

BS EN 4023:2010



BSI Standards Publication

# Aerospace series — Pipe coupling 8°30' in titanium alloy — Elbows 45°

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**National foreword**

This British Standard is the UK implementation of EN 4023:2010. It supersedes BS EN 4023:2001 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee ACE/69, Aerospace hydraulic systems, fluids and components.

A list of organizations represented on this committee can be obtained on request to its secretary.

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**Amendments issued since publication**

Date	Text affected
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English Version

Aerospace series - Pipe coupling 8°30' in titanium alloy - Elbows  
45°Série aérospatiale - Système de raccordement 8°30' en  
alliage de titane - Raccords coudés à 45°Luft- und Raumfahrt - Rohrverschraubung 8°30' aus  
Titanlegierung - Winkelverschraubungen 45°

This European Standard was approved by CEN on 2 July 2010.

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# Contents

Page

Foreword.....	3
1 Scope .....	4
2 Normative references .....	4
3 Required characteristics .....	4
4 Designation .....	6
5 Marking .....	6
6 Technical specification .....	6

## Foreword

This document (EN 4023:2010) has been prepared by the Aerospace and Defence Industries Association of Europe - Standardization (ASD-STAN).

After enquiries and votes carried out in accordance with the rules of this Association, this Standard has received the approval of the National Associations and the Official Services of the member countries of ASD, prior to its presentation to CEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2011, and conflicting national standards shall be withdrawn at the latest by April 2011.

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## 1 Scope

This standard specifies the characteristics of elbows 45°, for pipe couplings 8°30', in titanium alloy, for aerospace applications.

Nominal pressure: up to 28 000 kPa.

Temperature range: – 55 °C to 135 °C.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 2424, *Aerospace series — Marking of aerospace products*

EN 2491, *Aerospace series — Molybdenum disulphide dry lubricants — Coating methods*

EN 3274:2010, *Aerospace series — Pipe coupling 8°30' — Thread end — Geometric configuration*

EN 3275:2002, *Aerospace series — Pipe coupling 8°30' up to 28 000 kPa — Dynamic beam seal — Metric series — Technical specification*

EN 3311, *Aerospace series — Titanium alloy TI-P64001 (Ti-6Al-4V) — Annealed — Bar for machining —  $D < 110$  mm*

EN 3312, *Aerospace series — Titanium alloy TI-P64001 — Grade 2 — Annealed — Forgings —  $D_e \leq 150$  mm<sup>1)</sup>*

EN 3314, *Aerospace series — Titanium alloy TI-P64001 — Solution treated and aged — Bar for machining —  $D \leq 75$  mm<sup>1)</sup>*

EN 3315, *Aerospace series — Titanium alloy TI-P64001 — Solution treated and aged — Forgings —  $D_e \leq 75$  mm<sup>1)</sup>*

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

## 3 Required characteristics

### 3.1 Configuration — Dimensions — Mass

According to Figure 1 and Table 1. The values apply before lubricating.

Dimensions not specified are at the manufacturer's option provided that the qualification and acceptance requirements of EN 3275:2002, type II are met.

### 3.2 Surface roughness

According to Figure 1, unless otherwise specified in the design documentation.

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1) Published as ASD-STAN Prestandard at the date of publication of this standard by Aerospace and Defence Industries Association of Europe-Standardization (ASD-STAN) ([www.asd-stan.org](http://www.asd-stan.org)).

### 3.3 Materials

According to EN 3311 or EN 3314, EN 3312 or EN 3315.

### 3.4 Surface treatment

Lubrication: according to EN 2491, on threads and sealing faces.

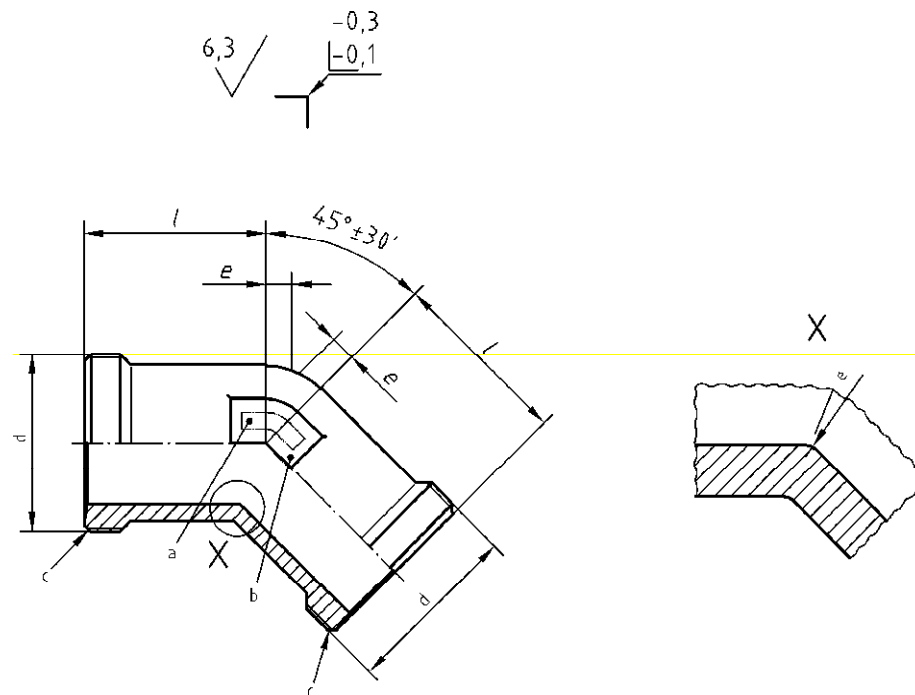
Prior to application of the lubricant, the surface shall be abrasive blasted using non-metallic grit.

Film thickness 0,005 mm to 0,013 mm.

### 3.5 Internal surface finishing

Finishing shall give a radius  $R$  of 0,3 mm to 1,0 mm and a surface roughness of 0,8  $\mu\text{m}$ . Hand deburring is not permitted.

Dimensions in millimetres



- a Area for marking
- b Across flats  $s$
- c According to EN 3274:2010, form C
- d Thread
- e Radius of the complete internal junction shall be between  $R$  0,3 to 1,0

Figure 1

Table 1

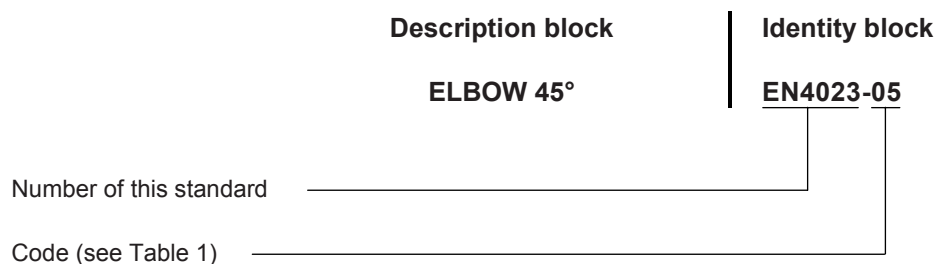
Dimensions in millimetres

Code <sup>a</sup>	Thread <sup>b</sup>	$e$ <sup>c</sup>	$l$ <sup>c</sup>	$s$ <sup>d</sup>	Mass g/piece max.
	4g6g		$\pm 0,2$	h13	
05	MJ10 $\times$ 1	0,9	16,3	8	5,0
06	MJ12 $\times$ 1,25	1,0	17,8	9	7,5
08	MJ14 $\times$ 1,5	1,4	20,8	11	11,8
10	MJ16 $\times$ 1,5	1,8	21,8	13	15,2
12	MJ18 $\times$ 1,5	2,2	23,8	15	19,6
14	MJ20 $\times$ 1,5	2,4	23,8	16	23,9
16	MJ22 $\times$ 1,5	2,8	25,8	18	30,6
18	MJ24 $\times$ 1,5	3,2	27,8	21	38,6
20	MJ27 $\times$ 1,5	4,7	27,8	24	49,5
22	MJ30 $\times$ 1,5	4,3	30,8	27	64,0
25	MJ33 $\times$ 1,5	4,6	32,8	30	86,0
28	MJ36 $\times$ 1,5	5,3	34,8	34	105,0
32	MJ39 $\times$ 1,5	5,0	36,4	36	113,3

<sup>a</sup> Corresponds to the pipe nominal outside diameter.  
<sup>b</sup> According to ISO 5855-3.  
<sup>c</sup> Drill depth dimension =  $l + e$ .  
<sup>d</sup> Across flats.

## 4 Designation

EXAMPLE



NOTE If necessary, the code I9005 shall be placed between the description block and the identity block.

## 5 Marking

According to EN 2424:2008, style A and Figure 1.

## 6 Technical specification

According to EN 3275:2002, type II.



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