

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 self-forming insertion **QUICKSERT® plus**



The advantages

- Suitable for thermoplastic parts
- High-strength and torsion-proof threads
- Chipless installation
- Special version available with external left-hand thread for improved reverse locking
- Material: Cu Zn 38 Pb 2 (EU 2000/53 compliant)

Principle

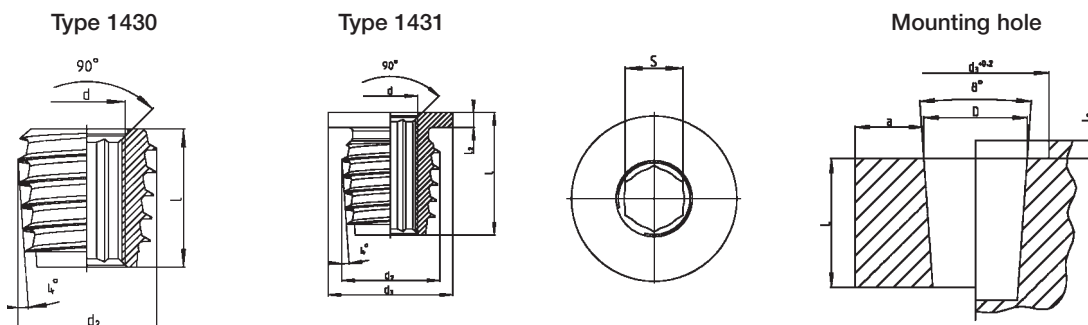
QUICKSERT® plus consists of a tapered basic body (8° overall taper) with internal thread, additional internal hexagon and a special external thread.

The profile of the external thread has an extremely small flank angle and expands asymmetrically towards the thread root. Driving torques for installation are thus reduced. Very good tight-fit is achieved with an ideal distribution of load. Since no cutting slot is required, there is no chip formation because the thread insert forms into the plastic material.

For special requirements, we offer a version with flange.

The threaded bush is inserted and screwed in with a rotating spindle.

Technical data



d	Brass Order No	D ^{+0.1} ⓐ	l	d ₂	L _{min.} ⓑ	a _{min.} ⓐ	S
M 4	1430 004 0008	7.10	8.00	7.74	8.00	5.00	3.20
M 5	1430 005 0009	8.20	9.00	9.15	9.00	5.50	4.00
M 6	1430 006 0011	9.50	11.00	10.70	11.00	6.00	5.00
M 8	1430 008 0014	11.90	14.00	13.69	14.00	7.05	6.50

d	Brass, with flange Order No	D ^{+0.1} ⓐ	l	l ₂	d ₂	d ₃	L _{min.} ⓑ	a _{min.} ⓐ	S
M 4	1431 004 0104	7.20	10.40	1.4	7.68	10.00	9.00	5.00	3.20
M 5	1431 005 0114	8.30	11.40	1.4	9.12	11.50	10.40	5.50	4.00
M 6	1431 006 0134	9.60	13.40	1.4	10.67	13.00	12.00	6.00	5.00
M 8	1431 008 0174	12.20	17.40	1.4	13.76	18.00	16.00	7.00	6.50

ⓐ Guide value – depends on moulding material, may have to be changed after setting trials.

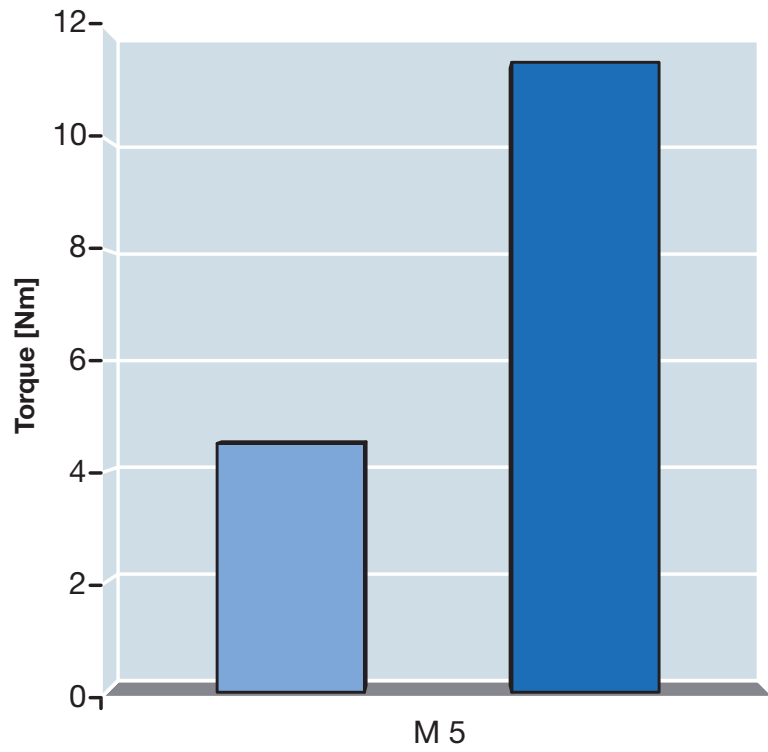
ⓑ For blind hole L + 1 mm.

All dimensions in mm.

The versions – thread inserts for self-tapping insertion **QUICKSERT® plus**

Technical data

Driving torque values **QUICKSERT® plus M 5**



	M 5
■ PP ME [Nm]	4.5
■ PA 6 GF 30 ME [Nm]	11.4

Installation method thermal installation

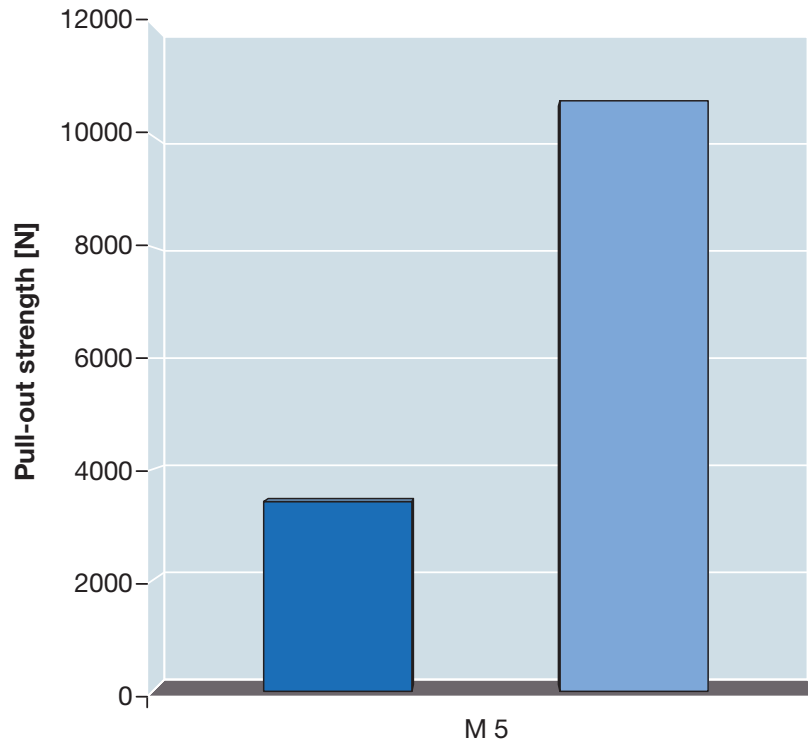
Installation method self-tapping insertion

Installation method expansion anchoring

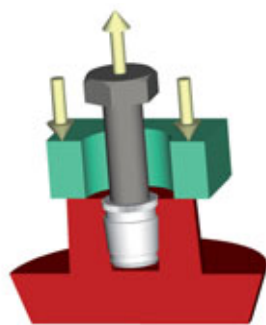
The versions – thread inserts for self-tapping insertion **QUICKSERT® plus**

Technical data

Pull-out values **QUICKSERT® plus M 5**



	M 5
■ PP FA [N]	3,417
■ PA 6 GF FA [N]	10,631



Pull-out strength (FA[N])

Technical notes

Indicated values are guide values. We recommend an installation test for the respective application. To be on the safe side, for fibre-reinforced plastics, the strengths of the non-reinforced material should be assumed. If you use brass thread inserts in plastics susceptible to stress cracks (e.g. polycarbonate), we recommend additional surface treatment of the thread inserts (nickel plating or surface coating as required). Strength values for other thread inserts on request.

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