

INTERNATIONAL
STANDARD

ISO
7320

Second edition
1992-12-15

**Aerospace — Couplings, threaded and
sealed, for fluid systems — Dimensions**

iTeh STANDARD PREVIEW
*Aéronautique et espace — Raccordement fileté étanche pour les
systèmes de fluides — Dimensions*
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ISO 7320:1992

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Reference number
ISO 7320:1992(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.

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 7320 was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Sub-Committee SC 10, *Aerospace fluid systems and components*.

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This second edition cancels and replaces the first edition (ISO 7320:1985), which has been technically revised.

Annex A of this International Standard is for information only.

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International Organization for Standardization

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Aerospace — Couplings, threaded and sealed, for fluid systems — Dimensions

1 Scope

This International Standard establishes a system for sealing the port connection of couplings used in the aerospace industry.

It specifies dimensions to achieve interchangeability of the port connection, the fitting end and a seal. The seal may be a standard O-ring or a special ring.

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 Sealing principle and assembly of the coupling

The coupling comprises three elements:

- a) the port element, including the internal thread (see 4.1);
- b) the fitting element, including an external thread and a groove intended to receive the O-ring (see 4.2) or a special seal; this element is screwed into the internal threaded element;
- c) the seal element, which maintains system pressure without leakage [a standard O-ring (see 4.3) or special seal].

4 Dimensions

4.1 Port connection

See figure 1 and table 1.

Dimensions in millimetres
 Surface roughness values in micrometres
 Remove burrs 0,1 to 0,4, unless otherwise specified

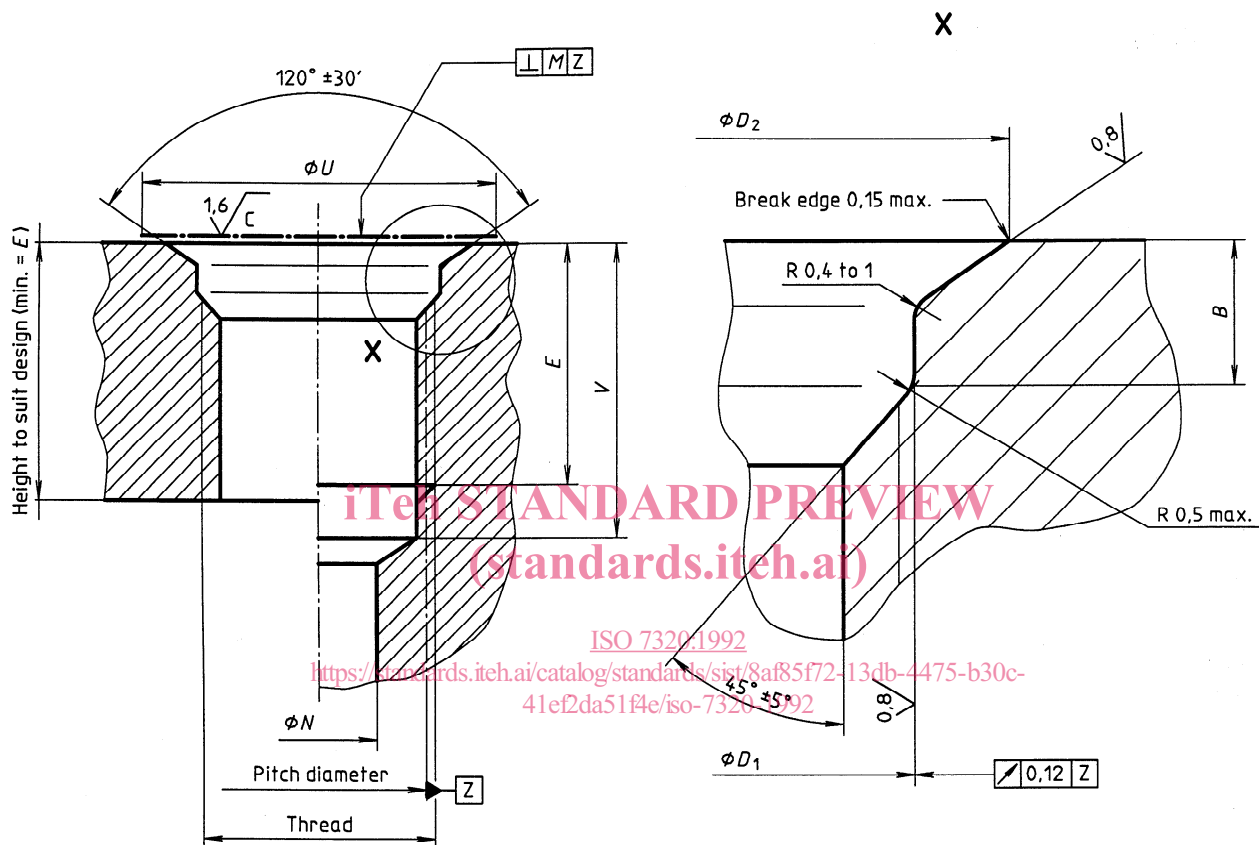


Figure 1 — Port connection configuration

Table 1 — Port connection dimensions

Dimensions in millimetres

DN ¹⁾	Thread ²⁾	B $\begin{matrix} +0,4 \\ 0 \end{matrix}$	D ₁		D ₂ $\begin{matrix} +0,4 \\ 0 \end{matrix}$	E min.	M	N min.	U min.	V max.	
			nom.	tol.							
03	MJ8 × 1	1,9	8,6	$\begin{matrix} +0,1 \\ 0 \end{matrix}$	11,3	11	0,08	Internal diameter of tube	15	15	
04			10,6		13,3				18		
05			12,4		15,1				20		17
06	MJ12 × 1,25	3,4	14,6	$\begin{matrix} +0,15 \\ 0 \end{matrix}$	18,3	16	0,1		23	21	
08	MJ14 × 1,5		16,6		20,3				25		
10	MJ16 × 1,5		18,6		22,3				28		
12	MJ18 × 1,5		20,6		24,3				31		
14	MJ20 × 1,5		22,6		26,3				31		21
16	MJ22 × 1,5		24,6		28,3				33		
18	MJ24 × 1,5		27,6		31,3				37		
20	MJ27 × 1,5		30,6		34,3			42			
22	MJ30 × 1,5		33,6		37,3			47			
25	MJ33 × 1,5		36,6		40,3			56	26		
28	MJ36 × 1,5	4,3	43	47,1	61						
32	MJ42 × 2		51	55,1	20	0,2					
40	MJ50 × 2										

1) DN = Nominal size (outside diameter of the corresponding tube).

2) Threads are in accordance with ISO 5855-3.

Table 2 — Fitting end dimensions

Dimensions in millimetres

DN ¹⁾	Thread ²⁾	C	F	H	J		S		T	Y						
					nom.	tol.	nom.	tol.								
	4h6h	± 0,5	$\begin{matrix} 0 \\ -0,2 \end{matrix}$	$\begin{matrix} +0,4 \\ 0 \end{matrix}$	nom.	tol.	nom.	tol.	$\begin{matrix} +0,5 \\ 0 \end{matrix}$	min.						
03	MJ8 × 1	6,2	10	1,9	6,3	$\begin{matrix} 0 \\ -0,08 \end{matrix}$	14	h13	13,8	3						
04																
05																
06	MJ12 × 1,25	8,2	11,5		8,3		17		16,8							
08	MJ14 × 1,5	9,8			10,1		19		18,7							
10	MJ16 × 1,5	11,5	15	3,4	11,7	$\begin{matrix} 0 \\ -0,1 \end{matrix}$	22	h13	21,7	4						
12	MJ18 × 1,5	13,5										13,7		24		23,7
14	MJ20 × 1,5	15,5										15,7		27		26,7
16	MJ22 × 1,5	17,5			17,7		30		29,7	5						
18	MJ24 × 1,5	19,5			19,7		32		31,6							
20	MJ27 × 1,5	21,5			21,7		36		35,4							
22	MJ30 × 1,5	24,5			24,7		41		40,4							
25	MJ33 × 1,5	27,5			27,7		46	h14	45,4	6						
28	MJ36 × 1,5	30,5			30,7		50									
32	MJ42 × 2	33,5			33,7		60									
40	MJ50 × 2	38,9	19	4,3	39	$\begin{matrix} 0 \\ -0,15 \end{matrix}$	50		49,4							
		46,9			47		60		59,3							

1) DN = Nominal size (outside diameter of the corresponding tube).

2) Threads are in accordance with ISO 5855-3.

4.3 O-ring seal

See figure 3 and table 3.

Table 3 — Selection of O-ring seal sizes

Dimensions in millimetres

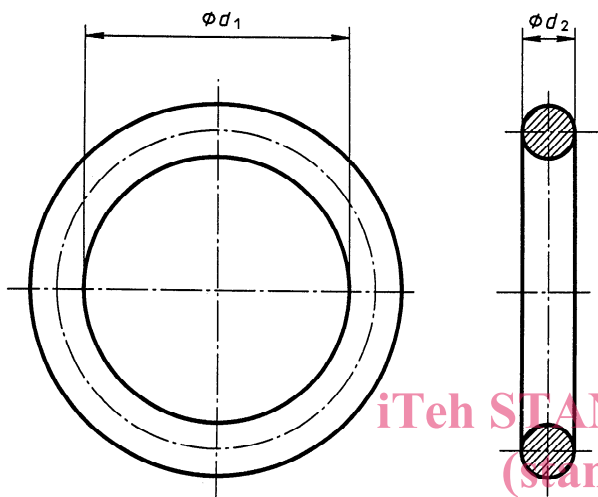


Figure 3 — O-ring seal configuration

DN ¹⁾	d_1		d_2	
	nom.	tol.	nom.	tol.
03	6	$\pm 0,13$	1,8	$\pm 0,08$
04				
05				
06	8	$\pm 0,14$	2,65	$\pm 0,09$
08	9,5	$\pm 0,15$		
10	11,2	$\pm 0,16$		
12	13,2	$\pm 0,17$		
14	15	$\pm 0,18$		
16	17	$\pm 0,2$		
18	19	$\pm 0,21$		
20	21,2	$\pm 0,22$	3,55	$\pm 0,1$
22	23,6	$\pm 0,24$		
25	26,5	$\pm 0,25$		
28	30	$\pm 0,27$		
32	32,5	$\pm 0,29$		
40	37,5	$\pm 0,32$	45	$\pm 0,36$

NOTE — Selection taken from Series A of ISO 3601-1.

1) DN = Nominal size (outside diameter of the corresponding tube).

Annex A

(informative)

Bibliography

- [1] ISO 1101:1983, *Technical drawings — Geometrical tolerancing — Tolerances of form, orientation, location and run-out — Generalities, definitions, symbols, indications on drawings.*
- [2] ISO 2692:1988, *Technical drawings — Geometrical tolerancing — Maximum material principle.*
- [3] ISO 3601-1:1988, *Fluid systems — Sealing devices — O-rings — Part 1: Inside diameters, cross-sections, tolerances and size identification code.*

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