



**SLOVENSKI STANDARD**  
**SIST EN 3819:2008**

**01-september-2008**

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Aerospace series - Clearance for wrenches and sockets

Luft- und Raumfahrt - Platzbedarf für Schraubwerkzeuge

Série aérospatiale - Dégagements pour clés et douilles

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**ICS:**

49.030.99

Drugi vezni elementi

Other fasteners

**SIST EN 3819:2008**

**en**

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ICS 49.030.99

English Version

## Aerospace series - Clearance for wrenches and sockets

Série aérospatiale - Dégagements pour clés et douilles

Luft- und Raumfahrt - Platzbedarf für Schraubwerkzeuge

This European Standard was approved by CEN on 12 December 2007.

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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.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
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## Contents

Page

|  |   |
|--|---|
| Foreword.....  | 3 |
| 1 Scope .....  | 4 |
| 2 Normative references .....                             | 4 |
| 3 Clearance for box wrench according to EN 3711 .....    | 4 |
| 4 Clearance for socket wrench according to EN 3710 ..... | 5 |

### Figures

|                |   |
|----------------|---|
| Figure 1 ..... | 4 |
| Figure 2 ..... | 4 |
| Figure 3 ..... | 4 |
| Figure 4 ..... | 5 |
| Figure 5 ..... | 5 |

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### Tables

|              |   |
|--------------|---|
| Table 1..... | 5 |
| Table 2..... | 6 |

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## Foreword

This document (EN 3819:2008) 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 November 2008, and conflicting national standards shall be withdrawn at the latest by November 2008.

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.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

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## 1 Scope

This standard defines the minimum clearance area required around nuts and bolt heads when using either double hexagon box or socket wrenches defined in AECMA standard.

## 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 3710, *Aerospace series — Sockets, bi-hexagonal — Technical Specification*<sup>1)</sup>

EN 3711, *Aerospace series — Wrench-double ended, bi-hexagonal — Straight, cranked, offset*<sup>1)</sup>

## 3 Clearance for box wrench according to EN 3711

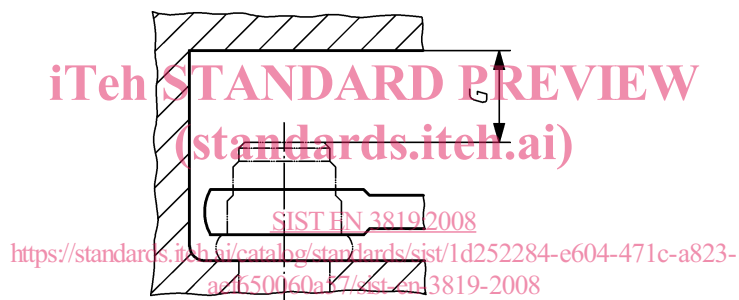


Figure 1

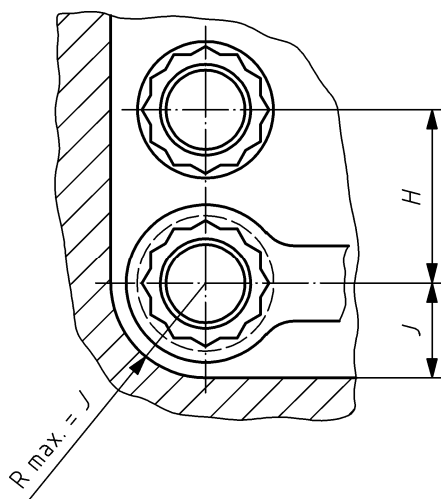


Figure 2

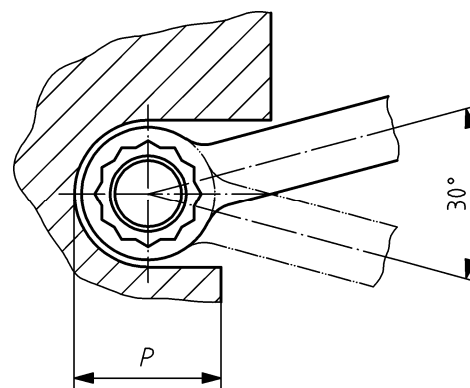


Figure 3

1) Published as AECMA prestandard at the date of publication of this standard.

Table 1

| Across flats | $G$<br>mm<br>min. | $H$<br>mm<br>min. | $J$<br>mm<br>min. | $P$<br>mm<br>max. |
|--------------|-------------------|-------------------|-------------------|-------------------|
| 6            | 7                 | 11                | 6                 | 9                 |
| 7            | 7,5               | 12                | 6,5               | 11                |
| 8            | 8                 | 13,5              | 7,5               | 12,5              |
| 9            | 9                 | 15                | 8                 | 15,5              |
| 10           | 10                | 16,5              | 9                 | 14                |
| 11           | 10,5              | 18                | 9,5               | 16,5              |
| 12           | 11                | 19,5              | 10,5              | 20                |
| 14           | 11,5              | 21,5              | 11,5              | 21,5              |
| 17           | 13                | 26                | 13,5              | 30,5              |
| 19           | 14                | 28,5              | 15                | 31                |
| 22           | 15                | 32,5              | 17                | 39                |

## 4 Clearance for socket wrench according to EN 3710

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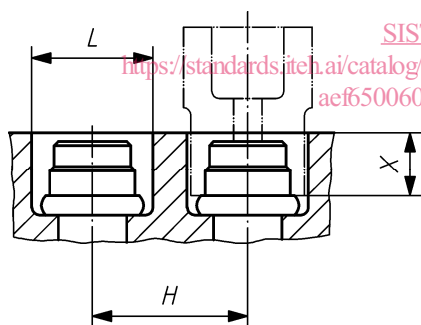


Figure 4

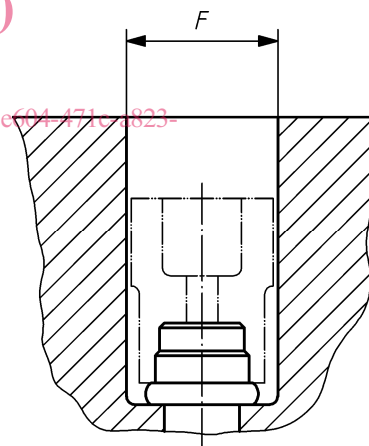


Figure 5

Table 2

| Square drive |        | Across flats | L<br>mm<br>min. | H<br>mm<br>min. | X <sub>S</sub> <sup>a</sup><br>mm | X <sub>L</sub> <sup>b</sup><br>mm | F<br>mm<br>min. |
|--------------|--------|--------------|-----------------|-----------------|-----------------------------------|-----------------------------------|-----------------|
| mm           | inch   |              |                 |                 |                                   |                                   |                 |
| 6,35         | 1/4    | 5            | ∅ 9             | 10              | 8                                 | 28                                | ∅ 12,5          |
|              |        | 6            | ∅ 10,5          | 11,5            |                                   |                                   |                 |
|              |        | 7            | ∅ 12            | 13              |                                   |                                   |                 |
|              |        | 8            | ∅ 13,5          | 14,5            |                                   |                                   | ∅ 13            |
|              |        | 9            | ∅ 14,5          | 15,5            |                                   |                                   |                 |
| 10           | 3/8    | 7            | ∅ 12            | 13              | 9                                 | 22                                | ∅ 18,5          |
|              |        | 8            | ∅ 13,5          | 14,5            |                                   |                                   |                 |
|              |        | 9            | ∅ 14,5          | 15,5            |                                   |                                   |                 |
|              |        | 10           | ∅ 16            | 17              |                                   |                                   |                 |
|              |        | 11           | ∅ 17            | 18              |                                   |                                   |                 |
|              |        | 12           | ∅ 18,5          | 19,5            |                                   |                                   |                 |
|              |        | 13           | ∅ 19,5          | 20,5            |                                   |                                   | ∅ 23,5          |
| 12,7         | 1/2    | 10           | ∅ 16            | 17              | 16                                | 46                                | ∅ 25            |
|              |        | 11           | ∅ 17            | 18              |                                   |                                   |                 |
|              |        | 12           | ∅ 18,5          | 19,5            |                                   |                                   |                 |
|              |        | 13           | ∅ 19,5          | 20,5            |                                   |                                   |                 |
|              |        | 14           | ∅ 21,5          | 22,5            |                                   |                                   |                 |
|              |        | 15           | ∅ 23            | 24              |                                   |                                   |                 |
|              |        | 16           | ∅ 24            | 25              |                                   |                                   | ∅ 26            |
|              |        | 17           | ∅ 25,5          | 26,5            |                                   |                                   |                 |
|              |        | 18           | ∅ 26,5          | 27,5            |                                   |                                   |                 |
|              |        | 19           | ∅ 28            | 29              |                                   |                                   |                 |
|              |        | 20           | ∅ 29            | 30              |                                   |                                   |                 |
|              |        | 21           | ∅ 30,5          | 31,5            |                                   |                                   |                 |
| 22           | ∅ 31,5 | 32,5         | ∅ 31,5          |                 |                                   |                                   |                 |

<sup>a</sup> Standard serial.  
<sup>b</sup> Length serial.