BAER GERMANY

BaerFix

SELF-CUTTING THREAD INSERTS

Precision and Quality

Good quality is the best marketing, because satisfied customers underline our success.

Our most important principle which inspires us is the commitment for products of the highest standards to meet the requirements of our customers to their utmost satisfaction - a mission we try to fulfill for our corporate philosophy every day.

Our quality check starts with the receipt of goods and continues until the outgoing of the products. At BAER Company customer satisfaction does not come by chance. Ongoing quality testings also influence all new product developments. New ideas and the most modern production facilities improve our products and make them even more precise.

Tradition and Experience

For more than 35 years we have been engaged in what we can do best: threading technology. With this far-reaching treasure trove of experience we have established ourselves as an expert by whom our customers can profit. We are proud to be a family company.

Our identification with the company is even stronger and more distinctive. Each customer, each modernization is at the same time an affair of the heart.

Tradition combined with innovation and progress - make us a flexible and competent partner when it is about threading tools.

Our claim: to contribute to a successful future and to develop tools which meet all kinds of requirements of our customers.

Development and Improvement

Essential for the sustainability of our work is to invest continuously the long-term in new innovative products. Highest efforts in research and development focus on the needs of our customers. Our tools represent practical and reliable solutions which support an efficient and easy application.

Our cooperations with other industries, companies and research institutes make a strong networking possible. New inspirations are created in innovations, are produced, tested and adapted for practice.

This way we are always up to the latest standards of knowledge related to thread technologies. All members of our company contribute to our innovations with their individual know-how.

- The largest full range of products - for best price performance ratio
- Quality and reliability - for the highest demands
- Decades of experience in threading technology
- Reliable partnership - flexible and easy
- Sale supporting materials
- Exclusive products
- Exclusive sale territories
- Qualified product and sales trainings
- Attractive terms and conditions
- Innovative products

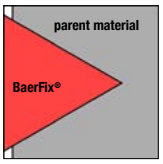
Content

BaerFix® Thread Inserts, self-tapping with cutting slots

BaerFix® Thread Inserts have a conical lead with cutting slots on the metric external thread. They are designed to cut their own threads as they are being driven into a drilled hole (= self-tapping). This provides a secure and high-strength anchor in the parent material. BaerFix® Thread Inserts create wear-free and vibration resistant bolted connections because of its close tolerances and the self-tapped thread. In some cases the Insert has a minimal inward springing action, which creates a screw locking effect. If this is not wished, you can use BaerFix® Thread Inserts with cutting holes. These are suitable for creating highly durable and wear resistant bolted connections in materials with low shear resistance.

BaerFix® Thread Inserts, self-tapping with cutting holes

BaerFix® self-tapping Thread Inserts with cutting holes are constructed especially for materials with difficult machining characteristics. The thick wall allows higher cutting forces, which are distributed over three cutting holes.

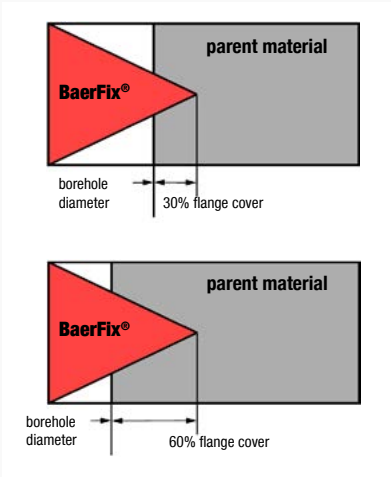


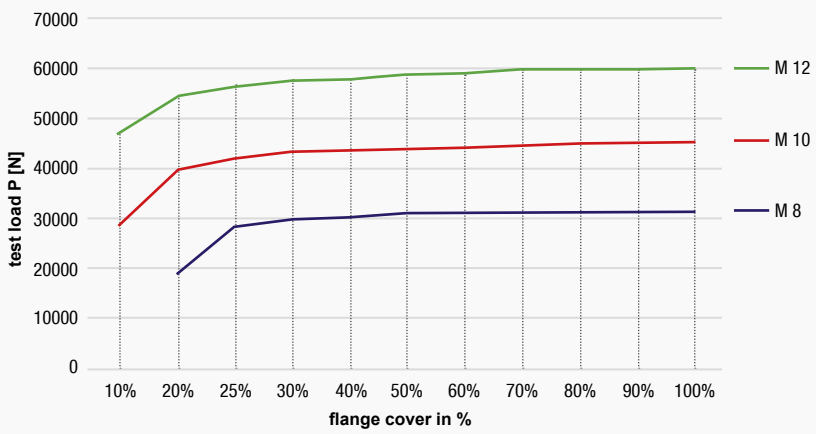
Large effective shearing surface

The BaerFix® Thread Insert has a larger effective surface, which ensures a higher degree of pull-out strength, i.e. an M 5 is often sufficient instead of a cut M 6 thread.

Flange cover

In a work piece made of a light alloy, the BaerFix® Insert achieves almost maximum pull-out strength with only 30 % flange cover.





Pull-out strength

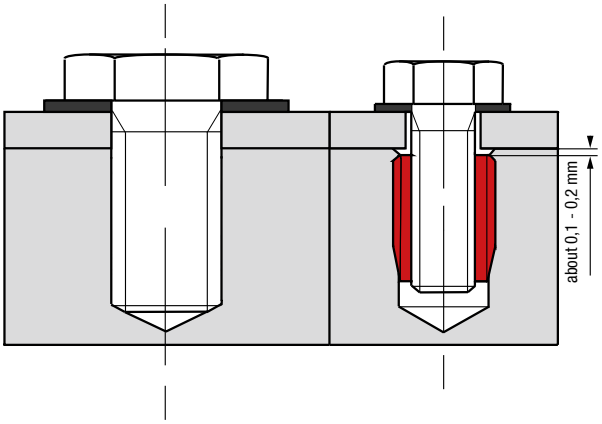
A BaerFix® Thread Insert is highly durable. Using in light alloys for example, helps achieving a pull-out strength which far exceeds the yield strength of a screw 8.8.

Corrosion resistance

The superior corrosion resistant characteristics of BaerFix® Inserts assure their adaptability to most materials and usual environmental conditions.

Minimize weight & space

Weight saving is unmatched - an important design feature for many products, particularly airborne equipment. Space saving is maximized, permitting the use of standard configurations with oversize requirements - as is necessary to accommodate solid bushings. A bigger radius equal to the nominal bolt size fit for higher load and forces.

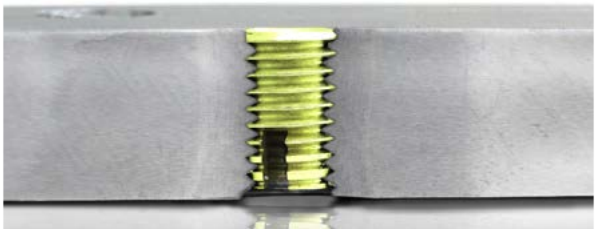


Minimize total costs

Overall production cost savings may be realised by using a less expensive material and still maintain the required thread strength with BaerFix® Inserts. Costs savings apply in many directions - lower insert costs, lower installation costs and smaller bolts do all result savings.

Thread Repair

In addition to thread reinforcement the BaerFix® Inserts also are used for repairing broken threads. In this process rejected components can be reclaimed by installing a thread insert. The created thread will keep its original dimension and also gets reinforced by raising the pull-out strength and corrosion resistance. Costs of acquisition and processing can be saved by repairing threads with BaerFix® Thread Inserts.



Applications

It's especially suitable for following materials:

- aluminum and aluminum alloy
- brass, bronze, cast iron
- magnesium alloy
- hermosetting plastics and thermoplastics (no rubber-soft thermoplastics)

Examples for applications:

- Automotive industry: engines, transmissions, radiators, autobody etc.
- Electrical and laboratory techniques: medical equipment, capacitors, boxes etc.
- Household appliance: vacuum cleaners, electric iron, washing machines, cameras, mobile phones etc.
- Plant and equipment construction: pumps, construction machines, different components etc.
- Military machines: aircrafts, weapons etc.

Materials

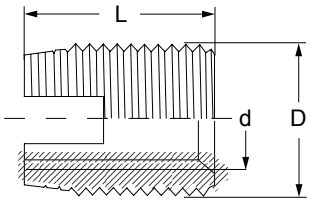
Case-hardened steel, zinc-plated, yellow chromated (conform to RoHS, free of ChromVI)	**Stainless steel 1.4305** **AISI 303** **X8CrNiS18-9**
Brass	**Stainless steel 1.4105*** **AISI 430 F** **X6CrMoS17**

Other materials and surfaces on request. * on request

Compatibility

BaerFix® Inserts are manufactured according to tolerance ISO 2768-m. BaerFix® products are compatible with thread inserts and tools from other manufactures.

BaerFix® Thread Inserts with cutting slots



Case-hardened steel, zinc-plated, conform to RoHS

Stainless steel 1.4305 (AISI 303)

Stainless steel 1.4571 (AISI 316Ti)

Brass

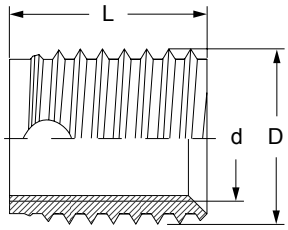
d	D	L	No.	packing unit	No.	packing unit	No.	packing unit	No.	packing unit
M										
M 2 x 0,4	M 4,5 x 0,5	6 mm	FE02 1-FE02	10 100						
M 2,5 x 0,45	M 4,5 x 0,5	6 mm	FE025 1-FE025	10 100						
M 3 x 0,5	M 5 x 0,5	6 mm	FE03 1-FE03	10 100	FA43 1-FA43	10 100	FAE03 1-FAE03	10 100	1-FMS43	100
M 4 x 0,7	M 6,5 x 0,75	8 mm	FE04 1-FE04	10 100	FA44 1-FA44	10 100	FAE04 1-FAE04	10 100	1-FMS44	100
M 5 x 0,8	M 8 x 1,0	10 mm	FE05 1-FE05	10 100	FA45 1-FA45	10 100	FAE05 1-FAE05	10 100	1-FMS45	100
M 6 x 1,0	M 9 x 1,0	12 mm	FE069 1-FE069	10 100	FA469 1-FA469	10 100	FAE069 1-FAE069	10 100	1-FMS469	100
M 6 x 1,0	M 10 x 1,5	14 mm	FE06 1-FE06	10 100	FA46 1-FA46	10 100	FAE06 1-FAE06	10 100	1-FMS46	100
M 8 x 1,25	M 12 x 1,5	15 mm	FE08 1-FE08	10 100	FA48 1-FA48	10 100	FAE08 1-FAE08	10 100	1-FMS48	100
M 10 x 1,5	M 14 x 1,5	18 mm	FE10 1-FE10	10 100	FA410 1-FA410	10 100	FAE10 1-FAE10	10 100	1-FMS410	100
M 12 x 1,5	M 16 x 1,5	22 mm	FE125 1-FE125	5 100						
M 12 x 1,75	M 16 x 1,5	22 mm	FE12 1-FE12	5 100	FA412 1-FA412	10 100	FAE12 1-FAE12	10 100	1-FMS412	100
M 14 x 1,5	M 18 x 1,5	24 mm	FE145	5						
M 14 x 2,0	M 18 x 1,5	24 mm	FE14 1-FE14	5 50						
M 16 x 2,0	M 20 x 1,5	22 mm	FE16 1-FE16	5 50	FA416 1-FA416	5 50			1-FMS416	50
M 18 x 2,5	M 22 x 1,5	24 mm	FE18	50						
M 20 x 2,5	M 26 x 1,5	27 mm	FE20 1-FE20	5 50	FA420 1-FA420	5 50				
M 22 x 2,5	M 26 x 1,5	30 mm	FE22	50						
M 24 x 3,0	M 30 x 1,5	30 mm	FE24 1-FE24	5 50	1-FA424	50				
UNC										
UNC 1/4 x 20*	M 10 x 1,5	14 mm	FE74 1-FE74	10 100						
UNC 5/16 x 18*	M 12 x 1,5	15 mm	FE75 1-FE75	10 100						
UNC 3/8 x 16*	M 14 x 1,5	18 mm	FE76 1-FE76	5 100						
UNC 7/16 x 14*	M 16 x 1,5	22 mm	FE77 1-FE77	5 100						
UNC 1/2 x 13*	M 18 x 1,5	22 mm	FE78 1-FE78	5 100						
UNC 5/8 x 11*	M 20 x 1,5	22 mm	FE79							
UNF										
UNF 1/4 x 28*	M 10 x 1,5	14 mm	FE84 1-FE84	10 100						
UNF 5/16 x 24*	M 12 x 1,5	15 mm	FE85 1-FE85	10 100						
UNF 3/8 x 24*	M 14 x 1,5	18 mm	FE86 1-FE86	5 100						
UNF 7/16 x 20*	M 16 x 1,5	22 mm	FE87 1-FE87	5 100						
UNF 1/2 x 20*	M 18 x 1,5	22 mm	FE88 1-FE88	5 100						
UNF 5/8 x 18*	M 20 x 1,5	22 mm	FE89							

Stainless steel 1.4105, and other materials on request

i Please see borehole- and further technical information on page 22 - 23.

* prices are on request

BaerFix® Thread Inserts with cutting slots



Material
Case-hardened steel, zinc-plated, conform to RoHS

d	D	L	No.	packing unit
M 3 x 0,5	M 5 x 0,6	4 mm	FEL03	10
			1-FEL03	100
M 3 x 0,5	M 5 x 0,6	6 mm	1-FELL03	100
M 4 x 0,7	M 6,5 x 0,8	6 mm	FEL04	10
			1-FEL04	100
M 4 x 0,7	M 6,5 x 0,8	8 mm	1-FELL04	100
M 5 x 0,8	M 8 x 1,0	7 mm	FEL05	10
			1-FEL05	100
M 5 x 0,8	M 8 x 1,0	10 mm	1-FELL05	100
M 6 x 1,0	M 10 x 1,25	8 mm	FEL06	10
			1-FEL06	100
M 6 x 1,0	M 10 x 1,25	12 mm	1-FELL06	100
M 8 x 1,25	M 12 x 1,5	9 mm	FEL08	10
			1-FEL08	100
M 8 x 1,25	M 12 x 1,5	14 mm	1-FELL08	100
M 10 x 1,5	M 14 x 1,5	10 mm	FEL10	10
			1-FEL10	100
M 10 x 1,5	M 14 x 1,5	18 mm	1-FELL10	100
M 12 x 1,75	M 16 x 1,75	12 mm	FEL12	10
			1-FEL12	100
M 12 x 1,75	M 16 x 1,75	22 mm	1-FELL12	100
M 16 x 2,0	M 20 x 2,0	14 mm	FEL16	5
			1-FEL16	50
M 16 x 2,0	M 20 x 2,0	24 mm	1-FELL16	50

Further dimensions on request

Material
Stainless steel 1.4305 (AISI 303)

d	D	L	No.	packing unit
M 3 x 0,5	M 5 x 0,6	4 mm	FAL03	10
			1-FAL03	100
M 3 x 0,5	M 5 x 0,6	6 mm	1-FALL03	100
M 4 x 0,7	M 6,5 x 0,8	6 mm	FAL04	10
			1-FAL04	100
M 4 x 0,7	M 6,5 x 0,8	8 mm	1-FALL04	100
M 5 x 0,8	M 8 x 1,0	7 mm	FAL05	10
			1-FAL05	100
M 5 x 0,8	M 8 x 1,0	10 mm	1-FALL05	100
M 6 x 1,0	M 10 x 1,25	8 mm	FAL06	10
			1-FAL06	100
M 6 x 1,0	M 10 x 1,25	12 mm	1-FALL06	100
M 8 x 1,25	M 12 x 1,5	9 mm	FAL08	10
			1-FAL08	100
M 8 x 1,25	M 12 x 1,5	14 mm	1-FALL08	100
M 10 x 1,5	M 14 x 1,5	10 mm	FAL10	10
			1-FAL10	100
M 10 x 1,5	M 14 x 1,5	18 mm	1-FALL10	100
M 12 x 1,75	M 16 x 1,75	12 mm	FAL12	10
			1-FAL12	100

Further dimensions on request

BaerFix® Thread Inserts with cutting holes for spark plug

Material
Case-hardened steel, zinc-plated

d	D	L		No.	packing unit
M 10 x 1,0	special size	8 mm	12,4 mm	FE101008	5
M 10 x 1,0	special size	13 mm	12,4 mm	FE101013	5
M 12 x 1,25	special size	10 mm	14,5 mm	FE121210	5
M 12 x 1,25	special size	14 mm	14,5 mm	FE121214	5
M 14 x 1,25	M 17,7 x 1,25	9 mm	17,0 mm	FE141259	5
M 14 x 1,25	M 17,7 x 1,25	15 mm	17,0 mm	FE141251	5

BaerFix® Thread Inserts for special applications

BAER Company develops and produces customer-oriented thread inserts and threading tools. Special applications can have special requirements to materials, dimensions, corrosion resistance, force effects, lifting capacities, pull out-strength or many more. Please send us your inquiry or give us a call. We enjoy to consult you in your applications.

- BaerFix® Thread Inserts with cutting holes, self-tapping
- BaerFix® Thread Inserts with hexagonal socket, self-tapping
- BaerFix® Thread Inserts for cold installation
- BaerFix® Thread Inserts for heat installation
- BaerFix® Thread Inserts for ultrasonic installation
- BaerFix® Thread Inserts for Screwing into a threaded hole
- Custom-made thread thread inserts (detail drawing or samples)

Instruction for use

1

Drilling

Clear the damaged thread with a drill bit or create a new hole in the parent material. For strong, hard and tough materials it is recommended to tap the thread (max. intermediate tap) before the installation of BaerFix® Inserts.

2

Screwing BaerFix® Insert on the inserting tool

Screw the BaerFix® Insert, with cutting slots or holes pointing downwards, on the inserting tool. Lock the BaerFix® Insert with the nut by wrench.

3

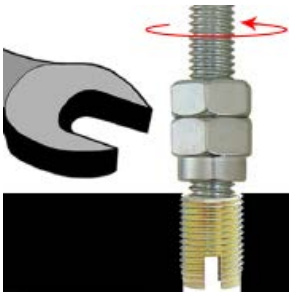
Installing the insert

Screw the BaerFix® Insert into the borehole. The BaerFix® Thread Insert is self-tapping. The inserting tool has a 1/4“ hexagonal shank and can be used by a cordless screwdriver or a wrench socket.

4

Screwing off the inserting tool

Unlock the counternut by a wrench and screw off the inserting tool. Created bolted connections with BaerFix® Inserts are vibration resistant, wear-free and have a high load capacity in materials with low shearing strength.



Installation by machine

1

Drilling

Clear the damaged thread with a drill bit or create a new hole in the parent material. For strong, hard and tough materials it is recommended to tap the thread (max. intermediate tap) before the installation of BaerFix® Inserts.

2

Configure the machine

Position the workpiece to ensure that hole and machine spindle are in alignment. Set the dimensions, speed values and driving depth (about 0,1 mm till 0,2 mm under the workpiece surface). Turn the external shell, so the stop pin can hold and drive the shell while rotating in clockwise direction. Screw the BaerFix® Insert, withcutting slots or holes pointing downwards, 2 till 4 windings on the inserting tool.

3

Installing the insert

Actuate the machine for screwing the insert into the hole, until the chosen driving depth is reached. Avoid a hard touchdown of the inserting tool on the workpiece to prevent damages on the inserting tool, thread insert or workpiece.

4

Screwing off the inserting tool

Set the machine on reverse running. The stop pin holds the shell while rotating in counterclockwise direction and screws out the inserting tool.

i Please see values for speed and installation torque on page 23.

BAER GERMANY

BaerFix®

Thread Repair Kits

BaerFix® Thread Repair Kits - ECO

- Drill Bit HSS
- Inserting Tool with 1/4“ hexagonal drive
- Adapter Nut - 1/4“ hexagonal drive to 10 mm hexagonal drive
- BaerFix® Thread Insert with cutting slots
- Material: Case-hardened steel, zinc-plated
- Instruction for use

M ISO metric thread					No.
M 2 x 0,4	EBS02*		4,20 mm	5	F001
M 2,5 x 0,45	EBS025*		4,20 mm	5	F002
M 3 x 0,5	KEBW03	NUT	4,70 mm	5	F003
M 4 x 0,7	KEBW04	NUT	6,10 mm	5	F004
M 5 x 0,8	KEBW05	NUT	7,50 mm	5	F005
M 6 x 1,0	KEBW06	NUT	9,30 mm	5	F006
M 8 x 1,25	KEBW08	NUT	11,40 mm	5	F008
M 10 x 1,5	KEBW10	NUT	13,25 mm	5	F010
M 12 x 1,5	KEBW1215	NUT	15,25 mm	5	F0125
M 12 x 1,75	KEBW12	NUT	15,25 mm	5	F012
M 14 x 1,5	BEBW1415*		17,00 mm	5	F0145
M 14 x 2,0	BEBW1420*		17,00 mm	5	F014
M 16 x 2,0	EBS16**		19,00 mm	5	F016
M 18 x 2,5	EBS18**		21,00 mm	5	F018
M 20 x 2,5	EBS20**		25,00 mm	5	F020

* Inserting Tool with 12 mm hexagonal drive instead of 1/4“ hexagonal drive
** with EBS-Inserting Tool instead of Inserting Tool with 1/4“ hexagonal drive

BaerFix® Thread Repair Kits - PRO

- Drill Bit HSS
- Countersink HSS with 1/4“ hexagonal drive
- Inserting Tool with 1/4“ hexagonal drive
- Adapter Nut - 1/4“ hexagonal drive to 10 mm hexagonal drive
- BaerFix® Thread Insert with cutting slots
- Material: Case-hardened steel, zinc-plated
- Instruction for use

M ISO metric thread						No.
M 3 x 0,5	KEBW03	NUT	10,4 mm	4,70 mm	10	F003P
M 4 x 0,7	KEBW04	NUT	10,4 mm	6,10 mm	10	F004P
M 5 x 0,8	KEBW05	NUT	10,4 mm	7,50 mm	10	F005P
M 6 x 1,0	KEBW06	NUT	10,4 mm	9,30 mm	10	F006P
M 8 x 1,25	KEBW08	NUT	16,5 mm	11,40 mm	10	F008P
M 10 x 1,5	KEBW10	NUT	16,5 mm	13,25 mm	10	F010P
M 12 x 1,75	KEBW12	NUT	16,5 mm	15,25 mm	10	F012P

BaerFix® Thread Repair Kits

- Drill Bit HSS
- Inserting Tool with 1/4“ hexagonal drive
- Adapter Nut - 1/4“ hexagonal drive to 10 mm hexagonal drive
- BaerFix® Thread Insert with cutting slots
- Material: Case-hardened steel, zinc-plated
- Instruction for use

UNC Unified National Coarse Thread Series ANSI B1.1

					No.
UNC 1/4 x 20	KEBW21	NUT	9,30 mm	5	FC001
UNC 5/16 x 18	KEBW22	NUT	11,40 mm	5	FC002
UNC 3/8 x 16	KEBW23	NUT	13,25 mm	5	FC003
UNC 7/16 x 14	KEBW24	NUT	15,25 mm	5	FC004
UNC 1/2 x 13	BEBW25*		17,00 mm	5	FC005

* Inserting Tool with 10 mm hexagonal drive instead of 1/4“ hexagonal drive

BaerFix® Thread Repair Kits

- Drill Bit HSS
- Inserting Tool with 1/4“ hexagonal drive
- Adapter Nut - 1/4“ hexagonal drive to 10 mm hexagonal drive
- BaerFix® Thread Insert with cutting slots
- Material: Case-hardened steel, zinc-plated
- Instruction for use

UNF Unified National Fine Thread Series ANSI B1.1

					No.
UNF 1/4 x 28	KEBW31	NUT	9,30 mm	5	FF001
UNF 5/16 x 24	KEBW32	NUT	11,40 mm	5	FF002
UNF 3/8 x 24	KEBW33	NUT	13,25 mm	5	FF003
UNF 7/16 x 20	KEBW34	NUT	15,25 mm	5	FF004
UNF 1/2 x 20	BEBW35*		17,00 mm	5	FF005

*Inserting Tool with 10 mm hexagonal drive instead of 1/4“ hexagonal drive

BaerFix® Thread Repair Kits for Spark Plug

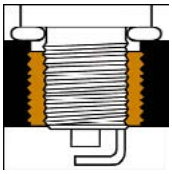
- Drill Bit HSS
- Drill Bit with reduced shank (13 mm) HSS
- Inserting Tool with hexagonal drive
- BaerFix® Thread Insert with cutting holes, 2 different lengths
- Material: Case-hardened steel, zinc-plated
- Instruction for use

					No.
M 10 x 1,0	ZEBW10	12,40	8 mm 2	13 mm 2	F1010
M 12 x 1,25	ZEBW12	14,50	10 mm 2	14 mm 2	F12125
M 14 x 1,25	ZBEBW14	17,00	9 mm 2	15 mm 2	F14125

1 **Drilling**

2 **Screwing a BaerFix® Insert on the inserting tool**

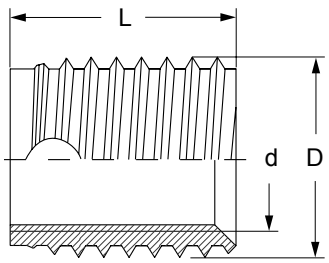
3 **Installing the insert**



3 **Unlocking the counternut and screwing off the inserting tool**

BaerFix® Thread Inserts with cutting holes for spark plug

Material
Case-hardened steel, zinc-plated



d	D	L		No.	packin unit
M 10 x 1,0	special size	8 mm	12,4 mm	FE101008	5
M 10 x 1,0	special size	13 mm	12,4 mm	FE101013	5
M 12 x 1,25	special size	10 mm	14,5 mm	FE121210	5
M 12 x 1,25	special size	14 mm	14,5 mm	FE121214	5
M 14 x 1,25	M 17,7 x 1,25	9 mm	17,0 mm	FE141259	5
M 14 x 1,25	M 17,7 x 1,25	15 mm	17,0 mm	FE141251	5

BAER GERMANY

BaerFix®

Thread Repair
Workshop Kits

BaerFix® Thread Repair Workshop Kits - ECO

- Drill Bit HSS
- Inserting Tool with 1/4“ hexagonal drive
- Adapter Nut - 1/4“ hexagonal drive to 10 mm hexagonal drive
- BaerFix® Thread Insert with cutting slots
- Material: Case-hardened steel, zinc-plated
- Instruction for use

M 3 - M 12




					No.
M 3 x 0,5	KEBW03		4,70 mm	5	
M 4 x 0,7	KEBW04		6,10 mm	5	
M 5 x 0,8	KEBW05		7,50 mm	5	
M 6 x 1,0	KEBW06	NUT	9,30 mm	5	F312
M 8 x 1,25	KEBW08		11,40 mm	5	
M 10 x 1,5	KEBW10		13,25 mm	5	
M 12 x 1,75	KEBW12		15,25 mm	5	

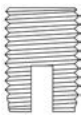
M 5 - M 12




					No.
M 5 x 0,8	KEBW05		7,50 mm	5	
M 6 x 1,0	KEBW06		9,30 mm	5	
M 8 x 1,25	KEBW08	NUT	11,40 mm	5	F512
M 10 x 1,5	KEBW10		13,25 mm	5	
M 12 x 1,75	KEBW12		15,25 mm	5	

M 3 - M 10



					No.
M 3 x 0,5	KEBW03		4,70 mm	5	
M 4 x 0,7	KEBW04		6,10 mm	5	
M 5 x 0,8	KEBW05	NUT	7,50 mm	5	F310
M 6 x 1,0	KEBW06		9,30 mm	5	
M 8 x 1,25	KEBW08		11,40 mm	5	
M 10 x 1,5	KEBW10		13,25 mm	5	

BaerFix® Thread Repair Workshop Kits - ECO

- Drill Bit HSS
- Inserting Tool with 1/4“ hexagonal drive
- Adapter Nut - 1/4“ hexagonal drive to 10 mm hexagonal drive
- BaerFix® Thread Insert with cutting slots
- Material: Case-hardened steel, zinc-plated
- Instruction for use

UNC 1/4 - UNC 1/2




						No.
UNC 1/4 x 20	KEBW21			9,30 mm	5	
UNC 5/16 x 18	KEBW22			11,40 mm	5	
UNC 3/8 x 16	KEBW23		NUT	13,25 mm	5	FC300
UNC 7/16 x 14	KEBW24			15,25 mm	5	
UNC 1/2 x 13	BEBW25*			17,00 mm	5	

* Inserting Tool with 10 mm hexagonal drive instead of 1/4“ hexagonal drive

UNF 1/4 - UNF 1/2




						No.
UNF 1/4 x 28	KEBW31			9,30 mm	5	
UNF 5/16 x 24	KEBW32			11,40 mm	5	
UNF 3/8 x 24	KEBW33		NUT	13,25 mm	5	FF300
UNF 7/16 x 20	KEBW34			15,25 mm	5	
UNF 1/2 x 20	BEBW35*			17,00 mm	5	

* Inserting Tool with 10 mm hexagonal drive instead of 1/4“ hexagonal drive

BaerFix® Thread Repair Workshop Kits - PRO

- Drill Bit HSS
- Countersink HSS with 1/4“ hexagonal drive
- Inserting Tool with 1/4“ hexagonal drive
- Adapter Nut - 1/4“ hexagonal drive to 10 mm hexagonal drive
- BaerFix® Thread Insert with cutting slots
- Material: Case-hardened steel, zinc-plated
- Instruction for use

M 3 - M 12

M 3 x 0,5	KEBW03			4,70 mm	10	
M 4 x 0,7	KEBW04		10,4 mm	6,10 mm	10	
M 5 x 0,8	KEBW05			7,50 mm	10	
M 6 x 1,0	KEBW06	NUT		9,30 mm	10	F312P
M 8 x 1,25	KEBW08			11,40 mm	10	
M 10 x 1,5	KEBW10		16,5 mm	13,25 mm	10	
M 12 x 1,75	KEBW12			15,25 mm	10	

M 5 - M 12

M 5 x 0,8	KEBW05		10,4 mm	7,50 mm	10	
M 6 x 1,0	KEBW06			9,30 mm	10	
M 8 x 1,25	KEBW08	NUT		11,40 mm	10	F512P
M 10 x 1,5	KEBW10		16,5 mm	13,25 mm	10	
M 12 x 1,75	KEBW12			15,25 mm	10	

M 3 - M 10

M 3 x 0,5	KEBW03			4,70 mm	10	
M 4 x 0,7	KEBW04		10,4 mm	6,10 mm	10	
M 5 x 0,8	KEBW05	NUT		7,50 mm	10	F310P
M 6 x 1,0	KEBW06			9,30 mm	10	
M 8 x 1,25	KEBW08		16,5 mm	11,40 mm	10	
M 10 x 1,5	KEBW10			13,25 mm	10	

BAER GERMANY

BaerFix®

Inserting Tools

BaerFix® Inserting Tools

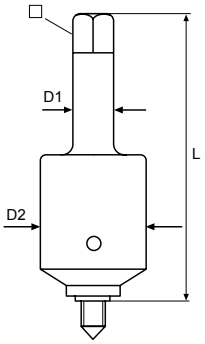
with 1/4“ hexagonal drive

	Length			No.
M 3 x 0,5	46,00 mm	5,50 mm	1/4“	1-KEBW03
M 4 x 0,7	48,00 mm	7,00 mm	1/4“	1-KEBW04
M 5 x 0,8	57,00 mm	8,00 mm	1/4“	1-KEBW05
M 6 x 1,0	62,00 mm	10,00 mm	1/4“	1-KEBW06
M 7 x 1,0	72,00 mm	11,00 mm	1/4“	1-KEBW07
M 8 x 1,25	72,00 mm	13,00 mm	1/4“	1-KEBW08
M 10 x 1,0	77,00 mm	17,00 mm	1/4“	1-KEBW1010
M 10 x 1,5	82,00 mm	17,00 mm	1/4“	1-KEBW10
M 12 x 1,25	79,00 mm	19,00 mm	1/4“	1-KEBW1212
M 12 x 1,5	79,00 mm	19,00 mm	1/4“	1-KEBW1215
M 12 x 1,75	92,00 mm	19,00 mm	1/4“	1-KEBW12
M 14 x 1,5	114,00 mm	19,00 mm	12 mm	BEBW1415
M 14 x 2,0	114,00 mm	19,00 mm	12 mm	BEBW1420
UNC 1/4 x 20	62,00 mm	7/16 ''	1/4“	1-KEBW21
UNC 5/16 x 18	67,00 mm	1/2 ''	1/4“	1-KEBW22
UNC 3/8 x 16	77,00 mm	9/16 ''	1/4“	1-KEBW23
UNC 7/16 x 14	87,00 mm	11/16 ''	1/4“	1-KEBW24
UNC 1/2 x 13	117,00 mm	3/4 ''	10 mm	BEBW25
UNF 1/4 x 28	62,00 mm	7/16 ''	1/4“	1-KEBW31
UNF 5/16 x 24	67,00 mm	1/2 ''	1/4“	1-KEBW32
UNF 3/8 x 24	77,00 mm	9/16 ''	1/4“	1-KEBW33
UNF 7/16 x 20	87,00 mm	11/16 ''	1/4“	1-KEBW34
UNF 1/2 x 20	117,00 mm	3/4 ''	10 mm	BEBW35

BaerFix® Machine Inserting Tools

with square drive

	D1	D2	L		□ No.
M 3 x 0,5	8 mm	18 mm	80 mm	6 mm	MEBW03
M 4 x 0,7	8 mm	18 mm	80 mm	6 mm	MEBW04
M 5 x 0,8	12,5 mm	30 mm	96,5 mm	10 mm	MEBW05
M 6 x 1,0	12,5 mm	30 mm	96,5 mm	10 mm	MEBW06
M 8 x 1,25	12,5 mm	30 mm	96,5 mm	10 mm	MEBW08
M 10 x 1,5	13 mm	40 mm	110 mm	10 mm	MEBW10
M 12 x 1,75	13 mm	40 mm	110 mm	10 mm	MEBW12
M 14 x 2,0	13 mm	40 mm	110 mm	10 mm	MEBW14
M 16 x 2,0	13 mm	40 mm	110 mm	10 mm	MEBW16



Please see values for speed and installation torque on page 23.

BaerFix® Inserting Tools for spark plug

with hexagonal drive

	Length		No.
M 10 x 1,0	128,00 mm	17 mm	ZEBW10
M 12 x 1,25	128,00 mm	19 mm	ZEBW12
M 14 x 1,25	128,00 mm	19 mm	ZEBW14

BaerFix® Drill Bits

DIN 338-A - HSS Reduced Shank Drill Bit (13 or 16 mm)

DIN 338 - HSS Straight Shank Drill Bit

DIN 345 - HSS Morse Taper Shank Drill Bit

Ø	M	M	UNC	UNF	BSW	DIN	No.
4,20 mm	M 2 x 0,4	M 2,5 x 0,45				338	1-16142
4,70 mm	M 3 x 0,5		UNC 4 x 40	UNF 4 x 40		338	1-16147
5,60 mm	M 3,5 x 0,6		UNC 6 x 32	UNF 6 x 40		338	1-16156
6,10 mm	M 4 x 0,7		UNC 8 x 32	UNF 8 x 36		338	1-16161
7,50 mm	M 5 x 0,8		UNC 10 x 24	UNF 10 x 32		338	1-16175
9,30 mm	M 6 x 1,0		UNC 1/4 x 20	UNF 1/4 x 28	BSW 1/4 x 20	338	1-16193
11,30 mm	M 8 x 1,25		UNC 5/16 x 18	UNF 5/16 x 24	BSW 5/16 x 18	338	1-161113
12,40 mm	M 10 x 1,0*					338-A	1-161124
13,25 mm	M 10 x 1,5		UNC 3/8 x 16	UNF 3/8 x 24	BSW 3/8 x 16	338-A	1-111132
14,50 mm	M 12 x 1,25*					338-A	1-111145
15,25 mm	M 12 x 1,75		UNC 7/16 x 14	UNF 7/16 x 20	BSW 7/16 x 14	338-A	1-111152
17,00 mm	M 14 x 2,0	M 14 x 1,25*	UNC 1/2 x 13	UNF 1/2 x 20	BSW 1/2 x 13	338-A	1-111170
19,00 mm	M 16 x 2,0		UNC 5/8 x 11	UNF 5/8 x 18	BSW 5/8 x 11	338-A	1-111190
21,00 mm	M 18 x 2,5					338-A	1-111210
25,00 mm	M 20 x 2,5	M 22 x 2,5	UNC 3/4 x 10	UNF 3/4 x 16		338-A	1-111250
29,00 mm	M 24 x 3,0					338-A	1-111290
33,00 mm	M 27 x 3,0					345	1-130330
35,00 mm	M 30 x 3,5					345	1-130350

* for spark plug thread inserts

The drill bit diameters are approximate diameters. Brittle, tough and hard materials need a larger borehole than soft or elastic materials.

BaerFix® Countersink HSSG

with 1/4“ hexagonal drive
to countersink a borehole

Ø	M	UNC	UNF	BSW	⬡	No.
10,4 mm	M 2 x 0,4 - M 6 x 1,0	UNC 4 x 40 – UNC 1/4	UNF 4 x 48 – UNF 1/4		1/4“	1-B9402
16,5 mm	M 8 x 1,25 - M 12 x 1,75	UNC 5/16 – UNC 7/16	UNF 5/16 – UNF 7/16	BSW 1/4 – BSW 7/16	1/4“	1-B9403

Generally it is not necessary to countersink the bore hole. However, we do recommend a countersink to avoid warping the workpiece surface when screwing in the insert.

BaerFix® Adapter Nut

1/4“ internal hexagon to 10 mm outside hexagon

internal hexagon	external hexagon	No.
1/4“	10 mm	B9501

BAER GERMANY

BaerFix®

Technical Information

Recommended borehole diameter

materials		BaerFix® Thread Inserts with cutting slots				BaerFix® Thread Inserts with cutting holes			
	Light alloys tensile strength [N/mm²]	< 250 N/mm²							
		< 300 N/mm²				< 300 N/mm²			
			< 350 N/mm²				< 350 N/mm²		
				> 350 N/mm²				> 350 N/mm²	
	Brass, NF-metals, bronze			> 350 N/mm²				> 350 N/mm²	
	Cast iron brinell hardness [HB]	< 150 HB				< 150 HB			
			< 200 HB				< 200 HB		
				> 200 HB				> 200 HB	
internal thread	**M 2 x 0,4**		4,1 mm	4,2 mm	4,3 mm				
	M 2,5 x 0,45		4,1 mm	4,2 mm	4,3 mm				
	M 3 x 0,5		4,6 mm	4,7 mm	4,8 mm	4,6 mm	4,7 mm		4,8 mm
	M 4 x 0,7	5,9 mm	6,0 mm	6,1 mm	6,2 mm	6,0 mm	6,1 mm		6,2 mm
	M 5 x 0,8	7,2 mm	7,3 mm	7,5 mm	7,6 mm	7,4 mm	7,5 mm	7,6 mm	7,7 mm
	M 6 x 1,0 thin walled	8,2 mm	8,3 mm	8,5 mm	8,6 mm				
	M 6 x 1,0	8,8 mm	9,0 mm	9,2 mm	9,4 mm	9,3 mm	9,4 mm	9,5 mm	9,6 mm
	M 8 x 1,25	10,8 mm	11,0 mm	11,2 mm	11,4 mm	11,1 mm	11,2 mm	11,3 mm	11,5 mm
	M 10 x 1,5	12,8 mm	13,0 mm	13,2 mm	13,4 mm	13,1 mm	13,2 mm	13,3 mm	13,5 mm
	M 12 x 1,75	14,8 mm	15,0 mm	15,2 mm	15,4 mm	15,0 mm	15,1 mm	15,2 mm	15,4 mm
	M 14 x 2,0	16,8 mm	17,0 mm	17,2 mm	17,4 mm	17,0 mm	17,1 mm	17,2 mm	17,4 mm
	M 16 x 2,0	18,8 mm	19,0 mm	19,2 mm	19,4 mm	19,0 mm	19,1 mm	19,2 mm	19,4 mm
	M 18 x 2,5	20,8 mm	21,0 mm	21,2 mm	21,4 mm				
	M 20 x 2,5	24,8 mm	25,0 mm	25,2 mm	25,4 mm				
	M 22 x 2,5	24,8 mm	25,0 mm	25,2 mm	25,4 mm				
	M 24 x 3,0	28,8 mm	29,0 mm	29,2 mm	29,4 mm				
	M 27 x 3,0	32,8 mm	33,0 mm	33,2 mm	33,4 mm				
	M 30 x 3,5	34,8 mm	35,0 mm	35,2 mm	35,4 mm				
	Flange cover	ca. 60%	ca. 50%	ca. 40%	ca. 30%	ca. 80%	ca. 70%	ca. 60%	ca. 50%
		possibly lubrication required				possibly lubrication required			

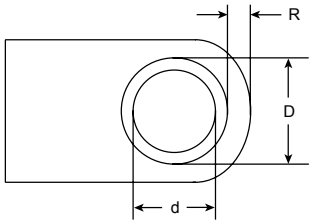
Minimum wall thickness for BaerFix® inserts

	BaerFix® Thread Inserts with cutting slots			BaerFix® Thread Inserts with cutting holes		
	light alloys	cast iron	plastics	light alloys	cast iron	plastics
M 2 x 0,4	0,90 mm	1,35 mm	1,13 mm			
M 2,5 x 0,45	0,90 mm	1,35 mm	1,13 mm			
M 3 x 0,5	1,00 mm	1,50 mm	1,25 mm	1,00 mm	1,50 mm	1,25 mm
M 4 x 0,7	1,30 mm	1,95 mm	1,63 mm	1,30 mm	1,95 mm	1,63 mm
M 5 x 0,8	1,60 mm	2,40 mm	2,00 mm	1,60 mm	2,40 mm	2,00 mm
M 6 x 1,0	2,00 mm	3,00 mm	2,50 mm	2,00 mm	3,00 mm	2,50 mm
M 8 x 1,25	2,40 mm	3,60 mm	3,00 mm	2,40 mm	3,60 mm	3,00 mm
M 10 x 1,5	2,80 mm	4,20 mm	3,50 mm	2,80 mm	4,20 mm	3,50 mm
M 12 x 1,75	3,20 mm	4,80 mm	4,00 mm	3,20 mm	4,80 mm	4,00 mm
M 14 x 2,0	3,60 mm	5,40 mm	4,50 mm	3,60 mm	5,40 mm	4,50 mm
M 16 x 2,0	4,00 mm	6,00 mm	5,00 mm	4,00 mm	6,00 mm	5,00 mm
M 18 x 2,5	4,40 mm	6,60 mm	5,50 mm			
M 20 x 2,5	5,20 mm	7,80 mm	6,50 mm			
M 22 x 2,5	5,20 mm	7,80 mm	6,50 mm			
M 24 x 3,0	6,00 mm	9,00 mm	7,50 mm			
M 27 x 3,0	6,80 mm	10,20 mm	8,50 mm			
M 30 x 3,5	7,20 mm	10,80 mm	9,00 mm			

Calculation for minimum values

d = internal diameter BaerFix® Insert
D = external diameter BaerFix® Insert
R = remaining wall thickness

R_{min} (light alloys) = 0,2 x D
R_{min} (cast iron) = 0,3 x D
R_{min} (plastics) = 0,25 x D



Minimal borehole depth

BaerFix® Thread Inserts with cutting slots

Internal Thread	Min. borehole depth for through holes	Min. borehole depth for blind holes
M 2 x 0,4	6,00 mm	8,00 mm
M 2,5 x 0,45	6,00 mm	8,00 mm
M 3 x 0,5	6,00 mm	8,00 mm
M 4 x 0,7	8,00 mm	10,00 mm
M 5 x 0,8	10,00 mm	13,00 mm
M 6 x 1,0	14,00 mm	17,00 mm
M 8 x 1,25	15,00 mm	18,00 mm
M 10 x 1,5	18,00 mm	22,00 mm
M 12 x 1,75	22,00 mm	26,00 mm
M 14 x 2,0	24,00 mm	28,00 mm
M 16 x 2,0	22,00 mm	27,00 mm
M 18 x 2,5	24,00 mm	29,00 mm
M 20 x 2,5	27,00 mm	32,00 mm
M 22 x 2,5	30,00 mm	36,00 mm
M 24 x 3,0	30,00 mm	36,00 mm
M 27 x 3,0	30,00 mm	36,00 mm
M 30 x 3,5	40,00 mm	46,00 mm

BaerFix® Thread Inserts with cutting holes

Internal Thread	Length	Min. borehole depth for through holes	Min. borehole depth for blind holes
M 3 x 0,5	4,00 mm	4,00 mm	6,00 mm
M 3 x 0,5	6,00 mm	6,00 mm	8,00 mm
M 4 x 0,7	6,00 mm	6,00 mm	8,00 mm
M 4 x 0,7	8,00 mm	8,00 mm	10,00 mm
M 5 x 0,8	7,00 mm	7,00 mm	9,00 mm
M 5 x 0,8	10,00 mm	10,00 mm	13,00 mm
M 6 x 1,0	8,00 mm	8,00 mm	10,00 mm
M 6 x 1,0	12,00 mm	12,00 mm	15,00 mm
M 8 x 1,25	9,00 mm	9,00 mm	11,00 mm
M 8 x 1,25	14,00 mm	14,00 mm	17,00 mm
M 10 x 1,5	10,00 mm	10,00 mm	13,00 mm
M 10 x 1,5	18,00 mm	18,00 mm	22,00 mm
M 12 x 1,75	12,00 mm	12,00 mm	15,00 mm
M 12 x 1,75	22,00 mm	22,00 mm	26,00 mm
M 16 x 2,0	24,00 mm	24,00 mm	28,00 mm

BaerFix® Thread Inserts with cutting slots

Internal Thread	Min. borehole depth for through holes	Min. borehole depth for blind holes
UNC 4 x 40	6,00 mm	8,00 mm
UNC 6 x 32	8,00 mm	10,00 mm
UNC 8 x 32	8,00 mm	10,00 mm
UNC 10 x 24	10,00 mm	13,00 mm
UNC 1/4 x 20	14,00 mm	17,00 mm
UNC 5/16 x 18	15,00 mm	18,00 mm
UNC 3/8 x 16	18,00 mm	22,00 mm
UNC 7/16 x 14	22,00 mm	26,00 mm
UNC 1/2 x 13	22,00 mm	28,00 mm
UNC 5/8 x 11	22,00 mm	27,00 mm

BaerFix® Thread Inserts with cutting slots

Internal Thread	Min. borehole depth for through holes	Min. borehole depth for blind holes
UNF 4 x 48	6,00 mm	8,00 mm
UNF 6 x 40	8,00 mm	10,00 mm
UNF 8 x 36	8,00 mm	10,00 mm
UNF 10 x 32	10,00 mm	13,00 mm
UNF 1/4 x 28	14,00 mm	17,00 mm
UNF 5/16 x 24	15,00 mm	18,00 mm
UNF 3/8 x 24	18,00 mm	22,00 mm
UNF 7/16 x 20	22,00 mm	26,00 mm
UNF 1/2 x 20	22,00 mm	28,00 mm
UNF 5/8 x 18	22,00 mm	27,00 mm

Tolerances

BaerFix® Inserts are produced according to ISO 2768-m
Internal metric threads: ISO 6H
External metric threads: works standard

Recommended values for machine installation

Speed values for light alloys

BaerFix® Internal Thread	Speed per min
M 2,5 - M 3	650 - 900
M 4 - M 5	400 - 600
M 6 - M 8	280 - 400
M 10 - M 12	200 - 300
M 14 - M 16	150 - 200
M 18 - M 20	120 - 200
M 22 - M 24	100 - 160
M 27 - M 30	80 - 140

Values for installation torque

BaerFix® Internal Thread	Torque [Nm]
M 2,5 x 0,45	1, 5 Nm
M 3 x 0,5	2, 5 Nm
M 4 x 0,7	5, 5 Nm
M 5 x 0,8	10, 0 Nm
M 6 x 1,0	15, 0 Nm
M 8 x 1,25	28, 0 Nm
M 10 x 1,5	40, 0 Nm
M 12 x 1,75	60, 0 Nm

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BaerFix