International Standard ISO 3191

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION•МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ•ORGANISATION INTERNATIONALE DE NORMALISATION

Aerospace — Self-locking, fixed, single-lug anchor nuts, reduced series, with counterbore, strength classification 1 100 MPa and maximum operating temperature 235 °C

Aéronautique et espace — Écrous à river, à freinage interne, fixes, simple patte, série réduite, avec chambrage, de classe de résistance 1 100 MPa pour température maximale d'utilisation 235 °C

First edition — 1985-07-15

UDC 629.7 : 621.882.3   Ref. No. ISO 3191-1985 (E)

Descriptors : aircraft industry, aircraft equipment, fasteners, nuts (fasteners), anchor nuts, self locking nuts, counterbore nuts, specifications, dimensions.

ISO 3191-1985 (E)

Price based on 3 pages

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 3191 was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles.*

Aerospace — Self-locking, fixed, single-lug anchor nuts, reduced series, with counterbore, strength classification 1 100 MPa and maximum operating temperature 235 °C

0 Introduction

This International Standard is confined to those dimensional characteristics accepted to date. Sub-clauses 4.5, 4.6 and 4.7 will be completed when the relevant International Standards become available.

Clauses relating to "Designation" and "Marking" will be added later.

1 Scope

This International Standard specifies requirements for single lug, reduced series, counterbored, fixed anchor nuts, with a self-locking feature achieved by forming the upper portion out-of-round.

2 Field of application

These nuts are intended for use in airborne vehicle assemblies, in which the fasteners are mainly subjected to shear loads. The counterbore is deep enough to accommodate a bolt plain shank in excess of assembly thickness as well as the incomplete threads.

They are intended to be used with threaded parts of 1 100 MPa[1] tensile strength classification.

The cadmium plating restricts the use of these nuts to a temperature not exceeding 235 °C.

3 References

ISO 128, *Technical drawings — General principles of presentation.*

ISO 286/1, *ISO system for limits and fits — Part 1 : Basis for tolerances, deviations and fits.*[2]

ISO 468, *Surface roughness — Parameters, their values and general rules for specifying requirements.*

ISO 1101, *Technical drawings — Geometrical tolerancing — Tolerancing of form, orientation, location and run-out — Generalities, definitions, symbols, indications on drawings.*

ISO 1302, *Technical drawings — Method of indicating surface texture on drawings.*

ISO 2692, *Technical drawings — Geometrical tolerancing — Maximum material principle.*[3]

ISO 5855/1, *Aerospace construction — MJ threads — Part 1 : Basic profile.*

ISO 5855/2, *Aerospace construction — MJ threads — Part 2 : Dimensions for bolts and nuts.*

4 Required characteristics

4.1 Configuration

The configuration shall be in accordance with the figure, which is presented in conformity with ISO 128. Only maximum envelope dimensions and those affecting interchangeability are imposed. The minimum dimensions are limited by the strength requirements. Details of form, not stated, are at the manufacturer's option.

4.2 Dimensions

All linear dimensions are expressed in millimetres; they shall conform with the table and apply after cadmium plating, but before dry film lubricant.

Standard tolerance symbols and values for linear dimensions are in conformity with ISO 286/1. Symbols for tolerances for form and position conform with ISO 1101 and ISO 2692.

---

1) This strength class applies at ambient temperature.

2) At present at the stage of draft. (Revision of ISO/R 286-1962.)

3) At present at the stage of draft. (Revision of ISO 1101/2-1974.)

4.3 Screw threads

MJ threads : ISO 5855.

4.4 Surface roughness

R_a max., in micrometres, $\overset{6,3}{\sqrt{}}$ ($\sqrt{}$), in accordance with ISO 468 and ISO 1302. These values are applicable before cadmium plating and dry film lubricant.

This requirement does not apply to threads, sheared edges or punched holes where the surface texture will be as achieved by normal methods of manufacture. Tool marks are permissible to produce the self-locking feature.

4.5 Material and relevant characteristics

Steel — see clause 0.

4.6 Surface treatment

Cadmium plated and dry film lubricated — See clause 0.

4.7 Procurement specification

See clause 0.

Dimensions in millimetres, surface roughness value in micrometres

Remove sharp edges 0,1 to 0,4 mm

Y–Y

Form out-of-round in
this area to achieve
the self-locking
torque requirement

Marking
to be applied
in these areas

Radius = $K/2$

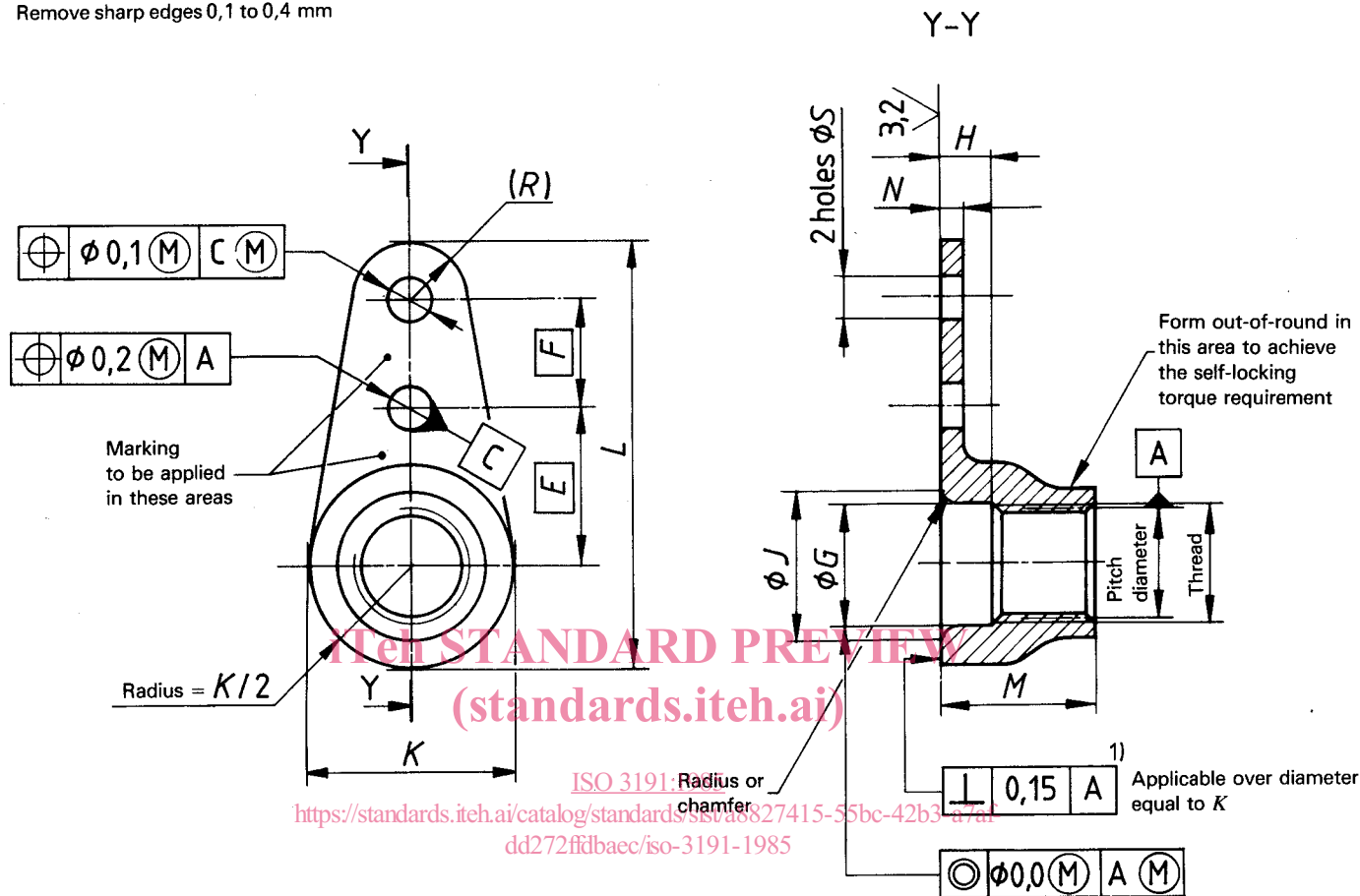1) Applicable over diameter
equal to K

Figure — Configuration

Table — Dimensions and masses

Dimensions and tolerance in millimetres

Size code	Thread[2]	E	F min.	G min.	H min.	J[3] max.	K max.	L max.	M max.	N[4] max.	(R)	S + 0,2 0	Mass kg/1 000 max.
040	MJ 4 × 0,7 — 4H6H	6	5,5	4,4	2,2	6,2	8	18,2	5,8	1,1	2,5	2,5	1,2
050	MJ 5 × 0,8 — 4H6H	7	5,5	5,5	2,4	7,3	9	19,7	6,9	1,1	2,5	2,5	1,6
060	MJ 6 × 1 — 4H5H	8	5,5	6,5	2,7	8,7	10	21,7	8,1	1,4	3	2,5	2,4

1) See checking requirements in the procurement specification.

2) In the self-locking zone, the tolerances apply before forming out-of-round.

3) Diameter J is to sharp corner (chamfered) or point of tangency (radiused).

4) Dimension N is the sheet thickness applicable at the rivet location.

3

iTeh STANDARD PREVIEW
(standards.iteh.ai)

iTeh STANDARD PREVIEW
(standards.iteh.ai)