

Selection guide for AMTEC® thread inserts

Requirements Specifications	HITSERT® 2	HITSERT® 3	SONICSERT®	QUICKSERT® plus	QUICKSERT® QUICK-SERT® Hex self-tapping	QUICKSERT® type 1230 expansion	EXPANSION-SERT 1	EXPANSION-SERT 2	SPREDSERT® type 1/type 2 SPREDSERT® with retaining flange
Suitability for different constr. materials									
- Thermoplastics	++	++	++	++	+	+	0	exception	type 1/withret. flange+
- Thermosets	--	-	--	--	++	+	+	--	type 2/withret. flange+
- Foams	--	--	--	-	0	-	--	+	--
- Elastomers	--	--	--	-	0	--	--	+	--
Minimum installation effort (machine technology)	Thermal installation machine (min. quantities with soldering gun)	"soldering gun" screwdriver toggle press	ultrasonic welding machine	manual installation tool screwdriver	manual installation tool screwdriver	spindle lifting tool (possibly press)	manual installation mandrel	manual installation mandrel	manual installation mandrel
Recommended wall thicknesses (comparable quality: 1 = low, 4 = high)	1	1	2	2	3	4	4	4	3
Fitting values in equal thermoplastics	100 %	100 % for thermal installation and tapping insertion, 70 % for pressing-in	80 %	110 %	120 %	100 %	60 %	-	50 %
Special requirements:									
- Tightness	with O-ring (implemented)	yes	with O-ring (possible)	no	no	-	no	no	no
- Bolt thread	yes		yes	no	no	-	no	no	no
- Through hole	yes	yes	yes	no	no		no	no	no
Others	by taper (8°) - self-centring - low-tension	seal insert, variable installation		chipless embedding		also suitable for light metals	easy installation		cost-effective
This catalogue, on page	6	8	11	19	23	24	30	32	33

! **Remarks regarding "Fitting values in equal thermoplastics":**
Indicated values relate to HITSERT® 2 in PA GF.

-- unsuitable / - limited / 0 satisfactory / + good / ++ very good



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Selection guide for installation methods

To meet the high general requirements to connection technology, fasteners and processing systems must be perfectly designed and match perfectly. That is why we, as a specialist in fastening and assembly technology, in the field of embedding thread inserts cooperate with KVT Bielefeld GmbH, Werkering 6, 33609 Bielefeld, Germany, phone + 49 (0)521-9320710, info@kvt-bielefeld.de, the welding specialist.

Installation methods	Possible sizes	Installation time	Materials	Size	Batch sizes	Installation accuracy			Special characteristics		
						< 0.05	+/- 0.1	≥ 0.2			
HEW – heat element welding	M 2 – M 8	approx. 3 – 4 seconds (for size M 4)	thermo- plastics, thermo- plastic elastomers	≤ M 3	< 50,000	--	++	++	<ul style="list-style-type: none"> – low-tension – multiple installation possible – well suitable for threaded bolts – easily convertible to other thread insert dimensions 		
					~ 500,000	--	++	++			
					> 1 Mio.	--	++	++			
				M 4 – M 6	< 50,000	--	++	++			
					~ 500,000	--	++	++			
					> 1 Mio.	--	++	++			
	≥ M 8	< 50,000	--	+	+						
		~ 500,000	--	+	+						
		> 1 Mio.	--	+	+						
	ERW – electromagnetic resistance welding	M 1,4 – M 40	approx. 3 seconds (for size M 5)	thermo- plastics, thermo- plastic elastomers	≤ M 3	< 50,000	++	++		++	<ul style="list-style-type: none"> – low-tension – multiple installation possible – especially for inserts < M 2 as well as inserts with sealing rings – single-phase or two-phase process can be selected
						~ 500,000	++	++		++	
						> 1 Mio.	++	++		++	
M 4 – M 6					< 50,000	++	++	++			
					~ 500,000	++	++	++			
					> 1 Mio.	++	++	++			
≥ M 8		< 50,000	++	++	++						
		~ 500,000	++	++	++						
		> 1 Mio.	++	++	++						
USW – ultrasonic welding		M 2 – M 6	approx. 3 seconds (for size M 5)	thermo- plastics,	≤ M 3	< 50,000	--	0	++	<ul style="list-style-type: none"> – high noise emission upon installation of metal inserts – considerable abrasion upon installation of metal inserts – unsuitable for threaded bolts – easily convertible to other thread insert dimensions 	
						~ 500,000	--	0	++		
						> 1 Mio.	--	0	++		
	M 4 – M 6				< 50,000	--	0	++			
					~ 500,000	--	0	++			
					> 1 Mio.	--	0	++			
	≥ M 8	< 50,000	--	--	--						
		~ 500,000	--	--	--						
		> 1 Mio.	--	--	--						

-- unsuitable / - limited / 0 satisfactory / + good / ++ very good

All dimensions in mm.

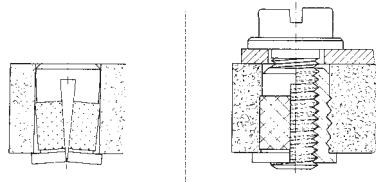
The versions – thread inserts for expansion anchoring SPREDSERT® with retaining flange



The advantages

- For thermoset and thermoplastic components
 - High-strength threads in through holes
 - Screw locking
- Material: Cu Zn 38 Pb 2 (EU 2000/53 compliant)

Principle

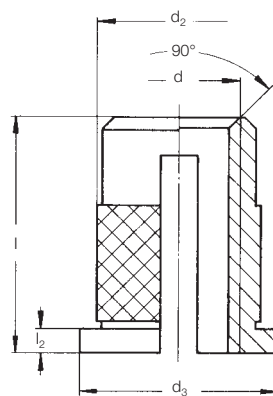


The **SPREDSERT®** with retaining flange is inserted into the through hole until the retaining flange is seated. The slotted anchoring section with diamond knurling is compressed.

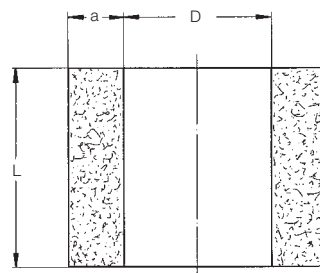
By screwing in the screw, the thread insert is forced open in the anchoring section so that the diamond knurling penetrates the plastic material. The retaining flange which acts as a shoulder support ensures high pull-out locking while the screw is also locked. For the additional expansion force, the tightening torque must be increased by 10 %.

Technical data

Type 0835



Mounting hole^①



For installation tools and machines, see pages 39 – 40

d	Order No	l ^①	d ₂	d ₃	l ₂	D ^{+0.1①}	L _{min.}	a _{min.}
M 3	0835 103 0048	4.8	4.3	5.5	0.5	3.9	4.5	3.2
M 3.5	0835 135 0064	6.4	5.1	6.3	0.7	4.7	6.0	3.6
M 4	0835 104 0008	8.0	6.0	7.0	0.8	5.5	7.5	4.0
M 5	0835 105 0095	9.5	6.8	8.0	1.0	6.3	9.0	4.8
M 6	0835 106 0127	12.7	8.4	9.5	1.3	7.9	12.0	6.0
M 8	0835 108 0127	12.7	9.9	11.0	1.3	9.4	12.0	7.1

Metric ISO thread according to DIN 13-6H.
 Technical modifications reserved.
 Minimum quantity on request.
 All dimensions in mm.

① Guide values: depend on moulding material, may have to be changed after setting trials.
 ② Screw contact length = min. insert length (l) + 1p (pitch)

Other sizes and special designs on request.

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