

**SLOVENSKI STANDARD****SIST EN 2515:2001****01-januar-2001**

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**Aerospace series - Rod ends, adjustable single fork and threaded shank - Dimensions and loads**

Aerospace series - Rod ends, adjustable single fork and threaded shank - Dimensions and loads

Luft- und Raumfahrt - Einstellbare Gabelköpfe einfach, mit Gewindeschaf - Maße und Belastungen

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Série aérospatiale - Embouts réglables à chape simple et à tige filetée - Dimensions et charges

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**Ta slovenski standard je istoveten z:** **EN 2515:1990**

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**ICS:**

49.035

Sestavni deli za letalsko in  
vesoljsko gradnjoComponents for aerospace  
construction**SIST EN 2515:2001****en**

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**EUROPEAN STANDARD**  
**NORME EUROPÉENNE**  
**EUROPÄISCHE NORM**

**EN 2515**

June 1990

UDC : 629.7.02 : 621.827.1 : 621.85.053.004.1

Key words : Aircraft industry, flight control, rod ends, threaded ends, dimensions, static loads

**English version**

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 Rod ends, adjustable  
 single fork and threaded shank  
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 Embouts réglables  
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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Central Secretariat or to any CEN member.

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**CEN**

European Committee for Standardization  
 Comité Européen de Normalisation  
 Europäisches Komitee für Normung

**Central Secretariat : Rue Bréderode 2, B—1000 Bruxelles**

**Brief history**

This European Standard has been prepared by the European Association of Aerospace Manufacturers (AECMA).

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

According to the Common CEN/CENELEC Rules, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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## 1 Scope and field of application

This standard specifies the characteristics of adjustable rod ends consisting of a rod end body with threaded shank consisting of :

- a single fork ;
- a circumferential groove to identify location ;
- an optional longitudinal groove for locking purposes.

These rod ends are intended for flight control rods or rods for aerospace structures.

The cadmium plating restricts the application to temperature not exceeding 235 °C.

## 2 References

ISO 3353	Aerospace construction - Rolled threads - Runout and lead threads
ISO 5855/1	Aerospace - MJ Threads - Part 1 : General requirements
ISO 5855/2	Aerospace - MJ Threads - Part 2 : Limit dimensions for bolts and nuts
EN 2133	Cadmium plating of steels with maximum specified tensile strength equal to or less than 1450 MPa, and copper and copper alloys - Aerospace series <sup>1)</sup>
EN 2137	Steel FE-PL75 - 1100 MPa $\leq R_m \leq 1250$ MPa - Bars $D_e \leq 100$ mm - Aerospace series <sup>1)</sup>
EN 2438	Steel FE-PL62 - 900 MPa $\leq R_m \leq 1100$ MPa - Bars $D_e \leq 40$ mm - Aerospace series <sup>1)</sup>
EN 2601	Aerospace series - Fork ends - Technical specification <sup>2)</sup>
EN 2791	Aerospace series - Rod ends, adjustable single fork and threaded shank - Dimensions and loads <sup>3)</sup>

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## 3 Required characteristics

### 3.1 Dimensions - Tolerances

Configuration : See figure.

Dimensions and tolerances : See figure and table, values after cadmium plating.

### 3.2 Surface

See figure, values before cadmium plating.

### 3.3 Materials

Steel EN 2137 or EN 2438.

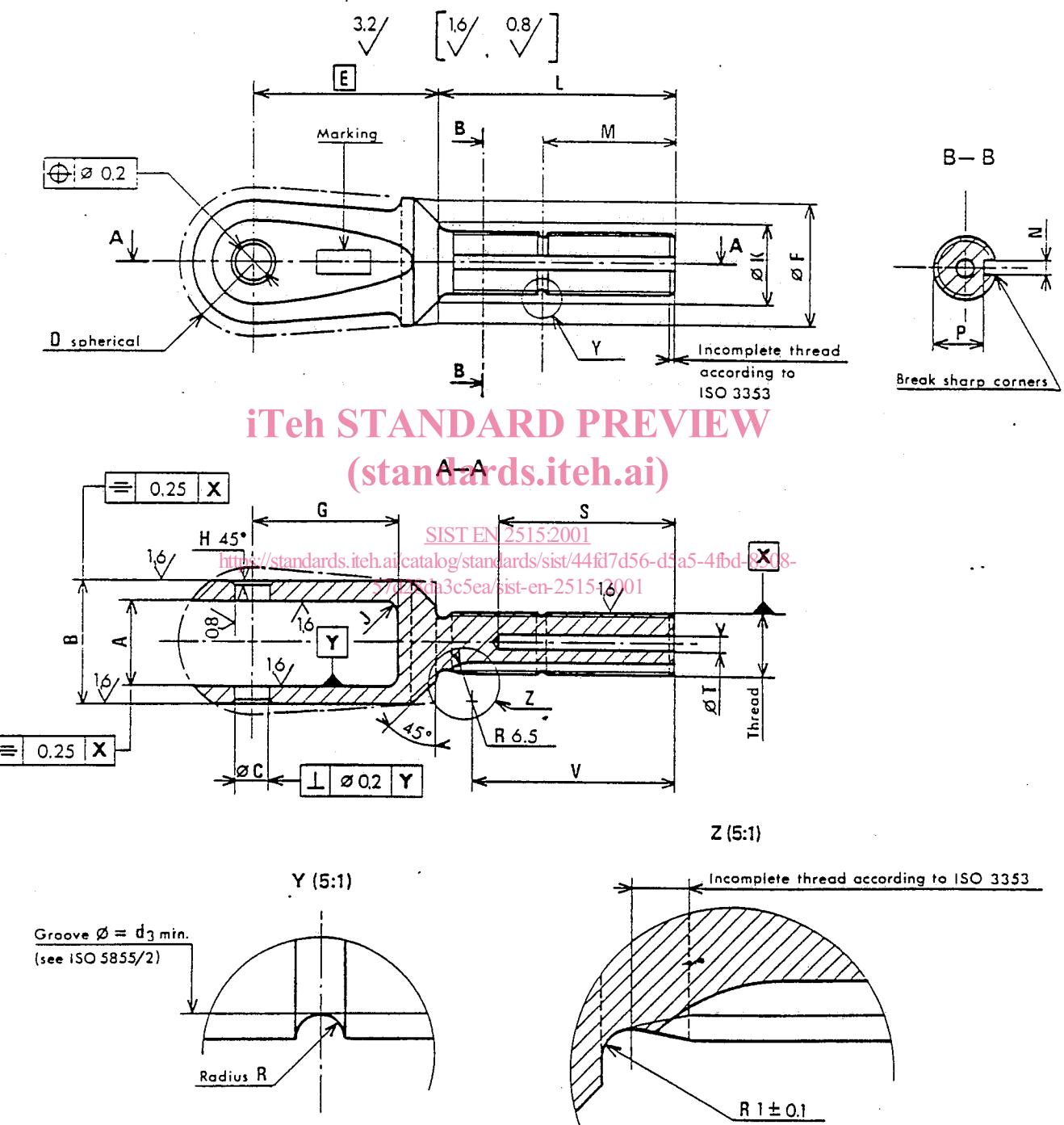
1) Published as AECMA standard.

2) In preparation.

3) Published as AECMA pre-standard.

### 3.4 Surface treatment

Cadmium plating, except on the bore C : EN 2133, 7 µm to 20 µm except thread 5 µm to 10 µm



NOTE : The circumferential groove and the longitudinal groove under distance M, shall be painted red.

Figure

Table

Dimensions in millimetres

Size Code	Fork						Thread						Rod and							
	A	B	C	D	E	F	G	H	J	K	L	M 2)	N	P	R	S	T	V	Ultimate load kN	Mass g
	+ 0,1	+ 0,2	+ 0,2	0	J7	0	± 0,25	± 0,25	± 0,1	0	+ 1 0	min. 0	+ 0,1 0	0	0	-1	- 0,25 max.			
V 3)	14	20,2	6	12,0	30	19,5	24	0,5	2	13)	MJ 10×1,25-4h6h	39	22	2,4	8,0	0,8	-	33	40	54
W 3)	15	22,2	8	13,9	36	21,5	30	0,8	2	15)	MJ 12×1,25-4h6h	44	25	2,4	10,2	0,8	-	38	58	81
Y	20	28,2	10	17,8	41	27,0	34	0,8	3	17)	MJ 14×1,5-4h6h	50	31	3,2	12,2	1,0	40	4	44	83
																		132		

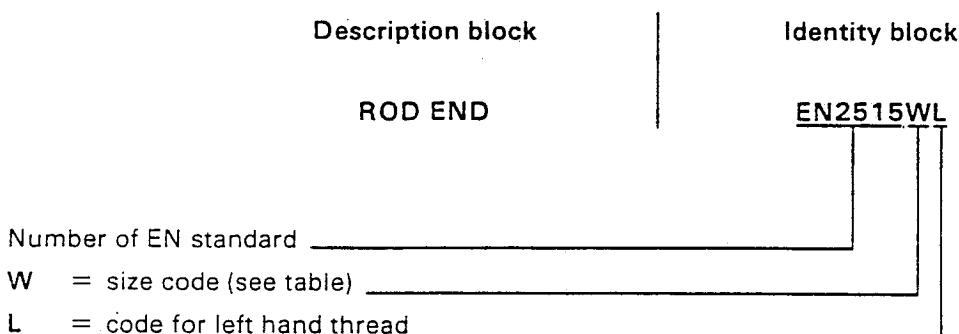
1) Thread : According to ISO 5855 parts 1 and 2, rolled.

2) M : Minimum length of engaged threads, includes thickness of lock washers and height of nut.

3) The codes V and W shall not be used for new design (see EN 2791).

#### 4 Designation

Each adjustable single fork rod end fitting shall only be designated as in the following example :



With application of the following codes :

L = left hand thread

R = right hand thread

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NOTE : If necessary, the originator code I9005 may be introduced between the description block and identity block.

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#### 5 Marking

In addition to the manufacturer's own marking, each rod end (see figure) and the package shall be marked, using the identity block specified in clause 4 of this standard.

#### 6 Technical specification

Rod ends supplied according to this standard shall conform with the requirements of EN 2601.