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/with ret. flange+
– Thermosets	––	–	––	––	++	+	+	––	type 2/with ret. 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

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	––	++	++	– 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	++	++	++	– 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	++	– 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 **QUICKSERT® Expansion type 1230**

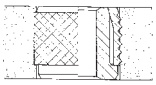
The advantages

- No tapping
- Quick, cost-effective installation
- Chipping-free installation in smooth mounting holes
- High-strength threads in light metals
- High-strength threads in thermoplastic and thermoset components** after moulding of components
- Suitable for one-sided accessibility of the installation point
- For screwed connections that can be detached as often as required
- For installation on finished surfaces

  Material: 11 SMn Pb 30+c

  Surface: A2J ISO 4042 Cr (VI)-free
  or Cu Zn 38 Pb 2 (EU 2000/53 compliant)

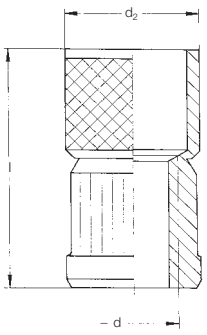
Principle



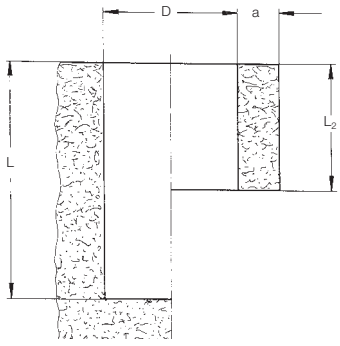
The **QUICKSERT® Expansion** is spun on to the rotating threaded mandrel of the installation tool and introduced into the mounting hole. The hole can be preformed or machined with common drills as a blind or through hole. The axial pulling motion of the threaded mandrel causes the **QUICKSERT® Expansion** Expansion to shear at the predetermined breaking point between anchoring sleeve and threaded bush. The threaded bush is pulled into the anchoring sleeve and expands it. Meanwhile, the diamond knurl of the anchoring sleeve is pressed into the wall of the hole. The thread insert is now anchored and locked against screwing and pull-out.

Technical data

Type 1230



Mounting hole①



For installation tools and machines, see pages 39 – 40

d	Steel Order No	Brass Order No	Total length l	Total length installed l_1	Knurls ø d_2	Mounting hole			
						$D^{+0.1①}$	L_{min}	L_{2min}	a
M3	1230 003 0048	1230 103 0048	8.0	4.8	5.5	5.5	8.8	4.8	2
M4	1230 004 0063	1230 104 0063	10.5	6.3	6.5	6.5	11.8	6.3	2
M5	1230 005 0082	1230 105 0082	13.5	8.2	7.5	7.5	15.2	8.2	2.5
M6	1230 006 0098	1230 106 0098	16.0	9.8	9	9	18.8	9.8	3
M8	1230 008 0 115	1230 108 0 115	19.0	11.5	12	12	21.0	11.5	4

Minimum quantity on request. All dimensions in mm.

For installation into plastic, we recommend brass thread inserts. Special lengths and thread diameters as well as other materials on request.
① Guide values: depend on moulding material, may have to be changed after setting trials.
** Particularly test this insert for suitability for plastics susceptible to stress cracks (e.g. PC, PPO).

Böllhoff International with companies in:

Argentina
Austria
Brazil
Canada
China
Czech Republic
France
Germany
Hungary
India
Italy
Japan
Korea
Mexico
Poland
Romania
Russia
Slovakia
Spain
Switzerland
Turkey
United Kingdom
USA

Apart from these 23 countries, Böllhoff supports its international customers in other important industrial markets in close partnership with agents and dealers.

Made of paper certified with the Ecolab of the European Community (Reg No. FR/11/003).
Printed by FSC®-certified company GFA-COC-001790.

KEL BULGARIA

KEL BULGARIA LTD
PLOT III/252,
Quarter 35BG-9136
PADINA (DEVNYA)BULGARIA
info@kelbulgaria.com
www.kelbulgaria.com
Telephone: +359 877008832
Fax: +359 24922552

Böllhoff Group
Please find your local contact on **www.boellhoff.com**
or contact us under **fasteningtechnology@boellhoff.com**

BÖLLHOFF