



Threaded Inserts (Plastics, Timber & Metal)

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specialised fastener products



Introduction

Specialised Fastener Products

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**

TFC Specialised Fastener Products has been at the forefront of fastener supply since 1988, specifically set-up to provide a complete design and application service to the Sheet Metal, Plastics and Electronics industries from our Colchester base. 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

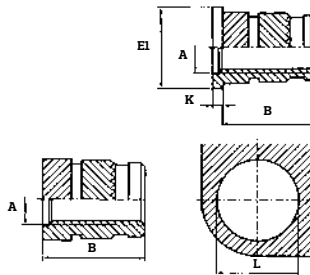
Type S860 Standard, S861 Short, S862 Headed

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

Material: Brass (-80)
Stainless steel (-50)

To Specify: Type - Thread size - Material
e.g. Headed M3 Brass - S862-0030-80

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 SCLB

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

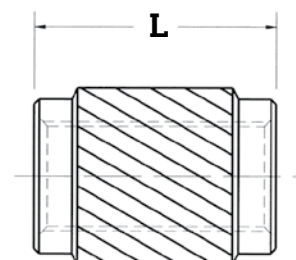
Finish: Self-colour

Length & wall thickness: To suit any application

To Specify: Type - Bolt size - Length e.g. SCLB - M6 - 20



Std Nom. Bolt size	Internal diameter	Recommended Hole size ± 0.05	'L' Length $+0 / - 0.15$
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

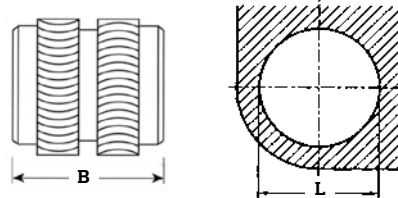
Type S863

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

Material: Brass (-80)

To Specify: Type - Thread size - Material
e.g. M4 Brass - S863-0040-80

Note: Headed version available to special order only - Type S863H



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

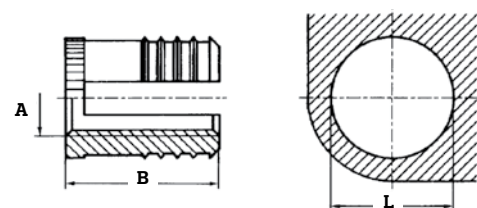
Type S813

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

Material: Brass (-80)

To Specify: Type - Thread size - Material
e.g. Headed M3 Brass - S813-0030-80

Part No.	Size A	Length B	No. of vanes	Recommended hole size L
812-	M2	4.0	2	3.2
813-	M2.5	4.8	3	4.0
813-	M3	4.8	3	4.0
813-	M3.5	6.4	3	4.8
814-	M4	8.0	4	5.6
815-	M5	9.5	5	6.4
815-	M6	12.7	5	8.0
815-	M8	12.7	5	9.5



Heat Transfer or Cold Insertion

Type SINS19, SINS20 Long

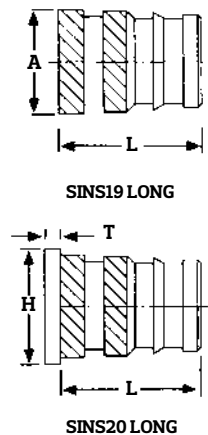
For post-mounting into thermoplastic materials via heat transfer or cold press-in.

Material: Brass

To specify: Type followed by thread size e.g. SINS19-M3L



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



Heat Transfer or Cold Insertion

Type SINS19, SINS20 Short

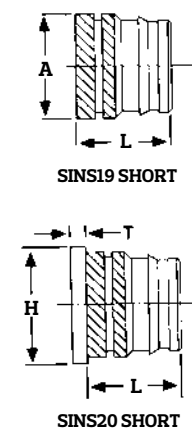
For post-mounting into thermoplastic materials via heat transfer or cold press-in.

Material: Brass

To specify: Type followed by thread size e.g. SINS19-M3S



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



Symmetrical Inserts

Type SINS29L – Standard length & SINS29S – Short length

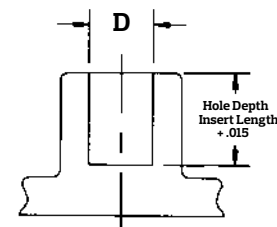
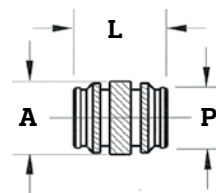
For post moulding into thermoplastic materials, where a symmetrical insert is required.

Material: Brass

To specify: Type followed by Threadsize, e.g. SINS 29L M3.0



Thread Size Metric	A	L		Hole Size +.008 - .000
		INS29L	INS29S	
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 SAS

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

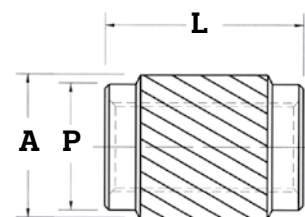
Material: Brass (-80)

To specify: Type - bolt size - length
e.g. SAS - M3

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	¼-20	7.92	8.23	7.87	7.95
M8	⅜-18	9.53	9.80	9.45	9.53



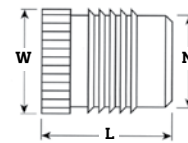
Vaned Inserts

Type SCLH61

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

Material: Brass

Finish: Self-colour



Part No.	Thread size	L Length	W diameter	N Pilot end diameter	No. of fins	Rec. hole -0.000 +0.004	Minimum wall
SCLH61 - M2	M2	4.0	3.7	3.1	2	3.2	1.6
SCLH61 - M2.5	M2.5	4.7	4.5	3.9	3	4.0	2.0
SCLH61 - M3	M3	4.7	4.5	3.9	3	4.0	2.0
SCLH61 - M3.5	M3.5	6.4	5.3	4.7	4	4.8	2.4
SCLH61 - M4	M4	7.9	6.1	5.5	5	5.6	2.8
SCLH61 - M5	M5	9.5	7.0	6.3	5	6.4	3.3
SCLH61 - M6	M6	12.7	8.6	7.9	7	8.0	4.0
SCLH61 - M8	M8	12.7	10.2	9.5	7	9.6	4.8

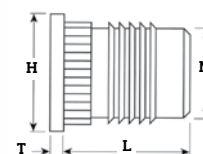
Headed Vaned Inserts

Type SCLH62

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

Material: Brass

Finish: Self-colour



Part No.	Thread size	L Length	T Head thickness	H Head diameter	W diameter	N Pilot end diameter	No. of fins	Rec. hole -0.000 +0.004	Minimum wall
SCLH62 - M2	M2	4.0	0.46	4.8	3.7	3.1	2	3.2	1.6
SCLH62 - M2.5	M2.5	4.7	0.58	5.5	4.5	3.9	3	4.0	2.0
SCLH62 - M3	M3	4.7	0.58	5.5	4.5	3.9	3	4.0	2.0
SCLH62 - M3.5	M3.5	6.4	0.74	6.4	5.3	4.7	4	4.8	2.4
SCLH62 - M4	M4	7.9	0.89	7.1	6.1	5.5	5	5.6	2.8
SCLH62 - M5	M5	9.5	1.07	7.9	7.0	6.3	5	6.4	3.3
SCLH62 - M6	M6	12.7	1.32	9.5	8.6	7.9	7	8.0	4.0
SCLH62 - M8	M8	12.7	1.32	11.0	10.2	9.5	7	9.6	4.8

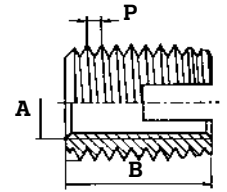
Self-tapping Inserts

Type S009

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

- Material:** Steel yellow zinc plated - (-002)
 Steel case hardened and yellow zinc plated - (-005)
 Brass - (-01)
 Stainless steel 1.4104 - (-02), Stainless steel 1.4305 - (-03)

To specify: Use Part No. as stated plus material code e.g. S009-614-02



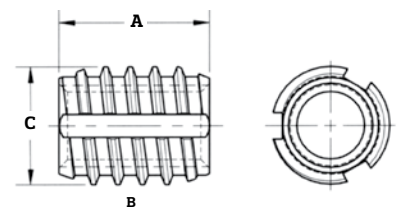
Part No.	Internal thread A	Length B	External thread P	Hole size- hard plastics and metals	Hole size- soft plastics and timber
S009-306-	M3	6	M5 x 0.5	4.68 - 4.74	4.56 - 4.62
S009-408-	M4	8	M6.5 x 0.75	6.01 - 6.11	5.81 - 5.91
S009-510-	M5	10	M8 x 1	7.36 - 7.48	7.12 - 7.24
S009-614-	M6	14	M10 x 1.5	9.0 - 9.2	8.6 - 8.8
S009-815-	M8	15	M12 x 1.5	11.0 - 11.2	10.6 - 10.8
S009-918-	M10	18	M14 x 1.5	13.0 - 13.2	12.6 - 12.8
S009-922-	M12	22	M16 x 1.5	15.0 - 15.2	14.6 - 14.8
S009-924-	M14	24	M18 x 1.5	17.0 - 17.4	16.6 - 16.8
S009-925-	M16	25	M20 x 1.5	19.0 - 19.6	18.6 - 18.8

Self-tapping Inserts

Type SQS

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

- Material:** Brass
Finish: Self-colour



Part No.	Thread size	C-Outside diameter	A-Length	B-External pitch	Hole diameter	Minimum wall	Hole depth
SQS-M3	M3	4.73	5.25	1.06	4.1	1.55	5.3
SQS-M3.5	M3.5	5.52	6.2	1.15	5.0	1.9	6.9
SQS-M4	M4	6.31	7.1	1.27	5.6	2.2	7.6
SQS-M5	M5	7.5	8.4	1.4	6.9	2.6	9.3
SQS-M6	M6	8.69	9.8	1.6	8	3.0	10.6
SQS-M8	M8	11.06	12.4	1.96	10.1	3.8	13.7
SQS-M10	M10	13.95	16.0	1.96	13.0	4.9	17.6



Self-tapping Brass Inserts

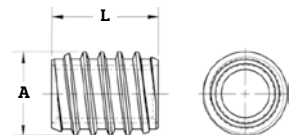
Type SINS10 & SINS13

Type SINS10 – Thread-forming insert for ductile materials

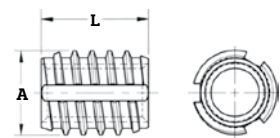
Type SINS13 – Thread-cutting insert for brittle materials

Material: Brass

To specify: Type followed by thread size, e.g. SINS13 M4



SINS10



SINS13

Thread Size mm	A	L ± 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

No.



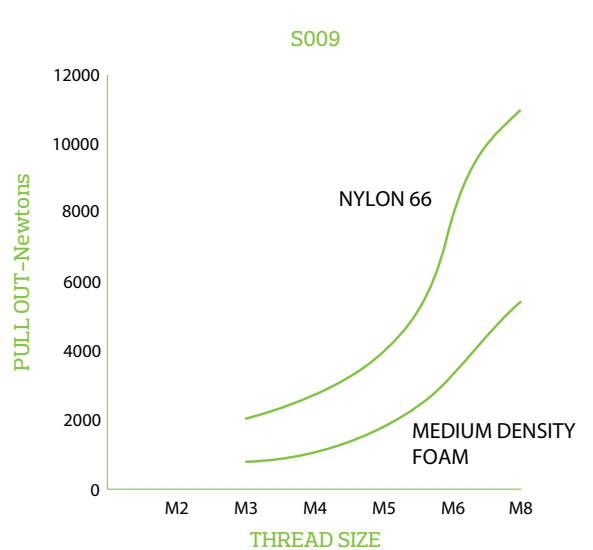
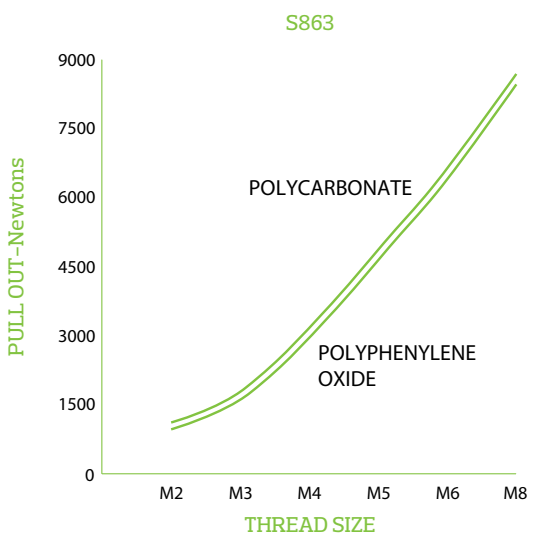
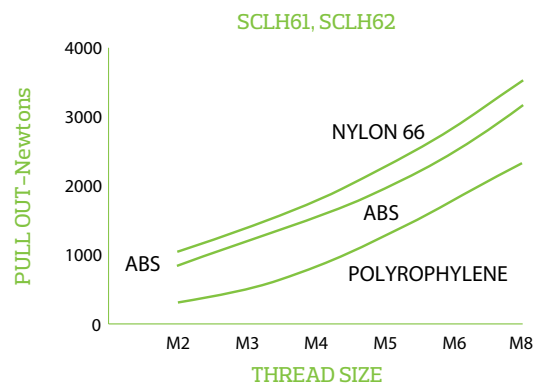
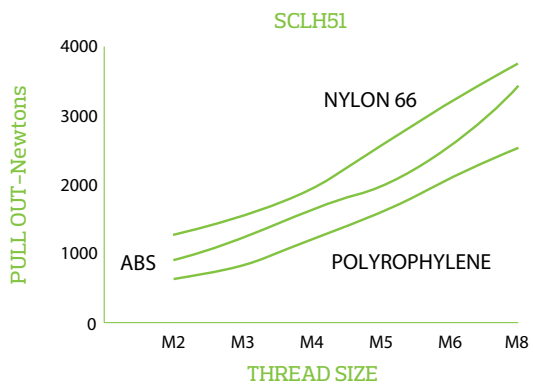
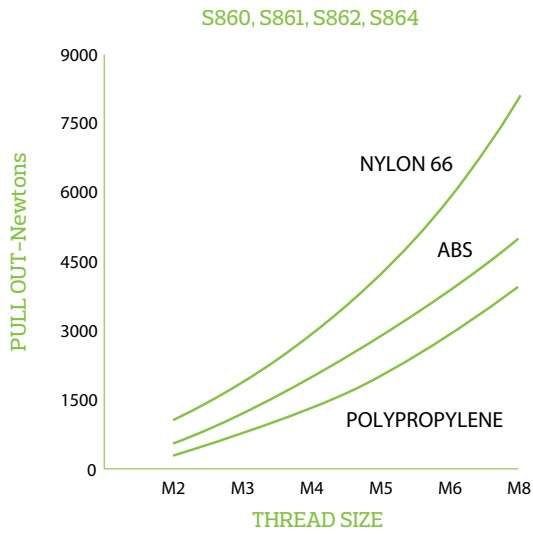
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Insert Performance Data

Thermoplastic materials



Self-broaching Inserts

Type S850 & S852 Headed

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

Material: Brass (-80)

Finish: Self-colour

To specify: Type - Thread size - Material
e.g. S850-0030-80



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 SCLH51

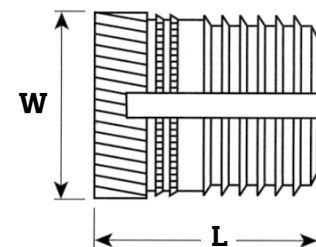
For use in most plastics including thermosetting, providing high and consistent pull-out strength.

Material: Brass CZ121

Finish: Self-colour



Part No.	Thread size	Length L	Diameter W	Rec. hole -0.000 +0.004	Minimum wall
SCLH51-M2	M2	4.0	3.7	3.2	1.6
SCLH51-M2.5	M2.5	5.8	4.5	4.0	2.0
SCLH51-M3	M3	5.8	4.5	4.0	2.0
SCLH51-M3.5	M3.5	7.2	5.3	4.8	2.4
SCLH51-M4	M4	8.2	6.1	5.6	2.8
SCLH51-M5	M5	9.5	6.9	6.4	3.2
SCLH51-M6	M6	12.7	8.5	8.0	4.0
SCLH51-M8	M8	12.7	10.1	9.6	4.8



Knurled Expansion Inserts

Type S841 – Plain, S841H – Headed

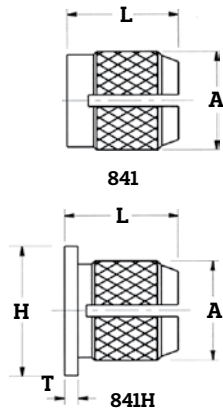
Headed and unheaded expansion type inserts for use in all types of plastic, also gives a self-locking action to the inserted screw.

Material: Brass (-80)

To specify: Type - Thread size - Material e.g. Plain M3 Brass - S841-0030-80



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 S842 – Reversed Head

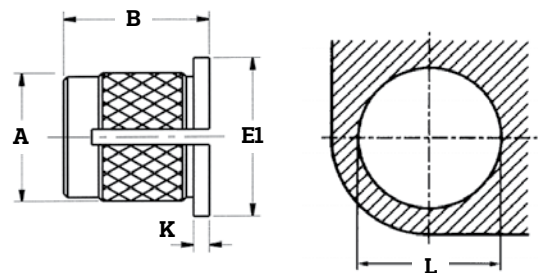
Reverse head push-in inserts with self-locking action for use in thermoset materials.

Material: Brass

To specify: Type - Thread size - Material
e.g. M4 Brass - S842-0040-80



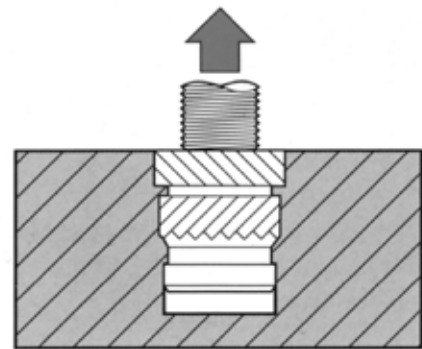
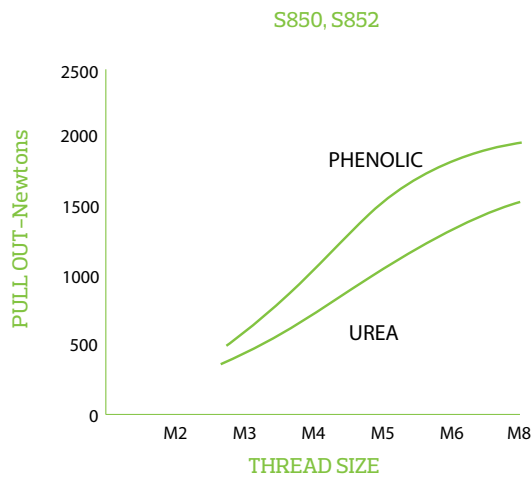
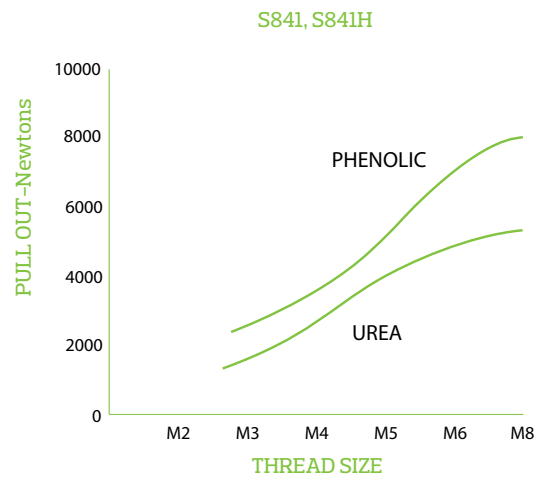
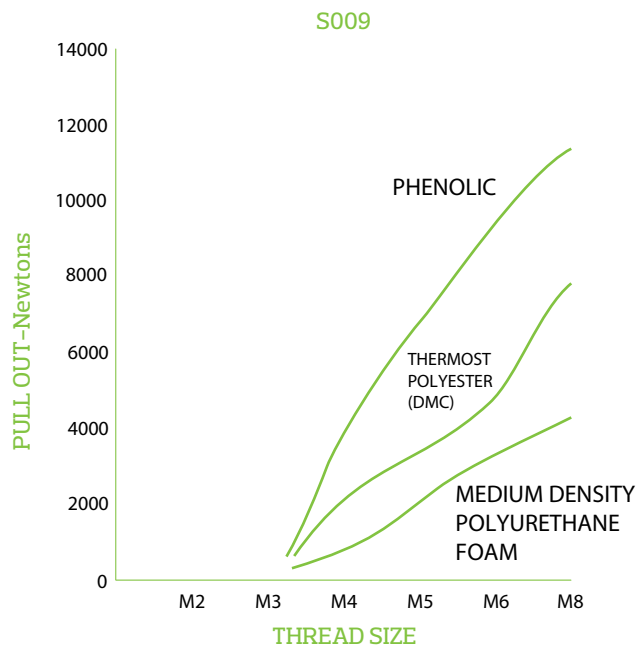
Thread Size	Length B	Head diameter K	Head thickness K	Recmd. hole size L
M2	4.0	4.8	0.6	3.2 to 3.3
M2.5	4.8	5.6	0.6	4.0 to 4.1
M3	4.8	5.6	0.6	4.0 to 4.1
M3.5	6.4	6.4	0.8	4.7 to 4.8
M4	8.0	7.2	0.8	5.5 to 5.6
M5	9.5	8.0	1.0	6.3 to 6.4
M6	12.7	9.5	1.3	7.9 to 8.0
M8	12.7	11.0	1.3	9.5 to 9.6



For A dimension refer to S841 above

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.

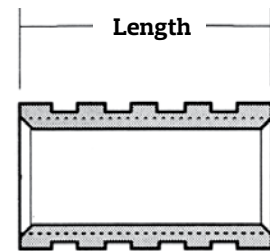
Moulded-in Range (Hexagon Style)

Type STQ

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

To specify: Type followed by size
 e.g. M6 x 10mm length - STQ-M6-10
 Add 'B' for blind end e.g. STQ-M6-10-B



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 SUG

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

To specify: Type followed by size
 e.g. M6 x 10mm length - SUG-M6-10
 Add 'B' for blind end e.g. SUG-M3-7.4-B



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 S307, S308

Application: The ENSAT® S307/S308 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 S307 with internal thread A=M5, in steel, case hardened, zinc plated and yellow chromated:

Material:	Steel, unhardened	9S Mn PB 28 K	Material code	.10
	Steel, case hardened, zinc plated, yellow chromate	9S Mn PB 28 K	Material code	.16
	Stainless steel 1.4105	X 4 Cr Mo S 18	Material code	.40
	Stainless steel 1.4305	X10 Cr Ni S 18 9	Material code	.50

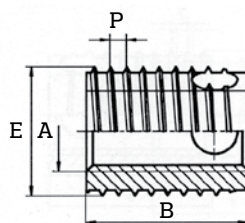
Other materials and dimensions on request

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

Example: Ensat with blind holes, internal thread M10,
Length 18 mm, stainless steel 1.4105 = Ensat 388 0 100.40



Dimensions in mm

Part No.	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
S307 0 30. S308 0 30.	M3	5	0.6	4 6	4.6	4.7	4.7	4.8	6 8
S307 0 35. S308 0 35.	M3.5	6	0.8	5 8	5.5	5.6	5.6	5.7	7 10
S307 0 40. S308 0 40.	M4	6.5	0.8	6 8	6.0	6.1	6.1	6.2	8 10
S307 0 50. S308 0 50.	M5	8	1	7 10	7.4	7.5	7.6	7.7	9 13
S307 0 60. S308 0 60.	M6	10	1.25	8 12	9.3	9.4	9.5	9.6	10 15
S307 0 80. S308 0 80.	M8	12	1.5	9 14	11.1	11.2	11.3	11.5	11 17
S307 0 100. S308 0 100.	M10	14	1.5	10 18	13.1	13.2	13.3	13.5	13 22
S307 0 120. S308 0 120.	M12	16	1.75	12 22	15.0	15.1	15.2	15.4	15 26
S307 0 140. S308 0 140.	M14	18	2	14 22	17.0	17.1	17.2	17.4	17 28
S307 0 160. S308 0 160.	M16	20	2	14 24	19.0	19.1	19.2	19.4	17 28

Precision Hardened Inserts

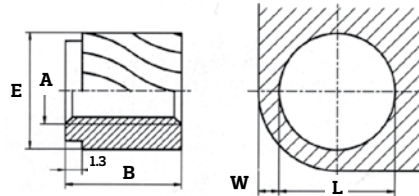
Type S890

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



Part No.	Internal Thread A	External Ø E	Length B	Recommended retaining hole ¹ L	Distance from edge ¹ ≥W
S890 0 020 .10	M2	3.9	5.6	3.7	2.9
S890 0 025.10	M2.5	5.3	4.5	4.8	3.8
S890 0 030.10	M3	5.3	4.5	4.8	3.8
S890 0 040.10	M4	7.7	6.9	7.2	6.0
S890 0 050.10	M5	7.7	6.9	7.2	6.0
S890 0 060.10	M6	10.3	9.5	9.6	7.4

1) Reference values only. Specific material trials are recommended

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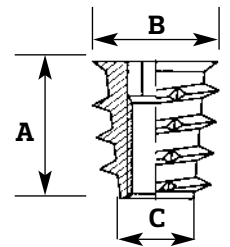
Screw-in Die-cast Inserts

Type SDF

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

Material: Die-cast Zinc Alloy

To specify: Use Part No. e.g. SDF M5 13



Part No.	Thread Size	Dimensions in mm			Recommended hole size
		A	B	C	
SDF M4 10	M4	10	8.5	5.0	5.7 - 6.0
SDF M5 10	M5	10	11.5	6.5	7.7 - 8.0
SDF M5 13	M5	13	11.5	6.5	7.7 - 8.0
SDF M6 10	M6	10	12.5	8.0	8.7 - 9.0
SDF M6 13	M6	13	12.5	7.5	8.7 - 9.0
SDF M6 20	M6	20	12.5	7.5	8.7 - 9.0
SDF M8 13	M8	13	14.5	9.5	10.7 - 11.0
SDF M8 20	M8	20	14.5	9.5	10.7 - 11.0
SDF M8 25	M8	25	14.5	9.5	10.7 - 11.0
SDF M10 13	M10	13	16.0	11.0	12.2 - 12.5
SDF M10 25	M10	25	16.0	11.0	12.2 - 12.5

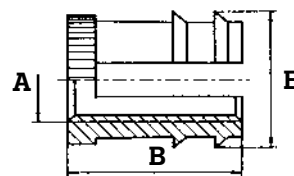
Expansion Type Self-locking Inserts

Type S821, S822 & S823

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

Material: Brass

To specify: Use Part No. as stated e.g. S822-0040-80



Part No.	Internal thread A	External dia. E	Length B	Number of fins	Recommended hole size
S821-0025-80	M2.5	5.35	4.8	1	4.5 to 4.7
S821-0030-80	M3	5.35	4.8	1	4.5 to 4.7
S821-0035-80	M3.5	6.00	4.8	1	5.2 to 5.4
S822-0040-80	M4	6.65	9.5	2	5.8 to 6.0
S822-0050-80	M5	7.35	9.5	2	6.5 to 6.7
S822-0060-80	M6	9.05	9.5	2	8.2 to 8.4
S822-0080-80	M8	12.5	14.3	3	11.8 to 12.0

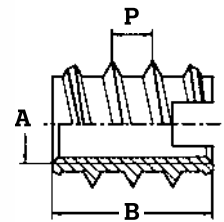
Self-tapping Inserts

Type SWS – for timber and plastic

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

Material code: 01 for Brass, 02 for Steel

To specify: Use Part No. with material code, e.g. for M3 in Brass; SWS 30 01



Part No.	Internal thread A	Internal thread (special thread)		Length B	Recommended hole diameter		Minimum hole depth (blind holes)
		E	P		Softwood	Plastic/ Hardwood	
SWS 25-	M 2.5	5	1.6	6	3.5	3.6 to 3.8	8
SWS 30-	M 3	5.5	1.6	6	4.1	4.2 to 4.3	8
SWS 35-	M 3.5	6.5	2.5	8	4.6	4.7 to 4.8	10
SWS 40-	M 4	7	2.5	10	5.1	5.2 to 5.3	13
SWS 50-	M 5	9	3	12	6.6	6.7 to 6.9	15
SWS 60-	M 6	10	4	14	7.6	7.7 to 7.9	17
SWS 80-	M 8	13	4	20	9.9	10.1 to 10.3	23
SWS 100-	M 10	16	5	23	12.4	12.6 to 12.8	26
SWS 120-	M 12	19	5	26	15.4	15.6 to 15.8	30
SWS 160-	M 16	24	5	26	20.4	20.6 to 20.8	30

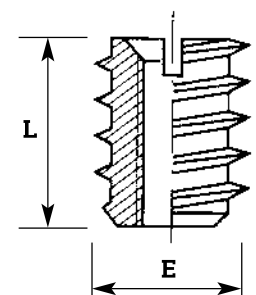
Self-tapping Inserts

Type SB – for timber and plastic

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

Material code: 001 for Steel zinc plated, 01 for Brass, 02 for Steel

To specify: Use Part No. with material code, e.g. for M3 in Brass; SB002 306 01



Part No.	External Ø E	Length L	Internal thread	Hole Sizes	
				Softwood	Hardwood
SB002 306-	6	6	M3	4.6 - 4.9	4.9 - 5.2
SB002 428-	6.5	8	M4	5.3 - 5.6	5.6 - 5.8
SB002 429-	6.5	10	M4	5.3 - 5.6	5.6 - 5.8
SB002 406-	8	6	M4	5.7 - 6.1	6.1 - 6.6
SB002 410-	8	10	M4*	5.7 - 6.1	6.1 - 6.6
SB002 412-	8	12	M4	5.7 - 6.1	6.1 - 6.6
SB002 510-	10	10	M5	7.6 - 8.0	8.0 - 8.5
SB002 512-	10	12	M5	7.6 - 8.0	8.0 - 8.5
SB002 610-	12	10	M6	9.4 - 9.9	9.9 - 10.4
SB002 612-	12	12	M6*	9.4 - 9.9	9.9 - 10.4
SB002 618-	12	18	M6	9.4 - 9.9	9.9 - 10.4
SB002 852-	14	12	M8	11.4 - 11.9	11.9 - 12.4
SB002 855-	14	15	M8*	11.4 - 11.9	11.9 - 12.4
SB002 860-	14	20	M8	11.4 - 11.9	11.9 - 12.4
SB002 112-	18.5	12	M10	15.1 - 15.8	15.8 - 16.5
SB002 125-	18.5	25	M10	15.1 - 15.8	15.8 - 16.5

Knock-in Inserts

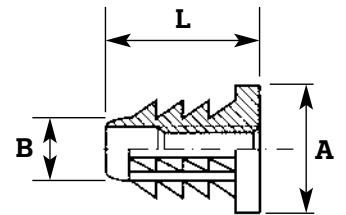
Type STSBZ

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

Material: Die-cast Zinc Alloy

Finish: Self-colour

To specify: Use Part No. e.g. STSBZ451 308 092



Part No.	Head Ø A	Shank Ø B	Total Length L	Internal Thread	Drill hole Ø
STSBZ451 308 092	8.5	6	8	M3	4.1 - 4.5
STSBZ451 409 092	10.5	8	9.5	M4	5.6 - 6.0
STSBZ451 411 092	10.5	8	11.5	M4	5.6 - 6.0
STSBZ451 512 092	12.5	10	12	M5	7.1 - 7.5
STSBZ451 515 092	12.5	10	15	M5	7.1 - 7.5
STSBZ451 610 092	16	12	10.5	M6	8.6 - 9.0
STSBZ451 612 092	14.5	12	12.5	M6	8.6 - 9.0
STSBZ451 615 092	14.5	12	15.5	M6	8.6 - 9.0
STSBZ451 813 092	19	13	13.5	M8	9.6 - 10.0
STSBZ451 815 092	19	13	15.5	M8	9.6 - 10.0
STSBZ451 820 092	25	13	20.5	M8	9.6 - 10.0

Knock-in Inserts

Type STSBZU

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

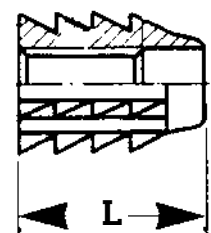
Material: Die-cast Zinc Alloy

Finish: Self-colour

To specify: Use Part No. e.g. STSBZU-452-M5-10



Part No.	Length	Internal Thread	Hole Size
STSBZU-452-M5-10	10	M5	6.2 - 6.4
STSBZU-452-M6-10.5	10.5	M6	8.0 - 8.2



Semi-automatic Manual Inserter

Type 400

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

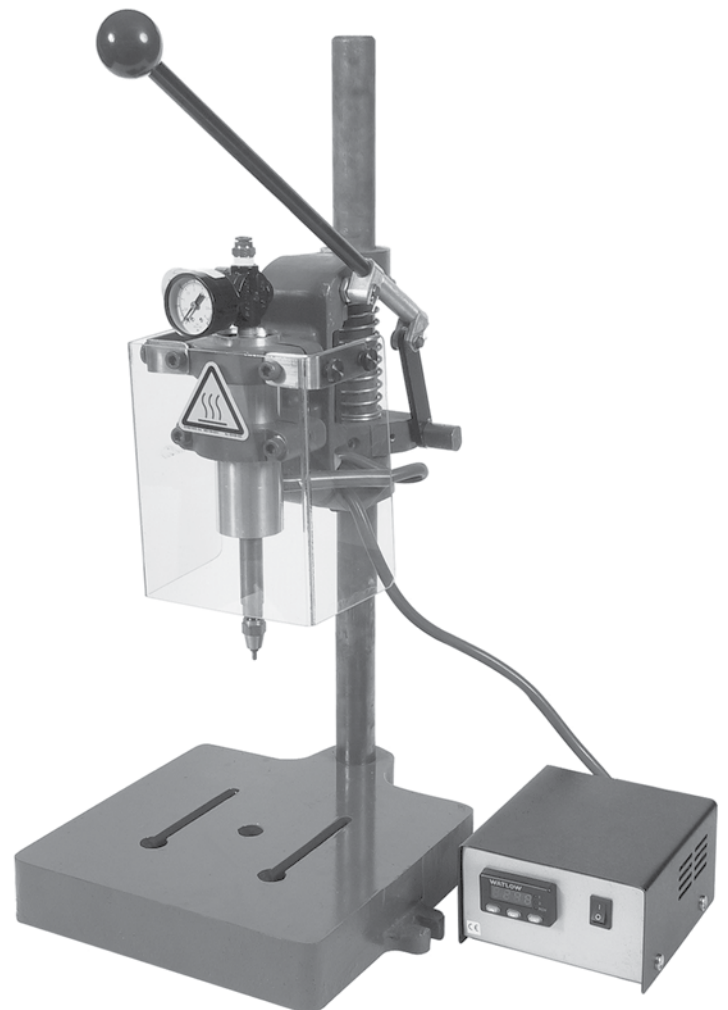
Type HM

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.

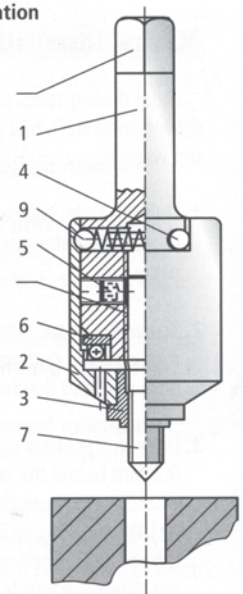


For use in a pillar drill with a reversible tapping attachment or tapping machine not pitch controlled.



Tool 620
for flush installation

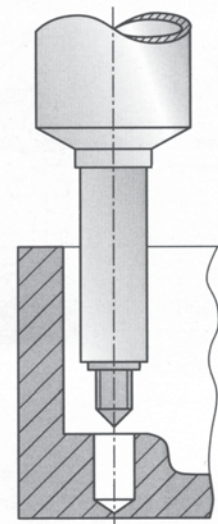
- Square flat
- 1 Shaft
- 4 Pin
- 9 Ball
- 5 Locking screw, colour marking
- 6 Ball bearing
- 2 Shell
- 3 Guide bush
- 7 Stud



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

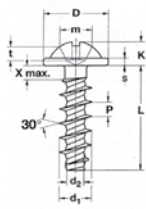


Tool 621
For deep retaining holes



PT[®] Screws For Thermoplastics

SWN 1411



H cross recess (A)

SWN 1412



SWN 1413

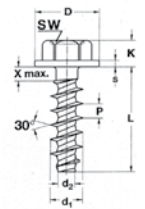


Z cross recess (B)

SWN 1446



SWN 1447



S cross recess
(Camera cross recess) (C)

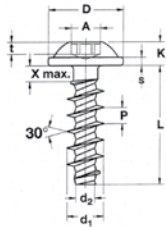


All cross recess and TORX[®] drives are also available as combi drives.

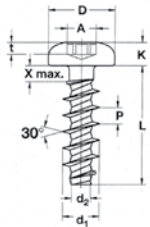
		Nominal Ø		K30	K35	K40	K50	K60	K70	K80	K100	
		External thread Ø	d ₁	3,0	3,5	4,0	5,0	6,0	7,0			
		Thread core Ø	d ₂	1,66	1,91	2,17	2,68	3,19	3,70			
		Thread pitch	P	1,34	1,57	1,79	2,24	2,69	3,14			
		Thread run-out X _{max}	standard L >	3 · d ₁	3,0	3,5	4,0	5,0	6,0	7,0		
			shortened L ≤	3 · d ₁	1,5	1,8	2,0	2,5	3,0	3,5		
SWN 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			
SWN 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			
SWN 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			
SWN 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	
SWN 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

SWN 1451



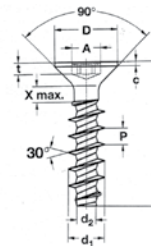
SWN 1452



SWN 1453



SWN 1423



TORX[®]



TORX^{plus} /
AUTOSERT



TORX^{plus} /
Tamper resistant



3-Star



One-Way screw



Slot



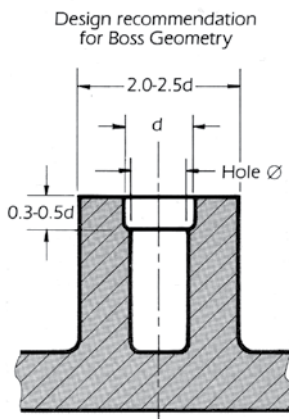
	Nominal Ø			K30	K35	K40	K50	K60	K70	K80	K100		
				External thread Ø		d ₁	3,0	3,5	4,0	5,0	6,0	7,0	8,0
Thread core Ø		d ₂	1,66	1,91	2,17	2,68	3,19	3,70	4,21	4,21	5,23		
Thread pitch		P	1,34	1,57	1,79	2,24	2,69	3,14	3,59	3,59	4,49		
Thread run-out X _{max}	standard L >	3 · d ₁	3,0	3,5	4,0	5,0	6,0	7,0	8,0	8,0	10,0		
	shortened L ≤	3 · d ₁	1,5	1,8	2,0	2,5	3,0	3,5	4,0	4,0	5,0		
SWN 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		
	Penetration depth	t	max.	A	max.	2,80	2,80	3,95	3,95	4,50	5,60	6,75	6,75
			min.		min.	1,00	1,10	1,25	1,40	1,60	2,00	2,70	2,70
Washer thickness		S	0,60	0,70	0,80	1,00	1,20	1,40	1,60	1,60	2,00		
SWN 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		
	Penetration depth	t	max.	A	max.	2,80	2,80	3,95	3,95	4,50	5,60	6,75	6,75
			min.		min.	1,00	1,10	1,25	1,40	1,60	2,00	2,40	2,70
max.		max.	1,30	1,40	1,70	1,80	2,00	2,40	2,40	2,90	3,20		
SWN 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		
	Penetration depth	t	max.	A	max.	2,80	3,35	3,95	4,50	5,60	6,75	6,75	6,75
min.				min.	1,00	1,20	1,40	1,60	2,00	2,70	2,70	2,70	
max.		max.	1,30	1,50	1,80	2,00	2,40	3,20	3,20	3,20	3,20		
SWN 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			
	Penetration depth	t	max.	A	max.	2,40	3,35	3,95	3,95	5,60	6,75	6,75	
			min.		min.	0,80	1,00	1,25	1,25	1,75	2,25	2,40	
max.		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



d = Nominal Ø of the screw

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 Specialised Fastener Product 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.

Springs 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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