



BSI Standards Publication

**Aerospace series - Inserts, screw thread,
helical coil, self-locking, in heat resisting nickel
base alloy NI-PH2801 (Inconel X750)**

National foreword

This British Standard is the UK implementation of EN 3542:2018. It supersedes BS EN 3542:1998, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee ACE/12, Aerospace fasteners and fastening systems.

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

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EUROPEAN STANDARD

EN 3542

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2018

ICS 49.030.30

Supersedes EN 3542:1998

English Version

**Aerospace series - Inserts, screw thread, helical coil, self-locking, in heat resisting nickel base alloy NI-PH2801
(Inconel X750)**

Série aérospatiale - Filets rapportés, à freinage interne, en alliage résistant à chaud à base de nickel NI-PH2801 (Inconel X750)

Luft- und Raumfahrt - Draht-Gewindeeinsätze, selbstsichernd, aus hochwarmfester Nickelbasislegierung NI-PH2801 (Inconel X750)

This European Standard was approved by CEN on 22 January 2018.

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CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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European foreword

This document (EN 3542:2018) 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of an identical text or by endorsement, at the latest by October 2018, and conflicting national standards shall be withdrawn at the latest by October 2018.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes [EN 3542:1998](#).

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Introduction

For design and assembly procedures see [EN 3044](#) and [EN 2945](#).

1 Scope

This document specifies the characteristics of inserts, self-locking, helical coil, tanged insertion drive, with MJ screw thread in NI-PH2801 material, for aerospace applications.

Maximum test temperature: 550 °C.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 2943](#), *Aerospace series — Inserts, screw thread, helical coil, selflocking — Technical specification*

[EN 2945](#), *Aerospace series — Inserts, screw thread, helical coil, selflocking — Assembly procedure*

EN 3018, *Aerospace series — Heat resisting alloy NI-PH2801 (NiCr16Fe7Ti3Nb1Al1), with consumable electrode remelted — Cold drawn wire for the manufacture of thread inserts $D \leq 3 \text{ mm}$ ¹⁾*

[EN 3044](#), *Aerospace series — Installation holes for inserts, screw thread, helical coil, selflocking — Design standard*

[ISO 5855-2](#), *Aerospace — MJ threads — Part 2: Limit dimensions for bolts and nuts*

3 Required characteristics

3.1 Configuration — Dimensions — Tolerances — Masses

See [Figure 1](#) and [Table 1](#) and [Table 2](#). Dimensions and tolerances are in millimetres.

3.2 Material

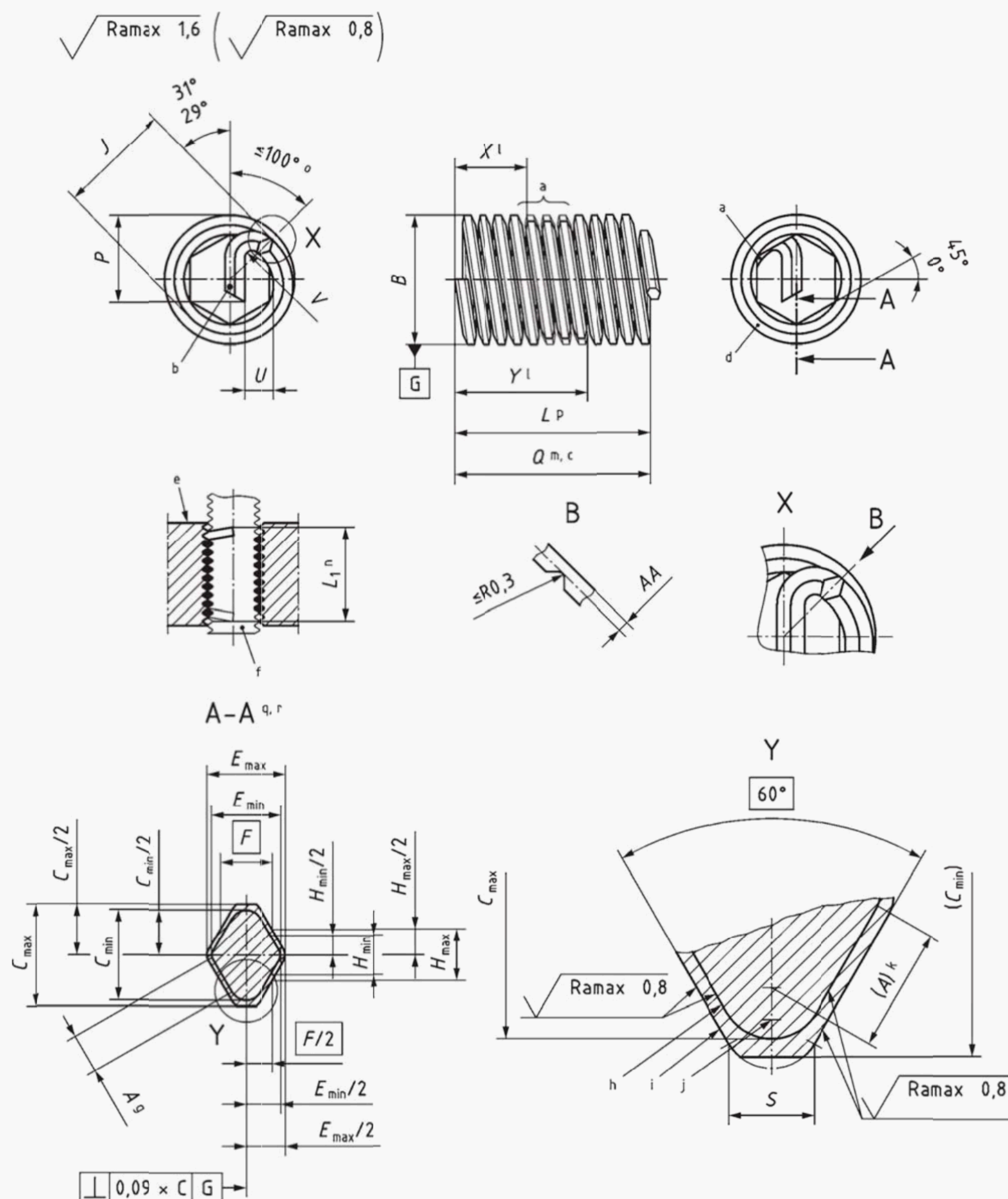
See EN 3018.

3.3 Material identification

Colour: yellow.

No chlorine-based constituents permitted in the colour identification product.

¹⁾ Published as ASD-STAN pre-standard at the date of publication of the present standard (www.asd-stan.org).



Key

- a form out-of-round in this area to achieve the self-locking requirements (tool marks permissible)
- b tang
- c number of coils
- d marking
- e lead-in face of installation hole
- f installation
- g see detail Y

- h min. profile
- i max. profile
- j R , min, tangential to flanks
- k straight portion of flank
- l locking feature shall be at least in the zone Y max. — X min. It shall take place on at least two coils separated by a plain coil, except in the case of inserts of diameters 4, 5 and 6 and a nominal length of $1,25 D$ where the plain coil may be omitted
- m the number of coils is counted from the notch
- p length of fitted insert to notch
- q dimensions after coiling, corresponding to an insert fitted in an installation hole to [EN 3044](#)
- r section A-A is perpendicular to the helical axis

Figure 1 — Layout drawing, dimensions destined for design depts.

Table 1 – Dimensions

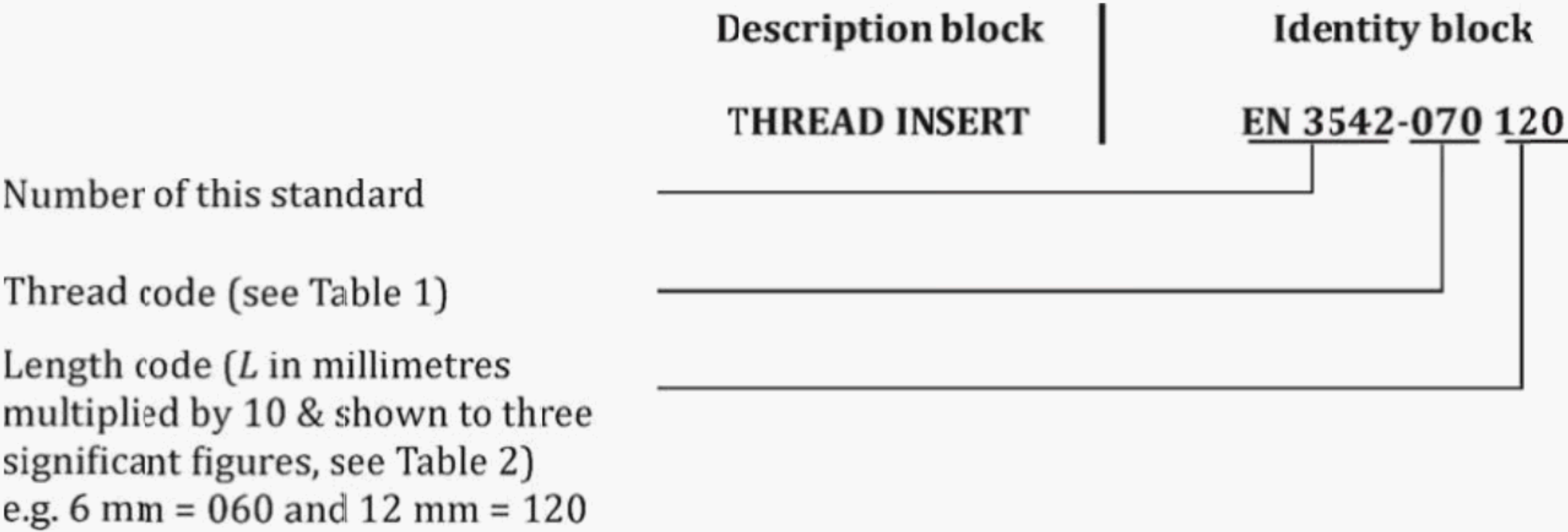
Diameter code	Thread ^a (Associated screw)	<i>A</i>	<i>B</i> _{min}	<i>B</i> _{max}	<i>C</i> _{max}	<i>C</i> _{min}	<i>E</i> _{max}	<i>E</i> _{min}	<i>F</i>	<i>H</i> _{max}	<i>H</i> _{min}	<i>J</i>		<i>P</i>	<i>P</i>	<i>R</i> ₁	<i>S</i>	<i>U</i>	<i>U</i>	<i>V</i>	<i>AA</i>	
		min.							max.			max.	min	max.	min.	min.	min.	max.	min.	max.	max.	min.
040	MJ4×0,7	0,163	5,05	5,60	0,758	0,683	0,612	0,51	0,35	0,455	0,4445	5,6	4,9	3,55	2,5	0,126	0,219	1,67	1,02	0,45	0,34	0,31
050	MJ5×0,8	0,209	6,25	6,80	0,866	0,775	0,7	0,598	0,4	0,52	0,5085	6,8	6,1	4,55	3,15	1,144	0,25	2,09	1,41	0,6	0,37	0,34
060	MJ6×1	0,267	7,40	7,95	1,083	0,975	0,875	0,748	0,5	0,65	0,637	7,95	7,25	4,85	3,7	0,18	0,312	2,55	1,65		0,5	0,45
070	MJ7×1		8,65	9,20								9,2	8,4	5,5	4,3			3,1	2,09			
080	MJ8×1		9,70	10,25								10	9,2	6,5	4,75			3,88	2,27	0,75		
100	MJ10×1,25	7,40	7,95	7,40	7,95	7,40	7,95	7,40	7,95	7,40	7,95	7,40	7,95	7,40	7,95	7,40	7,95	7,40	7,95		0,6	0,55
^a In accordance with ISO 5855-2 .																						

Table 2 — Dimensions, Number of turns, mass (1 of 2)

Diameter code	Thread ^a (Associated screw)	<i>L</i>			$\begin{matrix} +0,25 \\ L_1 \quad 0 \end{matrix}$			Number of turns $Q_{\pm 0,25}$			X^b min.			Y^b			Mass \approx kg/1 000 pieces		
		1,5 <i>D</i>	2 <i>D</i>	2,5 <i>D</i>	1,5 <i>D</i>	2 <i>D</i>	2,5 <i>D</i>	1,5 <i>D</i>	2 <i>D</i>	2,5 <i>D</i>	1,5 <i>D</i>	2 <i>D</i>	$\frac{2,5}{D}$	1,5 <i>D</i>	2 <i>D</i>	$\frac{2,5}{D}$	1,5 <i>D</i>	2 <i>D</i>	2,5 <i>D</i>
040	MJ4×0,7	6	8	10	5,47	7,47	9,47	6,1	8,6	11,1	0,8	2,5		3,1	4,8		0,22	0,31	0,39
050	MJ5×0,8	7,5	10	12,5	6,90	9,40	11,90	6,9	9,6	12,4	1,3	3,8	3,7	3,9	6,3	6,3	0,4	0,55	0,7
060	MJ6×1	9	12	15	8,25	11,25	14,25	6,8	9,5	12,1	2,2	5,1					0,72	0,99	1,26
070	MJ7×1	10,5	14	17,5	9,75	13,25	16,75	8	11,1	14,1	1,2	5,9	5,5				0,99	1,36	1,73
080	MJ8×1	12	16	20	11,25	15,25	19,25	9,4	13	16,5	2,5	6,8					1,32	1,8	2,28
100	MJ10×1,25	15	20	25	14,25	19,25	24,25	9,5	13,1	16,8	3,7						2,57	3,52	4,46
^a In accordance with ISO 5855-2 .																			
^b <i>X</i> and <i>Y</i> dimensions apply after installation of the thread insert.																			

4 Designation

EXAMPLE



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

5 Marking

See [EN 2424](#).

- style G;
- additionally style F permitted, as indicated on [Figure 1](#).

6 Technical specification

See [EN 2943](#).

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