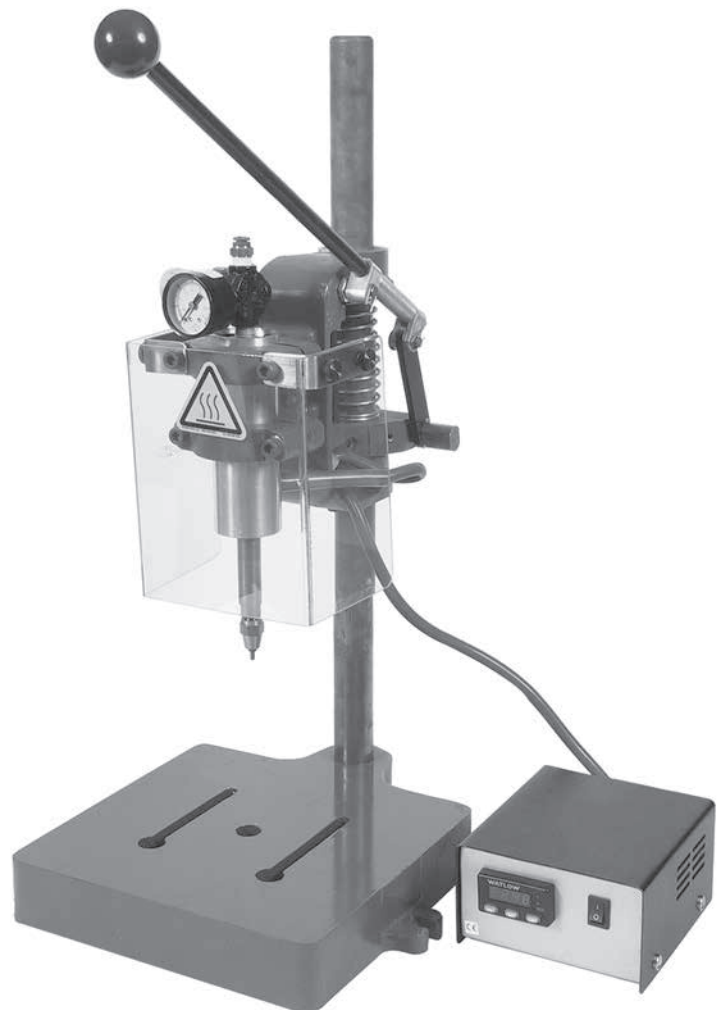
Temperature and pressure are easily adjusted to get the right combination for optimum installation and insert performance.

Features:

- High output heater for rapid insertion
- Adjustable insertion pressure to avoid damaging delicate mouldings
- Range of five interchangeable insertion tips supplied (M3, 3.5, 4, 5, 6)
- Adjustable electronic temperature controller

Specification:

- Temperature range 50°C-350°C
- Insert range up to M6
- Power requirements 240V, 50 cycle
- Heater output 100W
- Throat height 280mm, throat depth 125mm



Self-tapping Insert Drivers

To be used in a manual tap wrench.

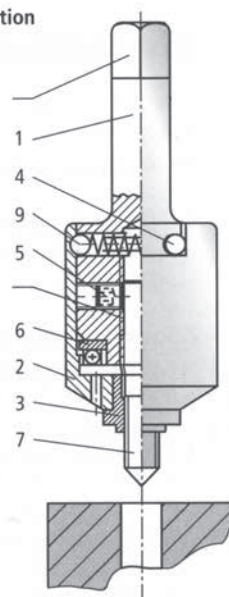


For use in a pillar drill with a reversible tapping attachment or tapping machine not pitch controlled.



Tool 620
for flush installation

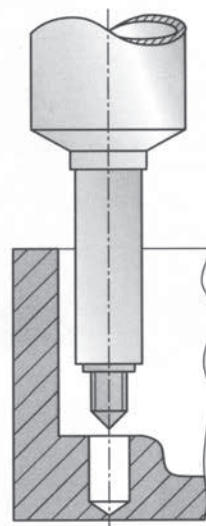
- Square flat
- 1 Shaft
- 4 Pin
- 9 Ball
- 5 Locking screw, colour marking
- 6 Ball bearing
- 2 Shell
- 3 Guide bush
- 7 Stud



For use in a pillar drill with a reversible tapping attachment or tapping machine not pitch controlled, for deep retaining holes.



Tool 621
For deep retaining holes



PT[®] Screws for Thermoplastics

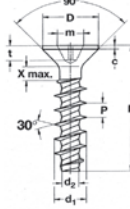
WN 1411



WN 1412



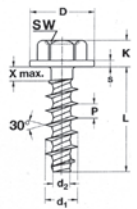
WN 1413



WN 1446



WN 1447



H Cross Recess (A)



Z Cross Recess (B)



S Cross Recess
(Camera Cross Recess) (C)

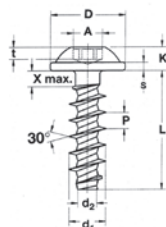


All cross recess and TORX[®] drives are also available as combi drives.

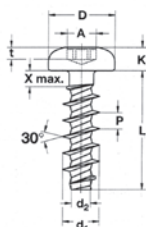
		Nominal Ø				K30	K35	K40	K50	K60	K70	K80	K100	
		External Thread Ø			d ₁	3,0	3,5	4,0	5,0	6,0	7,0			
		Thread Core Ø			d ₂	1,66	1,91	2,17	2,68	3,19	3,70			
		Thread Pitch			P	1,34	1,57	1,79	2,24	2,69	3,14			
		Thread run-out X _{max}			Standard L >	3 · d ₁	3,0	3,5	4,0	5,0	6,0	7,0		
					Shortened L ≤	3 · d ₁	1,5	1,8	2,0	2,5	3,0	3,5		
	WN 1411	Head Diameter			D	6,0	7,0	8,0	10,0	12,0	14,0			
		Head Height			K	2,1	2,4	2,5	3,2	4,0	4,6			
		Washer Thickness			S	0,7	0,8	0,9	1,1	1,3	1,5			
		A	H Cross Recess	Width / Size	≈ m	2,9/1	3,5/2	4,1/2	4,8/2	6,4/3	7,0/3			
				Penetration Depth t	min.	1,15	1,07	1,33	1,98	2,24	2,84			
					max.	1,61	1,70	1,96	2,61	2,90	3,50			
		B	Z Cross Recess	Width / Size	≈ m	2,8/1	3,8/2	4,2/2	4,7/2	6,3/3	7,0/3			
				Penetration Depth t	min.	1,26	1,08	1,40	2,01	2,27	2,91			
max.	1,51				1,54	1,86	2,47	2,73	3,37					
WN 1412	Head Diameter			D	5,3	6,1	7,0	8,8	10,5	12,3				
	Head Height			K	2,0	2,5	2,7	3,4	4,0	4,5				
	A	H Cross Recess		Width / Size	≈ m	2,9/1	4,0/2	4,3/2	4,9/2	6,5/3	7,1/3			
			Penetration Depth t	min.	1,19	1,23	1,51	2,12	2,44	3,00				
				max.	1,65	1,86	2,14	2,75	3,10	3,66				
	B	Z Cross Recess	Width / Size	≈ m	2,9/1	3,9/2	4,3/2	4,9/2	6,6/3	7,1/3				
			Penetration Depth t	min.	1,36	1,26	1,62	2,23	2,57	3,14				
				max.	1,61	1,72	2,08	2,67	3,03	3,61				
WN 1413	Head Diameter			D	5,5	7,3	8,4	9,3	11,3	13,6				
	Head Height			c	0,35	0,40	0,45	0,50	0,55	0,60				
	A	H Cross Recess		Width / Size	≈ m	2,7/1	3,9/2	4,2/2	4,6/2	5,2/2	6,9/3			
			Penetration Depth t	min.	1,10	1,33	1,59	2,04	2,59	3,02				
				max.	1,56	1,96	2,22	2,67	3,22	3,68				
	B	Z Cross Recess	Width / Size	≈ m	2,7/1	4,0/2	4,2/2	4,6/2	5,1/2	6,8/3				
			Penetration Depth t	min.	1,20	1,47	1,70	2,06	2,60	3,01				
				max.	1,45	1,93	2,16	2,52	3,06	3,47				
WN 1446	Width Across Flats			SW	5,0	5,5	7,0	8,0	10,0	10,0	13,0	13,0		
	Head Height			K	1,5	2,3	2,3	3,0	3,5	4,8	5,3	5,8		
WN 1447	Width Across Flats			SW	5,0	5,5	5,5	7,0	8,0	8,0	10,0	13,0		
	Head Height			K	2,3	2,8	2,8	3,5	4,2	5,0	6,0	7,0		
	Washer Ø			D	6,5	7,0	8,0	10,0	12,0	14,0	16,0	18,0		
	Washer Thickness			S	0,6	0,7	0,8	0,8	1,0	1,2	1,2	1,5		

PT® Screws for Thermoplastics

WN 1451



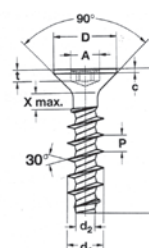
WN 1452



WN 1453



WN 1423



TORX®



TORXplus /
AUTOSERT



TORXplus /
Tamper resistant



3-Star



One-Way screw



Slot



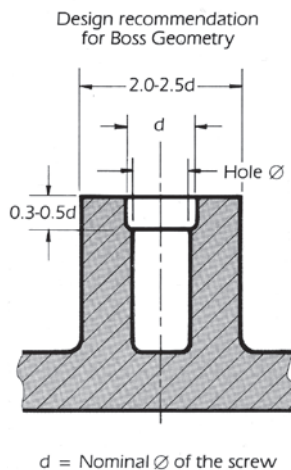
		Nominal Ø			K30	K35	K40	K50	K60	K70	K80	K100		
		External Thread Ø		d ₁	3,0	3,5	4,0	5,0	6,0	7,0	8,0	10,0		
		Thread Core Ø		d ₂	1,66	1,91	2,17	2,68	3,19	3,70	4,21	5,23		
		Thread Pitch		P	1,34	1,57	1,79	2,24	2,69	3,14	3,59	4,49		
		Thread Run-out X _{max}	Standard L >	3 · d ₁	3,0	3,5	4,0	5,0	6,0	7,0	8,0	10,0		
			Shortened L ≤	3 · d ₁	1,5	1,8	2,0	2,5	3,0	3,5	4,0	5,0		
	WN 1451	Head Diameter		D	6,0	7,0	8,0	10,0	12,0	14,0	16,0	20,0		
		Head Height		K	2,1	2,4	2,6	3,3	3,6	4,2	4,8	5,5		
				TORX®	T10	T10	T20	T20	T25	T30	T40	T40		
				A	max.	2,80	2,80	3,95	3,95	4,50	5,60	6,75	6,75	
		Penetration Depth	t	min.	1,00	1,10	1,25	1,40	1,60	2,00	2,70	2,70		
				max.	1,30	1,40	1,70	1,80	2,00	2,40	3,20	3,20		
		Washer Thickness		S	0,60	0,70	0,80	1,00	1,20	1,40	1,60	2,00		
		WN 1452	Head Diameter		D	5,6	6,9	7,5	8,2	10,8	12,5	14,0	16,0	
			Head Height		K	2,1	2,3	2,6	2,9	3,8	4,4	5,0	6,0	
					TORX®	T10	T10	T20	T20	T25	T30	T40	T40	
					A	max.	2,80	2,80	3,95	3,95	4,50	5,60	6,75	6,75
			Penetration Depth	t	min.	1,00	1,10	1,25	1,40	1,60	2,00	2,40	2,70	2,70
	max.				1,30	1,40	1,70	1,80	2,00	2,40	2,90	3,20	3,20	
	WN 1453	Head Diameter		D	5,6	6,5	7,5	9,2	11,0	12,5	14,5	14,5		
		Head Height		c	0,35	0,40	0,45	0,50	0,55	0,60	0,70	0,70		
				≈ f	0,75	0,90	1,00	1,25	1,50	1,80	2,00	2,00		
				TORX®	T10	T15	T20	T25	T30	T40	T40	T40		
				A	max.	2,80	3,35	3,95	4,50	5,60	6,75	6,75	6,75	
Penetration Depth		t	min.	1,00	1,20	1,40	1,60	2,00	2,70	2,70	2,70	2,70		
	max.		1,30	1,50	1,80	2,00	2,40	3,20	3,20	3,20	3,20			
WN 1423	Head Diameter		D	5,5	7,3	8,4	9,3	11,3	13,6	15,8				
	Head Height		c	0,35	0,40	0,45	0,50	0,55	0,60	0,70				
			TORX®	T8	T15	T20	T20	T30	T40	T40				
			A	max.	2,40	3,35	3,95	3,95	5,60	6,75	6,75			
	Penetration Depth	t	min.	0,80	1,00	1,25	1,25	1,75	2,25	2,40				
			max.	1,00	1,30	1,70	1,70	2,20	2,70	2,90				

PT® Screws For Thermoplastics

Size Range

PT® Screw	K18	K 22	K25	K30	K35	K40	K50	K60	K70	K80	K100
Nominal Ø (mm) Length L (mm)	1,80	2,20	2,50	3,00	3,50	4,00	5,00	6,00	7,00	8,00	10,00
3,5 ± 0,6											
4 ± 0,6											
4,5 ± 0,6											
5 ± 0,6											
6 ± 0,6											
7 ± 0,75											
8 ± 0,75											
10 ± 0,75											
12 ± 0,9											
14 ± 0,9											
16 ± 0,9											
18 ± 0,9											
20 ± 1,05											
25 ± 1,05											
30 ± 1,05											
35 ± 1,25											
40 ± 1,25											
50 ± 1,25											
60 ± 1,5											
70 ± 1,5											
80 ± 1,5											
90 ± 1,75											
100 ± 1,75											

Design Recommendations



Material	Hole Diameter	Boss Diameter	Minimum Insertion Depth
Polypropylene	0.7d	2d	2d
Acetal Homopolymer Polyoximethylene	0.75d	1.95d	1.7d
Polyethylene Terephthalate	0.75d	1.85d	1.7d
Polybutylene Terephthalate	0.75d	1.85d	1.7d
Nylon	0.75d	1.85d	1.7d
Styrene Acrylonitrile	0.77d	2d	1.9d
Acrystyrene	0.78d	2d	2d
ABS	0.8d	2d	2d
Polyethylene Terephthalate 30% Glass Fill	0.8d	1.8d	1.7d
Polybutylene Terephthalate 30% Glass Fill	0.8d	1.8d	1.7d
Nylon 30% Glass Fill	0.8d	1.8d	1.7d
Polystyrene	0.8d	2d	2d
Polycarbonate	0.85d	2.5d	2.2d
Polyphenylene Oxide (Noryl)	0.85d	2.5d	2.2d
(other materials upon request)	d = Nominal Screw Diameter		

Additional Product Ranges

Electronic Hardware

TFC's range includes components for computers, telecoms, medical and military/aerospace applications. Our product line includes; standoffs, spacers, captive screws, PCB supports, pillars, handles and ferrules.

Smalley Wave springs & Spirolox rings

With over 35 years of experience, TFC is the largest European supplier of Smalley's space-saving wave springs and Spirolox Retaining Rings, an alternative to the conventional circlip. TFC's Product Engineers are available to discuss your application no matter how unusual.

Threaded Fasteners

A vast range of commodity fasteners are available from TFC; socket products, HT bolts and screws, nuts, washers, studding, machine, self-tapping and thread forming screws. All can be delivered to your short or long-term scheduled requirements, direct to production line or stock room.

Seals & Bearings

TFC work closely with reputable manufacturers to bring together quality sealing solutions and bearings. 'O'rings, shaft seals, roller bearings, whether it's standard or bespoke for the most demanding environments, TFC's expert team can help.

Spring Steel & Moulded Panel Fasteners

Nylon rivets, drive fasteners, plastic clips, cage nuts, 'U'Nuts, Edge clips, pipe staples, all form part of TFC's extensive product portfolio, enabling us to satisfy the component demands of most engineering and industrial companies.

Circlips & Springs

With 1,000's of circlip sizes in stock, both imperial and metric, carbon and stainless, TFC can offer immediate shipment for next day delivery. Our access to the largest selection of round wire coil springs, disc springs, wave springs and wireforms, means TFC can provide a preload solution in a variety of materials including exotic alloys.

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