

Specification for

Interface of metric couplings, 24° cone, for aerospace fluid systems

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Committees responsible for this British Standard

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

British Airways
Department of Trade and Industry (Air Division)
Institution of Electrical Engineers
Ministry of Defence
Society of British Aerospace Companies

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 August 1993

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National foreword

This British Standard has been prepared under the direction of the Aerospace Standards Policy Committee. It is identical with ISO 7319:1992 *Aerospace — Fluid systems — Interface of 24° cone metric couplings*, published by the International Organization for Standardization (ISO). This British Standard supersedes BS M 59:1986 which is withdrawn.

Cross-reference

The Technical Committee has reviewed the provisions of ISO 5855-3:1988, to which normative reference is made in the text, and has decided that they are acceptable for use in conjunction with this standard.

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.

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 4, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This International Standard defines the geometry of the interface of removable 24° cone couplings for fluid systems in aircraft. The connection with the pipe of each one of the connecting elements may be of different design.

This International Standard specifies the dimensions which allow the interchangeability of the male and female elements and of the nut used for the connection.

The dimensions define the maximum volume of the male fitting.

2 Normative reference

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

ISO 5855-3:1988, *Aerospace — MJ threads — Part 3: Limit dimensions for fittings for fluid systems.*

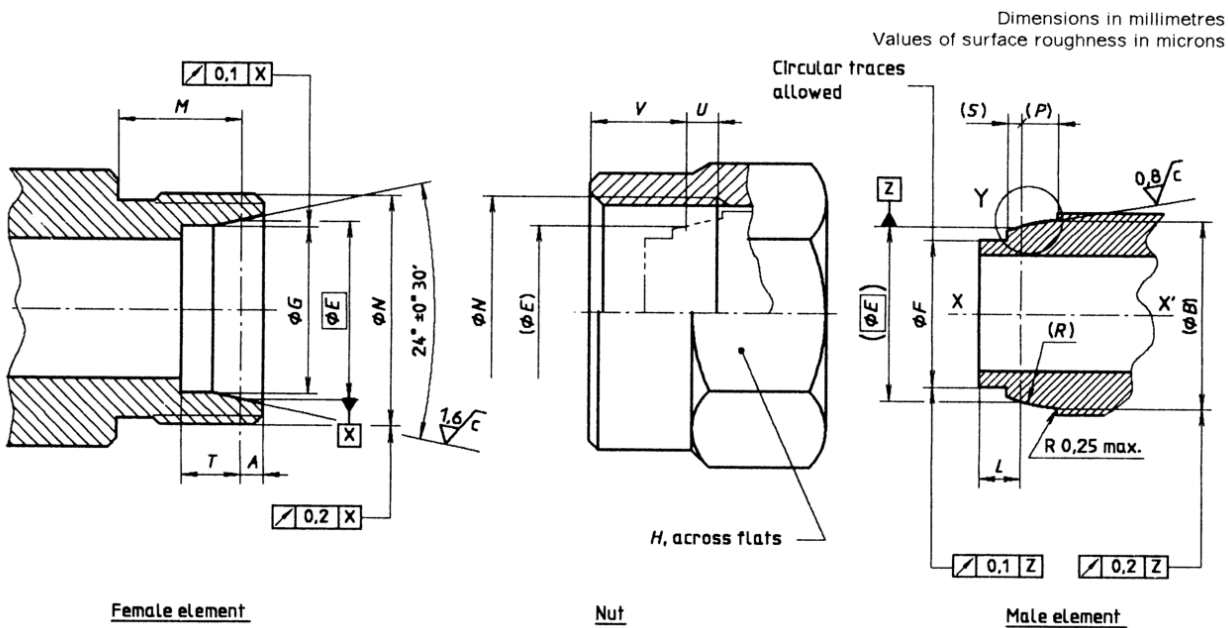
3 Coupling assembly and sealing principle

The coupling comprises three elements as follows.

- a) A female element including a frustum with a cone angle equal to 24°, with which the male element comes into contact to provide sealing. The contact line is a circle with a theoretical diameter, E .
- b) A male element, included inside a shell composed of two frustums connected by a spherical section with which the female element comes into contact to provide sealing. The contact line is a circle with a theoretical diameter, E .
- c) A nut allowing assembly of the male and female elements of the coupling.

4 Dimensions

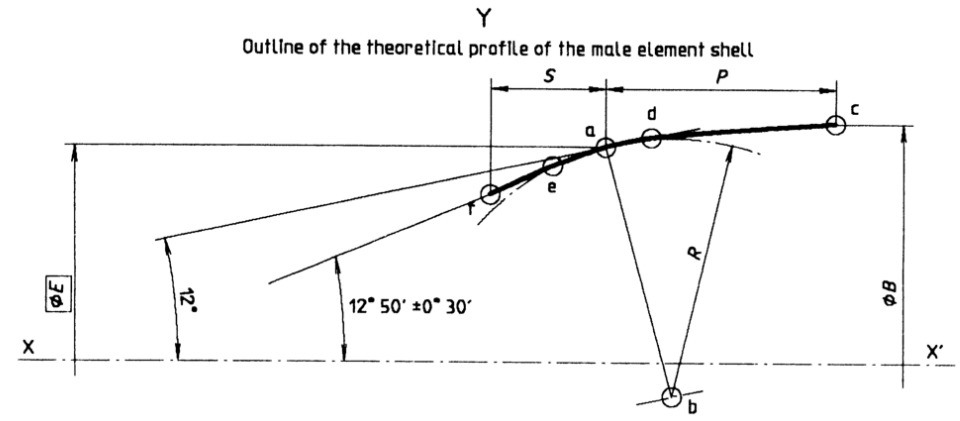
The dimensions shall be as shown in Figure 1 and given in Table 1.



Female element

Nut

Male element



Key

- Point a: origin at $E/2$ from the XX' axis
- Point b: point located at a distance R from point a, on the perpendicular to the line tilted 12° relative to XX' and passing through point a
- Point c: located at $B/2$ from the XX' axis and at a distance P from point a
- Line cd: tangent drawn from c to the arc of the circle with centre at b and radius R
- Line ef: tangent tilted $12^\circ 50'$ relative to the XX' axis on the arc to the circle with centre at b and radius R . The point of tangency thus obtained is designated e.

NOTE The profile involves exclusively those machined male elements which do not lose their shape. Nevertheless, the male element may be in the form of a sleeve fitted over the end of the pipe and which, during coupling to the female element, is compressed onto the pipe and changes its shape such that the correct profile is obtained.

Figure 1 — Dimensions

Table 1 — Dimensions

DN ^a	N ^b		Dimensions in millimetres															
	external 4g6g	internal 4H5H	A	B	E	F	G		H	L	M	P	R	S		T	U	V
	min.	max.	min.	max.	theoretical ^c	max.	min.	max.	recommended	max. ^d	min.	min.	max. ^e	min.	max.	min.	min.	max.
5	1,38	1,62	7,1	7,1	6,5	5,06	5,26	5,36	12	3,88	7,18	2,58	6,13	0,56	0,92	3,88	2,8	4,7
6	1,38	1,62	8,1	8,1	7,5	6,06	6,26	6,36	14	4,38	8,18	2,58	6,13	0,56	0,92	4,38	3,8	4,7
8	1,38	1,62	10,1	10,1	9,5	8,06	8,26	8,36	17	4,38	9,18	2,58	6,13	0,56	0,92	4,38	3,8	5,2
10	1,38	1,62	12,1	12,1	11,5	10,06	10,26	10,36	19	4,38	10,18	2,58	6,13	0,56	0,92	4,38	4,1	5,9
12	2,28	2,52	14,5	14,5	13,5	12,06	12,26	12,36	22	4,48	9,28	3,48	12,13	0,96	1,32	4,48	4,1	6,4
14	2,28	2,52	16,5	16,5	15,5	14,06	14,26	14,36	24	4,48	9,28	3,48	12,13	0,96	1,32	4,48	4,1	6,4
16	2,28	2,52	18,5	18,5	17,5	16,06	16,26	16,36	27	4,48	9,28	3,48	12,13	0,96	1,32	4,48	4,4	6,1
20	2,28	2,52	22,5	22,5	21,5	20,08	20,28	20,38	32	4,48	9,28	3,48	12,13	0,96	1,32	4,48	3,9	6,1
25	2,28	2,52	27,6	27,6	26,6	25,08	25,28	25,38	41	4,48	10,28	3,48	13,61	0,96	1,32	4,48	4,2	5,8
32	2,28	2,52	34,7	34,7	33,7	32,1	32,3	32,4	46	4,98	11,28	3,48	17,24	0,96	1,32	4,98	4,1	5,9
40	2,28	2,52	42,7	42,7	41,7	40,1	40,3	40,4	60	4,98	11,28	3,48	21,32	0,96	1,32	4,98	4,4	7,6

^a Nominal size (outside diameter of the corresponding tube).

^b Threads are in accordance with ISO 5855-3.

^c Tolerance for the proof gauge: $\pm 0,0025$

^d $L \text{ min.} = S$

^e The radius R shall have a sufficient minimum value in order to prevent a deterioration of the seats during assembly of the male and female elements.

Annex A (informative)
Bibliography

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

List of references

See national foreword.

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