BRITISH STANDARD

BS 6293 :
Part 3 : 1994
ISO 5855-3 :
1988

Aerospace — MJ threads

Part 3. Limit dimensions for fittings for fluid systems

UDC 629.7.063 : 621.643.06 : 621.882

BSI
STANDARDS

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Aerospace Standards Policy Committee (ACE/-) to Technical Committee ACE/12, upon which the following bodies were represented:

The Association of Electronics, Telecommunications and Business Equipment Industries
British Industrial Fasteners Federation
Ministry of Defence
Society of British Aerospace Companies Ltd.

This British Standard, having been prepared under the direction of the Aerospace Standards Policy Committee, was published under the authority of the Standards Board and comes into effect on 15 March 1994

The following BSI references relate to the work on this standard:
Committee reference ACE/12
Draft for comment 86/75879 DC

ISBN 0 580 23027 9

Amendments issued since publication

Amd. No.	Date	Text affected

Contents

National foreword

This Part of BS 6293 has been prepared under the direction of the Aerospace Standards Policy Committee. It is identical with ISO 5855-3 : 1988 *Aerospace — MJ threads — Part 3 : Limit dimensions for fitting for fluid systems*, published by the International Organization for Standardization (ISO).

Cross-references

International standard	Corresponding British Standard
ISO 965-1 : 1980	BS 3643 *Specification for ISO metric screw threads* Part 1 : 1981 *Principles and basic data* (Technically equivalent)
ISO 5855-1 : 1988	BS 6293 *Aerospace — MJ threads* Part 1 : 1994 *General requirements* (Identical)

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

Aerospace — MJ threads —

Part 3 :
Limit dimensions for fittings for fluid systems

1 Scope

This part of ISO 5855 specifies limit dimensions of MJ threads for fluid systems fittings for aerospace construction.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 5855. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 5855 are encouraged to investigate the possibility of applying the most recent editions of the standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 965-1 : 1980, *ISO general purpose metric screw threads — Tolerances — Part 1 : Principles and basic data.*

ISO 5855-1 : 1988, *Aerospace — MJ threads — Part 1 : General requirements.*

3 Nominal diameters and pitches

See table 1.

Table 1 — Nominal diameters and pitches

Dimensions in millimetres

Nominal diameter d or D	Pitch P	Nominal diameter d or D	Pitch P
8	1	27	1,5
10	1	30	1,5
12	1,25	33	1,5
14	1,5	36	1,5
16	1,5	39	1,5
18	1,5	42	2
20	1,5	48	2
22	1,5	50	2
24	1,5		

4 Tolerance classes

See table 2.

Table 2 — Tolerance classes

Assembly	External threads		Internal threads	
General case (clearance may be nil)	d	6h	D_1	5H
	d_2	4h	D_2	4H
Requiring systematic clearance	d	6g	D_1	5H
	d_2	4g	D_2	4H

5 Provisions for coated threads

Before coating, the dimensions of the threads shall be compatible with the thickness of the coating selected and with the limit dimensions for finished parts specified in clause 6.

6 Limit dimensions for finished parts (coated or non-coated)

6.1 External threads

6.1.1 4h6h external threads

Figure 1 illustrates the position and the form of the limit profiles (maximum and minimum) in relation to the basic profile (see ISO 5855-1).

Tables 3 and 4 specify the limit dimensions.

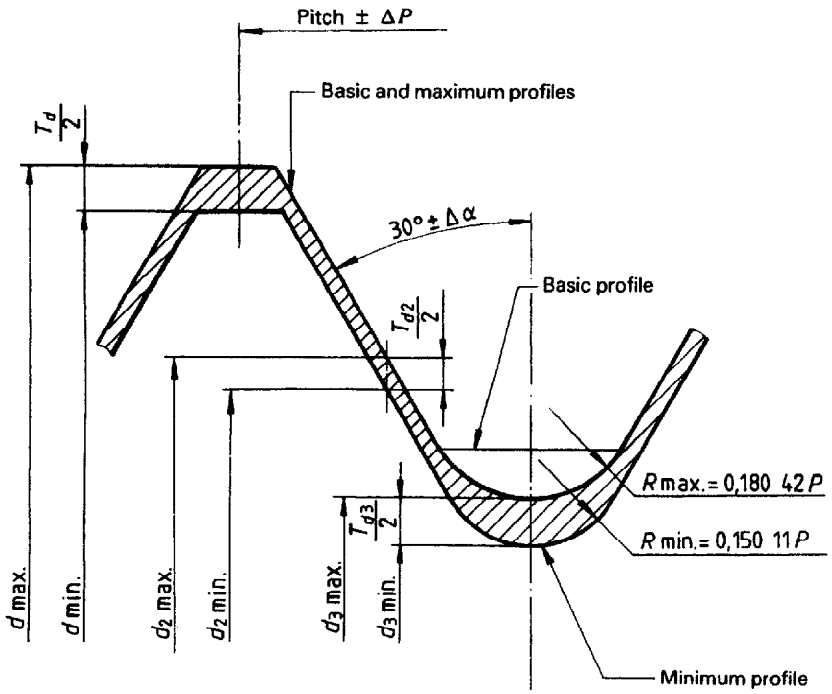

Figure 1 — Limit profiles for external threads (clearance may be nil)

Table 3 — Limit dimensions for 4h6h external threads

Dimensions in millimetres

Thread designation	Major diameter d			Pitch diameter d_2			Minor diameter d_3		
	max.	min.	T_d (6h)[1]	max.	min.	T_{d2} (4h)[1]	max.	min.	T_{d3}
MJ8 × 1 — 4h6h	8	7,82	0,18	7,35	7,279	0,071	6,845	6,713	0,132
MJ10 × 1 — 4h6h	10	9,82	0,18	9,35	9,279	0,071	8,845	8,713	0,132
MJ12 × 1,25 — 4h6h	12	11,788	0,212	11,188	11,103	0,085	10,557	10,396	0,161
MJ14 × 1,5 — 4h6h	14	13,764	0,236	13,026	12,936	0,09	12,268	12,087	0,181
MJ16 × 1,5 — 4h6h	16	15,764	0,236	15,026	14,936	0,09	14,268	14,087	0,181
MJ18 × 1,5 — 4h6h	18	17,764	0,236	17,026	16,936	0,09	16,268	16,087	0,181
MJ20 × 1,5 — 4h6h	20	19,764	0,236	19,026	18,936	0,09	18,268	18,087	0,181
MJ22 × 1,5 — 4h6h	22	21,764	0,236	21,026	20,936	0,09	20,268	20,087	0,181
MJ24 × 1,5 — 4h6h	24	23,764	0,236	23,026	22,931	0,095	22,268	22,082	0,186
MJ27 × 1,5 — 4h6h	27	26,764	0,236	26,026	25,931	0,095	25,268	25,082	0,186
MJ30 × 1,5 — 4h6h	30	29,764	0,236	29,026	28,931	0,095	28,268	28,082	0,186
MJ33 × 1,5 — 4h6h	33	32,764	0,236	32,026	31,931	0,095	31,268	31,082	0,186
MJ36 × 1,5 — 4h6h	36	35,764	0,236	35,026	34,931	0,095	34,268	34,082	0,186
MJ39 × 1,5 — 4h6h	39	38,764	0,236	38,026	37,931	0,095	37,268	37,082	0,186
MJ42 × 2 — 4h6h	42	41,72	0,28	40,701	40,595	0,106	39,691	39,463	0,228
MJ48 × 2 — 4h6h	48	47,72	0,28	46,701	46,589	0,112	45,691	45,457	0,234
MJ50 × 2 — 4h6h	50	49,72	0,28	48,701	48,589	0,112	47,691	47,457	0,234

1) In accordance with ISO 965-1.

Table 4 — Root radii for external threads

Dimensions in millimetres

Pitch P	Root radius R	
	max.	min.
1	0,18	0,15
1,25	0,226	0,188
1,5	0,271	0,225
2	0,361	0,3

6.1.2 4g6g external threads

Figure 2 illustrates the position and the form of the limit profiles (maximum and minimum) in relation to the basic profile (see ISO 5855-1).

Tables 4 and 5 specify the limit dimensions.

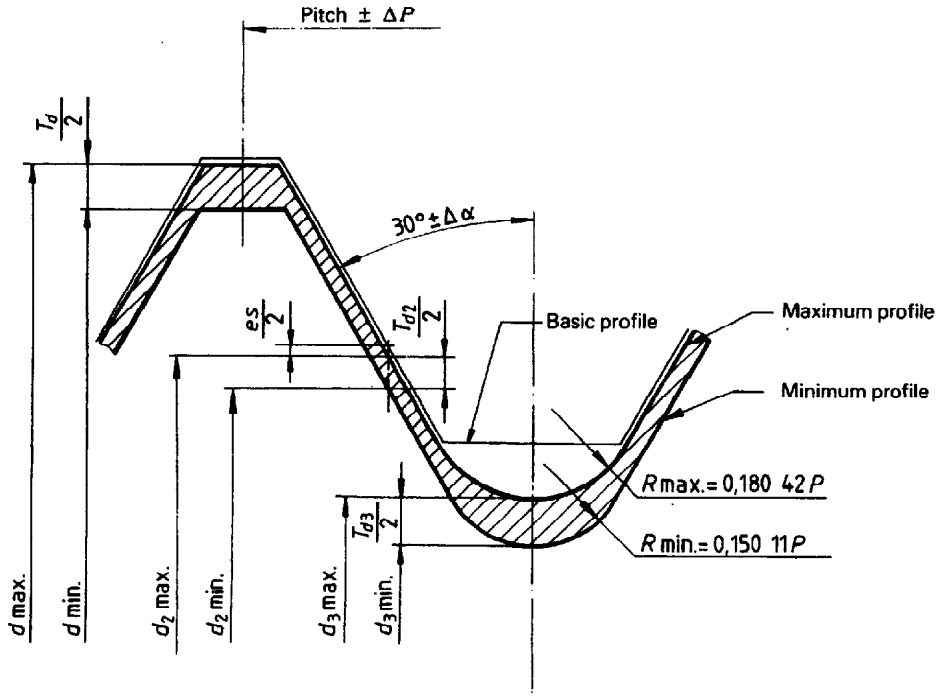

Figure 2 — Limit profiles for external threads (systematic clearance)

Table 5 — Limit dimensions for 4g6g external threads

Dimensions in millimetres

Thread designation	Major diameter d			Pitch diameter d_2			Minor diameter d_3		
	max.	min.	T_d (6g)[1]	max.	min.	T_{d2} (4g)[1]	max.	min.	T_{d3}
MJ8 × 1 — 4g6g	7,974	7,794	0,18	7,324	7,253	0,071	6,819	6,687	0,132
MJ10 × 1 — 4g6g	9,974	9,794	0,18	9,324	9,253	0,071	8,819	8,687	0,132
MJ12 × 1,25 — 4g6g	11,972	11,76	0,212	11,16	11,075	0,085	10,529	10,368	0,161
MJ14 × 1,5 — 4g6g	13,968	13,732	0,236	12,994	12,904	0,09	12,236	12,055	0,181
MJ16 × 1,5 — 4g6g	15,968	15,732	0,236	14,994	14,904	0,09	14,236	14,055	0,181
MJ18 × 1,5 — 4g6g	17,968	17,732	0,236	16,994	16,904	0,09	16,236	16,055	0,181
MJ20 × 1,5 — 4g6g	19,968	19,732	0,236	18,994	18,904	0,09	18,236	18,055	0,181
MJ22 × 1,5 — 4g6g	21,968	21,732	0,236	20,994	20,904	0,09	20,236	20,055	0,181
MJ24 × 1,5 — 4g6g	23,968	23,732	0,236	22,994	22,899	0,095	22,236	22,05	0,186
MJ27 × 1,5 — 4g6g	26,968	26,732	0,236	25,994	25,899	0,095	25,236	25,05	0,186
MJ30 × 1,5 — 4g6g	29,968	29,732	0,236	28,994	28,899	0,095	28,236	28,05	0,186
MJ33 × 1,5 — 4g6g	32,968	32,732	0,236	31,994	31,899	0,095	31,236	31,05	0,186
MJ36 × 1,5 — 4g6g	35,968	35,732	0,236	34,994	34,899	0,095	34,236	34,05	0,186
MJ39 × 1,5 — 4g6g	38,968	38,732	0,236	37,994	37,899	0,095	37,236	37,05	0,186
MJ42 × 2 — 4g6g	41,962	41,682	0,28	40,663	40,557	0,106	39,653	39,425	0,228
MJ48 × 2 — 4g6g	47,962	47,682	0,28	46,663	46,551	0,112	45,653	45,419	0,234
MJ50 × 2 — 4g6g	49,962	49,682	0,28	48,663	48,551	0,112	47,653	47,419	0,234

1) In accordance with ISO 965-1.

6.2 Internal threads

Figure 3 illustrates the position and the form of the limit profiles (maximum and minimum) in relation to the basic profile (see ISO 5855-1).

Table 6 specifies the limit dimensions.

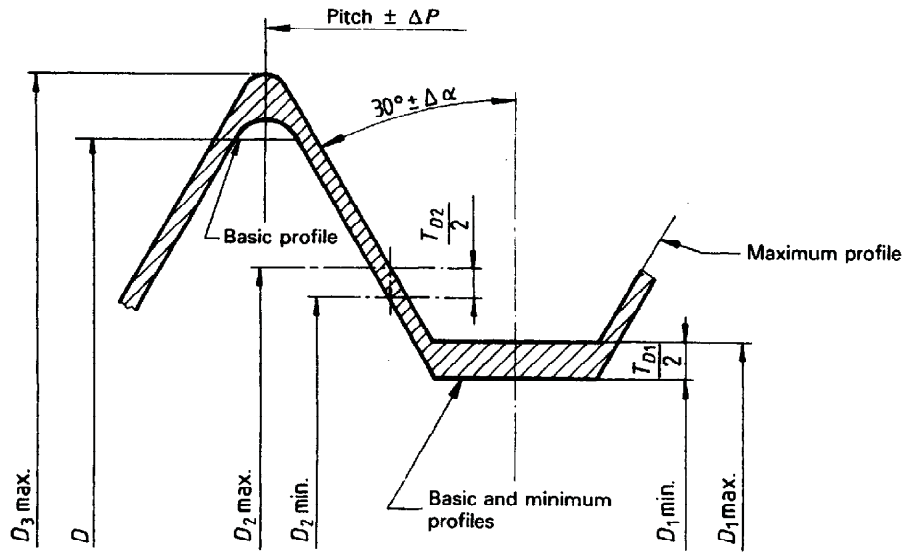

Figure 3 — Limit profiles for internal threads

Table 6 — Limit dimensions for 4H5H internal threads

Dimensions in millimetres

Thread designation	Major diameter D_3[1]	Pitch diameter D_2			Minor diameter D_1		
	max.	max.	min.	T_{D2} (4H)[2]	max.	min.	T_{D1} (5H)[2]
MJ8 × 1 — 4H5H	8,239	7,445	7,35	0,095	7,216	7,026	0,19
MJ10 × 1 — 4H5H	10,239	9,445	9,35	0,095	9,216	9,026	0,19
MJ12 × 1,25 — 4H5H	12,292	11,3	11,188	0,112	10,994	10,782	0,212
MJ14 × 1,5 — 4H5H	14,334	13,144	13,026	0,118	12,775	12,539	0,236
MJ16 × 1,5 — 4H5H	16,334	15,144	15,026	0,118	14,775	14,539	0,236
MJ18 × 1,5 — 4H5H	18,334	17,144	17,026	0,118	16,775	16,539	0,236
MJ20 × 1,5 — 4H5H	20,334	19,144	19,026	0,118	18,775	18,539	0,236
MJ22 × 1,5 — 4H5H	22,334	21,144	21,026	0,118	20,775	20,539	0,236
MJ24 × 1,5 — 4H5H	24,342	23,151	23,026	0,125	22,775	22,539	0,236
MJ27 × 1,5 — 4H5H	27,342	26,151	26,026	0,125	25,775	25,539	0,236
MJ30 × 1,5 — 4H5H	30,342	29,151	29,026	0,125	28,775	28,539	0,236
MJ33 × 1,5 — 4H5H	33,342	32,151	32,026	0,125	31,775	31,539	0,236
MJ36 × 1,5 — 4H5H	36,342	35,151	35,026	0,125	34,775	34,539	0,236
MJ39 × 1,5 — 4H5H	39,342	38,151	38,026	0,125	37,775	37,539	0,236
MJ42 × 2 — 4H5H	42,429	40,841	40,701	0,14	40,351	40,051	0,3
MJ48 × 2 — 4H5H	48,439	46,851	46,701	0,15	46,351	46,051	0,3
MJ50 × 2 — 4H5H	50,439	48,851	48,701	0,15	48,351	48,051	0,3

1) D_3 min. is not specified. However, it shall be greater than D (see figure 3).

2) In accordance with ISO 965-1.

6.3 Tolerances on pitch (lead) and on half flank angle

Taking into consideration the requirements of ISO 5855-1, the values of table 7 are given for information only.

Table 7 — Tolerances on pitch (lead) and on half flank angle

Nominal diameter d or D mm	Pitch P mm	External thread		Internal thread	
		ΔP µm	$\Delta\alpha$	ΔP µm	$\Delta\alpha$
8 10	1	16,4	1° 5′	21,9	1° 27′
12	1,25	19,6	1° 2′	25,9	1° 22′
4 16 18 20 22	1,5	20,8	0° 55′	27,3	1° 13′
24 27 30 33 36 39		21,9	0° 58′	28,9	1° 16′
42	2	24,5	0° 49′	32,3	1° 4′
48 50		25,9	0° 51′	34,6	1° 8′

List of references

See national foreword.

BS 6293 : Part 3 : 1994 ISO 5855-3 : 1988

BSI — British Standards Institution

BSI is the independent national body responsible for preparing British Standards. It presents the UK view on standards in Europe and at the international level. It is incorporated by Royal Charter.

Contract requirements

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Revisions

British Standards are updated by amendment or revision. Users of British Standards should make sure that they possess the latest amendments or editions.

Any person who finds an inaccuracy or ambiguity while using this British Standard should notify BSI without delay so that the matter may be investigated swiftly.

BSI offers members an individual updating service called PLUS which ensures that subscribers automatically receive the latest editions of standards.

Buying standards

Orders for all BSI, international and foreign standards publications should be addressed to Customer Services, Publications at Milton Keynes:
Tel: 0908 221166; Fax: 0908 322484.

In response to orders for international and European standards, it is BSI policy to supply the BSI implementation of those that have been published as British Standards, unless otherwise requested.

Information on standards

BSI provides a wide range of information on national, European and international standards through its Library, the Standardline Database, the BSI Information Technology Service (BITS) and its Technical Help to Exporters Service. Contact Customer Services, Information at Milton Keynes:
Tel: 0908 226888.

Subscribing members of BSI are kept up to date with standards developments and receive substantial discounts on the purchase price of standards. For details of these and other benefits contact Head of Customer Services, Membership Group at Milton Keynes: Tel: 0908 226777.

BSI
2 Park Street
London
W1A 2BS

BSI
Linford Wood
Milton Keynes
MK14 6LE

9403—5—0.4k—B

ISBN 0 580 23027 9

ACE/12