SLOVENSKI STANDARD
SIST EN 4110:2009

01-julij-2009

Aeronavtika - Obroļ ni ključ , odprti, ukrivljen

Aerospace series - Wrenches, open end, box

Luft- und Raumfahrt - Doppelringschlüssel, offen, verzahnt abgewinkelt

Série aérospatiale - Clés cannelés à tuyauter

Ta slovenski standard je istoveten z: **EN 4110:2006**

ICS:

49.030.99	Drugi vezni elementi	Other fasteners

SIST EN 4110:2009 **en,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 4110

December 2006

ICS 49.030.99

English Version

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EUROPÄISCHES KOMITEE FÜR NORMUNG

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Ref. No. EN 4110:2006: E

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Foreword

This document (EN 4110:2006) 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.

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1 Scope

This standard specifies the characteristics of open end box wrenches for splined nuts 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.

ISO 4156 (all parts), *Straigth cylindrical involute splines — Metric module, side fit.*

EN 2424, *Aerospace series — Marking of aerospace products.*

EN 4111, *Aerospace series — Wrenches, splined, socket for pipe fittings — Technical specification.*

3 Required characteristics

3.1 Configuration – Dimensions – Tolerances

See Figures 1 and 2 and Tables 1 and 2. Dimensions and tolerances are in millimetres.

3.2 Material

Material shall be corrosion resistant. The actual material specification shall be the choice of the manufacturer, provided that the spanner meets the requirements of the technical specification, EN 4111.

3.3 Hardness

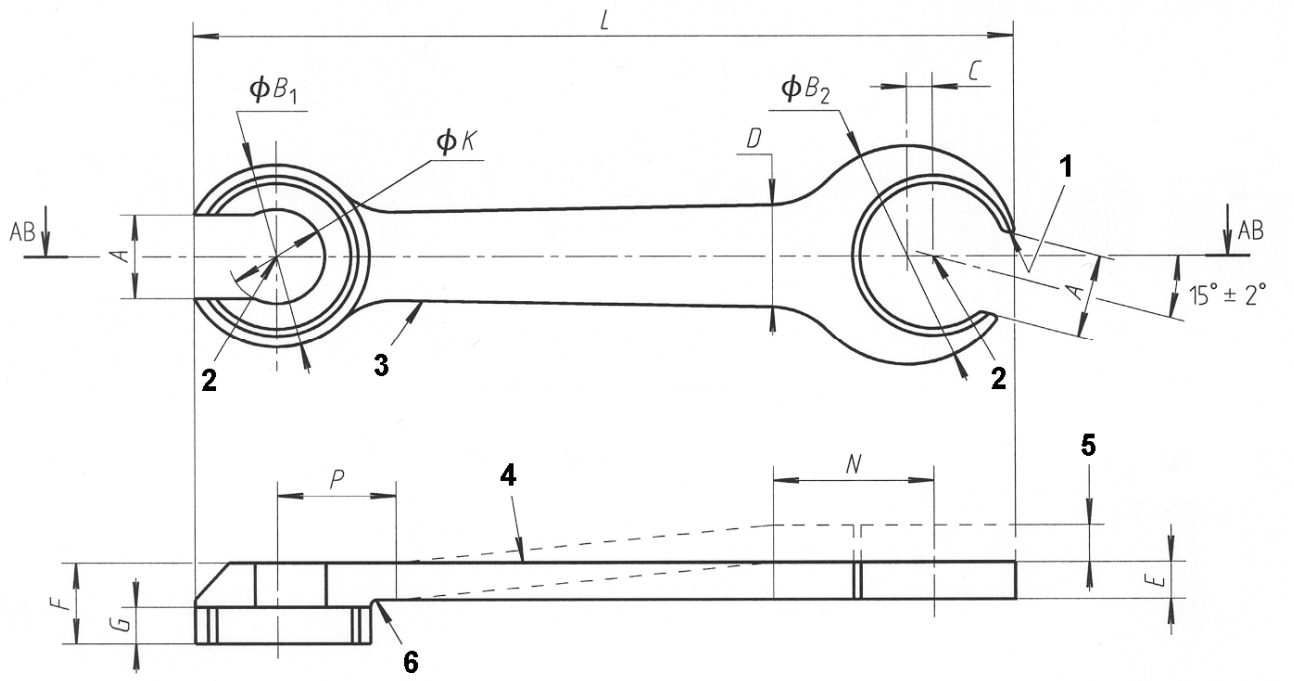
42 < HRC < 54

3.4 Surface treatment

Nickel-chromium coating

Nickel thickness: 5 µm

Chromium thickness: 0,25 µm



Section AB

Key

1 Rad. (2 positions)
2 Point "AA"
3 Profile may vary at manufacturer's discretion, 2 but shall blend smoothly with radii at ∅ B_1 and ∅ B_2
4 Marking
5 J max. 1 (see Note)
6 Rad.

See point "AA" for centre of origin of spline drives (both ends)

For spline dimensions, see Figure 2 and Table 2.

Drawing not to scale

Dimensions not quoted are at manufacturer's discretion.

Dimension "A" to be equidistant about slot centre line.

Surface texture to be R_a 3,2 unless otherwise specified.

NOTE 1 Wrench may be angled at manufacturer's discretion. J max. = E.

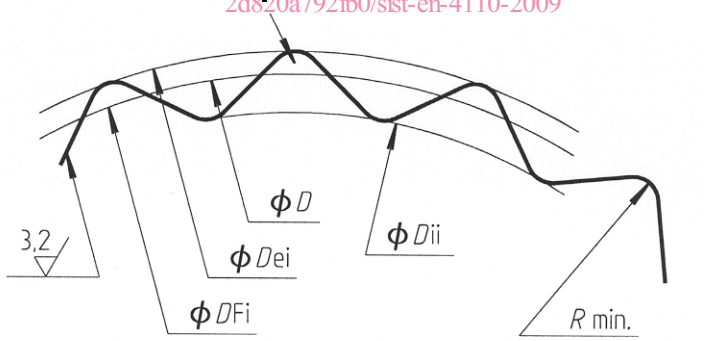
2 Shank may be either tapered or parallel.

Figure 1

Table 1

DN [a]	A min.	B_1 max.	B_2 max.	C ± 0,2	D max.	E max.	F max.	G ± 0,5	K ± 0,5	L max.	L min.	N max.	P max.
04	6,5	17	22	2	16	5	12,5	6	8,5	140	—	22	15
06	8,5	21,5	27		18	6	14,5	7	10,5		—		
08	10,5	24	31	3	20				12,5	155	140	27	20
10	13	27	33		22				14,5	165	145		
12	15	28,5	35		24	7	16,5	8	16,5	180	155		
13	16	30	36		25				17,5	210	180		
14	17,5	31	37		26				18,5				
16	19,5	33	39		28				20,5			34	25
18	21,5	37	44		30				22,5	225	195		
20	23,5	40	50	5	32				24,5	250	215		
22	25,5	43,5	55,5	6	34	8	18,5	9	26,5	265	230	44	32
25	28,5	49	63	8	37				29,5	290	245		
32	35,5	54,5	70	9	43				37,5	370	300		

[a] DN: Diameter Nominal (outside diameter of the corresponding pipe).



Key

1 Circular space width $\frac{E}{EV}$

Figure 2