

**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
<b>Suitability for different constr. materials</b>									
- 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 %
<b>Special requirements:</b>									
- 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
<b>Others</b>	by taper (8°) - self-centring - low-tension	seal insert, variable installation		chipless embedding		also suitable for light metals	easy installation		cost-effective
<b>This catalogue, on page</b>	<b>6</b>	<b>8</b>	<b>11</b>	<b>19</b>	<b>23</b>	<b>24</b>	<b>30</b>	<b>32</b>	<b>33</b>



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

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

**Kel** BULGARIA

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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"> <li>– low-tension</li> <li>– multiple installation possible</li> <li>– well suitable for threaded bolts</li> <li>– easily convertible to other thread insert dimensions</li> </ul>		
					~ 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"> <li>– low-tension</li> <li>– multiple installation possible</li> <li>– especially for inserts &lt; M 2 as well as inserts with sealing rings</li> <li>– single-phase or two-phase process can be selected</li> </ul>
						~ 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"> <li>– high noise emission upon installation of metal inserts</li> <li>– considerable abrasion upon installation of metal inserts</li> <li>– unsuitable for threaded bolts</li> <li>– easily convertible to other thread insert dimensions</li> </ul>	
						~ 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.

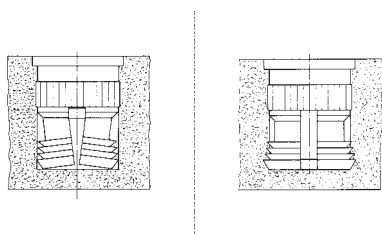
**The versions – thread inserts for expansion anchoring *Expansionsert 2***



**The advantages**

- For reactive resins, PUR, elastomers, integral hard foams as well as for wood composite materials
  - Wear-resistant threads
  - Quick, cost-effective installation
- Material: Cu Zn 38 Pb 2 (EU 2000/53 compliant)

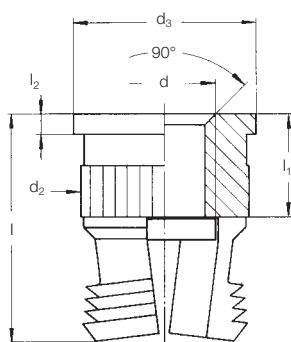
**Principle**



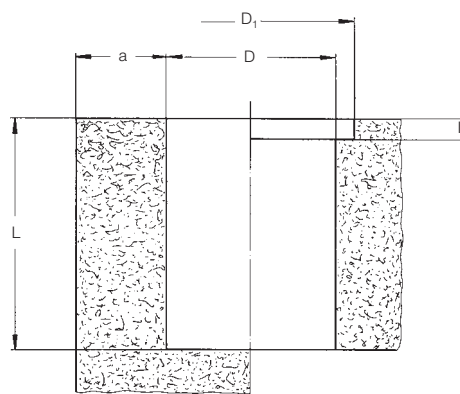
The **EXPANSIONSERT 2** thread insert consists of a body with internal thread, which has knurls and undercuts on the circumferential surface. Inside the body, there is a spreader plate that is pressed downwards when the thread insert is installed in the mounting hole. Upon installation, the slotted bottom part of the **EXPANSIONSERT 2** is expanded and its cutting rings are anchored in the wall of the mounting hole. The thread insert is thus reliably secured against pull-out and twisting.

**Technical data**

Type 0235



Mounting hole<sup>①</sup>



For installation tools and machines, see pages 39 – 40

d	Order No	l	d <sub>2</sub>	d <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	D <sup>+0.1</sup> ①	D <sub>1</sub>	L <sub>min.</sub>	a <sub>min.</sub>
M 3	0235 103 0008	8.0	5.9	7.0	3.0	0.8	5.5	7.2	8.2	4.0
M 3.5	0235 135 0008	8.0	5.9	7.0	3.5	0.8	5.5	7.2	8.2	4.0
M 4	0235 104 0095	9.5	6.9	8.0	4.0	0.8	6.5	8.2	9.8	5.0
M 5	0235 105 0011	11.0	8.4	10.0	5.0	0.8	8.0	10.2	11.3	6.0
M 6	0235 106 0125	12.5	8.4	10.0	6.0	0.8	8.0	10.2	12.8	6.0

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.

Other sizes and special designs on request.

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