International Standard 7319

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

Aerospace construction — Fluid systems — Interface of metric couplings

Constructions aérospatiales — Systèmes hydrauliques — Interface des raccordements métriques

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Foreword

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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.

International Standard ISO 7319 was developed by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, and was circulated to the member bodies in July 1981.

It has been approved by the member bodies of the following countries:

Australia	Egypt, Arab Rep. of	Romania
Austria	France	South Africa, Rep. of
Belgium	Ireland	Spain
Brazil	Italy	Sweden
Canada	Japan	USA
China	Korea, Rep. of	
Czechoslovakia	Netherlands	

The member bodies of the following countries expressed disapproval of the document on technical grounds:

Germany, F.R.
United Kingdom
USSR

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Aerospace construction — Fluid systems — Interface of metric couplings

1 Scope and field of application

This International Standard defines the geometry of the interface of the removable couplings for the aircraft fluid systems, with the possibility that the connection with the pipe of each one of the connecting elements be of different design.

This International Standard fixes the dimensions providing for the interchangeability of the male and female elements and of the nut used for the connection.

The dimensions are a definition of the maximum volume of the male fitting.

2 Reference

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

3 Coupling assembly and sealing principle

The coupling comprises three elements :

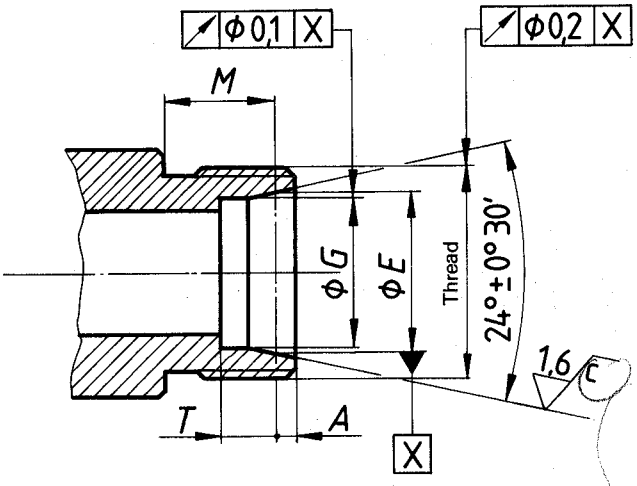
A female element including a frustum with a cone angle equal to 24° in which the male element comes into contact to provide the sealing. The contact line is a circle with a theoretical diameter E.

A male element, included inside a shell, with a torical/or spherical area extended by two tangential frustums on which the female element comes into contact to provide for the sealing. This contact line is a circle with a theoretical diameter E.

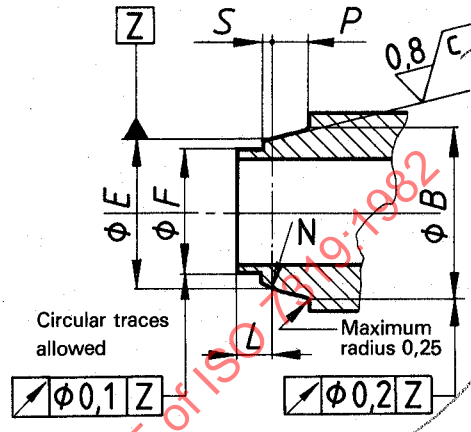
A nut providing for the assembly of the male and female elements of the coupling.

4 Dimensions

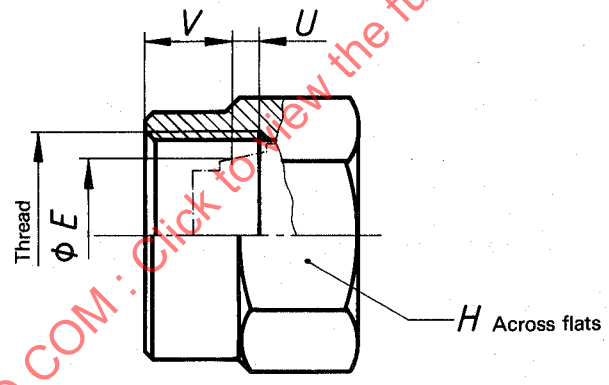
Female element



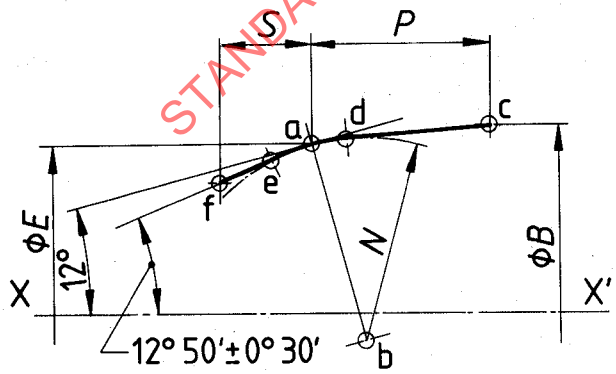
Male element



Nut



Outline of the theoretical profile of the male element shell



Point a = origin at $E/2$ from the XX' axis.

Point b = point located at a distance N from point a on the perpendicular to the line tilted 12° relatively to XX' and passing through a.

Point c = located at $B/2$ from the XX' axis and at P from a.

Line cd = tangent drawn from c to the arc of circle with center b and radius N.

Line ef = tangent tilted 12° 50 on the arc of circle of center b and of radius N. 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 female elements may receive anchor-type male elements that lose their shape.

Figure — Dimensions

Table — Dimensions (in millimetres)

Rated pipe	Thread external		Thread internal		A		ϕB	ϕE	ϕF	ϕG		H	L	M	Radius N	P	S		T	U	V
(DN)	4g	6g	4H	5H	min.	max.	max.	theoretical[1]	max.	min.	max.	recommended	max.[2]	min.	max.[3]	min.	min.	max.	min.	min.	max.
5	MJ 10 × 1				1,38	1,62	7,10	6,50	5,06	5,26	5,36	12	3,88	7,18	6,13	2,58	0,56	0,92	3,88	2,8	4,7
6	MJ 12 × 1,25				1,38	1,62	8,10	7,50	6,06	6,26	6,36	14	4,38	8,18	6,13	2,58	0,56	0,92	4,38	3,8	4,7
8	MJ 14 × 1,5				1,38	1,62	10,10	9,50	8,06	8,26	8,36	17	4,38	9,18	6,13	2,58	0,56	0,92	4,38	3,8	5,2
10	MJ 16 × 1,5				1,38	1,62	12,10	11,50	10,06	10,26	10,36	19	4,38	10,18	6,13	2,58	0,56	0,92	4,38	4,1	5,9
12	MJ 18 × 1,5				2,28	2,52	14,50	13,50	12,06	12,26	12,36	22	4,48	9,28	12,13	3,48	0,96	1,32	4,48	4,1	6,4
14	MJ 20 × 1,5				2,28	2,52	16,50	15,50	14,06	14,26	14,36	24	4,48	9,28	12,13	3,48	0,96	1,32	4,48	4,1	6,4
16	MJ 22 × 1,5				2,28	2,52	18,50	17,50	16,06	16,26	16,36	27	4,48	9,28	12,13	3,48	0,96	1,32	4,48	4,4	6,1
20	MJ 27 × 1,5				2,28	2,52	22,50	21,50	20,08	20,28	20,38	32	4,48	9,28	12,13	3,48	0,96	1,32	4,48	3,9	6,1
25	MJ 33 × 1,5				2,28	2,52	27,60	26,60	25,08	25,28	25,38	41	4,48	10,28	13,61	3,48	0,96	1,32	4,48	4,2	5,8
32	MJ 42 × 2				2,28	2,52	34,70	33,70	32,10	32,30	32,40	46	4,98	11,28	17,24	3,48	0,96	1,32	4,98	4,1	5,9
40	MJ 50 × 2				2,28	2,52	42,70	41,70	40,10	40,30	40,40	60	4,98	11,28	21,32	3,48	0,96	1,32	4,98	4,4	7,6

1) Tolerance for the proof gauge : ± 0,002 5

2) L min. = S

3) The radius N must have a sufficient minimum value in order to prevent a deterioration of the seats during the assembly of the male and female elements.