

**Aerospace series**  
**Nut, Self-locking, Hexagonal, Titanium**

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## 1 Scope

This standard specifies the dimensions, tolerances, required characteristics and the mass of a titanium hexagonal self-locking nut for use in aerospace applications. This product was designed to fit lightweight pins with cylindrical shank and short threads for shear applications, nominal diameter and oversizes.

## 2 Normative references

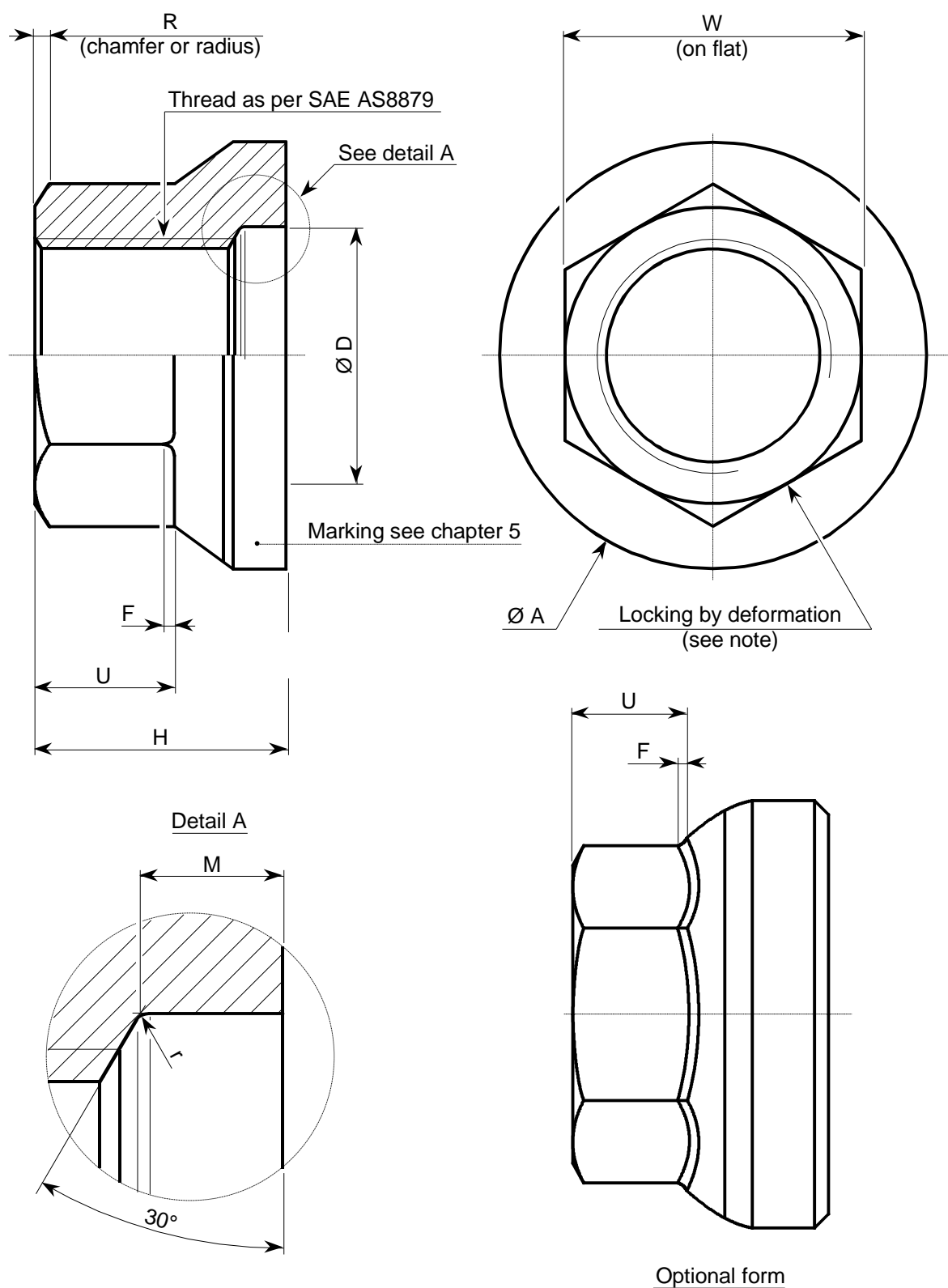
This Airbus Standard incorporates by dated or undated reference provisions from other publications. All normative references cited at the appropriate places in the text are listed hereafter. For dated references, subsequent amendments to or revisions of any these publications apply to this Airbus Standard only when incorporated in it by amendment of revision. For undated references, the latest issue of the publication referred to shall be applied.

|            |  |
|------------|--|
| ABS1757    | Technical specification - Self-locking, nut, hexagonal, titanium   |
| AMS4928    | Titanium alloys bars, wire, forgings, and rings 6AL-4V annealed.   |
| AMS4965    | Titanium alloys bars, wire, forgings, and rings 6AL-4V solution heat treated and aged.                   |
| AMS4967    | Titanium alloys bars, wire, forgings, and rings 6AL-4V annealed, heat treatable.                         |
| ASME B46-1 | Surface texture (Surface roughness, waviness and lay)  |
| EN2424     | Aerospace series - Marking of aerospace products.  |
| EN4473     | Non Chromated Aluminium pigmented coating.   |
| EN9133     | Aerospace series – Quality management systems Quality Procedure for Aerospace Standards Parts.           |
| ISO2768-1  | General tolerance; tolerance for linear and angular dimensions without individual tolerance indications. |
| ISO2768-2  | General tolerances - Geometrical tolerance for features without individual tolerance indication.         |
| SAE AS8879 | Screw threads, controlled radius root with increased minor diameter.                                     |

## 3 Requirements

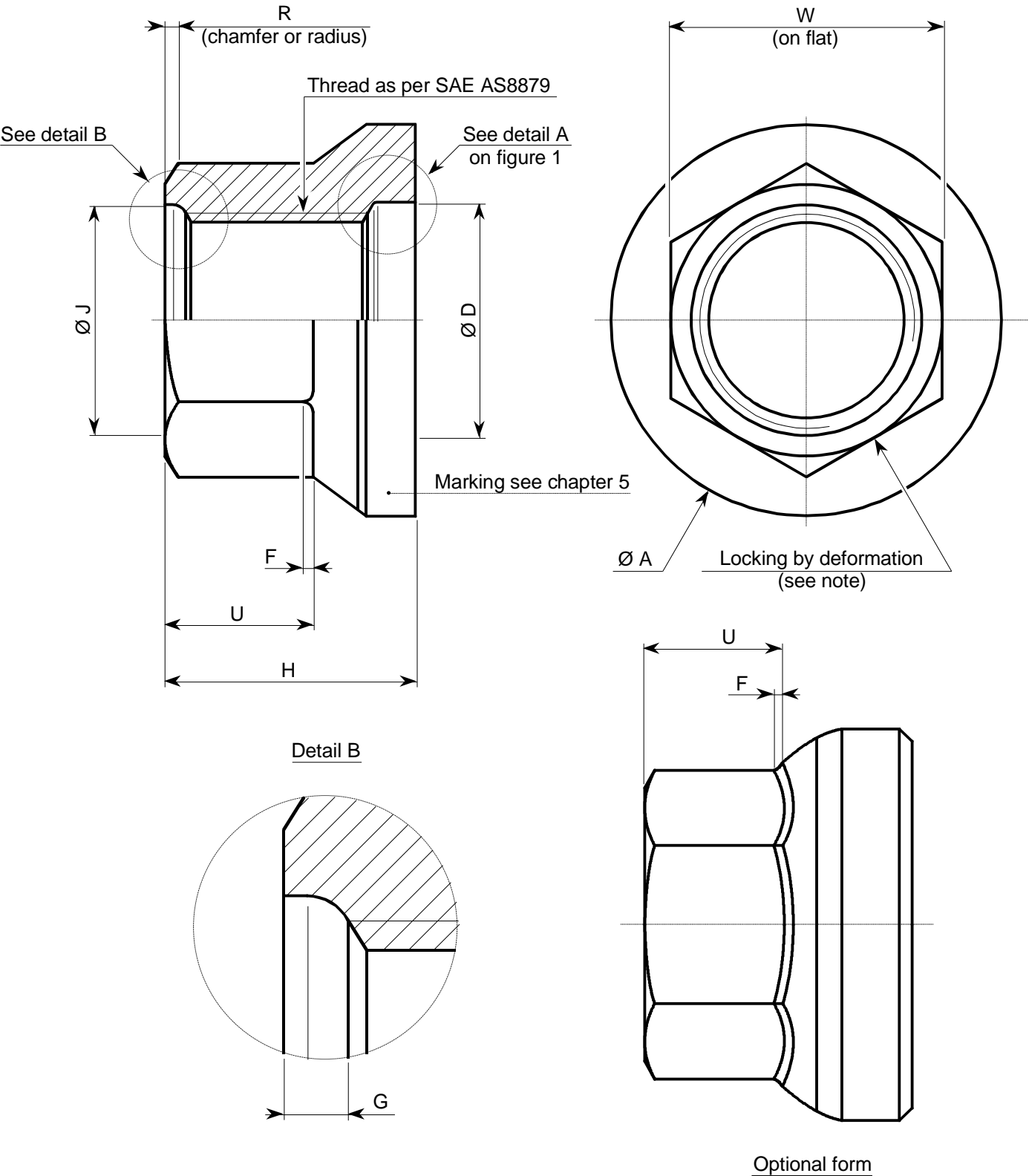
### 3.1 Configuration, dimensions, tolerances and mass

The configuration, dimensions, tolerances and mass shall be in accordance with figures 1 and 2, and table 1. Dimensions apply after finish except in locking areas (dimensions concerned asterisked in Table 1). Tolerances not specified, shall be in accordance with ISO2768-mk.



Note: Tool mark or distortion permissible in the locking area.

**Figure 1 : Configuration and dimensions for diameter codes 2 to 8**



Note: Tool mark or distortion permissible in the locking area.

**Figure 2 : Configuration and dimensions for diameter codes 9 to 18**

Table 1 : Dimensions, tolerances and mass

Dimensions in millimeters (continued)

| Dia<br>code<br>No | Thread<br>as per<br>SAE AS8879 | Ø A<br>± 0,05 | Ø D<br>Min | F<br>Max | G*<br>±0,1 | H*<br>±0,1 | J<br>Min | M<br>Min |
|-------------------|--------------------------------|---------------|------------|----------|------------|------------|----------|----------|
| 2                 | .1640-32 UNJC-3B               | 7,33          | 4,33       | 0,8      | -          | 5,31       | -        | 2,30     |
| 3                 | .1900-32 UNJF-3B               | 8,89          | 5,33       | 0,8      | -          | 6,01       | -        | 2,45     |
| 3A                | .2160-28 UNJF-3B               | 9,95          | 6,12       | 0,8      | -          | 6,50       | -        | 2,50     |
| 4                 | .2500-28 UNJF-3B               | 11,43         | 7,31       | 0,8      | -          | 6,88       | -        | 2,40     |
| 5                 | .3125-24 UNJF-3B               | 13,99         | 8,90       | 0,8      | -          | 7,99       | -        | 2,51     |
| 6                 | .3750-24 UNJF-3B               | 16,81         | 10,49      | 1,0      | -          | 9,01       | -        | 2,51     |
| 7                 | .4375-20 UNJF-3B               | 19,15         | 12,07      | 1,0      | -          | 10,36      | -        | 2,67     |
| 8                 | .5000-20 UNJF3B                | 22,11         | 13,66      | 1,0      | -          | 11,37      | -        | 2,66     |
| 9                 | .5625-18 UNJF-3B               | 24,69         | 15,24      | 1,0      | 1,41       | 14,09      | 15,10    | 2,77     |
| 10                | .6250-18 UNJF-3B               | 26,39         | 17,62      | 1,0      | 1,41       | 14,21      | 16,69    | 3,03     |
| 12                | .7500-16 UNJF-3B               | 31,34         | 20,79      | 1,0      | 1,59       | 16,51      | 20,00    | 3,18     |
| 14                | .8750-14 UNJF-3B               | 36,39         | 23,97      | 1,0      | 1,8        | 18,6       | 23,22    | 3,39     |
| 16                | 1.0000-12 UNJF-3B              | 41,37         | 27,14      | 1,0      | 2,12       | 21,55      | 26,55    | 3,66     |
| 18                | 1.1250-12 UNJF-3B              | 46,62         | 30,32      | 1,0      | 2,12       | 25,43      | 29,73    | 3,66     |

Table 1 : Dimensions, tolerances and mass (concluded)

Dimensions in millimeters.

| Dia<br>code<br>No | Thread<br>as per<br>SAE AS8879 | r<br>min | R<br>Ref | U<br>Min | W*    |       | Mass<br>kg/1000 parts<br>For information only |
|-------------------|--------------------------------|----------|----------|----------|-------|-------|---|
|                   |                                |          |          |          | Min   | Max   |   |
| 2                 | .1640-32 UNJC-3B               | 0,3      | 0,14     | 2,3      | 5,42  | 5,62  | 0,513   |
| 3                 | .1900-32 UNJF-3B               | 0,3      | 0,16     | 2,68     | 6,18  | 6,38  | 0,774   |
| 3A                | .2160-28 UNJF-3B               | 0,3      | 0,18     | 2,94     | 6,97  | 7,17  | 1,030   |
| 4                 | .2500-28 UNJF-3B               | 0,3      | 0,20     | 3,16     | 7,75  | 7,95  | 1,291   |
| 5                 | .3125-24 UNJF-3B               | 0,3      | 0,24     | 3,8      | 9,32  | 9,55  | 2,122   |
| 6                 | .3750-24 UNJF-3B               | 0,3      | 0,32     | 4,68     | 12,50 | 12,75 | 4,177   |
| 7                 | .4375-20 UNJF-3B               | 0,4      | 0,36     | 5,44     | 14,05 | 14,32 | 5,887   |
| 8                 | .5000-20 UNJF3B                | 0,4      | 0,41     | 6,16     | 15,64 | 15,92 | 8,066   |
| 9                 | .5625-18 UNJF-3B               | 0,4      | 0,45     | 8,34     | 17,19 | 17,47 | 11,564  |
| 10                | .6250-18 UNJF-3B               | 0,4      | 0,51     | 8,29     | 19,60 | 19,88 | 13,449  |
| 12                | .7500-16 UNJF-3B               | 0,5      | 0,61     | 9,74     | 23,48 | 23,78 | 22,524  |
| 14                | .8750-14 UNJF-3B               | 0,5      | 0,69     | 10,89    | 26,70 | 27,00 | 32,277  |
| 16                | 1.0000-12 UNJF-3B              | 0,5      | 0,77     | 12,61    | 29,90 | 30,23 | 46,663  |
| 18                | 1.1250-12 UNJF-3B              | 0,5      | 0,85     | 14,88    | 32,87 | 33,20 | 66,963  |

## 4 Material and surface treatment

The material and surface treatment shall be in accordance with table 2.

**Table 2 : Material and surface treatment**

| Material code | Material   | Surface finish   | Lubricant |
|---------------|--|--|-----------|
| K             | Titanium alloy as per chemistry of AMS4928 or AMS4967 or AMS4965<br>Solution heat treated and aged | Non-chromated aluminium pigmented coating as per EN4473, type IV | None      |

### 4.1 General requirements

Maximum operating temperature: +235 °C.

All surfaces  $\leq$  Ra 3,2  $\mu$ m, tool mark or distortion permissible in locking area.

### 4.2 Mechanical characteristics

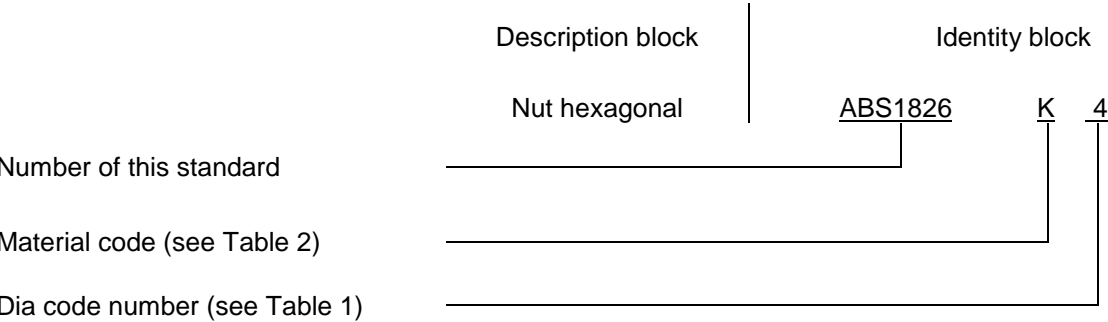
The mechanical characteristics shall be in accordance with table 3.

**Table 3 : Mechanical characteristics – Tooling to use**

| Dia code No. | Thread as per SAE AS8879 | Min. axial tensile strength (N) | Wrench size (inch) |
|--------------|--------------------------|---------------------------------|--------------------|
| 2            | .1640-32 UNJC-3B         | 8 800                           | 7/32               |
| 3            | .1900-32 UNJF-3B         | 12 400                          | 1/4                |
| 3A           | .2160-28 UNJF-3B         | 17 000                          | 9/32               |
| 4            | .2500-28 UNJF-3B         | 23 500                          | 5/16               |
| 5            | .3125-24 UNJF-3B         | 36 000                          | 3/8                |
| 6            | .3750-24 UNJF-3B         | 58 000                          | 1/2                |
| 7            | .4375-20 UNJF-3B         | 76 000                          | 9/16               |
| 8            | .5000-20 UNJF3B          | 102 000                         | 5/8                |
| 9            | .5625-18 UNJF-3B         | 129 000                         | 11/16              |
| 10           | .6250-18 UNJF-3B         | 142 340                         | 25/32              |
| 12           | .7500-16 UNJF-3B         | 208 650                         | 15/16              |
| 14           | .8750-14 UNJF-3B         | 281 230                         | 1-1/16             |
| 16           | 1.0000-12 UNJF-3B        | 381 101                         | 1-3/16             |

5 Designation

This type of standard shall be designated according to the philosophy of the following example:



6 Marking

Parts shall be marked as per EN2424, style F

7 Technical specification

ABS1757



RECORD OF REVISIONS

| Issue      | Clause modified | Description of modification   |
|------------|-----------------|---|
| 1<br>07/13 | Tables 1 and 3  | New standard  |
| 2<br>12/18 |                 | Diameters codes 2, 3 and 3A added for One Fast harmonization project, ABS1826 will replace ABS1738. |