



**SLOVENSKI STANDARD**  
**SIST EN 4234:2010**

**01-januar-2010**

**BUXca Yý U**  
**SIST EN 4234:2009**

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**Aeronavtika - Objemke s polžastim gonilom - Mere, mase**

Aerospace series - Clamps, worm drive - Dimensions, masses

Luft- und Raumfahrt - Schellen mit Schneckentrieb - Maße, Massen

Série aérospatiale - Colliers à vis tangente - Dimensions, masses

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**Ta slovenski standard je istoveten z: ~~SIST EN 4234:2009~~ EN 4234:2009**

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**ICS:**

49.030.99      Drugi vezni elementi      Other fasteners

**SIST EN 4234:2010**      **en**

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EUROPEAN STANDARD

EN 4234

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2009

ICS 49.030.99

Supersedes EN 4234:2006

English Version

## Aerospace series - Clamps, worm drive - Dimensions, masses

Série aérospatiale - Colliers à vis tangente - Dimensions,  
massesLuft- und Raumfahrt - Schellen mit Schneckentrieb - Maße,  
Massen

This European Standard was approved by CEN on 5 October 2009.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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## Foreword

This document (EN 4234:2009) 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 2010, and conflicting national standards shall be withdrawn at the latest by April 2010.

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

This document supersedes EN 4234:2006.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

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**EN 4234:2009 (E)****1 Scope**

This European Standard specifies the characteristics of worm drive clamps designed for use with suitable rubber hoses to form joints in fluid system pipelines for aerospace applications.

**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 2424:2008, *Aerospace series — Marking of aerospace products*

EN 2465, *Aerospace series — Steel FE-PA3901 (X2CrNi18-9) — Softened —  $450 \text{ MPa} \leq R_m \leq 680 \text{ MPa}$  — Bar for machining —  $4 \text{ mm} \leq D_e \leq 100 \text{ mm}$*

EN 2516, *Aerospace series — Passivation of corrosion resisting steels and decontamination of nickel base alloys*

EN 3077, *Aerospace series — Clamps worm drive — Technical specification*<sup>1)</sup>

EN 3487, *Aerospace series — Steel FE-PA3601 (X6CrNiTi18-10) — Air melted — Softened — Bar for machining —  $a$  or  $D \leq 250 \text{ mm}$  —  $500 \text{ MPa} \leq R_m \leq 700 \text{ MPa}$*

EN 3488, *Aerospace series — Steel FE-PA3601 (X6CrNiTi18-10) — Air melted — Softened — Sheet and strip —  $a \leq 6 \text{ mm}$  —  $500 \text{ MPa} \leq R_m \leq 700 \text{ MPa}$*

EN 10088 (all parts), *Stainless steels*

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**3 Required characteristics****3.1 Configuration — Dimensions — Masses**

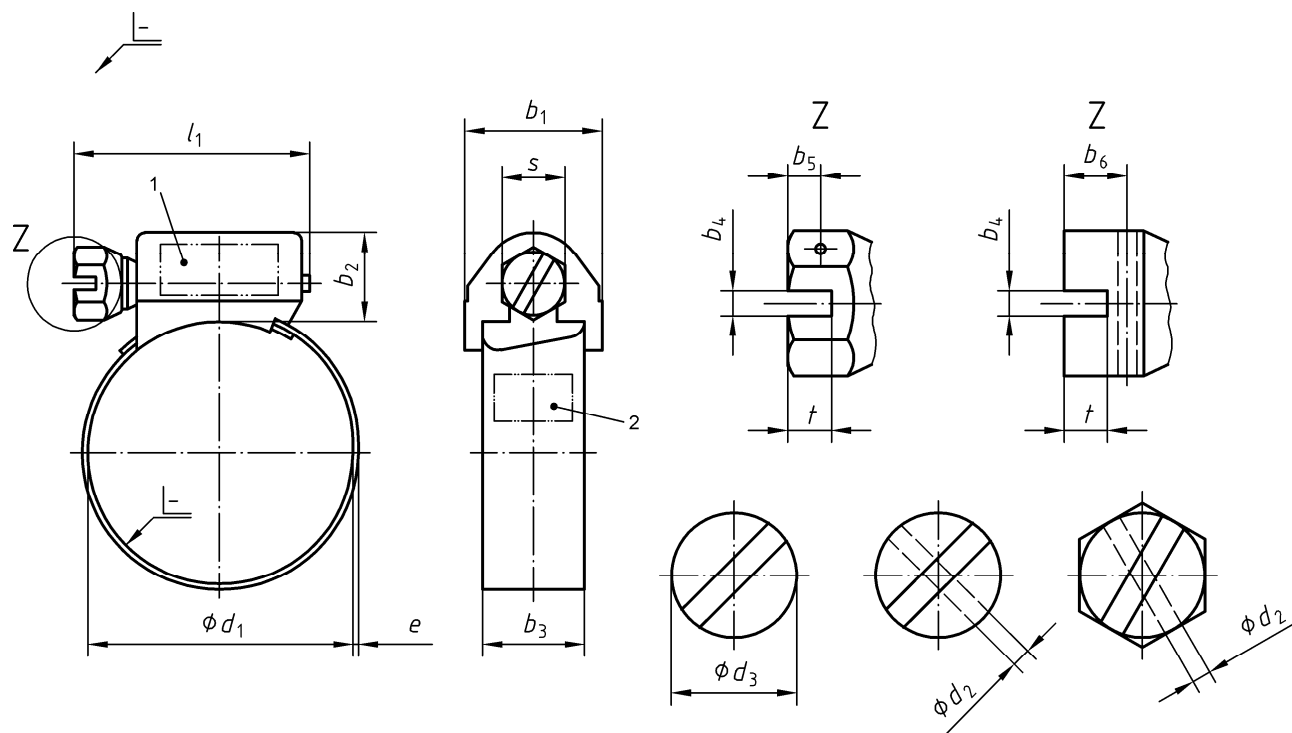
The configuration shall correspond with Figure 1.

Details of form not defined are at the manufacturer's option.

Dimensions shall correspond with Figure 1 and Tables 1 to 3.

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1) Published as ASD Prestandard at the date of publication of this standard.

**Key**

- 1 Field 1 for marking
- 2 Field 2 for marking

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**Figure 1**

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**Table 1 — Dimensions**

Dimensions in millimetres

Form	$b_1$ max.	$b_2$ max.	$b_3$	$b_4$ max.	$b_5$	$b_6$	$d_2$ $+0,3$ $0$	$d_3$ h13	$e$ $\pm 0,05$	$l_1$ max.	$s$ h12	$t$
<b>L</b>	16	11,3	$12 \pm 0,15$	1,9	$3,6 \pm 0,1$	$4 \pm 0,1$	1,2	8	0,7	30	7	$2,75 \pm 0,25$
<b>M<sup>a</sup></b> 10/16 to 16/27	10,9	8,9	$8 \pm 0,15$	1,2	$2,7 \pm 0,1$	$3^{+0,3}_0$		6		20,8		$1,35 \pm 0,27$
<b>M<sup>a</sup></b> 23/35 to 380/400	12	10			$2,6^{+0,2}_0$	7		22		$1,6^{+0}_-0,2$		
<b>N</b>	7,5	7,3	$5^{+0,12}_0$	1	—	—	—	4	0,4	13	—	$1,2^{+0,2}_0$

<sup>a</sup> Alternative tolerances for  $M \leq \emptyset 27$ ;  $e = 0,6 \pm 0,05$ .

Table 2 — Clamp ranges and masses

Size code	$d_1$		Mass <sup>a</sup>			Size code	$d_1$		Mass <sup>a</sup>	
	min.	max.	N	L	M		min.	max.	L	M
011	7	11	3,6	—	—	190	170	190	55,0	39,4
016	10	16	—		7,9	200	180	200	56,0	
019	10	19	4,0		—	210	190	210	58,0	
022	12 <sup>b</sup>	22	—	24,0	8,5	220	200	220	60,0	44,5
027	16	27		25,0	10,6	230	210	230	62,0	
035	23	35		25,5	14,6	240	220	240	63,0	
045	25	45		28,0	14,3	250	230	250	64,0	
050	32	50		29,0	16,6	260	240	260	66,0	
060	40	60		31,0	17,9	270	250	270	68,0	
070	50	70		33,0	19,3	280	260	280	70,0	
080	60	80		35,0	20,6	290	270	290	72,0	
090	70	90		38,0	21,9	300	280	300	74,0	
100	80	100		40,0	24,7	310	290	310	75,0	
110	90	110		41,0	26,1	320	300	320	76,0	
120	100	120		44,0	27,1	330	310	330	77,0	
130	110	130		45,0	30,7	340	320	340	79,0	
140	120	140		47,0	34,8	350	330	350	80,0	
150	130	150		49,0		360	340	360	82,0	
160	140	160		50,0		370	350	370	83,0	
170	150	170		52,0	34,8	380	360	380	84,0	
180	160	180		54,0		390	370	390	85,0	
—	—	—	—	—	400	380	400	86,0	64,5	

<sup>a</sup> Calculated on the basis of a density of 7,85 kg/dm<sup>3</sup>.

<sup>b</sup> For form L:  $d_{1min.} = 14$ .

Table 3 — Configuration

Details of form	Code	
Locking wire hole	H	(with locking wire hole)
	—	(without locking wire hole)
Shape of head	R	(round)
	S	(hexagonal)



### 3.2 Materials and surface treatment

See Table 4.

**Table 4 — Materials and surface treatment**

Material			Surface treatment	Code
Band	Housing	Screw		
According to EN 3488 <sup>a</sup>	According to EN 3488 <sup>a</sup>	According to EN 3487 <sup>a</sup>	passivated according to EN 2516	–
		According to EN 2465 <sup>a</sup>	passivated according to EN 2516	A
		According to EN 3487 <sup>a</sup>	without	B
		According to EN 2465 <sup>a</sup>	without	C

<sup>a</sup> Alternative material according to EN 10088.

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### 3.3 Tightening torque (standards.iteh.ai)

Form L: max. 6 Nm.

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Form M: max. 2,5 Nm.

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Form N: max. 0,8 Nm.

### 3.4 Design

The housing shall be firmly attached to the band. Sharp edges are not permissible and the inner edges should be rounded or beaded.

NOTE Clamps of form N are only equipped with a stamped band and undrilled, round-headed screw.