

BS EN 6113:2015



BSI Standards Publication

Aerospace series — Circuit breaker, connecting and attachment hardware

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National foreword

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The UK participation in its preparation was entrusted to Technical Committee ACE/6, Aerospace avionic electrical and fibre optic technology.

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ISBN 978 0 580 87663 9

ICS 49.060

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 July 2015.

Amendments issued since publication

Date	Text affected
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EUROPEAN STANDARD

EN 6113

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 2015

ICS 49.060

English Version

Aerospace series - Circuit breaker, connecting and attachment hardwareSérie aérospatiale - Disjoncteurs, connecteurs et montage
accessoiresLuft- und Raumfahrt - Schutzschalter, Anschluss- und
Montage- Zubehör

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European foreword

This document (EN 6113:2015) 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 European 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of an identical text or by endorsement, at the latest by January 2016, and conflicting national standards shall be withdrawn at the latest by January 2016.

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1 Scope

This European Standard specifies the connecting and attaching hardware for circuit breakers.

2 Normative references

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

EN 2424, *Aerospace series - Marking of aerospace products*

ISO 965-2, *ISO general purpose metric screw threads — Tolerances — Part 2: Limits of sizes for general purpose external and internal screw threads — Medium quality*

ISO 1190-1, *Copper and copper alloys — Code of designation — Part 1: Designation of materials*

ISO 4757, *Cross recesses for screws*

TR 3775, *Aerospace series — Bolts and pins — Materials* ¹⁾

MIL-B-87114, *Bolts, recess drive, general specification* ²⁾

MIL-S-8879, *Screw threads, controlled radius root with increased minor diameter, general specification for* ²⁾

3 Requirements

3.1 Configuration – Dimensions – Tolerances

The configuration, dimensions and tolerances shall conform with 3.2, 3.3, 3.4 and 3.5.

3.2 Connecting screw

3.2.1 Configuration

Configuration, see Figure 1, Figure 2, Figure 3 and Figure 4.

3.2.2 Dimensions and tolerances

Dimensions and tolerances are in millimetres.

3.2.3 Thread and Cross recess

3.2.3.1 Thread

0.1640-32UNC-3A in accordance with MIL-S-8879.

3.2.3.2 Cross recess

Cross recess in accordance with ISO 4757 type H, No.2.

¹⁾ Published as ASD-STAN Technical Report at the date of publication of this European Standard (<http://www.asd-stan.org/>).

²⁾ Published by: DoD National (US) Mil. Department of Defense (<http://www.defenselink.mil/>).

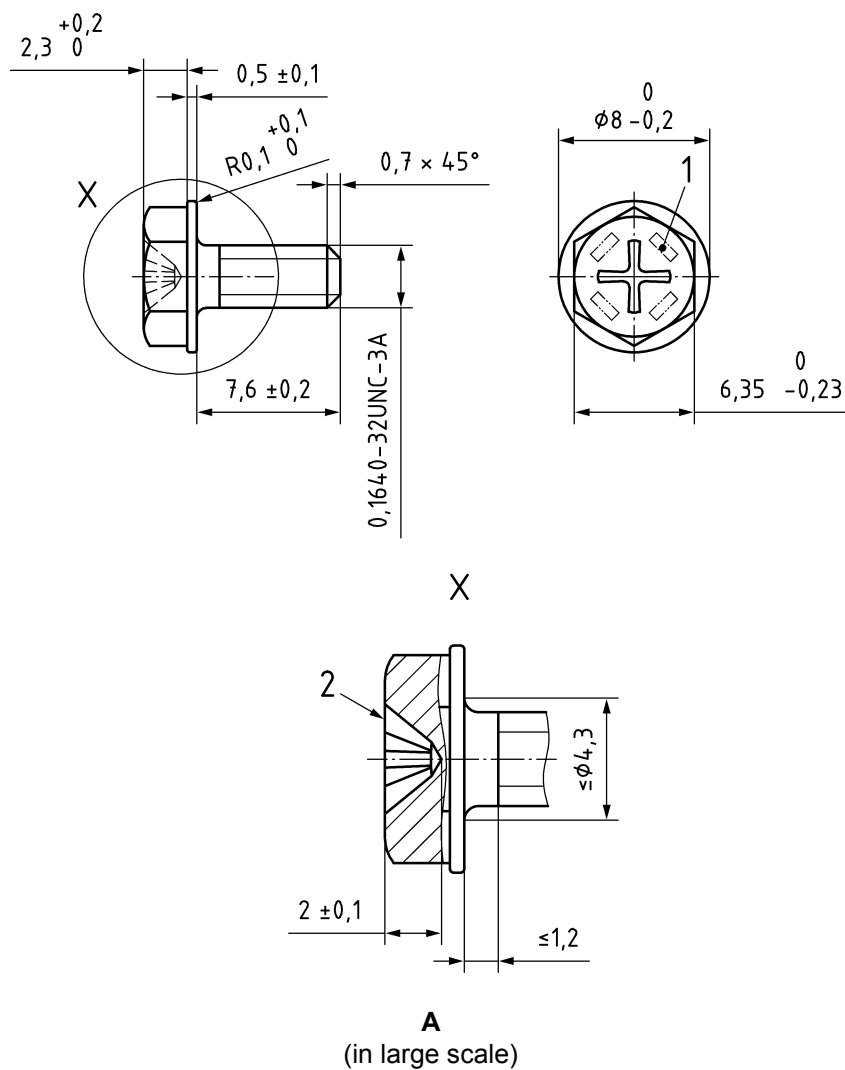
3.2.4 Material and protection

3.2.4.1 Material

Material: Steel, rupture resistance 860 MPa to 1 000 MPa in accordance with TR 3775.

3.2.4.2 Protection

Protection: Nickel plated (thickness 5 µm min.)



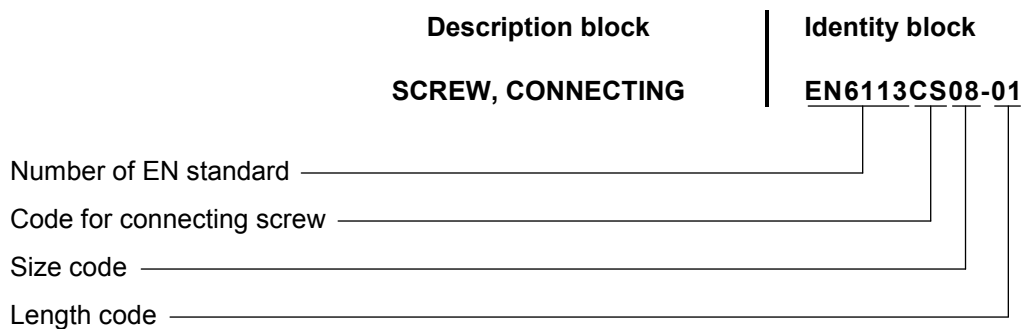
Key

- 1 Marking, see Clause 5.
- 2 Cross recess, see 3.2.3.2.

Figure 1 — Configuration of connecting screw

3.2.5 Designation of connecting screw

Example of designation for a single connecting screw:



3.3 Connecting lockwasher

3.3.1 Configuration

Configuration, see Figure 2.

3.3.2 Dimensions and tolerances

Dimensions and tolerances are in millimetres.

3.3.3 Requirements

Two wave corrugated washer.

3.3.4 Material and hardness

3.3.4.1 Material

Material: CuBe 1,9 to ISO 1190-1

3.3.4.2 Hardness

Hardness: 350 HV to 410 HV

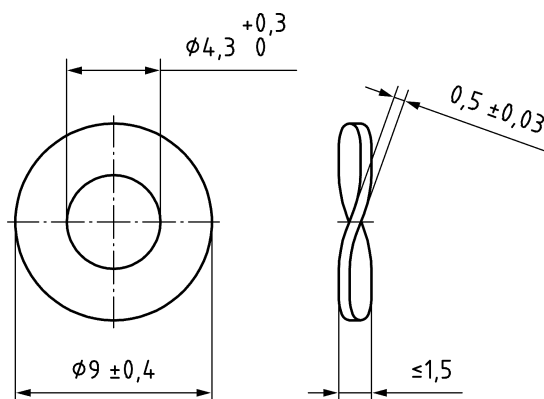
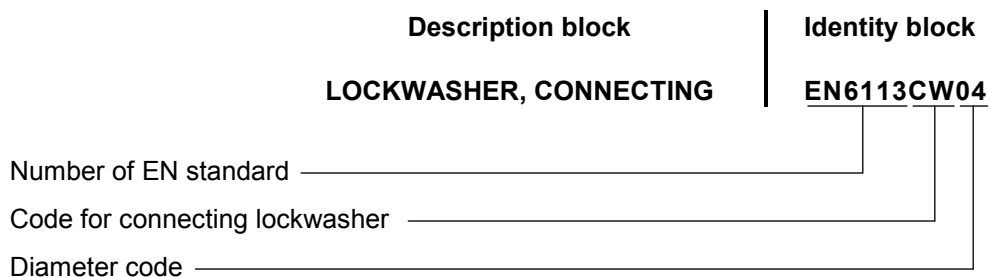


Figure 2 — Configuration of connecting lockwasher

3.3.5 Designation of connecting lockwasher

Example of designation for a single connecting lockwasher:



3.4 Attachment nut

3.4.1 Configuration

Configuration, see Figure 3.

3.4.2 Dimensions and tolerances

Dimensions and tolerances are in millimetres.

3.4.3 Material and protection

3.4.3.1 Material

Material: Aluminium alloy

3.4.3.2 Protection

Protection: Black sulphur anodized

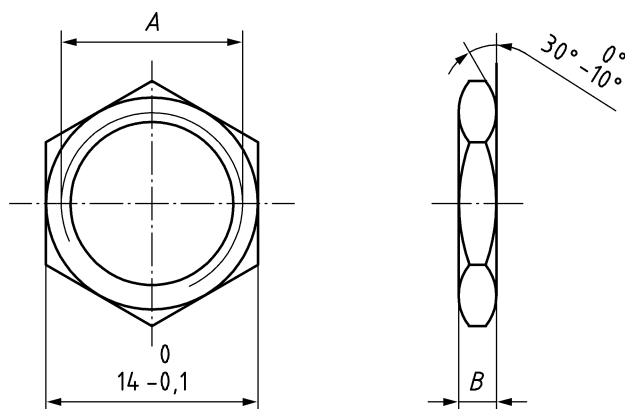


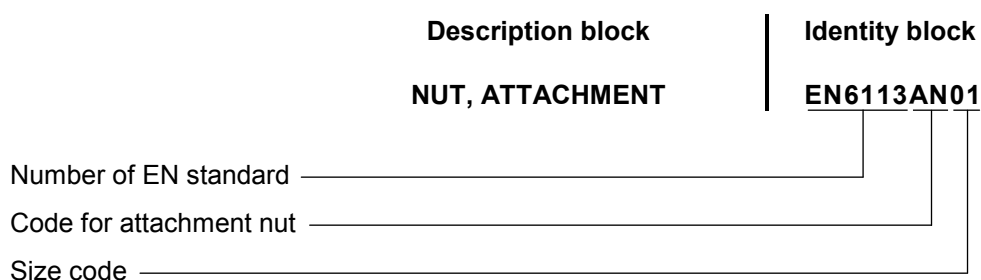
Figure 3 — Configuration of attachment nut

Table 1 — Dimensions of attachment nut

Size code	<i>A</i> thread ISO 965-2	<i>B</i> ±0,1
01	M12 × 0,75	2,0
02	M12 × 1	2,5

3.4.4 Designation of attachment nut

Example of designation for a single attachment nut:



3.5 Attachment lockwasher

3.5.1 Configuration

Configuration, see Figure 4.

3.5.2 Dimensions and tolerances

Dimensions and tolerances are in millimetres.

3.5.3 Requirements

M12DIC lockwasher (internal overlapping teeth)

3.5.4 Material and hardness

3.5.4.1 Material

Material: Steel

3.5.4.2 Hardness

Hardness: 400 HV to 480 HV

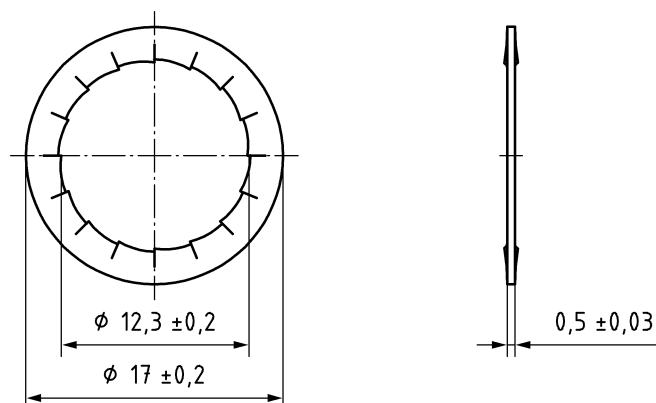
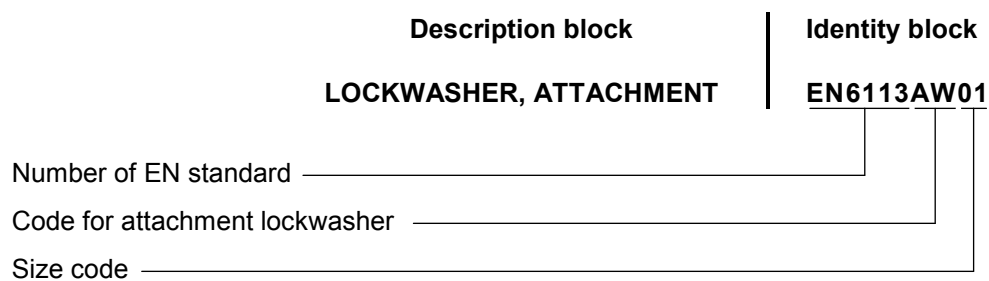


Figure 4 — Configuration attachment lockwasher

3.5.5 Designation of attaching lockwasher

Example of designation for a single attachment lockwasher:



4 Designation

Example of a hardware kit:

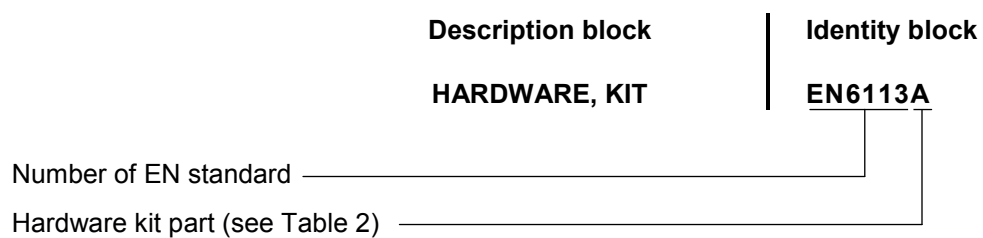


Table 2 — Hardware kit part

Kit part-no.	Components of the hardware kits		
	Single part-no. ^a	Description	Pieces per kit
EN 6113A	EN 6113CS08-01	Connecting screw	2
	EN 6113CW04	Connecting lockwasher	2
	EN 6113AN01	Attachment nut M12 × 0,75	1
	EN 6113AW01	Attachment lockwasher	1
EN 6113B	EN 6113AN01	Attachment nut M12 × 0,75	1
	EN 6113AW01	Attachment lockwasher	1
EN 6113C	EN 6113CS08-01	Connecting screw	6
	EN 6113CW04	Connecting lockwasher	6
	EN 6113AN01	Attachment nut M12 × 0,75	1
	EN 6113AW01	Attachment lockwasher	1
EN 6113A1	EN 6113CS08-01	Connecting screw	2
	EN 6113CW04	Connecting lockwasher	2
	EN 6113AN02	Attachment nut M12 × 1	1
	EN 6113AW01	Attachment lockwasher	1
EN 6113B1	EN 6113AN02	Attachment nut M12 × 1	1
	EN 6113AW01	Attachment lockwasher	1
EN 6113C1	EN 6113CS08-01	Connecting screw	6
	EN 6113CW04	Connecting lockwasher	6
	EN 6113AN02	Attachment nut M12 × 1	1
	EN 6113AW01	Attachment lockwasher	1

^a Spare parts can be ordered separately.

5 Marking

The packaging of kits and single parts (spare parts) must be marked in accordance with EN 2424 style P.

The parts can be marked with manufacturer's logo.

6 Technical specification

As per MIL-B-87114, unless otherwise specified.

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