SLOVENSKI STANDARD
SIST EN 3298:2008

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Aeronavtika - Vložki, tanka stena, samozapiralni - Postopek namestitve in odstranitve

Aerospace series - Inserts, thin wall, self-locking - Installation and removal procedure

Luft- und Raumfahrt - Gewindeeinsätze, dünnwandig, selbstsichernd - Ein- und Ausbauverfahren

Série aérospatiale - Douilles filetées, à paroi mince, à freinage interne - Procédure d'installation et d'extraction

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Aerospace series - Inserts, thin wall, self-locking - Installation and removal procedure

Série aérospatiale - Douilles filetées, à paroi mince, à freinage interne - Procédure d'installation et d'extraction

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN 3298:2008) has been prepared by the Aerospace and Defence Industries Association of Europe - Standardization (ASD-STAN).

After enquiries and votes carried out in accordance with the rules of this Association, this Standard has received the approval of the National Associations and the Official Services of the member countries of ASD, prior to its presentation to CEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2008, and conflicting national standards shall be withdrawn at the latest by October 2008.

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This document supersedes EN 3298:1998.

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1 Scope

This standard specifies the conditions of installation and removal (hole serration profile, tools, swaging procedure) of self-locking thin wall inserts defined by EN standards, for aerospace applications.

2 Normative references

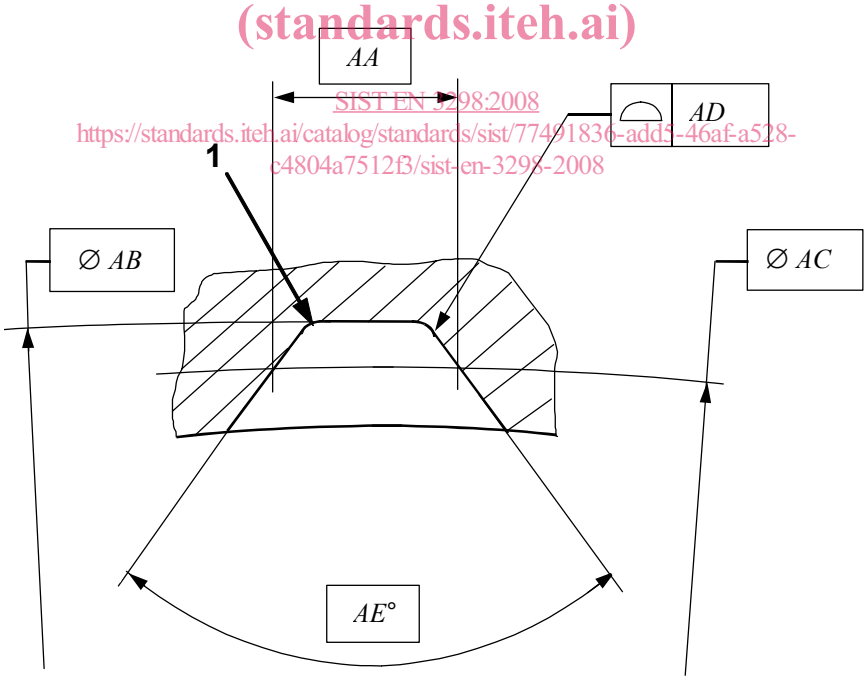
The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 3236, *Aerospace series — Inserts, thin wall, self-locking, short, in heat resisting nickel base alloy NI-P100HT (Inconel 718), silver plated internal thread.*

EN 3237, *Aerospace series — Inserts, thin wall, self-locking, long, in heat resisting nickel base alloy NI-P100HT (Inconel 718), silver plated internal thread.*

3 Hole serration profile (short inserts)

Figure 1 and Table 1 provide details of the insert part number and associated bolt thread in relation to the serration profile in the counterbore of the installation hole.



Key

1 Corners may vary from a sharp corner to a radius within the profile tolerance

Figure 1

Table 1

Bolt thread diameter	Short inserts	No. of serrations	Dimensions (mm)				$AE°$
			AA	∅ AB	∅ AC	AD	
MJ5 × 0,80	EN3236-050	18	0,41	7,46	7,25	0,13	114,5
MJ6 × 1,00	EN3236-060	24	0,28	8,55	8,30	0,10	82,0
MJ7 × 1,00	EN3236-070	27	0,25	9,51	9,30	0,10	83,0
MJ8 × 1,00	EN3236-080	28	0,27	10,50	10,25	0,10	83,3
MJ10 × 1,25	EN3236-100	33	0,27	12,48	12,25	0,10	84,3

For recommended serration profile gauge numbers, see Annex A, Table A.1.

4 Installation of inserts

Pre-installation requirements.

Prior to installation, check that the tapped hole, counterbore and serrations (if applicable) are free from burrs and foreign particles, grease, oil, etc. This will particularly apply to removal of the burrs produced by the cutting of the serrations.

The required insert shall be inspected to ensure that it is clean and free from protective grease, etc.

Inserts installed in steel, heat resisting alloy or titanium alloy components may be lightly smeared externally with clean engine oil (i.e. any of the recognised oils used for the engine lubrication system. If in any doubt, consult the Controlling Quality Engineer) to facilitate assembly into the tapped and serrated counterbored hole.

Inserts installed in aluminium or magnesium components must be lightly smeared externally with a suitable jointing compound to prevent electrolytic corrosion. A minimum of 10 minutes air drying time shall be allowed before installation of insert.

5 Minimum criteria for the installation and removal tools and their methods of application

The tools and their methods of application described in this standard are not mandatory and show only the basic principles to be observed to achieve the satisfactory installation and subsequent swaging or removal of the inserts.

The minimum dimensional requirements provided shall be achieved and on no account shall the design of the tools or their methods of application be such that damage may occur to the threads or the locking zone of the insert or the component into which it is being installed.

Always ensure the appropriate tool/insert size combinations have been chosen for either the insertion or swaging of the insert to enable correct installation of the insert. See 6.2 and 6.3.

During the swaging operation, the component into which the inserts are installed **shall be** adequately supported to ensure no flexing or distortion at the insert assembly face occurs. This particularly applies to drum shaped components which are prone to flexing.

6 Assembly tools and gauges

6.1 General

The tools and methods shown in this section for the installation, swaging and removal of thin wall inserts are **mandatory** (see Clause 4) for standard installations. When installing inserts in counterbores or other applications, e.g. curved surfaces, where standard tooling is unsuitable, alternative tools are permissible but all the dimensions in the tables must be adhered to.

6.2 Installation drive tool

Figure 2 shows an example of the installation drive tool configuration and Table 2 gives the relevant tool dimensions to ensure the correct tool size is used for screwing the insert into the tapped hole.

The driving feature shall be hexagonal, the insert driving feature shall be 'tri-lobed' but other tool features may vary depending upon the manufacturer.

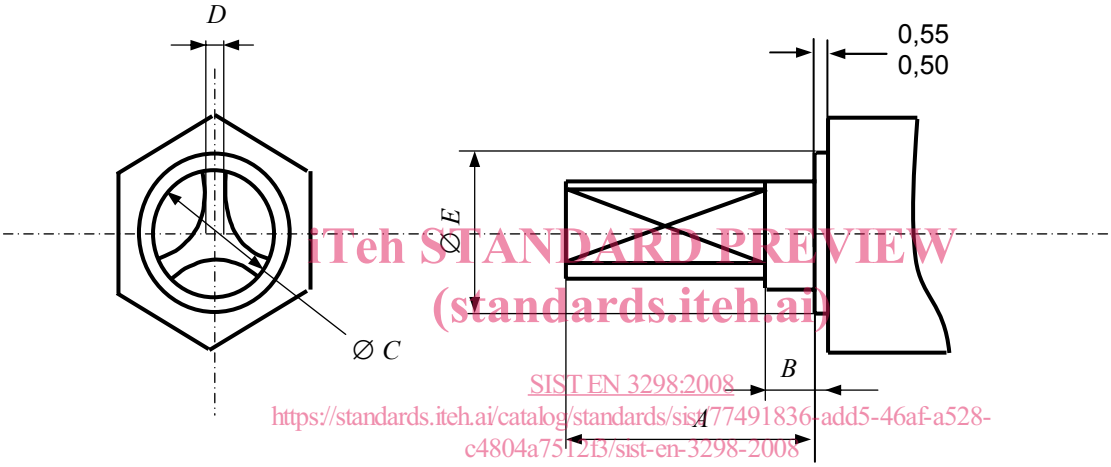


Figure 2

Table 2

Dimensions in millimetres

Short insert	Long insert	*A* ± 0,3	*B* ± 0,2	∅ *C* + 0,05 0	*D* ± 0,15	∅ *E* ± 0,05
EN3236-050	EN3237-050	7,3	2,50	4,435	1,05	6,95
EN3236-060	EN3237-060	8,5	2,70	5,325	1,30	7,95
EN3236-070	EN3237-070	10,5	3,10	6,325	1,55	8,95
EN3236-080	EN3237-080	12,5	3,50	7,175	1,75	9,95
EN3236-100	EN3237-100	16,0	4,20	9,015	2,25	11,95

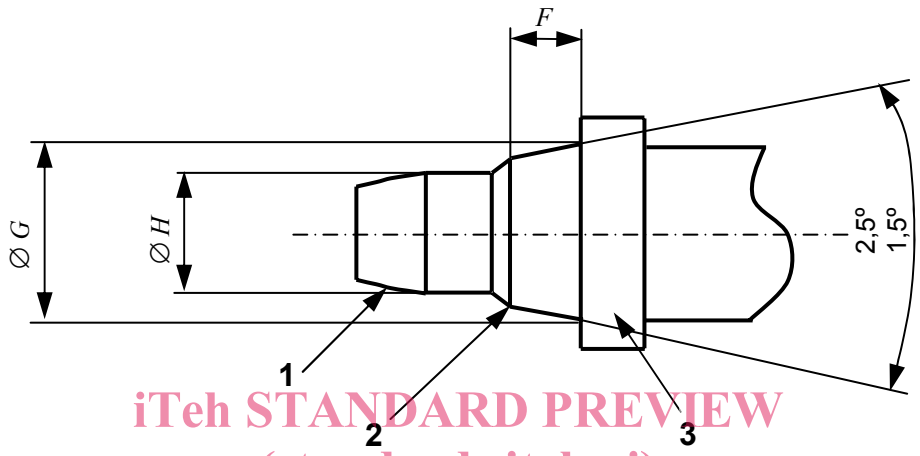
For recommended drive tools, see Annex A, Table A.2.

6.3 Swage tools

Table 3 gives the tool dimensions related to insert diameter code to ensure the correct tool size is used for swaging the insert into the component. Figure 3 shows an example of the swage tool configuration.

The swage tool has a protective nylon washer, see Figure 3, which acts as a stop during the swaging operation and helps to protect the surface of the component from damage. This **must** be replaced when dimension "$F_{max.}$" is exceeded.

The use of incorrect tools will cause damage to the insert and surrounding material and may also cause the flange(s) of the component to be distorted.



Key

1 Shape optional
2 Rad. J
3 Nylon stop washer (Replaceable)

Figure 3

Table 3

Dimensions in millimetres

Short insert	Long insert	F $^{+0,1}_{0}$	$\varnothing G$ ± 0,015	$\varnothing H$ ± 0,015	Rad. J ± 0,25
EN3236-050	EN3237-050	2,255	5,975	3,775	0,65
EN3236-060	EN3237-060	2,455	6,995	4,575	0,80
EN3236-070	EN3237-070	2,655	8,005	5,575	1,00
EN3236-080	EN3237-080	3,055	9,025	6,275	1,00
EN3236-100	EN3237-100	3,755	11,085	7,775	1,15

For recommended swage tool numbers, see Annex A, Table A.3 and Table A.4.