



SLOVENSKI STANDARD

SIST EN 3916:2008

01-november-2008

Aeronavtika - Vložki, tanka stena - Postopek za popravljanje sestavnih delov

Aerospace series - Insert, thin wall - Salvage procedure for components

Luft- und Raumfahrt - Gewindeeinsätze, dünnwandig - Verfahren für Nacharbeit von Bauteilen

Série aérospatiale - Douilles filetéés, à paroi mince - Procédure pour récupération

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Ta slovenski standard je istoveten z: **EN 3916:2008**

ICS:

49.030.99

Drugi vezni elementi

Other fasteners

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 3916

August 2008

ICS 49.030.99

English Version

Aerospace series - Insert, thin wall - Salvage procedure for components

Série aérospatiale - Douilles filetées, à paroi mince -
Procédure pour récupération

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Verfahren für Nacharbeit von Bauteilen

This European Standard was approved by CEN on 3 April 2008.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

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Foreword

This document (EN 3916:2008) 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of an identical text or by endorsement, at the latest by February 2009, and conflicting national standards shall be withdrawn at the latest by February 2009.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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EN 3916:2008 (E)**1 Scope**

- 1.1** This specification covers the accepted methods for the reclamation of installation holes for standard thin wall inserts, within assemblies.
- 1.2** To enable rectification when defects or damage occur to the standard insert tapped installation hole, or to rectify any out of position of the hole within the specified parameters of use.
- 1.3** To control the machining of the existing insert hole and the installation requirements of the replacement oversize thin wall insert.

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 3676:1998, *Aerospace series — Inserts, thin wall, self-locking — Design standard*

EN 3913, *Aerospace series — Insert, thin wall, self-locking, short, in heat resisting nickel base alloy NI-PH2601 (NI-P100HT, Inconel 718), silver plated on internal thread, for salvage of components*

EN 3914, *Aerospace series — Insert, thin wall, self-locking, long, in heat resisting nickel base alloy NI-PH2601 (NI-P100HT, Inconel 718), silver plated on internal thread, for salvage of components*

EN 3915, *Aerospace series — Insert, thin wall, self-locking, MJ threads, in heat resisting nickel base alloy NI-PH2601 (NI-P100HT, Inconel 718), for salvage of components — Classification: 1 275 MPa (at ambient temperature) / 550 °C — Technical specification*

ISO 965-1, *ISO general-purpose metric screw threads — Tolerances — Part 1: Principles and basic data*

ISO 5855-2, *Aerospace — MJ threads — Part 2: Limit dimensions for bolts and nuts*

3 Conditions of use

- 3.1** After reclamation, assemblies shall conform to the dimensional requirements of their respective Engineering Drawings.
- 3.2** Table 1 shows the values for the maximum out of position as applied to the theoretical centreline of the original hole. In practice this is a cylinder of diameter x_{xx} applied down the theoretical centreline of the original hole. If the actual position of the hole centreline falls outside the perimeter of this cylinder, the hole cannot be reclaimed.
- 3.3** Salvage using oversize inserts is only possible if the 'Boss thickness for component salvage' has been used in the original design (see EN 3676:1998, Table 6).
- 3.4** The reclamation facility shall at this stage investigate the component Engineering Drawings to check that the operations detailed and controlled by sections 4 and 5 will not cause a further non conformance of the component.

Table 2 demonstrates that 2 types of oversize insert can be used i.e. long or short. Before commencing reclamation, the original Engineering Drawings shall be checked to establish which type of standard insert has been used i.e. long or short. The replacement oversize insert and accompanying dimensions from this specification shall correspond with it, i.e. short for short, long for long.

Only one reclamation is possible using the oversize insert method for any one hole. Further non conformance occurring to the oversize insert hole **cannot** be rectified using this method.

3.5 Performance: It should be noted that the salvage inserts conforming with EN 3915 give 10 reuses at 550 °C.

Table 1

Dimensions in millimetres

Standard insert internal thread size	Maximum out of position of the original hole (regardless of feature size)
MJ5×0,8-4H6H	∅ 0,5
MJ6×1-4H5H	∅ 0,5
MJ7×1-4H5H	∅ 0,5
MJ8×1-4H5H	∅ 0,5
MJ10×1,25-4H5H	∅ 0,5

4 Re-machining of an existing insert hole

4.1 The existing threaded portion of the insert hole shall be completely removed by using a correctly aligned cutter (see Figure 1).

4.2 The cutter used shall enable the modified minor diameter B listed within Table 3 to be produced.

4.3 The old counterbore and serrations will be removed when the new counterbore is machined.

4.4 In the case of the original insert hole being out of position, the manufacture shall ensure that the new oversize insert hole is machined in its correct position, see 3.2 and Table 1.

EXAMPLE

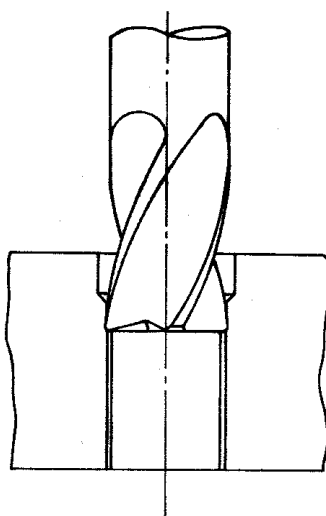


Figure 1

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5 Insert and tapped hole particulars

5.1 Table 2 provides details of the oversize insert part numbers in relation to the bolt thread diameter and insert lengths.

Table 2

Dimensions in millimetres

Bolt thread diameter	Short insert	Length $\pm 0,3$	Long insert	Length $\pm 0,3$
MJ5×0,8-4h6h	EN 3913-050	8,2	EN 3914-050	13,75
MJ6×1,0-4h6h	EN 3913-060	9,5	EN 3914-060	15,95
MJ7×1,0-4h6h	EN 3913-070	11,5	EN 3914-070	18,35
MJ8×1,0-4h6h	EN 3913-080	13,4	EN 3914-080	20,75
MJ10×1,25-4h6h	EN 3913-100	16,8	EN 3914-100	25,45

5.2 Table 3 and Figure 2 provide the necessary information for tapped holes to receive oversize thin wall inserts.

The counterbore depth D_1 applies when oversize inserts are to be installed into light alloy components and prebroaching is not required. Counterbore depth D_2 (refer to Figure 3 and Table 4) applies when oversize inserts are to be installed into hard materials, i.e. steels, nickel and titanium alloys, and the counterbore will need to be prebroached.

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Table 3

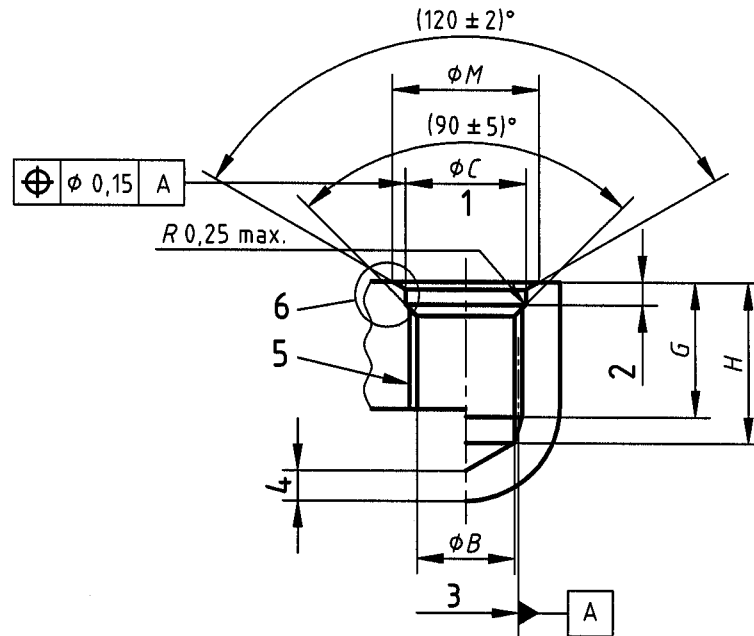
Dimensions in millimetres

Hole diameter code	Length code ^a	Associated bolt thread	A Thread	$\varnothing B^b$ Minor		C		D_1^c	D_2	$\varnothing M$ Chamfer	G	H
				max.	min.	max.	min.	$\pm 0,13$	$\pm 0,13$			
050	L	MJ5×0,8-4h6h	MJ9×1,0-4H5H	8,2	8,1	9,1	9,0	2,59	–	10,03	14,8	17,95
	S							–	2,97		9,25	12,4
060	L	MJ6×1,0-4h6h	MJ10×1,0-4H5H	9,24	9,11	10,13	10,0	3,00	–	11,02	17,0	20,15
	S							–	3,38		10,50	13,7
070	L	MJ7×1,0-4h6h	MJ11×1,0-4H5H	10,29	10,16	11,13	11,0	3,00	–	12,04	19,4	22,55
	S							–	3,38		12,50	15,7
080	L	MJ8×1,0-4h6h	MJ12×1,0-4H5H	11,29	11,16	12,13	12,0	3,00	–	13,00	21,8	24,95
	S							–	3,38		14,40	17,6
100	L	MJ10×1,25-4h6h	MJ14×1,0-4H5H	13,32	13,17	14,15	14,0	3,51	–	15,06	26,5	29,65
	S							–	3,89		17,80	21,0

^a Length code L for long inserts (EN 3914 series), code S for short inserts (EN 3913 series).

^b Modified Minor diameter.

^c See 5.2.



Key

- 1 Thread marks on counterbore permissible
- 2 D_1 light alloys or D_2 steel, nickel and titanium alloy see 5.2 and refer to Figure 3 and Table 4.
- 3 Thread pitch diameter
- 4 2,00 min after final machining, see 3.3.
- 5 Example: Thread diameter A modified minor diameter thread call out: MJ10×1,0-4H5H modified minor diameter 9,11 to 9,24.
- 6 See 5.3.

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For all other particulars refer to parent drawing.

Figure 2

5.3 Table 4 and Figures 3 and 4 give the additional information required to produce the serrations in the counterbore for steel, nickel and titanium alloys.

Serrations are required in the counterbore when oversize inserts are to be used in harder materials. These serrations are produced using a special broaching tool.