

**Specification for**

**Steel double hexagon bolts —  
1250 MPa (180,000 lbf/in<sup>2</sup>) for  
aircraft**

ICS 49.030.20

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# Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee ACE/12, Aerospace fasteners and fastening systems, upon which the following bodies were represented:

British Industrial Fasteners Federation  
Ministry of Defence  
Society of British Aerospace Companies Ltd.

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## Foreword

This British Standard has been prepared by Technical Committee ACE/12. It supersedes BS 3A 228 : 1979 which is withdrawn.

This edition incorporates the requirements for 1½ UNJF bolts and at the same time corrects several editorial errors that have been noted in the previous edition. It does not reflect a full review or revision of the standard which will be undertaken in due course.

Oversize dimensions for 10 – 32 and 1½ diameter bolts have not been included.

**Compliance with a British Standard does not of itself confer immunity from legal obligations.**

### Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 12, an inside back cover and a back cover.

# Specification

## 1 Scope

This British Standard specifies the materials, dimensions, finish and inspection requirements for steel bolts of high metallurgical quality with double hexagon head and unified screw threads of 'UNJF' basic profile for aircraft use.

NOTE. The latest edition of an Aerospace Series standard is indicated by a prefix number.

## 2 Normative references

This British Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are made at the appropriate places in the text and the cited publications are listed on the inside back cover. For dated references, only the edition cited applies, any subsequent amendments to or revisions of the cited publication apply to this standard only when incorporated by amendment or revision. For undated references, the latest edition of the cited publication applies, together with any amendments.

## 3 Materials, manufacture, inspection and testing

### 3.1 Materials

The bolts shall be manufactured from steel bars conforming to the requirements of BS S 147 or BS S 149, according to the discretion of the manufacturer.

### 3.2 Manufacture, inspection and testing

The bolts shall be manufactured, inspected and tested in accordance with the requirements of BS A 241.

## 4 Screw threads

The screw threads shall conform to the requirements of BS 4084.

## 5 Dimensions

**5.1** All finished bolts, after the application of the cadmium coating shall conform to the dimensions and tolerances given in tables 1 and 2. See also figure 1.

**5.2** The wrenching profile of the bolts shall conform to the dimensions and tolerances given in SBAC publication RS 680[1].

**5.3** Oversize bolts are designated X and Y for the first and second oversize respectively. Dimensions for oversize bolts are given in annex A.

**5.4** With reference to figure 1 and table 1, the following conditions shall apply.

- a) Dimensions A, B and G shall be concentric to each other within values specified for K.
- b) Dimensions W and G shall be concentric to each other within values specified for M.
- c) Dimensions A and the effective thread diameter shall be concentric to each other within values specified for N.
- d) Untoleranced linear dimensions shall be within  $\pm 0.01$  in and untoleranced angles shall be within  $\pm 2^\circ$ .

## 6 Anti-corrosion treatment

All finished bolts shall be coated with cadmium in accordance with DEF STAN 03-19[2].

## 7 Identification and marking

The bolts shall be marked on the top face of the head with the number of this British Standard and the relevant Part number given in table 2 and annex A. The bolts shall be marked in accordance with the requirements of BS A 241.

### Examples of bolt marking

|                                |          |
|--------------------------------|----------|
| Standard size                  | A228E6   |
| Standard size — drilled head   | A228E6H  |
| First oversize                 | A228E6X  |
| First oversize — drilled head  | A228E6HX |
| Second oversize                | A228E6Y  |
| Second oversize — drilled head | A228E6HY |

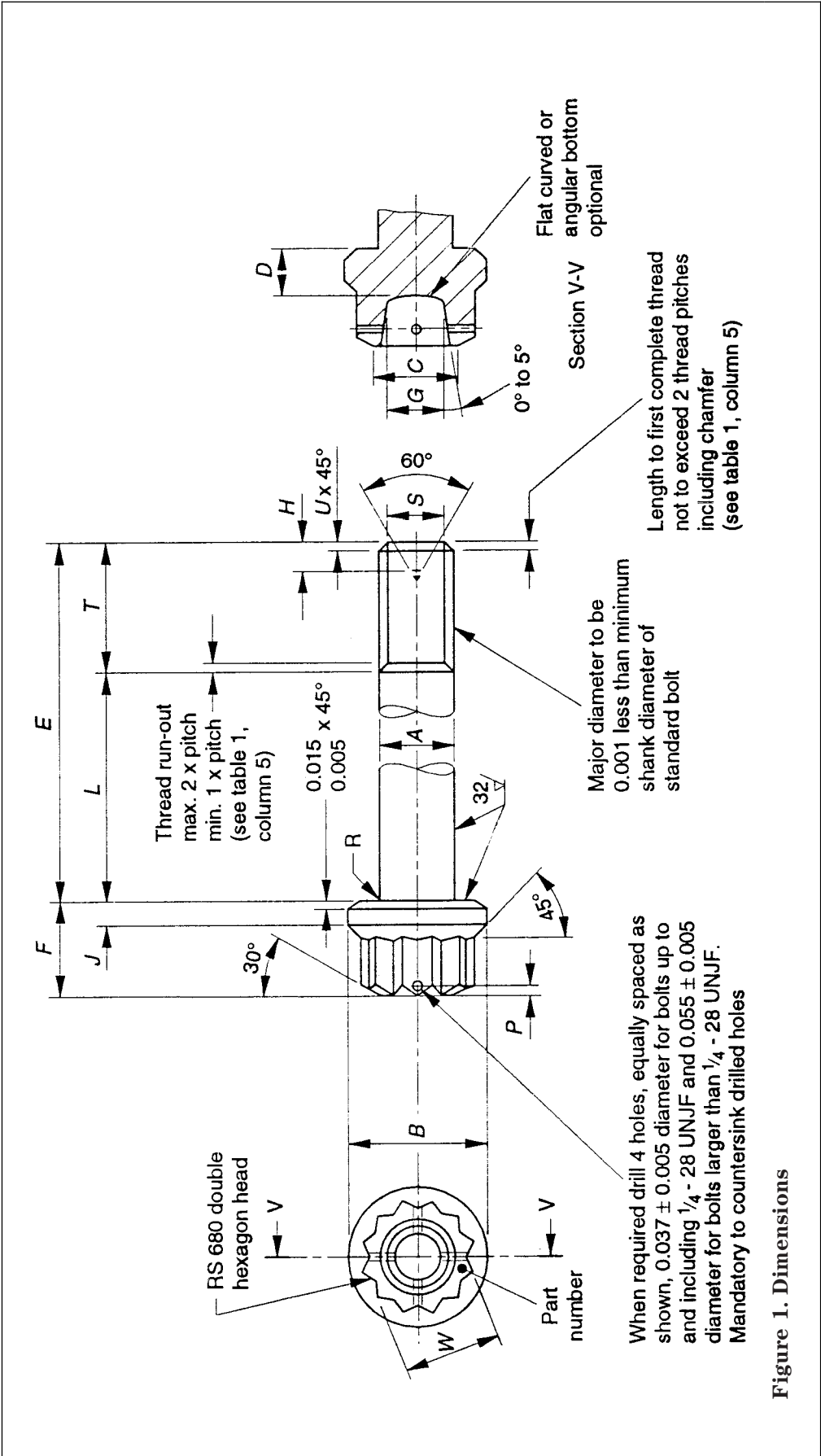


Figure 1. Dimensions