

INTERNATIONAL STANDARD

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Aerospace — MJ threads — **Part 1:** **General requirements**

Aéronautique et espace — Filetage MJ —
Partie 1: Exigences générales



Reference number
ISO 5855-1:1999(E)

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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 5855-1 was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 4, *Aerospace fastener systems*.

This third edition cancels and replaces the second edition (ISO 5855-1:1988), of which it constitutes a technical revision.

ISO 5855 consists of the following parts, under the general title *Aerospace — MJ threads*:

- *Part 1: General requirements*
- *Part 2: Limit dimensions for bolts and nuts*
- *Part 3: Limit dimensions for fittings for fluid systems*

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International Organization for Standardization
Case postale 56 • CH-1211 Genève 20 • Switzerland
Internet iso@iso.ch

Printed in Switzerland

Aerospace — MJ threads —

Part 1: General requirements

1 Scope

This part of ISO 5855 specifies the general requirements for MJ threads used in aerospace construction.

It determines the basic triangular profile for this type of thread and gives a system for designating the diameter and pitch combinations. For all diameters 1,6 mm to 300 mm, it offers in the form of tables the basic dimensions and tolerances for a selection of diameter and pitch combinations. It also provides the method of calculation for the dimensions and tolerances for any diameter and pitch combination not given in the tables, including threads with a diameter in excess of 300 mm.

For limit dimensions for bolts and nuts of nominal diameter 1,6 mm to 39 mm, see ISO 5855-2. For limit dimensions for fittings for fluid systems, see ISO 5855-3.

2 Normative reference

The following normative document contains provisions which, through reference in this text, constitute provisions of this part of ISO 5855. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 5855 are encouraged to investigate the possibility of applying the most recent edition of the normative document indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 965-1:1998, *ISO general-purpose metric screw threads — Tolerances — Part 1: Principles and basic data*.

3 Term and definition

For the purpose of this part of ISO 5855, the following term and definition apply.

3.1 basic profile

theoretical profile, in an axial plane, corresponding to the basic dimensions (without tolerances) of the thread, i.e. major diameter, pitch diameter and minor diameter

See Figure 1.

4 Basic profile

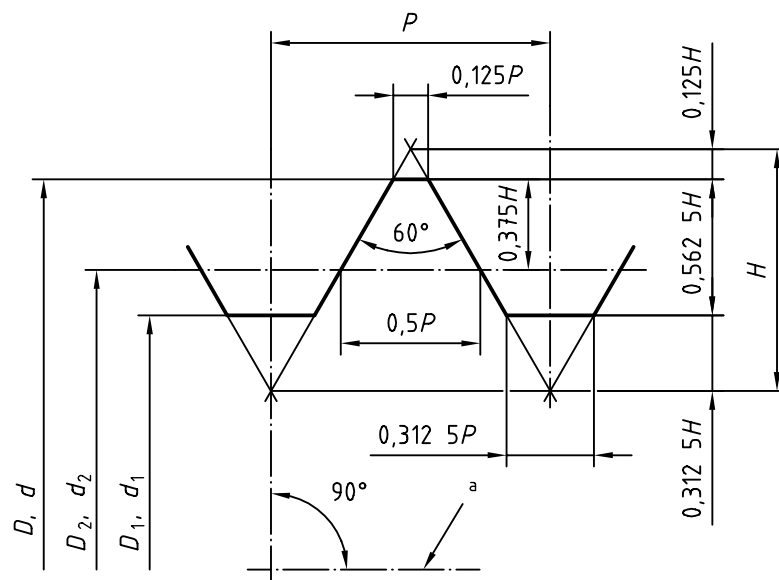
4.1 Symbols

See Figure 1.

4.2 Dimensions

See Figure 1 and Table 1.

Basic deviations shall be applied to the basic dimensions.



where

- D is the basic major diameter of internal thread
- D_2 is the basic pitch diameter of internal thread
- D_1 is the basic minor diameter of internal thread
- d is the basic major diameter of external thread
- d_2 is the basic pitch diameter of external thread
- d_1 is the basic minor diameter of external thread
- H is the height of fundamental triangle
- P is the pitch

^a Axis of thread

Figure 1 — Basic profile

Table 1 — Dimensions

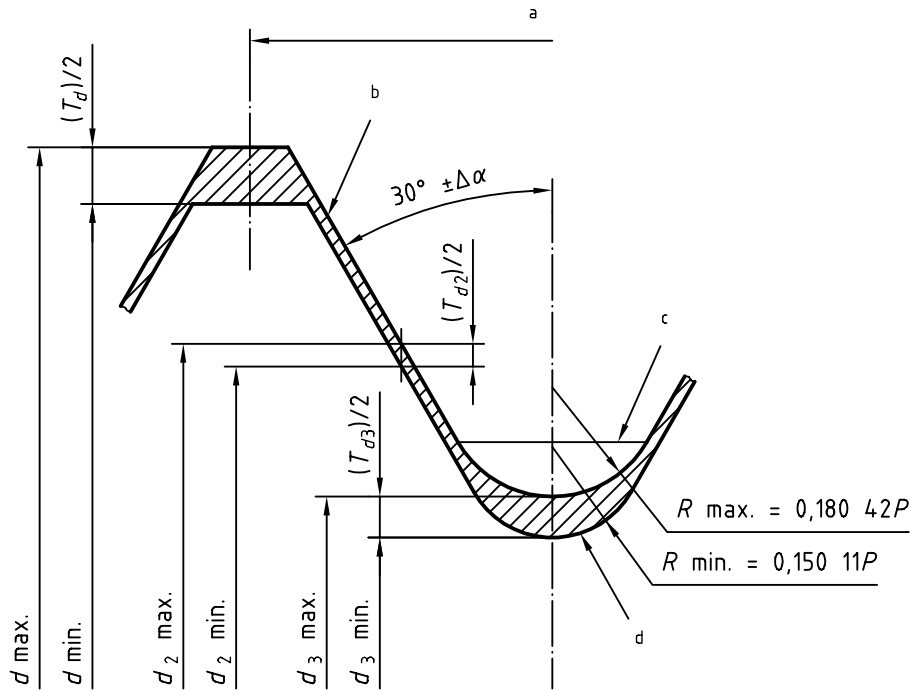
P	Dimensions in millimetres											
	0,125P	0,312 5P	H	0,125H	0,312 5H	0,375H	0,562 5H	0,583 33H	0,565 80P	0,75H	0,916 67H	1,125H
0,2	0,025	0,062 5	0,173 21	0,021 65	0,054 13	0,064 95	0,097 43	0,101 04	0,113 16	0,129 904	0,158 77	0,194 85
0,25	0,031 25	0,078 13	0,216 51	0,027 06	0,067 66	0,081 19	0,121 79	0,126 30	0,141 45	0,162 380	0,198 46	0,243 57
0,35	0,043 75	0,109 38	0,303 11	0,037 89	0,094 72	0,113 67	0,170 5	0,176 81	0,198 03	0,227 332	0,277 85	0,341
0,4	0,05	0,125	0,346 41	0,043 3	0,108 25	0,129 9	0,194 86	0,202 07	0,226 32	0,259 808	0,317 54	0,389 71
0,45	0,056 25	0,140 62	0,389 71	0,048 71	0,121 78	0,146 14	0,219 21	0,227 33	0,254 61	0,292 283	0,357 24	0,438 43
0,5	0,062 5	0,156 25	0,433 01	0,054 13	0,135 32	0,162 38	0,243 57	0,252 59	0,282 9	0,324 759	0,396 93	0,487 14
0,6	0,075	0,187 5	0,519 62	0,064 95	0,162 38	0,194 86	0,292 28	0,303 11	0,339 48	0,389 711	0,476 32	0,584 57
0,7	0,087 5	0,218 75	0,606 22	0,075 78	0,189 44	0,227 33	0,341	0,353 63	0,396 06	0,454 663	0,555 70	0,682
0,75	0,093 75	0,234 38	0,649 52	0,081 19	0,202 97	0,243 57	0,365 36	0,378 88	0,425 35	0,487 139	0,595 39	0,730 71
0,8	0,1	0,25	0,692 82	0,086 6	0,216 51	0,259 81	0,389 71	0,404 14	0,452 64	0,519 615	0,635 09	0,779 42
1	0,125	0,312 5	0,866 03	0,108 25	0,270 63	0,324 76	0,487 14	0,505 18	0,565 8	0,649 519	0,793 86	0,974 28
1,25	0,156 25	0,390 62	1,082 53	0,135 32	0,338 29	0,405 95	0,608 92	0,631 47	0,707 25	0,811 899	0,992 32	1,217 85
1,5	0,187 5	0,468 75	1,299 04	0,162 38	0,405 95	0,487 14	0,730 71	0,757 78	0,848 7	0,974 278	1,190 79	1,461 42
1,75	0,218 75	0,546 88	1,515 54	0,189 44	0,473 6	0,568 33	0,852 5	0,884 06	0,990 15	1,136 658	1,389 25	1,704 99
2	0,25	0,625	1,732 05	0,216 51	0,541 27	0,649 52	0,974 28	1,010 36	1,131 6	1,299 038	1,587 72	1,948 56
2,5	0,312 5	0,781 25	2,165 06	0,270 63	0,676 58	0,811 9	1,217 85	1,262 95	1,414 5	1,623 797	1,984 65	2,435 7
3	0,375	0,937 5	2,598 08	0,324 75	0,811 89	0,974 28	1,461 42	1,515 54	1,697 4	1,948 557	2,381 58	2,922 84
3,5	0,437 5	1,093 75	3,031 09	0,378 88	0,947 21	1,136 66	1,704 99	1,768 13	1,980 3	2,273 316	2,778 51	3,409 98
4	0,5	1,25	3,464 1	0,433	1,082 52	1,299 04	1,948 56	2,020 72	2,263 2	2,598 076	3,175 44	3,897 12
4,5	0,562 5	1,406 25	3,897 11	0,487 13	1,217 84	1,461 42	2,192 13	2,273 31	2,546 1	2,922 835	3,572 37	4,384 26
5	0,625	1,562 5	4,330 13	0,541 25	1,353 15	1,623 8	2,435 7	2,525 9	2,829	3,247 595	3,969 3	4,871 4
5,5	0,687 5	1,718 75	4,763 14	0,595 38	1,488 47	1,786 18	2,679 27	2,778 49	3,111 9	3,572 354	4,366 23	5,358 54
6	0,75	1,875	5,196 15	0,649 5	1,623 78	1,948 56	2,922 84	3,031 08	3,394 8	3,897 114	4,763 16	5,845 68

5 Position and form of limit profiles

5.1 External threads

The actual thread profile is located between the limit profiles shown in Figures 2 and 3.

Within these limits, any continuous, non-reversing curve is permitted, provided that it comprises radii no less than $0,150\ 11P$.



- a Pitch $\pm \Delta P$
- b Basic and maximum profiles
- c Basic profile
- d Minimum profile

Figure 2 — Limit profiles for external threads (clearance may be nil)



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