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Dimensions of spindle ends for manually operated electronic components

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EUROPEAN COMMITTEE FOR ELECTROTECHNICAL STANDARDIZATION

CENELEC HARMONIZATION DOCUMENT

HD 363

IEC 390 (1972 - 1st edition)

Dimensions of spindle ends for manually operated electronic components

Amendment No.1 (1976)

This Harmonization Document was adopted by CENELEC on 1977-03-01.

The National Electrotechnical Committees, members of CENELEC, in

A : Austria
B : Belgium
CH : Switzerland
D : Germany
DK : Denmark
F : France
I : Italy
IRL : Ireland
N : Norway
NL : Netherlands
P : Portugal
S : Sweden
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UK : United Kingdom

Reference of the relevant National Harmonized Standards overleaf

are obliged, in accordance with the CENELEC Internal Regulations, to implement this Harmonization Document in their respective country by

- Issuing harmonized national standard(s) and/or
- Withdrawing conflicting national standard(s)

Latest date of implementation : 1978-01-01

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Dimensions des terminaisons des axes de composants électroniques pour commande manuelle

Dimensions of spindle ends for manually operated electronic components

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

DIMENSIONS OF SPINDLE ENDS FOR MANUALLY OPERATED ELECTRONIC COMPONENTS

FOREWORD

1) The formal decisions or agreements of the IEC on technical matters, prepared by Technical Committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
2) They have the form of recommendations for international use and they are accepted by the National Committees in that sense.
3) In order to promote this international unification, the IEC expresses the wish that all National Committees having as yet no national rules, when preparing such rules, should use the IEC recommendations as the fundamental basis for these rules in so far as national conditions will permit.
4) The desirability is recognized of extending international agreement on these matters through an endeavour to harmonize national standardization rules with these recommendations in so far as national conditions will permit. The National Committees pledge their influence towards that end.

PREFACE

This Recommendation was prepared by Sub-Committee 48C: Switches, of IEC Technical Committee No. 48, Electromechanical Components for Electronic Equipment, in accordance with a decision taken at a meeting held in Aix-les-Bains in 1964 that Technical Committee No. 48 should prepare a Recommendation for the dimensions of spindle ends for all manually operated electronic components.

Drafts of the present Recommendation were discussed at meetings of Sub-Committee 48C in Prague in 1967 and in The Hague in 1969. As a result of this latter meeting, a draft was submitted to the National Committees for approval under the Six Months' Rule in March 1970. Amendments to this draft were submitted to the National Committees for approval under the Two Months' Procedure in April 1971.

The following countries voted explicitly in favour of publication:

Australia
Austria
Belgium
Czechoslovakia
Denmark
France
Germany
Hungary
Iran
Israel
Italy
Netherlands
Norway
Portugal
Sweden
Switzerland
Turkey
Union of Soviet Socialist Republics
United Kingdom
Yugoslavia

The present Recommendation covers components made to original metric dimensions, but a supplement is now under consideration for components made to original inch dimensions.

DIMENSIONS OF SPINDLE ENDS FOR MANUALLY OPERATED ELECTRONIC COMPONENTS

1. Introduction

Figures 1 to 9 give the recommended dimensions and tolerances of spindle ends which affect interchangeability. Mounting details are under consideration.

All dimensions include finish requirements.

2. Scope

This Recommendation is applicable to the ends of spindles for the manual operation of components including switches, potentiometers and variable capacitors, primarily intended for use in equipment for telecommunication and in electronic devices employing similar techniques.

3. Units

The inch dimensions are derived from the original millimetre dimensions.

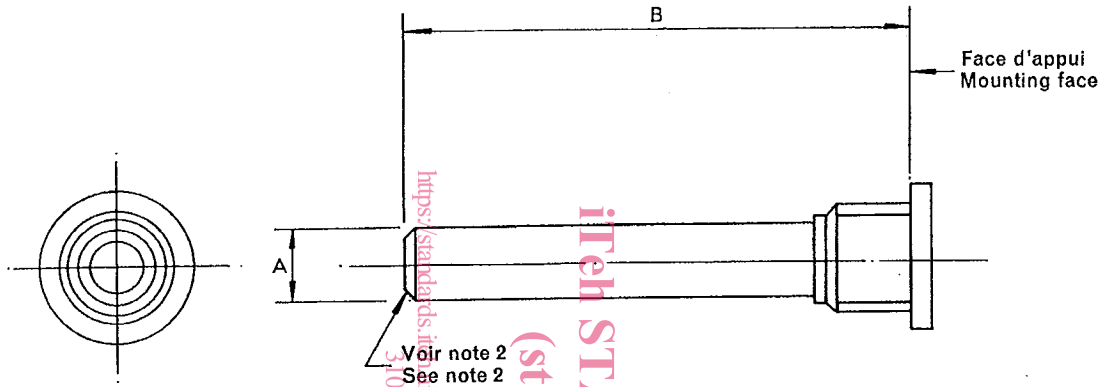

FIG. 1. — Axe cylindrique.
Plain round spindle.

(Dimensions en millimètres)
(All dimensions in millimetres)

Dimension A		Dimension B (voir note 1) (see note 1)									
Exécution courante General	Exécution de précision Precision	10 ± 0.5	12.5 ± 0.5	16 ± 0.5	20 ± 0.5	25 ± 0.5	32 ± 0.5	40 ± 1.0	50 ± 1.0	63 ± 1.0	80 ± 1.0
$2^{+0}_{-0.06}$	$2^{+0}_{-0.025}$	↑	↑	↑	↑	↑					
$3^{+0}_{-0.06}$	$3^{+0}_{-0.025}$						↑				
$4^{+0}_{-0.075}$	$4^{+0}_{-0.03}$							↑			
$6^{+0}_{-0.075}$	$6^{+0}_{-0.03}$								↑	↑	
$8^{+0}_{-0.09}$	$8^{+0}_{-0.036}$										↑
$10^{+0}_{-0.09}$	$10^{+0}_{-0.036}$	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

(Dimensions en inches)
(All dimensions in inches)

Dimension A		Dimension B (voir note 1) (see note 1)									
Exécution courante General	Exécution de précision Precision	0.394 ± 0.020	0.492 ± 0.020	0.629 ± 0.020	0.787 ± 0.020	0.984 ± 0.020	1.260 ± 0.020	1.575 ± 0.039	1.968 ± 0.039	2.480 ± 0.039	3.150 ± 0.039
$0.079 \begin{smallmatrix}+0\\-0.0024\end{smallmatrix}$	$0.079 \begin{smallmatrix}+0\\-0.001\end{smallmatrix}$	↑	↑	↑	↑	↑					
$0.118 \begin{smallmatrix}+0\\-0.0024\end{smallmatrix}$	$0.118 \begin{smallmatrix}+0\\-0.001\end{smallmatrix}$						↑				
$0.158 \begin{smallmatrix}+0\\-0.003\end{smallmatrix}$	$0.158 \begin{smallmatrix}+0\\-0.0012\end{smallmatrix}$							↑			
$0.236 \begin{smallmatrix}+0\\-0.003\end{smallmatrix}$	$0.236 \begin{smallmatrix}+0\\-0.0012\end{smallmatrix}$								↑	↑	
$0.315 \begin{smallmatrix}+0\\-0.0036\end{smallmatrix}$	$0.315 \begin{smallmatrix}+0\\-0.0014\end{smallmatrix}$										↑
$0.394 \begin{smallmatrix}+0\\-0.0036\end{smallmatrix}$	$0.394 \begin{smallmatrix}+0\\-0.0014\end{smallmatrix}$	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

Notes 1. — Si des valeurs intermédiaires sont nécessaires, elles seront choisies de préférence dans la série R.20 (millimètres). La tolérance sur la longueur peut être ± 2 mm (0,079 in) pour les potentiomètres de dissipations nominales élevées.

2. — Chanfrein à 40°/50° ou arrondi sur une hauteur comprise entre 5% et 10% de la dimension A.

Notes 1. — If intermediate values are required, they should preferably be chosen from the R.20 series (millimetres). The tolerance on the length may be ± 2 mm (0.079 in) for potentiometers with high rated dissipation.

2. — Chamfer at 40°/50° or a radius for a depth of between 5% and 10% of dimension A.

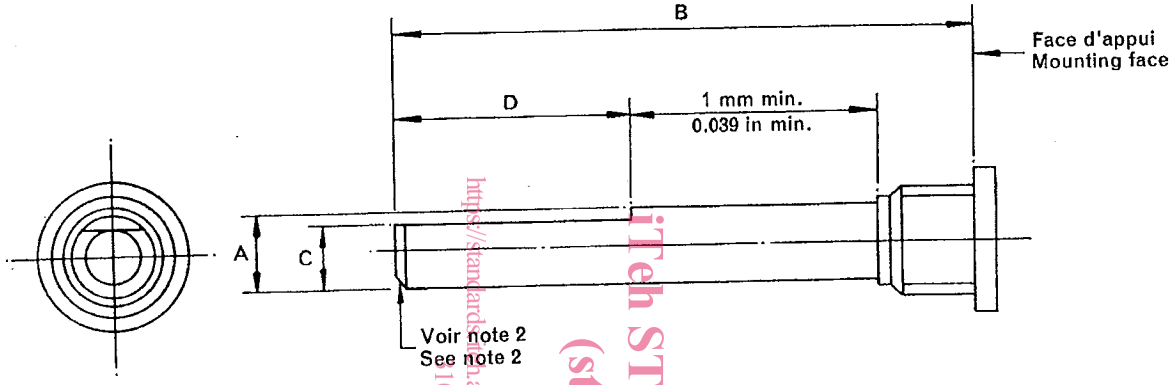

FIG. 2. — Méplat unique.
Flatted spindle.

(Dimensions en millimètres)
(All dimensions in millimetres)

Dimension A		Dimension B (voir note 1) (see note 1)										Dimension C (voir note 3) (see note 3)		Dimension D
Exécution courante General	Exécution de précision Precision	10 ± 0.5	12.5 ± 0.5	16 ± 0.5	20 ± 0.5	25 ± 0.5	32 ± 0.5	40 ± 1	50 ± 1	63 ± 1	80 ± 1	Bouton à serrage par vis Screwed knob	Bouton à autoserrage Push-on knob	
$3^{+0}_{-0.06}$	$3^{+0}_{-0.025}$	↑	↑	↑	↑	↑	↑					$2.5^{+0}_{-0.1}$	$2^{+0}_{-0.1}$	A partir de 4 mm en augmentant de 2 en 2 mm. Tolérance ± 0,5 From 4 mm in increments of 2 mm. Tolerance ± 0.5
$4^{+0}_{-0.075}$	$4^{+0}_{-0.03}$	↑	↑	↑	↑	↑	↑	↑	↑			$3.5^{+0}_{-0.1}$	$3^{+0}_{-0.1}$	
$6^{+0}_{-0.075}$	$6^{+0}_{-0.03}$		↑	↑	↑	↑	↑	↑	↑	↑		$5^{+0}_{-0.2}$	$4^{+0}_{-0.1}$	
$8^{+0}_{-0.09}$	$8^{+0}_{-0.036}$			↑	↑	↑	↑	↑	↑	↑	↑	$7^{+0}_{-0.2}$	$6^{+0}_{-0.1}$	
$10^{+0}_{-0.09}$	$10^{+0}_{-0.036}$			↑	↑	↑	↑	↑	↑	↑	↑	$9^{+0}_{-0.2}$	$7^{+0}_{-0.1}$	