

Dimensions of electronic tubes and valves —

Part 1: IEC dimensions

UDC 621.38 – 181

Cooperating organizations

The Electronic Components Standards Committee, under whose direction this British Standard was prepared, consists of representatives from the following:

- British Electrical and Allied Manufacturers' Association (BEAMA)
- Electricity Supply Industry in England and Wales
- Electronic Components Industry Federation*
- Electronic Engineering Association
- Institution of Electronic and Radio Engineers*
- Ministry of Defence*
- National Supervising Inspectorate*
- Post Office
- Society of British Aerospace Companies Limited
- Telecommunication Engineering and Manufacturing Association (TEMA)

The organizations marked with an asterisk in the above list, together with the following, were directly represented on the Technical Committee entrusted with the preparation of this British Standard:

- Scientific Instrument Manufacturers' Association
- Services Electronic Parts Committee
- United Kingdom Atomic Energy Authority

This British Standard, having been prepared under the direction of the Electronic Components Standards Committee, was published under the authority of the Executive Board and comes into effect on 30 April 1981

© BSI 05-2000

First published 1953
First revision 1981

The following BSI references relate to the work on this standard:
Committee reference ECL/5
Draft for comment 79/21173 DC

ISBN 0 580 11619 0

Amendments issued since publication

Amd. No.	Date of issue	Comments
5998	September 1992	Indicated by a sideline in the margin

Contents

	Page
Cooperating organizations	Inside front cover
National foreword	ii
Recommended practice for the preparation of drawings for inclusion in IEC Publication 67	1
1 Scope	1
2 General rules	1
3 Base drawings	2
4 Outline drawings	4
Table I	5
Table II	6
Table III	6
Inter-conversion and rounding off of inch and millimetre dimensions	7
1 Original units	7
2 Toleranced dimensions	7
3 Untoleranced dimensions	7
4 Conversion of inches into millimetres	8
Table I	8
5 Conversion of millimetres into inches	9
Table II	9
Appendix	10
1 Tables for conversion from inches into millimetres	10
2 Tables for conversion from millimetres into inches	12
Part I: Bases	13
Quick reference guide to pin numbers and pin circle diameters for various bases	14
List of drawings	16
General	18
Explanation regarding reference letters on drawings	21
Part II: Outlines	131
List of drawings	132
General	133
Explanation regarding reference letters on drawings	134
Part III: Caps	196
List of drawings	197
General	198
Part IV: Special gauges for cathode-ray tubes	208
List of drawings	209
General	210
Additions to the lists of national codes appearing on the standard sheets of Publication 67	228
National appendix A United Kingdom coded bases, coded reference line gauges for CRTs and coded caps	230

National foreword

This Part of this British Standard has been prepared under the direction of the Electronic Components Standards Committee and is identical with IEC Publication 67:1966 (2nd edition) "Dimensions of electronic tubes and valves", together with the matter given in Supplements 67A, 67B, 67C, 67D and 67E, which were issued between 1966 and 1986 by the International Electrotechnical Commission (IEC). This standard is being issued in two Parts and supersedes BS 448-1 and BS 448-2, published in 1953, both of which will be withdrawn on the publication of Part 2. Part 2 will comprise data sheets for bases, top caps and gauges for electronic tubes not already included in Part 1 and for which there is a requirement in the United Kingdom. It is the intention eventually to withdraw, or transfer to Part 1, those data sheets at present included in Part 2, which will then itself be withdrawn.

This revision of BS 448 is necessary as IEC 67 has been adopted as a harmonized document (HD 146) by CENELEC.

Terminology and conventions. The text of the International Standard has been approved as suitable for publication, without deviation, as a British Standard. Some terminology and certain conventions are not identical with those used in British Standards; attention is especially drawn to the following.

Wherever the word "publication" is used, referring to this standard, it should be read as "Part 1 of this standard".

In the table of conversion from millimetres to inches in the inter-conversion and rounding off of inch and millimetre dimensions, the comma is used as a decimal marker. In British Standards it is current practice to use a full point on the baseline as the decimal marker.

Cross-references. In Part I "Bases", the following International Standard is referred to in the text. The corresponding British Standard is as follows:

ISO R 370:1964 *Conversion of
toleranced dimensions from inches
into millimetres and vice versa*

BS 2856:1973 *Precise conversion of
inch and metric sizes on
engineering drawings*

Textual error. When the text of the International Standard was adopted as a British Standard, it was noted that in Part III Caps, there was no General clause, although it was shown in the contents list. This omission has been brought to the attention of the IEC and has been corrected in this British Standard.

Additional information. Complete pages of French text have been deleted. Pages that contain part English and part French, irrespective of the form of layout used, have been reproduced in their entirety.

A list of United Kingdom coded bases, caps and reference line gauges is attached as a national appendix to this standard. It indicates in which Part of the standard the individual bases will be found, but it is not part of IEC Publication 67.

Scope. For the purposes of this British Standard the scope is detailed in clause 1 (page 1) together with the paragraphs headed "Scope" in the "General" sections of Parts I, II, III and IV. For convenience the scope can be summarized as follows:

"This standard specifies the dimensions and necessary tolerances of electronic tube and valve bases and outlines, together with appropriate gauges, and also specifies the dimensions of valve caps. This standard also includes recommended dimensions for special gauges for cathode ray tubes, and the recommended practice for the preparation of drawings included in this standard."

Basic rules for insertion and deletion of drawings in IEC Publication 67.

- 1) Only drawings which have the support of at least two countries (the originator and one other) will be considered for insertion in IEC Publication 67.
- 2) The deletion of a drawing is prevented when one country opposes the proposal.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 231 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

Recommended practice for the preparation of drawings for inclusion in IEC publication 67

1 Scope

This text gives recommended practice for the preparation of drawings for inclusion in this Publication.

2 General rules

2.1 General layout

2.1.1 The drawing shall show all dimensions necessary to assure clearances and mating with auxiliary accessories.

2.1.2 The country of origin, code and name should be stated at the foot of each sheet.

2.1.3 When a drawing is re-issued because of modifications, the changes made should be indicated by arrows in the margin.

The date of the revised issue and of the superseded issue should be stated.

2.1.4 Drawings need not be drawn to scale, but they should be roughly in proportion and, where necessary for clarity, an enlarged detail drawing should be used.

2.1.5 Angles should be indicated as follows:

a) By quoting the value in degrees and minutes and seconds.

Where this is not practical, the value should be quoted in fractions of degrees.

b) Where it is self-evident that a number of angles are of equal value, the value of only one of those angles should be quoted.

2.1.6 The pitch circle should be shown by a dot and dashed line.

2.1.7 Fractional dimensions in inch originals should be avoided if possible.

2.2 Drawing

The drawing shall include:

2.2.1 A suitable side-view.

2.2.2 Such additional views and details as are required to show special configurations or appendages.

2.3 Dimensions

Two types of dimensions may be on the drawing, namely:

2.3.1 Dimensions with tolerances to be used where they are necessary to ensure compatibility. The number of decimals quoted for dimensions for which maximum, nominal and minimum values are given should be the same.

2.3.2 Untoleranced nominal dimensions which are given for general information or which are used in specifying true geometrical positions.

For such nominal dimensions, no specific tolerance is to be inferred.

2.4 Values of dimensions

2.4.1 Numerical dimensions shall not be shown directly on the views; they will be shown in tabular form under the view and related to reference letters on the view itself.

2.4.2 All reference letters on the drawings should be in an upright position.

2.4.3 Single maximum or single minimum dimensions should be stated in decimals to such a number of places as it is considered adequate to express the degree of accuracy appropriate to the dimension, e.g. if measurement to the nearest 0.001 in is considered appropriate, the dimension should be expressed to the third decimal place, (for example 0.005 in). If measurement to the nearest 0.01 in is sufficient, the dimension should be expressed to the second decimal place (for example 0.50 in) and so on. Similar consideration should be given to the number of decimal places necessary when an original dimension is expressed in millimetres.

2.4.4 The table will give dimensions in both inches and millimetres and the original system used shall be stated immediately above the table.

2.5 Notes shall be numbered and placed under the table of dimensions. This table shall have a “Note” column on the right-hand side and the note reference shall be placed opposite the dimension to which the note refers.

2.6 Third angle projection shall be used and this shall be stated on each drawing.

2.7 All drawings shall allow a space for the date of approval.

2.8 Inter-conversion of inch and millimetre dimensions shall be in accordance with this Publication.

3 Base drawings

3.1 Definitions

3.1.1

base drawing

a drawing which includes the dimensional characteristics of the base required for compatibility with the socket and interchangeability of the tube or valve of which it is a part

3.1.2

base diameter

the major or greater diameter of the base

3.1.3

locating guide

that portion of the base specifically designed to position the tube or valve in the socket

Examples: bayonet pin, spigot and key or keyway, index guide and similar devices.

3.1.4

datum line

a radial line used as a reference for numbering base pins or contacts

3.2 General rules for base drawings

3.2.1 Wherever the bottom view of the base is used, the pins or contacts shall be numbered according to Sub-clause **3.3**. A note should be given stating that the drawing shows the numbering of the pins as seen from their free ends.

3.2.2 Where applicable, each base drawing shall specify the maximum height of solder to be added to the over-all base dimension for finished tubes and valves.

3.2.3 Tolerances for base dimensions depend on the possible application of the base. Normally it is recommended that the dimensions are shown as follows:

3.2.3.1 Pin diameter: plus and minus tolerance.

3.2.3.2 Length of the straight portion of the pin contact: minimum dimension.

3.2.3.3 Overall pin length: maximum dimension.

3.2.3.4 Pin positions: nominal dimensions.

3.2.3.5 Shell or wafer height: nominal dimension.

3.2.3.6 Shell or wafer diameter: maximum and minimum dimensions.

3.2.4 Base dimensions without tolerance or other limitations shall be interpreted as “nominal dimensions”. Variations on such dimensions shall be consistent with current practice.

3.3 Numbering of base pins and contacts

3.3.1 Numbers shall be used to identify pins. Pin positions shall be numbered in succession in a clock-wise direction from the datum line (see Sub-clause **3.3.4**) beginning with the first pin position, the centre of which is past the datum line, as viewed from the free end of the pins. Each pin shall be identified by the number of its position.

When a contact pin is located in the centre of the base, this may either be numbered or designated as the centre pin. If numbered, it should be the highest numbered pin.

When there is a short or index pin, that pin shall not be counted in the numbering of pins.

When a base has concentric pin circles of decreasing diameters, the pin positions on the pin circles shall be numbered sequentially, continuing from the highest numbered pin position in the outer circle, always numbering in a clockwise direction along a decreasing spiral. The datum line is the reference for the outer pin circle only.

3.3.2 For tubes and valves in which the leads emerge from the base in an essentially linear array, the lead nearest the reference mark shall be numbered as No. 1. The other leads shall be numbered progressively from lead No. 1, but when a lead is omitted its position shall be included in the numbering of the other leads.

3.3.3 When tubes and valves have more than one base mounted on the same bulb section, the pin numbers will be established separately for each base.

3.3.4 Methods for locating the datum line are listed below in order of preference.

3.3.4.1 The radial line through the centre of the key, the keyway or indexing boss.

3.3.4.2 The radial line midway between the two pins most widely spaced in an otherwise equally spaced circular pin array.

3.3.4.3 The radial line midway between:

- the two large contact pins, or
- the two small contact pins.

3.3.4.4 The radial line 180° from the locating radial line through the most isolated pin.

3.3.4.5 The radial line 180° from the locating radial line through the bayonet pin.

3.3.4.6 The radial line 180° from the midway point of:

- the two most closely spaced pins, or
- the two most widely spaced pins.

Where none of the above methods can be employed exactly, the method best suited for the base should be determined and used.

When an unambiguous datum line cannot be established, such as in the case of a two pin base, and pin numbers are necessary, a reference mark may be used.

3.4 General rules for gauge drawings

3.4.1 A separate drawing of the base gauge should be provided to govern the spacing and alignment of base contacts and such other factors as may be important for compatibility between base and holder or socket except in those cases where the simplicity of the base permits direct measurement of the pins position and other compatibility features.

3.4.2 The recommended dimensions to be shown are as follows:

3.4.2.1 Pitch circle diameter: nominal dimension.

3.4.2.2 Pin hole diameter: plus and minus tolerance.

3.4.2.3 Pin hole position: positional tolerance zone of the axis around its true geometrical position with respect to the optimum centre and x-direction of the pin hole pattern.

3.4.2.4 Gauge thickness: nominal dimension.

3.4.2.5 Spigot and key hole dimensions: plus and minus tolerance. A datum slot should be drawn so that this slot lies on or near the y-axis.

3.4.2.6 Where holes are in a circular array, the angle between pin holes: nominal dimensions.

Additional information in rectangular co-ordinates may be given, it being clearly stated that the polar co-ordinates are the original dimensions.

3.4.2.7 Eccentricity of centre hole, barrier circle (and slot) with respect to the optimum centre (and y-axis) of the pin hole pattern.

3.4.2.8 Gauging procedure to be used: this should be a reference to the appropriate clause in Part I.

3.5 Reference letters for dimensions on base and gauge drawings

Reference letters on gauge drawings shall, where possible, be arranged to refer to related dimensions on the corresponding base drawings. Letter references not appearing in the drawing should be omitted from the tables. Where letters are used with numerical subscripts, the lower numbers shall be used to denote the larger dimensions; this does not apply to radii.

A	= pitch circle diameter
B	= diameter of larger pin
C	= diameter of smaller pin
D	= diameter of shell
E	= larger chord between pin centres
F	= smaller chord between pin centres
G	= spigot and key slot on gauge
H	= over-all height of shell and pin
J	= straight portion of pin
K	= height of shell
L	= length of pin
M	= width of collar on pin
N	= depth of collar on pin
P	= length of spigot
Q	= length of key
R	= radius at entry of holes
S	= depth of key
T	= thickness of gauge
U ₁ , U ₂	= diameters of spigot
V ₁ , V ₂	= widths of spigot and key
A-A'	= for a clear section reference
B-B'	= for another clear section reference
A-B	= for a discontinuous section reference
W	= width of the key
Z	= the length of a short or index pin to which no electrical connection is made
a	= small angle
b, d	= larger angles
g	= flat portion on enlarged pin contour
h	= tapered portion on enlarged pin contour

3.6 Specimen drawing layout

The sheets contained in this Publication have originated from many sources and were added at different dates and for these reasons, it should not be expected that all sheets comply with the above rules.

Sheet 67-I-15a is however a specimen drawing layout.

4 Outline drawings

4.1 Definitions

4.1.1 outline drawings

a drawing which includes the dimensional characteristics of a finished tube or valve required for interchangeability other than those included in the base drawing

4.1.2 over-all length

an over-all clearance dimension of the tube or valve including solder (Flexible leads shall not be included as part of the over-all length.)

4.1.3**bulb diameter**

the major or greater diameter of the bulb envelope. Its maximum value should include an allowance for out of round

4.1.4**total height of bulb and top (if present) or seated height**

the distance from the bottom of base shell, wafer, button, etc. to top any exposed tip, cap (with solder) or rigid terminal present, otherwise to top of bulb. (Flexible leads shall not be included as a part of the seated height)

4.1.5**dome diameter**

the diameter of the parallel-sided portion of the bulb adjacent to its top or closed end

4.1.6**base-seat to bulb-top or hold-down line**

the distance from the bottom of the base shell, wafer, button, etc. to the plane of a circle determined by a ring gauge of specified diameter at right angles to the tube or valve axis and generally concentric with it

4.2 General rules for outline drawings

4.2.1 When tube or valve terminals, such as flexible leads, rigid leads, etc. are used for electrical connections instead of bases and caps, their essential dimensions and tolerances shall be shown on the tube or valve outlines. Such flexible leads are not to be included in the over-all length dimensions of the tube or valve.

4.2.2 Base dimensions specified on base outline drawings should not normally be repeated on the tube or valve outline.

4.2.3 When the base has a diameter greater than the bulb, both the bulb and base maximum diameters shall be specified on the tube or valve outline.

4.2.4 Normally, it is recommended that the dimensions are shown as follows:

Table I

Classification	Over-all length	Seated height	Bulb diameter ^a	Dome diameter (when included)	Base-seat to hold-down line
General purpose tubes and valves					
a) Single-ended ^b (tubular bulb) (excluding miniature and subminiature)	Max.	Max.	Max.	Max.	
b) Single-ended (other than tubular bulb)	Max.	Nominal with $\pm$ tolerance	Max.	Max.	
c) Double-ended ^b (excluding miniature and subminiature)	Max.	Nominal with $\pm$ tolerance	Max.	Max.	
d) Miniature and subminiature single and double-ended	Max.	Max.	Min.	Max.	Nominal with $\pm$ tolerance
^a See Sub-clause 4.2.3					
^b Due to application requirements for electron ray indicator tubes and valves, the design seated height should be shown with maximum and minimum values.					

Table II

Classification	Over-all length	Seated height	Bulb diameter ^a	Side cap, when included
Power and transmitting tubes or valves and similar types (single and double-ended with push-in mountings)	Max.	Max.	Max.	Nominal from tube and valve axis with $\pm$ tolerance
^a See Sub-clause 4.2.3				

Table III

Classification	Over-all length	Seated height	Bulb diameter ^a	Length and width of active cathode surface	Base-seat to centre of cathode
Photo tubes	Max.	Max.	Max.	Min. (for each)	Nominal
^a See Sub-clause 4.2.3					

4.3 Reference letters for dimensions on outline drawings

A = diameter of bulb (or larger diameter)

B = smaller diameter of bulb

C = total length of bulb and leads (and top cap, if present)

D = total length of bulb (and top cap, if present)

E = length from base seat to bulb top line

F = thickness of press

G = length of leads

H = diameter of leads

J = distance between leads

4.4 Specimen drawing layout

The sheets contained in this Publication have originated from many sources and were added at different dates and for these reasons, it should not be expected that all sheets comply with the above rules.

Sheet 67-II-9a is however a specimen drawing layout.

Inter-conversion and rounding off of inch and millimetre dimensions

These methods are based on the ISO Recommendation R 370, from which the Clauses 4 and 5 and the appendix are extracted.

WARNING: When converting inch dimensions to millimetre dimensions or vice versa, attention is drawn to the fact that the first columns of Table I and Table II are headed "equal to at least".

1 Original units

The units used for the original dimensions must be known.

2 Toleranced dimensions

These may be given as a nominal value with tolerance or as maximum and minimum values.

2.1 Maximum and minimum values of toleranced dimensions

Convert and round off using Method B. For examples, see Clauses 4 and 5.

2.2 Nominal value of toleranced dimensions

Convert and round off to the same number of decimal places as used in the maximum and minimum values of the same dimension, using Method A.

3 Untoleranced dimensions

3.1 Maximum only or minimum only untoleranced dimension

Convert and round off using Method B by assuming as the original tolerance the unity of the last but one expressed order.

If the application of this rule results in incompatibility, then greater precision should be used.

Example 1

A dimension is expressed in inches as follows: 1.934 in min.

The exact conversion to millimetres gives: 49.1236 mm.

By assuming the original tolerance to be 0.01 in (i.e. the unity of the last but one expressed order) then Table I indicates a rounding off to 0.01 mm and by applying Method B (i.e. rounding off within the tolerance) 49.13 mm min. is obtained.

Example 2

A dimension is expressed in millimetres as follows: 49.9 mm max.

The exact conversion to inches gives: 1.964 566 9 in.

By assuming the original tolerance to be 1 mm (i.e. the unity of the last but one expressed order) then Table II indicates a rounding off to 0.001 in and by applying Method B (i.e. rounding off within the tolerance) 1.964 in max. is obtained.

3.2 Nominal untoleranced dimensions given for general information

Convert and round off using Method A by assuming as the original tolerance the unity of the last but one expressed order.

Example

A dimension is expressed in millimetres as follows: 101 mm.

The exact conversion to inches gives: 3.976 378 in.

By assuming the original tolerance to be 10 mm (i.e. the unity of the last but one expressed order) then Table II indicates a rounding off to 0.01 in and by applying Method A, 3.98 in is obtained.

3.3 Nominal untoleranced dimensions given to specify true geometrical positions

Convert and round off using Method A by assuming as the original tolerance the diameter of the tolerance zone around the true geometrical position.

The diameter of the tolerance zone should be converted and rounded off to the same number of decimals as the nominal untoleranced dimension given to specify true geometrical position using Method B.

Example

The exact conversion to millimetres of the distance 1.423 in from some reference to a certain point gives 36.1442 mm and there is a positional tolerance zone of 0.007 in diameter around this point.

By assuming the original tolerance to be 0.007 in (i.e. the diameter of the positional tolerance around this point) then Table I indicates rounding off to 0.001 mm and by applying Method A, 36.144 mm is obtained.

The exact conversion to millimetres of the diameter of the tolerance zone gives 0.1778 mm. Rounding off to the same number of decimals towards the interior of the tolerance results in 0.177 mm.

4 Conversion of inches into millimetres

4.1 Method A

- For each dimension in inches, consider only its two limits, maximum and minimum.
- Convert the corresponding two values into millimetres by means of the conversion factor: 1 in = 25.4 mm (see the conversion tables in the Appendix).
- Round off the results obtained in this way to the nearest rounded value as indicated in Table I below, depending on the original tolerance in inches, i.e. on the difference between the two limits in inches¹⁾.

The use of this method guarantees that, even in the most unfavourable cases, neither of the two original limits will be exceeded by more than 2 % of the value of the tolerance.

4.2 Method B

As Method A, except that the rounding off is not effected to the nearest rounded value but towards the interior of the tolerance (i.e. to the next lower value for the upper limit and to the next higher value for the lower limit).

This method should be employed only when the original limits have to be respected absolutely (in particular, when components are to be inspected by means of original gauges).

Table I

Original tolerance in inches		Round off to a whole number of
Equal to at least	Below	
in	in	mm
0.00001	0.0001	0.00001
0.0001	0.001	0.0001
0.001	0.01	0.001
0.01	0.1	0.01
0.1	1	0.1

Example: suppose that a dimension is expressed in inches as follows:

$$1.950 \pm 0.016$$

conversion of the two limits into millimetres gives:

$$49.1236 \text{ and } 49.9364.$$

As the tolerance equals 0.032 in and thus lies between 0.01 in and 0.1 in, it is necessary, employing Method A, to round these values off to the nearest 0.01 mm. The values in millimetres to be employed for these two limits are thus:

$$49.12 \text{ and } 49.94.$$

(Rounding off towards the interior of the tolerance, according to Method B, would give limits of 49.13 and 49.93 mm, i.e. a tolerance reduced to 0.80 mm instead of 0.82 mm as given by Method A.)

¹⁾ This amounts to rounding off each of the two values converted into millimetres to a whole number of 1×10^{-n} mm when the original tolerance in inches lies between 1×10^{-n} and less than 10×10^{-n} in.

5 Conversion of millimetres into inches

5.1 Method A

- For each dimension in millimetres, consider only its two limits, maximum and minimum.
- Convert the corresponding two values exactly into inches by means of the conversion factor: 1 mm = 1/25.4 in (see the conversion tables in the Appendix).
- Round off the results obtained in this way to the nearest rounded value as indicated in Table II below, depending on the original tolerance in millimetres, i.e. on the difference between the two limits in millimetres²⁾.

The use of this method guarantees, that even in the most unfavourable cases, neither of the two original limits will be exceeded by more than 2.5 % of the value of the tolerance.

5.2 Method B

As Method A, except that the rounding off is not effected to the nearest rounded value but towards the interior of the tolerance (i.e. to the next lower value for the upper limit and to the next higher value for the lower limit).

This method should be employed only when the original limits have to be respected absolutely (in particular, when components are to be inspected by means of original gauges).

Table II

Original tolerance in millimetres		Round off to a whole number of
Equal to at least	Below	
mm	mm	in
0.0003	0.005	0.000 001
0.005	0.05	0.000 01
0.05	0.5	0.0001
0.5	5	0.001
5	50	0.01

Example: suppose that a dimension is expressed in millimetres as follows:

$$49.5 \pm 0.4$$

conversion of the two limits into inches gives:

$$1.933\ 070\ 9 \text{ and } 1.964\ 566\ 9.$$

As the tolerance equals 0.8 mm, and thus lies between 0.5 mm and 5 mm, it is necessary, employing Method A, to round these values off to the nearest 0.001 in. The values in inches to be employed for these two limits are thus:

$$1.933 \text{ and } 1.965.$$

(Rounding off towards the interior of the tolerance, according to Method B, would give limits of 1.934 and 1.964 in, i.e. a tolerance reduced to 0.030 in instead of 0.032 in. as given by Method A.)

²⁾ For tolerances equal to at least 0.0005 mm, this is the same as rounding off each of the two values converted into inches, to a whole number of $1 \times 10^{-(n+2)}$ in, when the original tolerance in millimetre lies between 5×10^{-n} and less than 50×10^{-n} mm.

Appendix

1. Tables for conversion from inches into millimetres^a

1.1 Inches in fractions

in		mm	in		mm
$\frac{1}{64}$	0.015 625	0.396 875	$\frac{33}{64}$	0.515 625	13.096 875
$\frac{1}{32}$	0.031 250	0.793 750	$\frac{17}{32}$	0.531 250	13.493 750
$\frac{3}{64}$	0.046 875	1.190 625	$\frac{35}{64}$	0.546 875	13.890 625
$\frac{1}{16}$	0.062 500	1.587 500	$\frac{9}{16}$	0.562 500	14.287 500
$\frac{5}{64}$	0.078 125	1.984 375	$\frac{37}{64}$	0.578 125	14.684 375
$\frac{3}{32}$	0.093 750	2.381 250	$\frac{19}{32}$	0.593 750	15.081 250
$\frac{7}{64}$	0.109 375	2.778 125	$\frac{39}{64}$	0.609 375	15.478 125
$\frac{1}{8}$	0.125 000	3.175 000	$\frac{5}{8}$	0.625 000	15.875 000
$\frac{9}{64}$	0.140 625	3.571 875	$\frac{41}{64}$	0.640 625	16.271 875
$\frac{5}{32}$	0.156 250	3.968 750	$\frac{21}{32}$	0.656 250	16.668 750
$\frac{11}{64}$	0.171 875	4.365 625	$\frac{43}{64}$	0.671 875	17.065 625
$\frac{3}{16}$	0.187 500	4.762 500	$\frac{11}{16}$	0.687 500	17.462 500
$\frac{13}{64}$	0.203 125	5.159 375	$\frac{45}{64}$	0.703 125	17.859 375
$\frac{7}{32}$	0.218 750	5.556 250	$\frac{23}{32}$	0.718 750	18.256 250
$\frac{15}{64}$	0.234 375	5.953 125	$\frac{47}{64}$	0.734 375	18.653 125
$\frac{1}{4}$	0.250 000	6.350 000	$\frac{3}{4}$	0.750 000	19.050 000
$\frac{17}{64}$	0.265 625	6.746 875	$\frac{49}{64}$	0.765 625	19.446 875
$\frac{9}{32}$	0.281 250	7.143 750	$\frac{25}{32}$	0.781 250	19.843 750
$\frac{19}{64}$	0.296 875	7.540 625	$\frac{51}{64}$	0.796 875	20.240 625
$\frac{5}{16}$	0.312 500	7.937 500	$\frac{13}{16}$	0.812 500	20.637 500
$\frac{21}{64}$	0.328 125	8.334 375	$\frac{53}{64}$	0.828 125	21.034 375
$\frac{11}{32}$	0.343 750	8.731 250	$\frac{27}{32}$	0.843 750	21.431 250
$\frac{23}{64}$	0.359 375	9.128 125	$\frac{55}{64}$	0.859 375	21.828 125
$\frac{3}{8}$	0.375 000	9.525 000	$\frac{7}{8}$	0.875 000	22.225 000
$\frac{25}{64}$	0.390 625	9.921 875	$\frac{57}{64}$	0.890 625	22.621 875
$\frac{13}{32}$	0.406 250	10.318 750	$\frac{29}{32}$	0.906 250	23.018 750
$\frac{27}{64}$	0.421 875	10.715 625	$\frac{59}{64}$	0.921 875	23.415 625
$\frac{7}{16}$	0.437 500	11.112 500	$\frac{15}{16}$	0.937 500	23.812 500
$\frac{29}{64}$	0.453 125	11.509 375	$\frac{61}{64}$	0.953 125	24.209 375
$\frac{15}{32}$	0.468 750	11.906 250	$\frac{31}{32}$	0.968 750	24.606 250
$\frac{31}{64}$	0.484 375	12.303 125	$\frac{63}{64}$	0.984 375	25.003 125
$\frac{1}{2}$	0.500 000	12.700 000	1	1.000 000	25.400 000
^a On the basis of the conversion factor 1 in = 25.4 mm. (All the values in these tables are exact).					

1.2 Inches in decimals and inches

in	mm
0.001	0.0254
0.002	0.0508
0.003	0.0762
0.004	0.1016
0.005	0.1270
0.006	0.1524
0.007	0.1778
0.008	0.2032
0.009	0.2286

in	mm
0.01	0.254
0.02	0.508
0.03	0.762
0.04	1.016
0.05	1.270
0.06	1.524
0.07	1.778
0.08	2.032
0.09	2.286

in	mm
0.1	2.54
0.2	5.08
0.3	7.62
0.4	10.16
0.5	12.70
0.6	15.24
0.7	17.78
0.8	20.32
0.9	22.86

* On the basis of the conversion factor 1 in = 25.4 mm.
(All the values in these tables are exact).

in	mm	in	mm
1	25.4	51	1295.4
2	50.8	52	1320.8
3	76.2	53	1346.2
4	101.6	54	1371.6
5	127.0	55	1397.0
6	152.4	56	1422.4
7	177.8	57	1447.8
8	203.2	58	1473.2
9	228.6	59	1498.6
10	254.0	60	1524.0
11	279.4	61	1549.4
12	304.8	62	1574.8
13	330.2	63	1600.2
14	355.6	64	1625.6
15	381.0	65	1651.0
16	406.4	66	1676.4
17	431.8	67	1701.8
18	457.2	68	1727.2
19	482.6	69	1752.6
20	508.0	70	1778.0
21	533.4	71	1803.4
22	558.8	72	1828.8
23	584.2	73	1854.2
24	609.6	74	1879.6
25	635.0	75	1905.0
26	660.4	76	1930.4
27	685.8	77	1955.8
28	711.2	78	1981.2
29	736.6	79	2006.6
30	762.0	80	2032.0
31	787.4	81	2057.4
32	812.8	82	2082.8
33	838.2	83	2108.2
34	863.6	84	2133.6
35	889.0	85	2159.0
36	914.4	86	2184.4
37	939.8	87	2209.8
38	965.2	88	2235.2
39	990.6	89	2260.6
40	1016.0	90	2286.0
41	1041.4	91	2311.4
42	1066.8	92	2336.8
43	1092.2	93	2362.2
44	1117.6	94	2387.6
45	1143.0	95	2413.0
46	1168.4	96	2438.4
47	1193.8	97	2463.8
48	1219.2	98	2489.2
49	1244.6	99	2514.6
50	1270.0	100	2540.0

2. Tables for conversion from millimetres into inches^a

mm	in
0,001	0,000 039 4
0,002	0,000 078 7
0,003	0,000 118 1
0,004	0,000 157 5
0,005	0,000 196 9
0,006	0,000 236 2
0,007	0,000 275 6
0,008	0,000 315 0
0,009	0,000 354 3

mm	in
0,01	0,000 393 7
0,02	0,000 787 4
0,03	0,001 181 1
0,04	0,001 574 8
0,05	0,001 968 5
0,06	0,002 362 2
0,07	0,002 755 9
0,08	0,003 149 6
0,09	0,003 543 3

mm	in
0,1	0,003 937 0
0,2	0,007 874 0
0,3	0,011 811 0
0,4	0,015 748 0
0,5	0,019 685 0
0,6	0,023 622 0
0,7	0,027 559 1
0,8	0,031 496 1
0,9	0,035 433 1

mm	in	mm	in
1	0,039 370 1	51	2,007 874 0
2	0,078 740 2	52	2,047 244 1
3	0,118 110 2	53	2,086 614 2
4	0,157 480 3	54	2,125 984 2
5	0,196 850 4	55	2,165 354 3
6	0,236 220 5	56	2,204 724 4
7	0,275 590 6	57	2,244 094 5
8	0,314 960 6	58	2,283 464 6
9	0,354 330 7	59	2,322 834 6
10	0,393 700 8	60	2,362 204 7
11	0,433 070 9	61	2,401 574 8
12	0,472 440 9	62	2,440 944 9
13	0,511 811 0	63	2,480 315 0
14	0,551 181 1	64	2,519 685 0
15	0,590 551 2	65	2,559 055 1
16	0,629 921 3	66	2,598 425 2
17	0,669 291 3	67	2,637 795 3
18	0,708 661 4	68	2,677 165 4
19	0,748 031 5	69	2,716 535 4
20	0,787 401 6	70	2,755 905 5
21	0,826 771 7	71	2,795 275 6
22	0,866 141 7	72	2,834 645 7
23	0,905 511 8	73	2,874 015 7
24	0,944 881 9	74	2,913 385 8
25	0,984 252 0	75	2,952 755 9
26	1,023 622 0	76	2,992 126 0
27	1,062 992 1	77	3,031 496 1
28	1,102 362 2	78	3,070 866 1
29	1,141 732 3	79	3,110 236 2
30	1,181 102 4	80	3,149 606 3
31	1,220 472 4	81	3,188 976 4
32	1,259 842 5	82	3,228 346 5
33	1,299 212 6	83	3,267 716 5
34	1,338 582 7	84	3,307 086 6
35	1,377 952 8	85	3,346 456 7
36	1,417 322 8	86	3,385 826 8
37	1,456 692 9	87	3,425 196 8
38	1,496 063 0	88	3,464 566 9
39	1,535 433 1	89	3,503 937 0
40	1,574 803 1	90	3,543 307 1
41	1,614 173 2	91	3,582 677 2
42	1,653 543 3	92	3,622 047 2
43	1,692 913 4	93	3,661 417 3
44	1,732 283 5	94	3,700 787 4
45	1,771 653 5	95	3,740 157 5
46	1,811 023 6	96	3,779 527 6
47	1,850 393 7	97	3,818 897 6
48	1,889 763 8	98	2,858 267 7
49	1,929 133 9	99	3,897 637 8
50	1,968 503 9	100	3,937 007 9

^a On the basis of the conversion factor 1 mm = 1/25.4 in.
(The inch values in these tables are rounded to the nearest value in the 7th decimal place).

PUBLICATION 67
1^{ère} PARTIE
EMBASES ET CULOTS
Sommaire

	Page
Liste des dessins	16
Généralités	18
Explication des lettres de référence sur les dessins	21

PUBLICATION 67
PART I
BASES
Contents

	Page
List of drawings	16
General	18
Explanation of letters on drawings	21

**GUIDE DONNANT LE NOMBRE DES BROCHES ET LE DIAMÈTRE DU CERCLE
D'IMPLANTATION POUR LES DIVERS CULOTS**

**QUICK REFERENCE GUIDE TO PIN NUMBERS AND PIN CIRCLE DIAMETERS
FOR VARIOUS BASES**

Nom/Code du pays d'origine Name/Code of country of origin	Feuille No. Sheet No.		Diamètre du cercle d'implantation des broches Pitch circle diameter	
	Culot Base	Encombrement Outline	mm	in
2 broches/2 pins				
Base for Geiger-Müller counter tubes B2A	67-I-45		15.0	0.591
3 broches/3 pins				
Pee Wee 3-pin base A3-1	67-I-19a		8.74	0.344
A3-20 base	67-I-25		—	—
4 broches/4 pins				
Dwarf shell small 4-pin base A4-26	67-I-1a		16.26	0.640
Medium 4-pin base A4-9	67-I-2		16.26	0.640
Medium 4-pin base with bayonet A4-10	67-I-3		16.26	0.640
Jumbo 4-pin base A4-29	67-I-23		24.66	0.971
Super Jumbo 4-pin base with bayonet A4-18	67-I-24		25.40	1.000
Super Jumbo 4-pin base A4-81	67-I-28a		25.40	1.000
5 broches/5 pins				
Medium 5-pin base A5-11	67-I-4a		19.05	0.750
Medium shell Giant 5-pin base with bayonet A5-19	67-I-21a		31.75	1.250
B5E-base	67-I-21b		31.75	1.250
Giant 5-pin base	67-I-21c		31.75	1.250
Super Giant 5-pin base	67-I-22a		38.15	1.500
Super Giant 5-pin base with bridge	67-I-22c		38.1	1.500
Subminiature base B5B/F	67-I-29	67-II-8	2.3	0.091
7 broches/7 pins				
Small button miniature	67-I-10a	67-II-1	9.53	0.375
7-pin base E7-1		67-II-9a		
Septar 7-pin base E7-2	67-I-20a		25.40	1.000
B7 G/D	67-I-49a		9.53	0.375

Nom/Code du pays d'origine Name/Code of country of origin	Feuille No. Sheet No.		Diamètre du cercle d'implantation des broches Pitch circle diameter	
	Culot Base	Encombrement Outline	mm	in
8 broches/8 pins				
Octal base	67-I-5a	67-II-11 67-II-12	17.45	0.687
Small wafer octal bases with coaxial lead	67-I-5f		17.45	0.687
Locking-in base D8-1	67-I-7a		17.45	0.687
Continental loctal- or B-base	67-I-8a		17.5	0.689
B8G-base	67-I-9a		17.45	0.687
B8A-base	67-I-11a	67-II-3	11.5	0.453
Subminiature base E8-9	67-I-26a	67-II-6a	5.97	0.235
Subminiature base E8-10	67-I-27	67-II-7a	5.97	0.235
B8H-base	67-I-31a		15.24	0.600
E8-11 base	67-I-33a		15.24	0.600
9 broches/9 pins				
Small button noval	67-I-12a	67-II-2	11.89	0.468
9-pin base E9-1		67-II-10/10a		
Magnoval base	67-I-36a	67-II-15 up to 67-II-18	17.45	0.687
Novar base E9-75	67-I-38a	67-II-19	17.45	0.687
Novar base E9-76	67-I-39a	67-II-20 67-II-21	17.45	0.687
10 broches/10 pins				
10-pin miniature base	67-I-41a	67-II-24	11.89	0.468
11 broches/11 pins				
11-pin base	67-I-43a		17.45	0.687
12 broches/12 pins				
12 contact key base B12D	67-I-14a		approx. 66.16	approx. 2.604
Duodecal 12-pin base	67-I-17a		27.00	1.063
13 broches/13 pins				
B13B base	67-I-37a		16.66	0.656
B13D base	67-I-48		15.24	0.600
14 broches/14 pins				
Diheptal 14-pin base	67-I-16a		44.45	1.750
Base 14-20/1	67-I-47a		20.32	0.800
20 broches/20 pins				
Small shell bidecal base B20-102	67-I-42a		44.45	1.750
Nuvistor	67-I-40a	67-II-25 67-II-26		

PUBLICATION 67, 1 ^{re} PARTIE				PUBLICATION 67, PART I			
Liste des dessins				List of drawings			
Nom	Feuille	Date		Name	Sheet	Date	
Culot américain à 4 broches petit modèle	67-I-1a	Sept.	1953	Dwarf shell small 4-pin base	67-I-1a	Sept.	1953
Calibre pour le culot américain à 4 broches	67-I-1b	»		4-pin base gauge	67-I-1b	»	
Culot américain à 4 broches grand modèle	67-I-2	»		Medium 4-pin base	67-I-2	»	
Culot américain à 4 broches avec baïonnette	67-I-3	Avr.	1967	Medium 4-pin base with bayonet	67-I-3	Apr.	1967
Culot américain à 5 broches	67-I-4a	Sept.	1953	Medium 5-pin base	67-I-4a	Sept.	1953
Calibre pour le culot américain à 5 broches	67-I-4b	»		Medium 5-pin base gauge	67-I-4b	»	
Culot octal	67-I-5a	Jan.	1964	Octal base	67-I-5a	Jan.	1964
Calibre pour le culot octal	67-I-5b	Mars	1966	Octal base gauge	67-I-5b	Mar.	1966
Dimensions des chemises du culot octal	67-I-5c	Sept.	1953	Shell sizes of octal base	67-I-5c	Sept.	1953
	67-I-5d	Nov.	1956		67-I-5d	Nov.	1956
Chemises de culot octal	67-I-5e	Déc.	1961	Shells of octal base	67-I-5e	Dec.	1961
Culots octal à pastille, à sortie coaxiale	67-I-5f	Jan.	1964	Small wafer octal bases with coaxial lead	67-I-5f	Jan.	1964
Calibre pour les culots octal à pastille, à sortie coaxiale	67-I-5g	»		Gauge for octal base with coaxial lead	67-I-5g	»	
Embase américaine à 8 broches à verrouillage	67-I-7a	»		Locking-in base	67-I-7a	»	
Calibre pour l'embase américaine à 8 broches à verrouillage	67-I-7b	»		Locking-in base gauge	67-I-7b	»	
Embase continentale «loctal» ou embase B	67-I-8a	»		Continental loctal- or B-base	67-I-8a	»	
Calibre pour l'embase continentale «loctal» ou embase B	67-I-8b	»		Continental loctal- or B-base gauge	67-I-8b	»	
Embase B8G	67-I-9a	Déc.	1958	B8G base	67-I-9a	Dec.	1958
Calibre pour l'embase B8G	67-I-9b	Sept.	1953	B8G base gauge	67-I-9b	Sept.	1953
Embase miniature à 7 broches	67-I-10a	Déc.	1960	Small button miniature 7-pin base	67-I-10a	Dec.	1960
Calibre pour l'embase miniature à 7 broches	67-I-10c	Sept.	1953	Small button miniature 7-pin base gauge	67-I-10c	Sept.	1953
Embase Rimlock-Médium	67-I-11a, b	Déc.	1958	Rimlock/B8A base	67-I-11a, b	Dec.	1958
Calibre de position des broches et du bossage pour l'embase Rimlock-Médium	67-I-11c, d	Sept.	1953	Pin and boss position gauge for Rimlock/B8A base	67-I-11c, d	Sept.	1953
Embase miniature à 9 broches	67-I-12a	Déc.	1958	Small button noval 9-pin base	67-I-12a	Dec.	1958
Calibre pour l'embase miniature à 9 broches	67-I-12b	Sept.	1953	Small button noval 9-pin base gauge	67-I-12b	Sept.	1953
Culot britannique à 12 contacts à clé B12D	67-I-14a	»		B12D 12-contact key base	67-I-14a	»	
Calibre vérifiant la forme du moulage du culot britannique à 12 contacts à clé B12D	67-I-14b	»		B12D 12-contact key base: base moulding gauge	67-I-14b	»	
Calibre à bague pour le culot britannique à 12 contacts à clé B12D	67-I-14c	»		B12D 12 contact key base: contact ring gauge	67-I-14c	»	
Culot américain diheptal à 14 broches	67-I-16a	Avr.	1967	Diheptal 14-pin base	67-I-16a	Apr.	1967
Calibre pour le culot américain à 14 broches	67-I-16b	Sept.	1953	Diheptal 14-pin base pin alignment gauge	67-I-16b	Sept.	1953
Dimensions des chemises du culot américain à 14 broches	67-I-16c	»		Shell sizes of diheptal base	67-I-16c	»	
Culot américain duodécad à 12 broches	67-I-17a	Déc.	1958	Duodecal 12-pin base	67-I-17a	Dec.	1958
Calibre pour le culot duodécad	67-I-17b	Mars	1966	Duodecal 12-pin base gauge	67-I-17b	Mar.	1966
Coquilles pour le culot duodécad	67-I-17c	Déc.	1958	Shell sizes of duodecal base	67-I-17c	Dec.	1958
Culot Pee Wee à 3 broches	67-I-19a	Avr.	1967	Pee Wee 3-pin base	67-I-19a	Apr.	1967
Calibre pour le culot Pee Wee à 3 broches	67-I-19b	Déc.	1958	Pee Wee 3-pin base gauge	67-I-19b	Dec.	1958

Liste des dessins (suite)				List of drawings (cont.)			
Nom	Feuille	Date		Name	Sheet	Date	
Embase américaine septar à 7 broches	67-I-20a, b	Jan.	1964	Septar 7-pin base	67-I-20a, b	Jan.	1964
Calibre pour l'embase américaine septar à 7 broches	67-I-20c	»		Septar 7-pin base gauge	67-I-20c	»	
Calibre de position du manchon pour l'embase septar	67-I-20d	»		B7A base pin No. 4 sleeve position gauge	67-I-20d	»	
Culot américain géant à 5 broches avec baïonnette	67-I-21a	Avr.	1967	Medium shell Giant 5-pin base with bayonet	67-I-21a	Apr.	1967
Culot 5B31	67-I-21b	Déc.	1958	B5E base	67-I-21b	Déc.	1958
Embase géante à 5 broches	67-I-21c	Sept.	1970	Giant 5-pin base	67-I-21c	Sept.	1970
Calibre pour embase géante à 5 broches	67-I-21d	»		Giant 5-pin base gauge	67-I-21d	»	
Embase supergéante à 5 broches	67-I-22a	Déc.	1960	Super Giant 5-pin base	67-I-22a	Déc.	1967
Calibre pour embase supergéante à 5 broches	67-I-22b	Nov.	1954	Super Giant 5-pin base gauge	67-I-22b	Nov.	1954
Embase supergéante à 5 broches avec pont de verre	67-I-22c	Déc.	1960	Super Giant 5-pin base with bridge	67-I-22c	Déc.	1960
Culot Jumbo à 4 broches	67-I-23	Avr.	1967	Jumbo 4-pin base	67-I-23	Apr.	1967
Culot super-Jumbo à 4 broches avec baïonnette	67-I-24	»		Super Jumbo 4-pin with bayonet	67-I-24	»	
Culot américain A3-20	67-I-25	Nov.	1954	A3-20 base	67-I-25	Nov.	1954
Embase subminiature 8B6	67-I-26a	Sept.	1955	Subminiature base E8-9	67-I-26a	Sept.	1955
Calibre pour embase subminiature 8B6	67-I-26b	»		Gauge for subminiature base E8-9	67-I-26b	»	
Embase subminiature 8A6	67-I-27	»		Subminiature base E8-10	67-I-27	»	
Culot super-Jumbo à 4 broches	67-I-28a	»		Super Jumbo 4-pin base	67-I-28a	»	
Calibre pour le culot super-Jumbo à 4 broches	67-I-28b	»		Super Jumbo 4-pin base gauge	67-I-28b	»	
Embase subminiature B5B/F	67-I-29	»		Subminiature base B5B/F	67-I-29	»	
Culots 8C15-A et B	67-I-31a	Déc.	1961	B8H base	67-I-31a	Déc.	1961
Culots 8C15-A et B	67-I-31b	»		B8H base	67-I-31b	»	
Calibre pour culots 8C15	67-I-31c	Mars	1966	B8H pin and spigot position gauge	67-I-31c	Mar.	1966
Embase 9C15	67-I-33a	Avr.	1967	E8-11 base	67-I-33a	Apr.	1967
Calibre pour l'embase 9C15	67-I-33b	Jan.	1964	Gauge for base E8-11	67-I-33b	Jan.	1964
Embase magnoval	67-I-36a	Mars.	1966	B9D base	67-I-36a	Mar.	1966
Calibres pour embase magnoval	67-I-36b, c	»		B9D base gauges	67-I-36b, c	»	
Embase à 13 broches	67-I-37a	»		B13B base	67-I-37a	»	
Calibre pour embase à 13 broches	67-I-37b	»		B13B base gauge	67-I-37b	»	
Embase novar	67-I-38a	»		B9E base	67-I-38a	»	
Calibre pour embase novar 9D18-1	67-I-38b	»		B9E base gauge	67-I-38b	»	
Embase novar	67-I-39a	»		B9E base	67-I-39a	»	
Calibre pour embase novar 9D18-2	67-I-39b	»		B9E base gauge	67-I-39b	»	
Embase de nuvistor	67-I-40a	»		Nuvistor base	67-I-40a	»	
Calibre d'embase de nuvistor	67-I-40b, c	»		Nuvistor base gauge	67-I-40b, c	»	
Embase décal	67-I-41a	Mars	1966	B10B base	67-I-41a	Mar.	1966
Calibre pour embase décal	67-I-41b	»		B10B base gauge	67-I-41b	»	
Embase bidécal à petite coquille	67-I-42a	Avr.	1967	Small-shell-bidecal base	67-I-42a	Apr.	1967
Calibre pour l'embase bidécal	67-I-42b	»		Gauge for small-shell-bidecal base	67-I-42b	»	
Embase à 11 broches	67-I-43a	»		11-pin base	67-I-43a	»	
Calibre pour l'embase à 11 broches	67-I-43b	»		Gauge tot 11-pin base	67-I-43b	»	
Embase à 2 broches pour tubes compteurs Geiger-Müller	67-I-45	»		2-pin base for Geiger-Müller counter tubes	67-I-45	»	
Embase en verre à 14 broches	67-I-46a	Sept.	1968	14-pin all-glass base	67-I-46a	Sept.	1968
Calibre pour embase à 14 broches	67-I-46b	»		Gauge for 14-pin all-glass base	67-I-46b	»	
Calibre pour embase à 14 broches	67-I-46c	»		Gauge for 14-pin all-glass base	67-I-46c	»	
Embase 14C20	67-I-47a	Avr.	1970	14-pin base	67-I-47a	Apr.	1970
Calibre pour embase 14C20	67-I-47b	»		14-pin base gauge	67-I-47b	»	
Embase à 13 broches	67-I-48	Mars	1977	13-pin base	67-I-48	Mar.	1977
Embase B7 G/D	67-I-49a	Oct.	1981	B7 G/D base	67-I-49a	Oct.	1981
Calibre pour l'embase B7 G/D	67-I-49b	»		B7 G/D base gauge	67-I-49b	»	

GÉNÉRALITÉS

Domaine d'application

Le présent document normalise les dimensions des culots et embases des tubes électroniques ainsi que leurs calibres, avec les tolérances nécessaires.

Objectif

L'objectif de la normalisation internationale est d'obtenir que les dimensions des culots et embases garantissant l'interchangeabilité des tubes soient les mêmes dans tous les pays.

Dimensions

Les dimensions des culots ou embases qui sont nécessaires pour assurer la compatibilité entre le tube électronique et son support s'appliquent aux tubes terminés, sauf spécification contraire.

Calibres et procédés de calibrage

Chaque fois que ce sera spécifié sur le dessin d'une embase ou d'un culot, des calibres normalisés seront utilisés pour vérifier l'emplacement et l'alignement des contacts et tous autres facteurs qui peuvent être importants pour la compatibilité entre le culot du tube électronique et son support. Ces calibres normalisés sont prévus pour des embases faisant partie intégrante du tube ou pour des culots séparés avant leur montage sur le tube. Ils peuvent également être employés avec des culots déjà assemblés sur les tubes à condition que toute trace de soudure soit retirée des génératrices de la broche. (Pour le contrôle du diamètre de la broche sans enlèvement de la soudure, voir « diamètre des broches des culots assemblés ».)

Quand l'embase fait partie intégrante du tube, le calibrage doit être exécuté sans modification des broches ou des fils (telle qu'enlèvement de la soudure).

Calibres

Les calibres normalisés d'alignement des broches de culots ou d'embases doivent être conformes aux dessins contenus dans ces normes.

GENERAL

Scope

This publication gives standards for the dimensions with the necessary tolerances of electronic tube and valve bases and the gauges for these articles.

Object

The object of international standardization of electronic tube and valve bases is to ensure that those dimensions essential for compatibility shall be the same in all countries.

Dimensions

The dimensions of the electronic tube and valve bases being of importance to ensure compatibility between base and socket apply to the finished tubes or valves, except where otherwise stated.

Gauges and gauging procedure

Standard alignment gauges shall be used, when specified on individual base drawings, to govern the spacing and alignment of base contacts and such other factors as may be important to the compatibility between base and socket. Standard alignment gauges are intended to be used for integral type bases and for attachable bases before assembly on electronic tubes and valves; they may also be used for attachable bases assembled on electronic tubes and valves, provided all solder is removed from the sides of the contact pins (for checking pin diameter without removing the solder see under heading "Pin diameters on attachable bases").

Where the base is an integral part of electronic tubes and valves, gauging shall be performed without any alteration to the pins or leads (such as removal of solder).

Gauges

Standard base pin alignment gauges shall conform to the drawings contained in this standard.

1. *Dimensions et tolérances*

Les dimensions spécifiées pour ces pièces ne définissent pas les tolérances de fabrication, mais les limites qui ne doivent pas être dépassées au cours de la vie du calibre.

Les dimensions indiquées sur les dessins des calibres incluent les tolérances de fabrication et d'usure.

2. *Construction*

Les dessins de ces pièces indiquent en général seulement les parties essentielles des calibres. Les autres détails de construction doivent être conformes à la pratique d'usage pour ces types de calibre, entre autres:

- a) on pourra remplacer les trous simples par des canons de passage en acier trempé à condition qu'ils soient bien fixés et qu'ils n'affaiblissent pas le calibre.
- b) Les surfaces des calibres doivent être convenablement finies en rapport avec la classe de tolérance indiquée; elles doivent être au moins rectifiées.
- c) A moins d'indications contraires les angles aigus seront éliminés; un rayon ou un chanfrein de 0,12 mm. (0.005 in) est acceptable.

Procédés de calibrage

Le poids total, lorsqu'il est indiqué sur un dessin de calibre correspond au poids total du calibre et de son poids additionnel. Le procédé de calibrage indiqué sur chaque dessin pour l'emploi du calibre se réfère à l'une des deux méthodes ci-dessous.

Procédé de calibrage normalisé No. 1.

La totalité de la longueur des broches doit s'introduire dans le calibre prescrit et s'en dégager, sans effort anormal dans les deux cas.

Procédé de calibrage normalisé No. 2.

Le calibre doit être fixé sur un poids additionnel de façon à obtenir le poids total prescrit sur le dessin du calibre. La totalité de la longueur des broches doit s'introduire dans le calibre et, en sens inverse, doit s'en dégager sans soulever le poids total de l'ensemble composé du calibre et de son poids additionnel.

1. *Dimensions and Tolerances*

The dimensions specified for these items do not define manufacturing tolerances but are limiting dimensions which should not be exceeded throughout the working life of the gauge.

The dimensions and tolerances given on the gauge drawings include manufacturing and wear figures.

2. *Construction*

The relevant drawings show, in general, only the essential features of the gauges. The detailed construction should follow normal gauging practice, e.g.

- a) Hardened bushes may be used where plain holes are shown, provided that they are secure and the gauge is not unduly weakened.
- b) Gauge surfaces shall be suitably finished for the class of tolerance indicated and should have a ground finish or better.
- c) Unless otherwise stated the sharp edges shall be removed. A maximum radius or chamfer of 0.005 in (0.12 mm) is acceptable.

Gauging procedure

The total weight where given on a gauge drawing is the required total weight of gauge and accessory. The procedure indicated on each gauge drawing refers to the procedure shown below.

Standard gauging procedure No. 1.

The entire length of the pins shall, without undue force, pass into and disengage from the prescribed gauge.

Standard gauging procedure No. 2.

The gauge shall be attached to such additional weight as will give the total weight prescribed on the gauge drawing.

The entire length of the pins shall pass into the gauge and, on withdrawal, shall become disengaged without lifting the total weight of the assembled gauge and accessory weight.

Au cas d'un désaccord provoqué par des différences entre des calibres, l'article sera accepté s'il passe dans un calibre réalisé conformément aux tolérances définies dans le système original de mesure, le procédé de calibrage étant, en outre, exécuté à une température de $20^{\circ} \pm 5^{\circ} \text{ C}$ et à un pourcentage relatif d'humidité de 75 %.

Diamètre des broches des culots assemblés

Les broches des tubes électroniques comportant des culots assemblés, auront dans les « conditions de réception » les diamètres maxima indiqués ci-dessous dépendant de la valeur nominale du diamètre de broche mentionné sur la feuille correspondante:

In any case of disagreement arising due to differences between gauges the article shall be accepted if it passes any gauge which is made within the tolerances defined in the original system of measures, the gauging procedure being carried out at $20^{\circ} \pm 5^{\circ} \text{ C}$ and at maximum relative humidity of 75 %.

Pin diameters on attachable bases

Pins on electronic tubes and valves with attachable bases will, in the "as received condition", have maximum diameters as mentioned below depending on the nominal value of the diameter as given on the appropriate sheets:

Diamètre de la broche — Pin diameter			
Valeur nominale Nominal value		Valeur maximum dans les « Conditions de réception » Maximum value in the "as received condition"	
<i>inches</i>	<i>millimetres</i>	<i>inches</i>	<i>millimetres</i>
0.093	2.362	0.100	2.540
0.125	3.175	0.132	3.352
0.156	3.962	0.163	4.140
0.187	4.750	0.195	4.953

Dans ce tableau, les dimensions en millimètres sont déduites des dimensions originales en pouces.

Pour les broches d'un diamètre nominal de 0.093 in (2,362 mm), on peut utiliser un calibre de broche avec un trou cylindrique d'un diamètre minimum de 0.1000 in (2,5400 mm) et maximum de 0.1005 in (2,5527 mm.)

In the table the millimetre dimensions are derived from the original inch dimensions.

For pins with a nominal diameter of 0.093 in (2.362 mm) a pin gauge may be used with a cylindrical hole with a diameter of min. 0.1000 in (2.5400 mm) and max. 0.1005 in (2.5527 mm).

EXPLICATION DES LETTRES DE RÉFÉRENCE SUR LES DESSINS

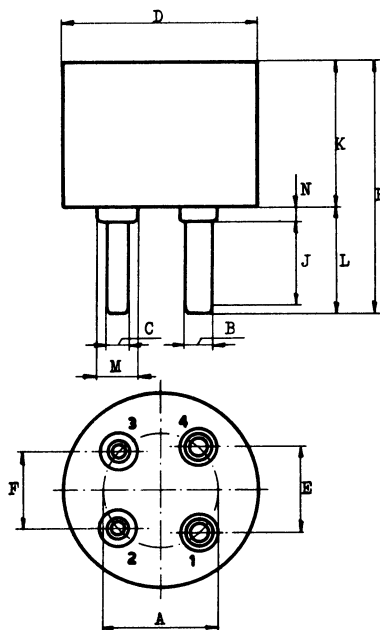
Des lettres de référence ont été portées dans la mesure du possible sur les dessins pour renvoyer aux dimensions correspondantes des culots/embases et calibres en accord avec le système suivant.

A	=	diamètre du cercle des broches
B	=	diamètre de la grosse broche
C	=	diamètre de la broche fine (éventuellement)
D	=	diamètre du culot (éventuellement)
E	=	grande corde entre les centres des broches
F	=	petite corde entre les centres des broches (éventuellement)
G	=	clé et rainure d'ergot sur le calibre
H	=	hauteur totale du culot et de la broche
J	=	longueur de la partie droite de la broche
K	=	hauteur du culot
L	=	longueur de la broche
M	=	largeur du collet sur la broche (éventuellement)
N	=	profondeur du collet sur la broche (éventuellement)
P	=	longueur de la clé (éventuellement)
Q	=	longueur de l'ergot (éventuellement)
R	=	rayon du congé
S	=	profondeur de l'ergot (éventuellement)
T	=	épaisseur du calibre
U ₁ , U ₂	=	diamètres de la clé (éventuellement)
V ₁ , V ₂	=	largeur de la clé plus l'ergot (éventuellement)
X — Y	=	axe de coupe
a	=	petit angle
b, d	=	grands angles (éventuellement)

EXPLANATION REGARDING REFERENCE LETTERS ON DRAWINGS

Reference letters on drawings have where possible been arranged to refer to related dimensions on the bases and their gauges in accordance with the following system.

A	=	pitch circle diameter
B	=	diameter of larger pin
C	=	diameter of smaller pin (if present)
D	=	diameter of shell (if present)
E	=	larger chord between pin centres
F	=	smaller chord between pin centres (if present)
G	=	spigot and key slot on gauge
H	=	overall height of shell and pin
J	=	straight portion of pin
K	=	height of shell
L	=	length of pin
M	=	width of collar on pin (if present)
N	=	depth of collar on pin (if present)
P	=	length of spigot (if present)
Q	=	length of key (if present)
R	=	radius at entry of holes
S	=	depth of key (if present)
T	=	thickness of gauge
U ₁ , U ₂	=	diameters of spigot (if present)
V ₁ , V ₂	=	width of spigot and key (if present)
X — Y	=	section reference
a	=	small angle
b, d	=	larger angles (if present)



Les dimensions en millimètres sont déduites des dimensions originales en inches.

The millimetre dimensions are derived from the original inch dimensions.

ref.	inches			millimetres			notes
	min.	nom.	max.	min.	nom.	max.	
A	—	0.640	—	—	16.26	—	—
B	0.153	0.156	0.159	3.887	3.962	4.038	—
C	0.122	0.125	0.128	3.099	3.175	3.251	—
D	1.037	—	1.072	26.34	—	27.22	—
E	—	0.468	—	—	11.89	—	—
F	—	0.437	—	—	11.10	—	—
H	—	1.436	—	—	36.47	—	—
J	0.450	—	—	11.43	—	—	—
K	—	0.843	—	—	21.41	—	—
L	—	—	0.596	—	—	15.13	1.
M	—	—	0.195	—	—	4.95	—
N	—	—	0.065	—	—	1.65	—

1. Dans le cas du tube fini, ajouter 0.030" (0,762 mm) pour la soudure.

1. On finished article add 0.030" (0.762 mm) for solder.

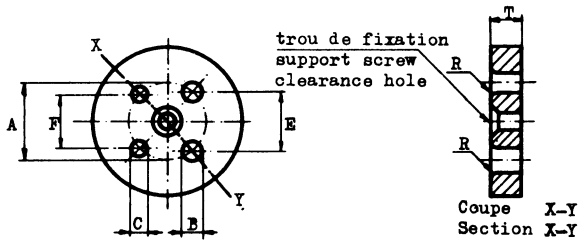
Pour vérifier l'alignement des broches utiliser le calibre de la feuille 19b.

For pin alignment use the gauge as shown on sheet 19b.

Les dimensions en inches indiquées sur cette feuille correspondent au RTMA-Standard ET-103-C d'avril 1953 pour le culot A4-26.

The inch dimensions as given on this sheet are in accordance with RTMA-Standard ET-103-C of April 1953 for base A4-26.

Pays/Country	Code	Nom/Name	Mode de projection: troisième angle Third angle projection
Origin. ETATS UNIS/U.S.A.	A4-26	DWARF SHELL SMALL 4-PIN BASE	
France/France	—	Culot américain à 4 broches petit modèle	
			Date: Septembre September 1953
67-I-1a			



Les dimensions en millimètres sont déduites des dimensions originales en inches.

The millimetre dimensions are derived from the original inch dimensions.

ref.	inches			millimetres		
	min.	nom.	max.	min.	nom.	max.
A	0.6395	0.6400	0.6405	16.244	16.256	16.268
B	0.1645	0.1650	0.1655	4.179	4.191	4.203
C	0 1335	0.1340	0.1345	3.391	3.404	3.416
E	0.4675	0.4680	0.4685	11.875	11.887	11.899
F	0.4365	0.4370	0.4375	11.088	11.100	11.112
R	—	0.005r	—	—	0.13r	—
T	—	0.25	—	—	6.4	—

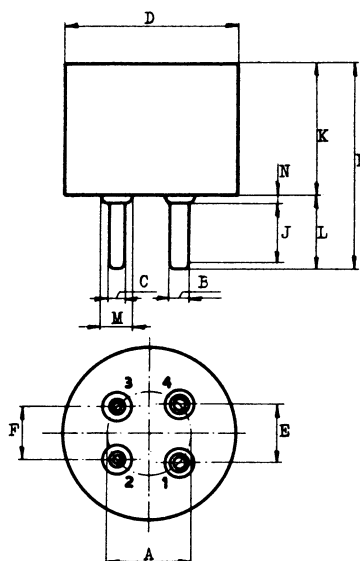
Les tolérances sur les dimensions des cordes entre centres des trous ne sont pas additives.
Employer le procédé de calibrage No 2; poids total 1,814 kg.

Tolerances on chord dimensions between pin holes not cumulative.
Use gauging procedure 2; total weight 4 lbs.

Les dimensions en inches indiquées sur cette feuille correspondent au RTMA-Standard ET-106-B de mars 1953 pour le calibre GA4-1

The inch dimensions as given on this sheet are in accordance with RTMA-Standard ET-106-B of March 1953 for gauge GA4-1.

Pays/Country	Code	Nom/Name	Mode de projection: troisième angle Third angle projection
Origin. ETATS UNIS/U.S.A.	GA4-1	4-PIN BASE GAUGE	
France/France	4C17	Calibre pour le culot américain à 4 broches	Date: Septembre 1953 September
67-I-1b			



Les dimensions en millimètres sont déduites des dimensions originales en inches.

The millimetre dimensions are derived from the original inch dimensions.

ref.	inches			millimetres			notes
	min.	nom.	max.	min.	nom.	max.	
A	—	0.640	—	—	16.26	—	—
B	0.153	0.156	0.159	3.887	3.962	4.038	—
C	0.122	0.125	0.128	3.099	3.175	3.251	—
D	1.337	—	1.377	33.96	—	34.97	—
E	—	0.468	—	—	11.89	—	—
F	—	0.437	—	—	11.10	—	—
H	—	1.680	—	—	42.67	—	—
J	0.450	—	—	11.43	—	—	—
K	—	1.087	—	—	27.61	—	—
L	—	—	0.596	—	—	15.13	1.
M	—	—	0.195	—	—	4.95	—
N	—	—	0.065	—	—	1.65	—

1. Dans le cas du tube fini, ajouter 0.030" (0,762 mm) pour la soudure.

Pour vérifier l'alignement des broches utiliser le calibre de la feuille 1b.

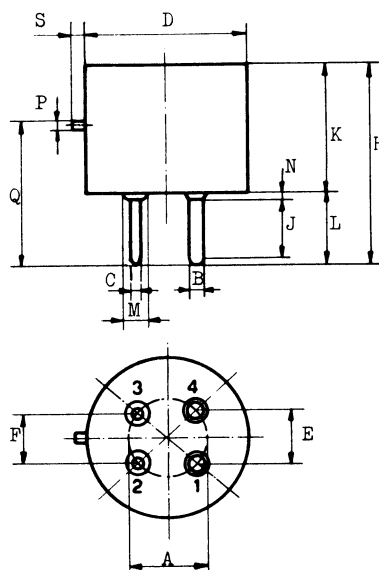
1. On finished article add 0.030" (0.762 mm) for solder.

For pin alignment use the gauge as shown on sheet 1b.

Les dimensions en inches indiquées sur cette feuille correspondent au RTMA-Standard ET-103-C d'avril 1953 pour le culot A4-9.

The inch dimensions as given on this sheet are in accordance with RTMA-Standard ET-103-C of April 1953 for base A4-9.

Pays/Country	Code	Nom/Name	Mode de projection: troisième angle Third angle projection
Origin. ETATS UNIS/U.S.A.	A4-9	MEDIUM 4-PIN BASE	
France/France	4C17	Culot américain à 4 broches grand modèle	
			Date: Septembre 1953 September
67-I-2			



Les dimensions en millimètres sont déduites
des dimensions originales en inches.

The millimetre dimensions are derived
from the original inch dimensions.

ref.	inches			millimetres			notes
	min.	nom.	max.	min.	nom.	max.	
A	—	0.640	—	—	16.26	—	—
B	0.153	0.156	0.159	3.887	3.962	4.038	—
C	0.122	0.125	0.128	3.099	3.175	3.251	—
D	1.337	—	1.377	33.96	—	34.97	—
E	—	0.468	—	—	11.89	—	—
F	—	0.437	—	—	11.10	—	—
H	—	1.680	—	—	42.67	—	—
J	0.450	—	—	11.43	—	—	—
K	—	1.087	—	—	27.61	—	—
L	—	—	0.596	—	—	15.13	1.
M	—	—	0.195	—	—	4.95	—
N	—	—	0.065	—	—	1.65	—
P	—	—	0.082	—	—	2.08	—
Q	1.210	1.230	1.250	30.74	31.24	31.75	1.
S	0.062	0.070	0.078	1.58	1.78	1.98	—

1. Dans le cas du tube fini, ajouter 0.030" (0.762 mm)
pour la soudure.

1. On finished article add 0.030" (0.762 mm) for solder.

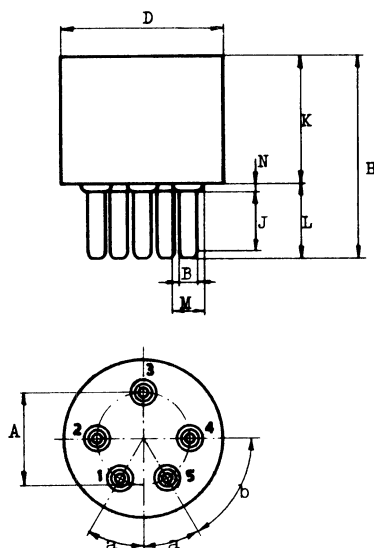
Pour vérifier l'alignement des broches, utiliser le
calibre de la feuille 1b.

For pin alignment use the gauge as shown on sheet 1b.

Les dimensions en inches indiquées sur cette feuille correspondent
au RETMA-Standard ET-103-D de mars 1955 pour le culot A4-10.

The inch dimensions as given on this sheet are in accordance
with RETMA-Standard ET-103-D of March 1955 for base
A4-10.

Pays/Country	Code	Nom/Name	Mode de projection: troisième angle Third angle projection
Origin. ETATS UNIS/U.S.A.	A4-10	MEDIUM 4-PIN BASE WITH BAYONET	
France/France	4C17B	Culot américain à 4 broches avec baïonnette	
			Date: Décembre 1958 December
67-I-3			



Les dimensions en millimètres sont déduites des dimensions originales en inches.

The millimetre dimensions are derived from the original inch dimensions.

ref.	inches			millimetres			degrés degrees	notes
	min.	nom.	max.	min.	nom.	max.		
A	—	0.750	—	—	19.05	—	—	—
B	0.122	0.125	0.128	3.099	3.175	3.251	—	—
D	1.337	—	1.377	33.96	—	34.97	—	—
H	—	1.680	—	—	42.67	—	—	—
J	0.450	—	—	11.43	—	—	—	—
K	—	1.087	—	—	27.61	—	—	—
L	—	—	0.596	—	—	15.13	—	1.
M	—	—	0.195	—	—	4.95	—	—
N	—	—	0.065	—	—	1.65	—	—
a	—	—	—	—	—	—	30°	—
b	—	—	—	—	—	—	60°	—

1. Dans le cas du tube fini, ajouter 0.030" (0,762 mm) pour la soudure.

1. On finished article add 0.030" (0.762 mm) for solder.

Pour vérifier l'alignement des broches utiliser le calibre de la feuille 4b.

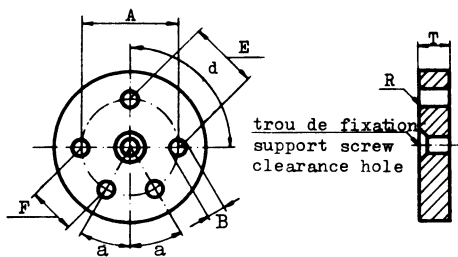
For pin alignment use the gauge as shown on sheet 4b.

Les dimensions en inches indiquées sur cette feuille correspondent au RTMA-Standard ET-103-C d'avril 1953 pour le culot A5-11.

The inch dimensions as given on this sheet are in accordance with RTMA-Standard ET-103-C of April 1953 for base A5-11.

Pays/Country	Code	Nom/Name	Mode de projection: troisième angle Third angle projection
Origin. ETATS UNIS/U.S.A.	A5-11	MEDIUM 5-PIN BASE	
France/France	5C20	Culot américain à 5 broches	Date: Septembre 1953 September

67-I-4a



Les dimensions en millimètres sont déduites des dimensions originales en inches. The millimetre dimensions are derived from the original inch dimensions.

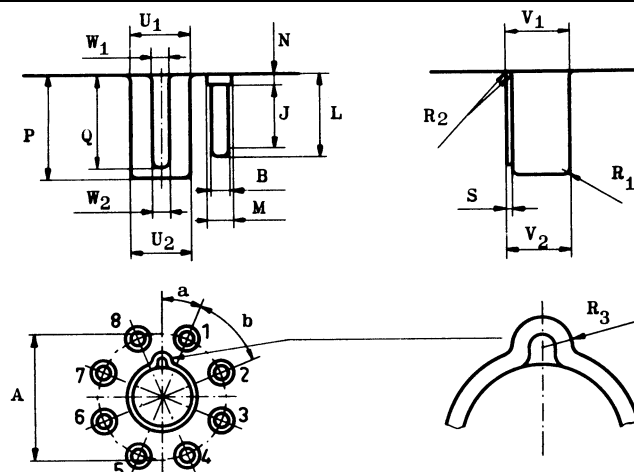
ref.	inches			millimetres			degrés degrees
	min.	nom.	max.	min.	nom.	max.	
A	0.7495	0.7500	0.7505	19.038	19.050	19.062	—
B	0.1355	0.1360	0.1365	3.442	3.454	3.467	—
E	0.5295	0.5300	0.5305	13.457	13.470	13.482	—
F	0.3745	0.3750	0.3755	9.513	9.525	9.537	—
R	—	0.005r	—	—	0.13r	—	—
T	—	0.25	—	—	6.4	—	—
a	—	—	—	—	—	—	30°
d	—	—	—	—	—	—	90°

Les tolérances sur les dimensions des cordes entre centres des trous ne sont pas additives. Tolerances on chord dimensions between pin holes not cumulative.

Employer de procédé le calibrage No 2; poids total 1,814 kg. Use gauging procedure 2; total weight 4 lbs.

Les dimensions en inches indiquées sur cette feuille correspondent au RTMA-Standard ET-106-B de mars 1953 pour le calibre GA5-1. The inch dimensions as given on this sheet are in accordance with RTMA-Standard ET-106-B of March 1953 for gauge GA5-1.

Pays/Country	Code	Nom/Name	Mode de projection: troisième angle Third angle projection
Origin. ETATS UNIS/U.S.A.	GA5-1	MEDIUM 5-PIN BASE GAUGE	
France/France	5C20	Calibre pour le Culot américain à 5 broches	
			Date: Septembre 1953 September
67-I-4b			



Les dimensions en millimètres sont déduites des dimensions originales en inches.

The millimetre dimensions are derived from British the original inch dimensions.

originales en inches.

the original inch dimensions.

Version américaine American version									Version britannique British version																																				
ref.	inches			millimetres			degrés degrees	notes	inches		millimetres		notes	ref.																															
	min.	nom.	max.	min.	nom.	max.			min.	max.	min.	max.																																	
A	—	0.687	—	—	17.45	—	—	—	Dimensions identiques à celles du tableau de gauche.						A																														
B	0.090	0.093	0.096	2.286	2.362	2.438	—	—							B																														
J	0.320	—	—	8.13	—	—	—	—							J																														
L	0.427	0.437	0.447	10.85	11.10	11.35	—	1.							L																														
M	—	—	0.135	—	—	3.42	—	—							M																														
N	—	—	0.050	—	—	1.27	—	—	Dimensions identical with table on the left.						N																														
P	0.550	0.560	0.570	13.97	14.22	14.47	—	—							P																														
Q	0.490	0.500	0.510	12.45	12.70	12.95	—	—							Q																														
R ₁	—	0.031r	—	—	0.79r	—	—	—							R ₁																														
R ₂	—	—	0.050r	—	—	1.27r	—	—							R ₂																														
R ₃	—	0.040r	—	—	1.02r	—	—	—	<table><tr><td>0.300</td><td>0.317</td><td>7.62</td><td>8.05</td><td>2.</td></tr><tr><td>0.300</td><td>0.317</td><td>7.62</td><td>8.05</td><td>2.</td></tr><tr><td>0.343</td><td>0.372</td><td>8.72</td><td>9.44</td><td>2.</td></tr><tr><td>0.343</td><td>0.372</td><td>8.72</td><td>9.44</td><td>2.</td></tr><tr><td>0.075</td><td>0.095</td><td>1.91</td><td>2.41</td><td>2.</td></tr><tr><td>0.075</td><td>0.095</td><td>1.91</td><td>2.41</td><td>2.</td></tr></table>						0.300	0.317	7.62	8.05	2.	0.300	0.317	7.62	8.05	2.	0.343	0.372	8.72	9.44	2.	0.343	0.372	8.72	9.44	2.	0.075	0.095	1.91	2.41	2.	0.075	0.095	1.91	2.41	2.	R ₃
0.300	0.317	7.62	8.05	2.																																									
0.300	0.317	7.62	8.05	2.																																									
0.343	0.372	8.72	9.44	2.																																									
0.343	0.372	8.72	9.44	2.																																									
0.075	0.095	1.91	2.41	2.																																									
0.075	0.095	1.91	2.41	2.																																									
S	0.040	0.047	0.055	1.02	1.19	1.39	—	—	S																																				
U ₁	0.305	0.312	0.317	7.75	7.92	8.05	—	—	0.300	0.317	7.62	8.05	2.	U ₁																															
U ₂	0.300	0.308	0.315	7.62	7.82	8.00	—	—	0.300	0.317	7.62	8.05	2.	U ₂																															
V ₁	0.352	0.362	0.372	8.95	9.19	9.44	—	—	0.343	0.372	8.72	9.44	2.	V ₁																															
V ₂	0.343	0.353	0.363	8.72	8.97	9.22	—	—	0.343	0.372	8.72	9.44	2.	V ₂																															
W ₁	0.085	0.090	0.095	2.16	2.29	2.41	—	—	0.075	0.095	1.91	2.41	2.	W ₁																															
W ₂	0.075	0.080	0.085	1.91	2.03	2.15	—	—	0.075	0.095	1.91	2.41	2.	W ₂																															
a	—	—	—	—	—	—	22° 30'	—	—	—	—	—	—	a																															
b	—	—	—	—	—	—	45°	—	—	—	—	—	—	b																															

1. Dans le cas du tube fini, ajouter 0,030" (0,76 mm) max. pour la soudure.

2. L'ergot et la clé peuvent être coniques à l'intérieur des tolérances indiquées.

Toutes saillies du plan inférieur du culot autres que celles indiquées, telles que rebords ou cordons extérieurs, ne doivent pas dépasser 0,045" (1,14 mm).

La version américaine est l'originale: la version britannique est suffisamment similaire pour être interchangeable.

Les différences entre les deux versions sont indiquées dans le tableau.

Pour vérifier l'implantation des broches, utiliser le calibre de la feuille 5b.

1. On finished article add 0.030" (0.76 mm) max. for solder.

2. The spigot and key may be tapered within the limits given.

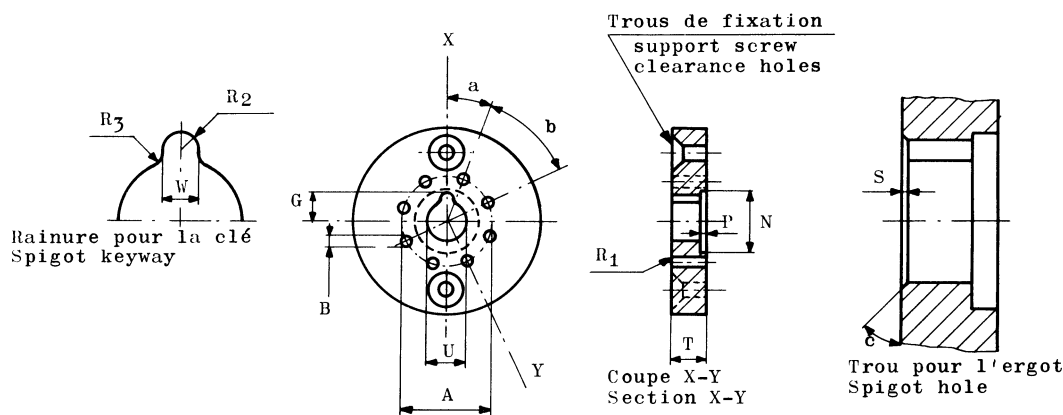
Any projection on the under-surface of the base other than those shown, such as a rim or external barriers, shall have a height not exceeding 0.045" (1.14 mm).

The American version is the original: the British version is sufficiently similar to be interchangeable. The existing differences are shown in the table.

For pin alignment use the gauge as shown on sheet 5b.

Pays/Country	Code	Nom/Name	Mode de projection: troisième angle Third angle projection
Origin: ETATS UNIS/U.S.A.	Group 1	OCTAL BASE	
France/France	8C18	Culot octal	Date: Janvier 1964 January
Royaume Uni United Kingdom	—	Octal base	
Allemagne/Germany	—	Oktal-Sockel	

67-I-5a



Les dimensions en millimètres sont déduites des dimensions originales en inches. The millimetre dimensions are derived from the original inch dimensions.

ref.	inches			millimetres			degrés degrees	notes
	min.	nom.	max.	min.	nom.	max.		
A	—	0.6870	—	—	17.450	—	—	—
B	0.1025	0.1030	0.1035	2.604	2.616	2.628	—	1
G	0.218	0.219	0.221	5.538	5.563	5.613	—	—
N	—	0.469	—	—	11.91	—	—	—
P	—	0.0625	—	—	1.588	—	—	—
R ₁	—	0.005r	—	—	0.13r	—	—	—
R ₂	—	0.0475r	—	—	1.207r	—	—	—
R ₃	0.012r	—	0.015r	0.305r	—	0.381r	—	—
S	0.010	—	0.015	0.254	—	0.381	—	2
T	—	0.25	—	—	6.4	—	—	—
U	0.3180	—	0.3185	8.0772	—	8.0899	—	—
W	0.095	0.095	0.096	2.413	2.413	2.438	—	—
a	—	—	—	—	—	—	22° 30'	—
b	—	—	—	—	—	—	45°	—
c	—	—	—	—	—	—	45°	2

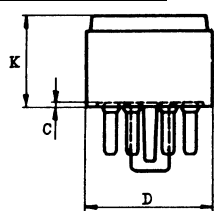
- 1. Les trous B ont des zones de tolérance de diamètre 0,001 in (0,025 mm).
Référence: le trou U et la fente.

→ 2. Cette dimension est seulement tolérée.
Employer le procédé de calibrage No 2; poids total 0,907 kg.
1. The holes B have positional tolerance zones of 0.001 in (0.025 mm) diameter.
Datum: hole U and the slot.

2. This dimension is permissible only.
Use gauging procedure 2; total weight 2 lbs.

Pays/Country	Code	Nom/Name	Mode de projection: troisième angle Third angle projection
Origin: ETATS UNIS/U.S.A.	GB8-1	OCTAL BASE GAUGE	
France/France	C8C-18	Calibre pour le culot octal	
Royaume-Uni United Kingdom	B8-0	Octal base gauge	Date: Mars 1966 March
Allemagne/Germany	—	Lehre für Oktal-Sockel	
67-I-5b			

Dwarf Shell Octal



RTMA-code

B5-45

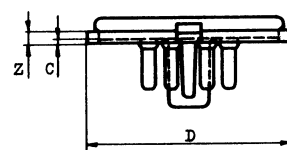
Nom/Name

5-pin Base

Broches/Pins

1, 3, 5, 7, 8

Large-Wafer Octal



RTMA-code

B8-32

Nom/Name

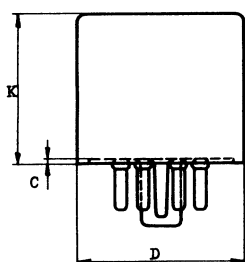
8-pin Base

Broches/Pins

1, 2, 3, 4, 5, 6, 7, 8

ref.	inches			millimetres			ref.	inches			millimetres		
	min.	nom.	max.	min.	nom.	max.		min.	nom.	max.	min.	nom.	max.
C	—	—	0.020	—	—	0.50	C	—	—	0.020	—	—	0.50
D	1.033	—	1.062	26.24	—	26.97	D	1.677	—	1.718	42.60	—	43.63
K	—	0.812	—	—	20.63	—	Z	—	0.100	—	—	2.54	—

Long Medium — Shell Octal



RTMA-code

B8-65

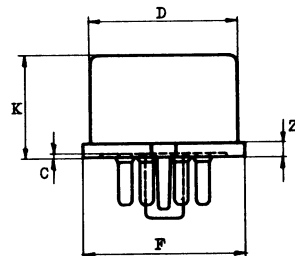
Nom/Name

8-pin Base

Broches/Pins

1, 2, 3, 4, 5, 6, 7, 8

Small-Wafer Octal with Sleeve



RTMA-code

B8-26

Nom/Name

8-pin Base

Broches/Pins

1, 2, 3, 4, 5, 6, 7, 8

B7-27

7-pin Base

B6-28

6-pin Base

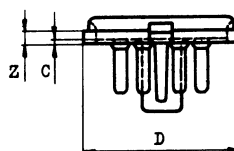
B5-30

5-pin Base

1, 2, 4, 6, 8

ref.	inches			millimetres			ref.	inches			millimetres		
	min.	nom.	max.	min.	nom.	max.		min.	nom.	max.	min.	nom.	max.
C	—	—	0.020	—	—	0.50	C	—	—	0.020	—	—	0.50
D	1.337	—	1.377	33.96	—	34.97	D	1.198	—	1.250	30.43	—	31.75
K	—	1.375	—	—	34.93	—	F	1.271	—	1.312	32.29	—	33.32
							K	—	0.843	—	—	21.41	—
							Z	—	0.100	—	—	2.54	—

Small-Wafer Octal



RTMA-code

B8-21

Nom/Name

8-pin Base

Broches/Pins

1, 2, 3, 4, 5, 6, 7, 8

B7-22

7-pin Base

1, 2, 3, 4, 5, 7, 8

B6-23

6-pin Base

1, 2, 3, 5, 7, 8

B5-25

5-pin Base

1, 2, 4, 6, 8

ref.	inches			millimetres		
	min.	nom.	max.	min.	nom.	max.
C	—	—	0.020	—	—	0.50
D	1.271	—	1.312	32.29	—	33.32
Z	—	1.100	—	—	2.54	—

Les dimensions en inches indiquées sur cette feuille correspondent au RTMA-Standard ET-103-C d'avril 1953 pour le culot octal. Les dimensions en millimètres sont déduites des dimensions originales en inches.

The inch dimensions as given on this sheet are in accordance with RTMA-Standard ET-103-C of April 1953 for the Octal base.

The millimetre dimensions are derived from the original inch dimensions.

Pays/Country	Code	Nom/Name	Mode de projection: troisième angle Third angle projection
Origin. ETATS UNIS/U.S.A.	—	SHELL SIZES OF OCTAL BASE	
France/France	8C18	Dimensions des chemises du culot octal	Date: Septembre 1953 September 1953
Royaume Uni United Kingdom	—	Shell sizes of octal base	

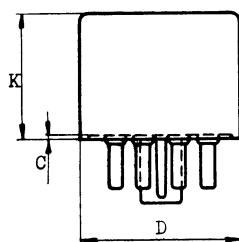
67-I-5c



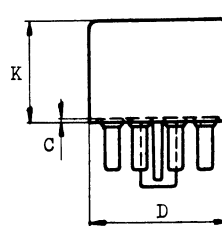
Documents

Document Sharing Hub

Medium-Shell Octal

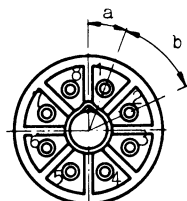
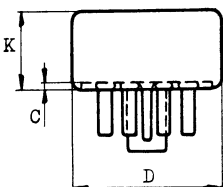


Small-Shell Octal

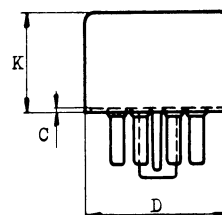


JETEC designation	Nom/Name	Broches/Pins	JETEC designation	Nom/Name	Broches/Pins
B8-11	8-pin Base	1, 2, 3, 4, 5, 6, 7, 8	B8-1	8-pin Base	1, 2, 3, 4, 5, 6, 7, 8
B7-12	7-pin Base	1, 2, 3, 4, 5, 7, 8	B7-2	7-pin Base	1, 2, 3, 4, 5, 7, 8
B6-13	6-pin Base	1, 2, 3, 5, 7, 8	B6-3	6-pin Base	1, 2, 3, 5, 7, 8
B5-15	5-pin Base	1, 2, 4, 6, 8	B5-5	5-pin Base	1, 2, 4, 6, 8

ref.	inches			millimetres			ref.	inches			millimetres		
	min.	nom.	max.	min.	nom.	max.		min.	nom.	max.	min.	nom.	max.
C	—	—	0.020	—	—	0.50	C	—	—	0.020	—	—	0.50
D	1.337	—	1.337	33.96	—	34.97	D	1.136	—	1.175	28.86	—	29.84
K	—	1.087	—	—	27.61	—	K	—	0.843	—	—	21.41	—

Short Intermediate-Shell Octal
with external barriers

Intermediate-Shell Octal



JETEC designation	Nom/Name	Broches/Pins	JETEC designation	Nom/Name	Broches/Pins
B8-58	8-pin Base	1, 2, 3, 4, 5, 6, 7, 8	B8-6	8-pin Base	1, 2, 3, 4, 5, 6, 7, 8
B7-59	7-pin Base	1, 2, 3, 4, 5, 7, 8	B7-7	7-pin Base	1, 2, 3, 4, 5, 7, 8
B6-60	6-pin Base	1, 2, 3, 5, 7, 8	B6-8	6-pin Base	1, 2, 3, 5, 7, 8
B6-84	6-pin Base	2, 3, 4, 5, 7, 8	B6-81	6-pin Base	2, 3, 4, 5, 7, 8
B5-62	5-pin Base	1, 2, 4, 6, 8	B5-10	5-pin Base	1, 2, 4, 6, 8
B5-85	5-pin Base	2, 3, 5, 7, 8	B5-82	5-pin Base	2, 3, 5, 7, 8

ref.	inches			millimetres			degrés degrees	ref.	inches			millimetres		
	min.	nom.	max.	min.	nom.	max.			min.	nom.	max.	min.	nom.	max.
C	—	—	0.045	—	—	1.14	—	C	—	—	0.020	—	—	0.50
D	1.235	—	1.275	31.37	—	32.38	—	D	1.235	—	1.275	31.37	—	32.38
K	—	0.665	—	—	16.89	—	—	K	—	0.843	—	—	21.41	—
a	—	—	—	—	—	—	22 1/2°							
b	—	—	—	—	—	—	45°							

Les dimensions en inches indiquées sur cette feuille correspondent au RTMA-Standard ET-103-C d'avril 1953 pour le culot octal.

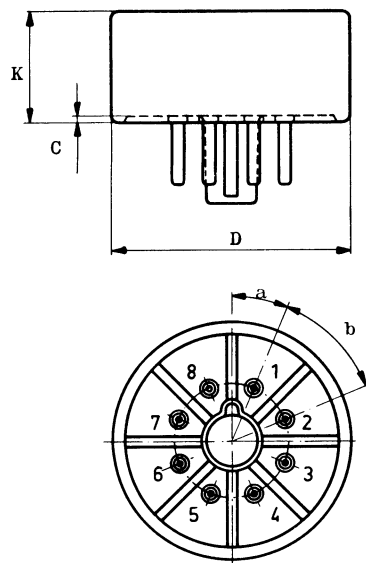
Les dimensions en millimètres sont déduites des dimensions originales en inches.

The inch dimensions as given on this sheet are in accordance with RTMA-Standard ET-103-C of April 1953 for the octal base. The millimetre dimensions are derived from the original inch dimensions.

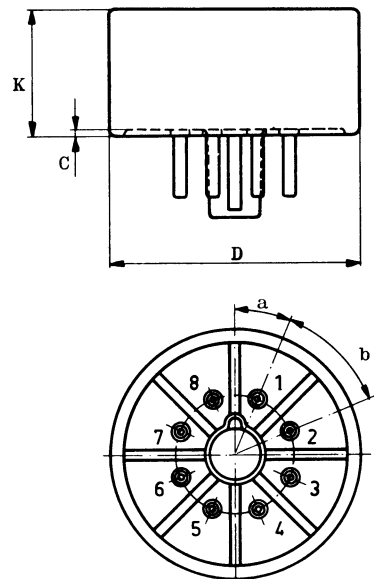
Pays/Country	Code	Nom/Name	Mode de projection: troisième angle Third angle projection
Origin. ETATS UNIS/U.S.A.	—	SHELL SIZES OF OCTAL BASE	
France/France	8C18	Dimensions des chemises du culot octal	Date: Novembre 1956 November
Royaume Uni United Kingdom	—	Shell sizes of octal base	

67-I-5d

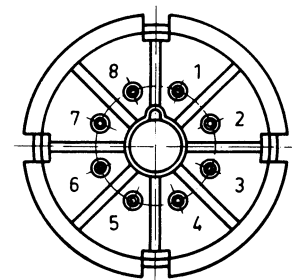
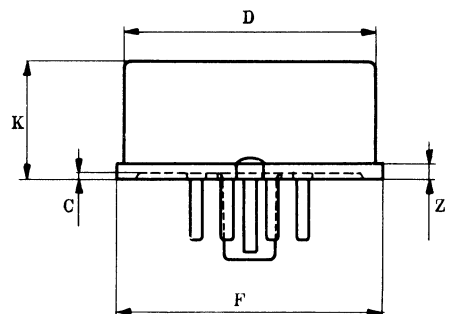
type 1
Short medium-shell
with external barriers



type 2
Short jumbo-shell
with external barriers



type 3
Large wafer
with external barriers and sleeve



Type 1

ref.	inches			millimetres			degrés degrees
	min.	nom.	max.	min.	nom.	max.	
C	—	—	0.045	—	—	1.14	—
D	1.337	—	1.377	33.96	—	34.97	—
K	—	0.725	—	—	18.42	—	—
a	—	—	—	—	—	—	22° 30'
b	—	—	—	—	—	—	45°

Type 2

C	—	—	0.045	—	—	1.14	—
D	1.655	—	1.695	42.04	—	43.05	—
K	—	0.855	—	—	21.72	—	—
a	—	—	—	—	—	—	22° 30'
b	—	—	—	—	—	—	45°

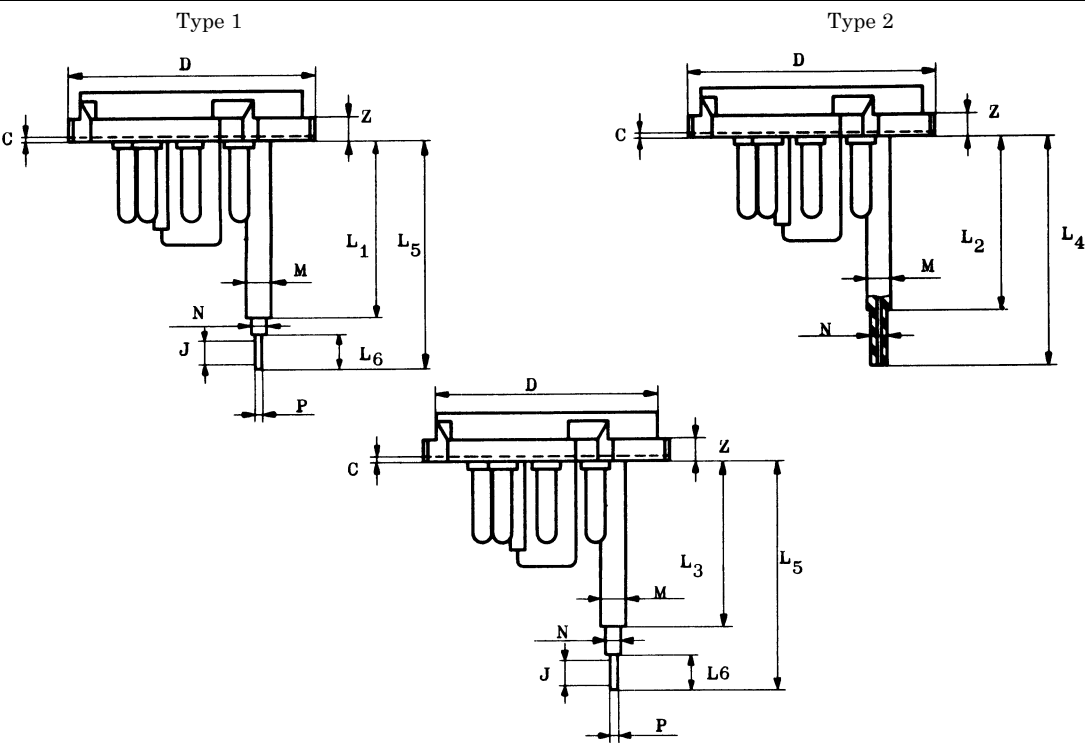
Type 3

C	—	—	0.045	—	—	1.14	—
D	1.600	—	1.625	40.64	—	41.27	—
F	1.677	—	1.718	42.60	—	43.63	—
K	—	0.770	—	—	19.56	—	—
Z	—	0.100	—	—	2.54	—	—

Les dimensions en millimètres sont déduites
des dimensions originales en inches.

The millimetre dimensions are derived from the
original inch dimensions.

des dimensions originales en inches.		original non dimensionné.	
Pays/Country	Code	Nom/Name	Mode de projection troisième angle Third angle projection
Origin: ETATS UNIS/U.S.A.	—	SHELLS OF OCTAL BASE	
France/France	8C 18	Chemises de culot octal	Décembre Date: December 1961
67-I-5e			



Les dimensions en millimètres sont déduites des dimensions originales en inches.

The millimetre dimensions are derived from the original inch dimensions.

ref.	inches			millimetres			
	min.	nom.	max.	min.	nom.	max.	notes
C	—	—	0.020	—	—	0.50	—
D	1.271	—	1.312	32.29	—	33.32	—
J	0.156	—	—	3.97	—	—	—
L ₁	0.876	0.938	0.985	22.3	23.8	25.0	—
L ₂	0.910	0.920	0.930	23.12	23.37	23.62	—
L ₃	0.875	0.885	0.895	22.23	22.48	22.73	—
L ₄	1.203	1.219	1.235	30.56	30.96	31.36	—
L ₅	1.188	1.219	1.250	30.18	30.96	31.75	—
L ₆	0.172	0.188	0.204	4.37	4.78	5.18	—
M	0.135	0.140	0.145	3.43	3.56	3.68	—
N	—	0.124	—	—	3.15	—	—
P	0.035	0.040	0.045	0.89	1.02	1.14	—
Z	—	0.100	—	—	2.54	—	—

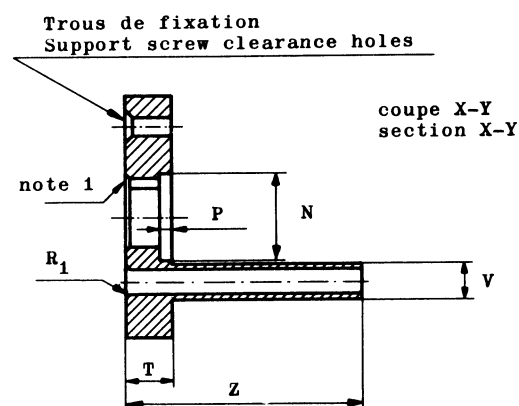
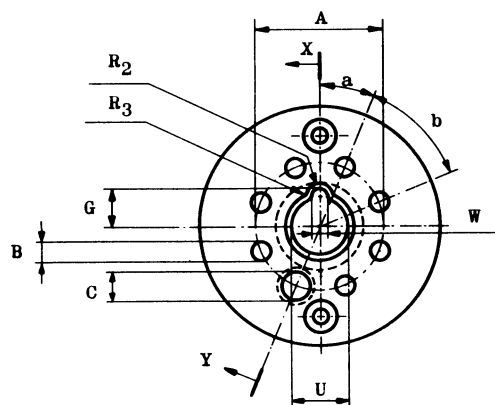
A l'exception de la sortie coaxiale qui remplace la broche No. 4 toutes les dimensions de ces culots sont les mêmes que celles de la feuille 67-I-5a.

With the exception of the coaxial lead in place of pin No. 4 all dimensions of these bases are the same as shown on sheet 67-I-5a.

Pour vérifier l'implantation des broches et de la sortie coaxiale, utiliser le calibre de la feuille 67-I-5g.

For pin and coaxial lead alignment use the gauge as shown on sheet 67-I-5g.

Pays/Country	Code	Nom/Name	Date: Janvier 1964 January
Origin: ETATS-UNIS/U.S.A.		SMALL WAFER OCTAL BASES WITH COAXIAL LEAD	
France/France	8C18-11 -12 -13	Culots octal à pastille, à sortie coaxiale	
67-I-5f			



Les dimensions en millimètres sont déduites des dimensions originales en inches.

The millimetre dimensions are derived from the original inch dimensions.

ref.	inches			millimetres			degrés degrees	notes
	min.	nom.	max.	min.	nom.	max.		
A	—	0.6870	—	—	17.450	—	—	2
B	0.1025	0.1030	0.1035	2.604	2.616	2.628	—	2
C	0.1595	0.1600	0.1605	4.052	4.064	4.076	—	2
G	0.218	0.219	0.221	5.538	5.563	5.613	—	—
N	—	0.469	—	—	11.91	—	—	—
P	—	0.0625	—	—	1.588	—	—	—
R ₁	—	0.005r	—	—	0.13r	—	—	—
R ₂	—	0.0475r	—	—	1.207r	—	—	—
R ₃	—	0.010r	—	—	0.25r	—	—	—
T	—	0.25	—	—	6.4	—	—	—
U	0.3180	—	0.3185	8.0772	—	8.0899	—	—
V	—	0.210	—	—	5.33	—	—	—
W	0.095	0.095	0.096	2.413	2.413	2.438	—	—
Z	1.250	—	—	—	31.75	—	—	—
a	—	—	—	—	—	—	22° 30'	—
b	—	—	—	—	—	—	45°	—

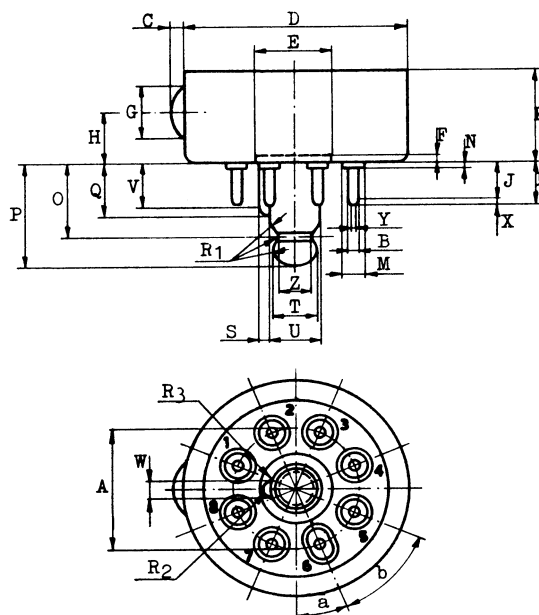
1. Chamfrein à 45°, de profondeur min. 0,010" (0,254 mm) max. 0,015" (0,381. mm).
2. Les trous B et C doivent être à moins de 0,0005" (0,012 mm) de leur position géométrique exacte par rapport au trou central U.

Employer le procédé de calibrage No 2; poids total 0,9072 kg.

1. 45° chamfer to a depth of min. 0.010" (0.254 mm) max. 0.015" (0.381 mm).
2. The holes B and C shall be within 0.0005" (0.012 mm) of their true geometrical position with respect to the centre hole U.

Use gauging procedure 2; total weight 2 lbs.

Pays/Country	Code	Nom/Name	Mode de projection: troisième angle Third angle projection
Origin: ETATS-UNIS/U.S.A.	—	GAUGE FOR OCTAL BASE WITH COAXIAL LEAD	
France/France	C8C18A	Calibre pour les culots octal à pastille, à sortie coaxiale	
			Date: Janvier 1964 January
67-I-5g			



Les dimensions en millimètres sont déduites des dimensions originales en inches.

The millimetre dimensions are derived from the original inch dimensions.

ref.	inches			millimètres			degrés degrees	notes
	min.	nom.	max.	min.	nom.	max.		
A	—	0.687	—	—	17.45	—	—	—
B	0.048	0.050	0.052	1.220	1.270	1.320	—	—
C	—	—	0.040	—	—	1.01	—	—
D	1.170	—	1.187	29.72	—	30.14	—	—
E	0.460	—	—	11.69	—	—	—	—
F	0.010	—	—	0.26	—	—	—	—
G	—	0.205	—	—	5.21	—	—	—
H	—	0.281	—	—	7.14	—	—	—
J	0.135	—	—	3.43	—	—	—	—
K	—	0.500	—	—	12.70	—	—	—
L	—	—	0.220	—	—	5.58	—	—
M	—	—	0.075	—	—	1.90	—	—
N	—	—	0.030	—	—	0.76	—	—
O	0.389	0.398	0.407	9.89	10.11	10.33	—	—
P	—	0.534	—	—	13.56	—	—	—
Q	—	0.274	—	—	6.96	—	—	—
R ₁	—	0.031r	—	—	0.79r	—	—	—
R ₂	—	0.040r	—	—	1.02r	—	—	—
R ₃	—	0.031r	—	—	0.79r	—	—	—
S	0.038	—	0.049	0.97	—	1.24	—	—
T	0.245	0.250	0.255	6.23	6.35	6.47	—	—
U	0.258	—	0.266	6.55	—	6.75	—	—
V	0.235	—	—	5.97	—	—	—	—
W	0.070	—	0.090	1.78	—	2.28	—	—
X	0.012	—	0.035	0.31	—	0.88	—	1.
Y	—	—	0.035	—	—	0.88	—	2.
Z	0.213	0.217	0.221	5.411	5.512	5.613	—	—
a	—	—	—	—	—	—	22° 30'	—
b	—	—	—	—	—	—	45°	—

Cette émbase n'est pas exactement équivalente aux embases représentées sur les feuilles 8a et 9a.

This base is not fully interchangeable with the bases mentioned on sheets 8a and 9a.

1. Cette dimension peut varier dans les limites données en ce qui concerne le contour de l'extrémité de chaque broche.
La forme de cette partie de la broche doit être convexe ou conique et non pointue.

1. This dimension may vary within the limits shown around the periphery of any individual pin.
This surface of the pin shall be convex or conical in shape and shall not be brought to a sharp point.

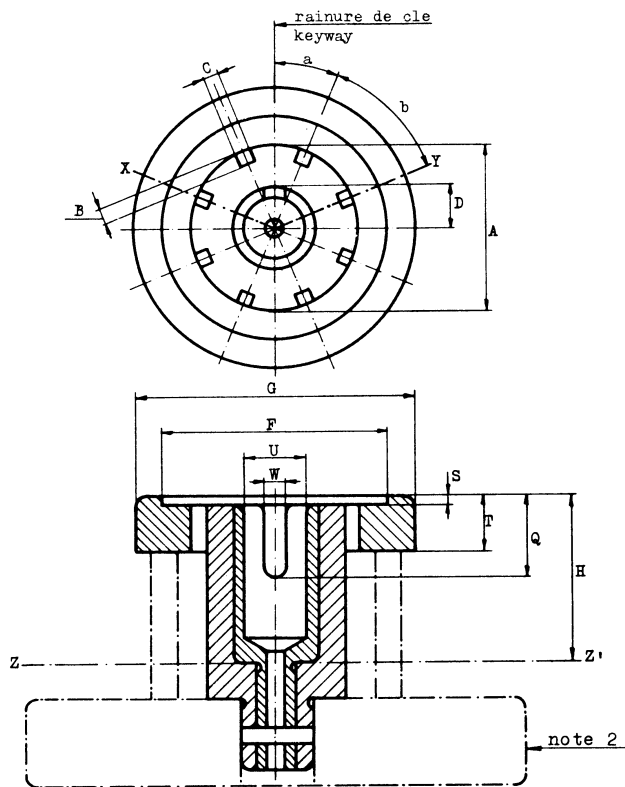
2. Cette surface doit être plane.
Pour vérifier l'alignement des broches, utiliser le calibre de la feuille 7b.

2. This surface shall be flat.
For pin alignment use the gauge as shown on sheet 7b.

Les dimensions en inches indiquées sur cette feuille correspondent au RTMA-Standard ET-103-C d'avril 1953 pour le culot D8-1.

The inch dimensions as given on this sheet are in accordance with RTMA-Standard ET-103-C of April 1953 for base D8-1.

Pays/Country	Code	Nom/Name	Mode de projection: troisième angle Third angle projection
Origin: ETATS UNIS/U.S.A.	D8-1	LOCKING-IN BASE	
France/France	8C18B	Embase américaine à 8 broches à verrouillage	
Allemagne/Germany	—	Amerikanischer Schlüssel-Sockel	Date: Septembre 1953 September
67-I-7a			



Coupe X-Y

Les dimensions en millimètres sont déduites des dimensions originales en inches.

Section X-Y

The millimetre dimensions are derived from the original inch dimensions.

ref.	inches			millimetres			degrés degrees	notes
	min.	nom.	max.	min.	nom.	max.		
A	0.7520	0.7525	0.7530	19.101	19.114	19.126	—	3.
B	0.064	0.065	0.065	1.626	1.651	1.651	—	1. 3.
C	0.064	0.065	0.065	1.626	1.651	1.651	—	1. 3.
D	0.187	0.188	0.190	4.750	4.775	4.826	—	—
F	0.995	1.000	1.005	25.273	25.400	25.527	—	—
G	—	1.25	—	—	31.8	—	—	—
H	—	0.75	—	—	19.1	—	—	—
Q	0.50	—	—	12.7	—	—	—	—
S	0.040	—	—	1.02	—	—	—	—
T	—	0.25	—	—	6.4	—	—	—
U	0.270	0.272	0.274	6.858	6.909	6.959	—	—
W	0.114	—	0.115	2.90	—	2.92	—	—
a	—	—	—	—	—	—	22° 30'	—
b	—	—	—	—	—	—	45° ± 0°5'	3.

1. Quoique ce calibre ait des trous carrés, il est entendu que les broches de l'embase sont rondes.

2. Au-dessous du plan Z-Z', les dimensions, la méthode de montage, etc. ne sont pas imposées.

3. Les dimensions et tolérances pour le cercle des trous des broches, pour les dimensions des trous et l'espacement de ceux-ci s'appliquent à la face extérieure du calibre.
1. Although this gauge has square holes, it should be understood that the pins on the base shall be round.

2. Dimensions, mounting method, etc. below plane Z-Z' are optional.

3. Dimensions and tolerances for pin hole circle and pin hole size and spacing, apply to upper surface.

Employer le procédé de calibrage No. 1.

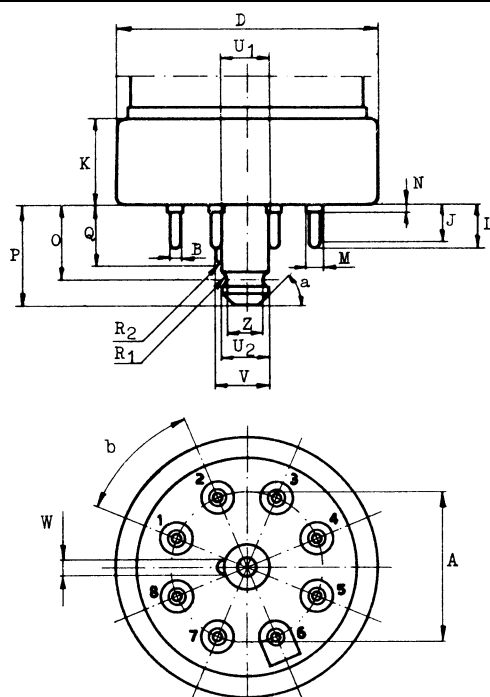
Les dimensions en inches indiquées sur cette feuille correspondent au RTMA-Standard ET-106-B de mars 1953 pour le calibre GD8-1.

Use gauging procedure 1.

The inch dimensions as given on this sheet are in accordance with RTMA-Standard ET-106-B of March 1953 for base GD8-1.

Pays/Country	Code	Nom/Name	Mode de projection: troisième angle Third angle projection
Origin. ETATS UNIS/U.S.A.	GD8-1	LOCKING-IN BASE GAUGE	
France/France	8C18B	Calibre pour l'embase américaine à 8 broches à verrouillage	Date: Septembre 1953 September
Allemagne/Germany	—	Lehre für amerikanischen Schlüssel-Sockel	

67-I-7b



Sillon sur la clé
Groove in the spigot

Les dimensions en inches sont déduites des dimensions originales en millimètres.

The inch dimensions are derived from the original millimetre dimensions.

ref.	millimetres			inches			degrés degrees
	min.	nom.	max.	min.	nom.	max.	
A	—	17.5	—	—	0.689	—	—
B	1.17	1.30	1.30	0.0461	0.0511	0.0511	—
D	—	—	32	—	—	1.25	—
J	4.5	—	—	0.178	—	—	—
K	—	11	—	—	0.43	—	—
L	—	—	6.2	—	—	0.244	—
M	—	1.9	—	—	0.075	—	—
N	—	0.8	—	—	0.031	—	—
O	9.9	10.2	10.5	0.390	0.402	0.413	—
P	13.4	13.9	14.4	0.528	0.547	0.566	—
Q	7.5	7.8	8.1	0.296	0.307	0.318	—
R ₁	0.95r	1.00r	1.05r	0.0374r	0.0394r	0.0413r	—
R ₂	0.8 r	1.0 r	1.2 r	0.0315r	0.0394r	0.0472r	—
R ₃	—	—	0.3 r	—	—	0.011r	—
U ₁	6.48	6.73	6.73	0.2552	0.2649	0.2649	—
U ₂	6.33	6.63	6.63	0.2493	0.2610	0.2610	—
V	7.62	7.80	7.97	0.3000	0.3071	0.3137	—
W	1.8	2.1	—	0.071	0.083	—	—
Z	5.3	5.4	5.5	0.2087	0.2126	0.2165	—
a	—	—	—	—	—	—	45°
b	—	—	—	—	—	—	45°

Cette embase n'est pas exactement équivalente aux embases représentées sur les feuilles 7a et 9a.

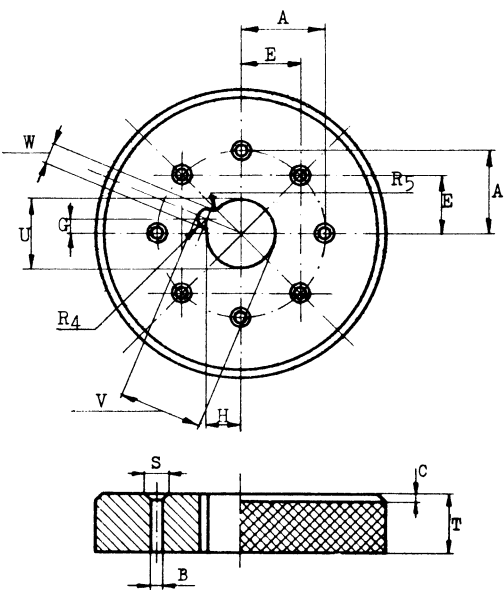
This base is not fully interchangeable with the bases mentioned on sheets 7a and 9a.

Pour vérifier l'alignement des broches utiliser le calibre de la feuille 8b.

For pin alignment use the gauge as shown on sheet 8b.

Pays/Country	Code	Nom/Name	Mode de projection: troisième angle Third angle projection
Origin. PAYS BAS THE NETHERLANDS	—	CONTINENTAL LOCTAL- OR B-BASE	
Allemagne/Germany	—	Continentaler Schlüsselsockel	Date: Septembre 1953 September

67-I-8a



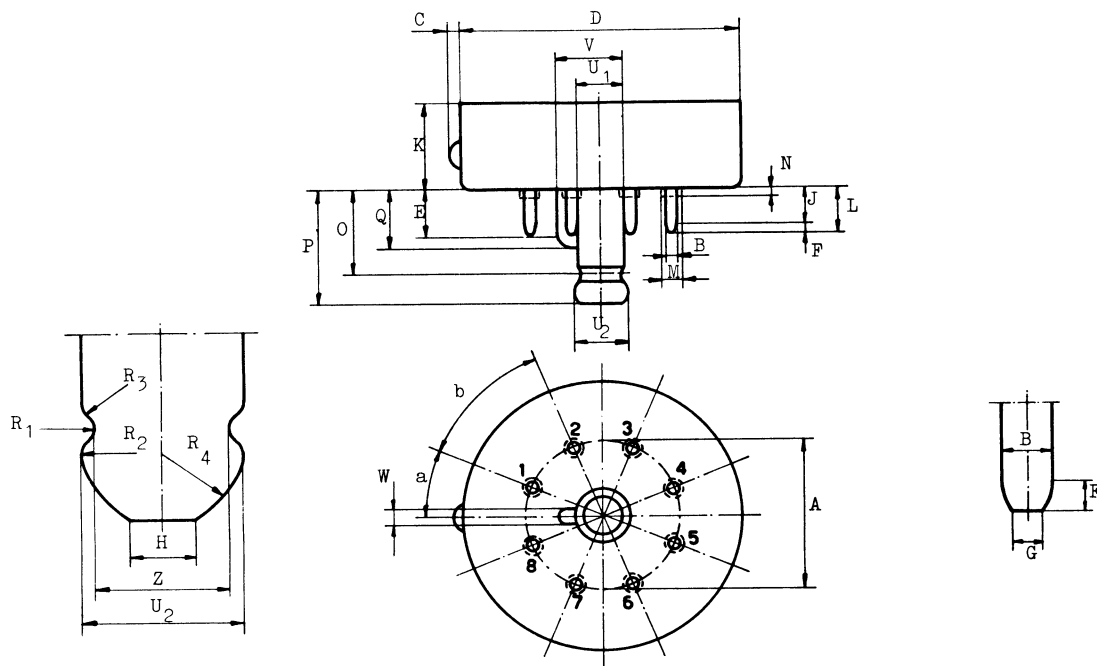
Les dimensions en inches sont deduites des dimensions originales en millimètres. The inch dimensions are derived from the original millimetre dimensions.

ref.	millimetres			inches			notes
	min.	nom.	max.	min.	nom.	max.	
A	—	8.75	—	—	0.3445	—	1.
B	1.645	1.650	1.655	0.06477	0.06496	0.06515	—
C	0.65	0.75	0.85	0.0256	0.0295	0.0334	—
E	—	6.187	—	—	0.24358	—	1.
G	1.305	1.310	1.310	0.05138	0.05157	0.05157	—
H	3.155	3.160	3.160	0.12422	0.12440	0.12440	—
R ₄	1.180r	1.185r	1.185r	0.04646r	0.04665r	0.04665r	—
R ₅	0.2 r	0.3 r	0.3 r	0.0079r	0.0118r	0.0118r	—
S	1.88	1.90	1.90	0.07402	0.07480	0.07480	—
T	6.19	6.20	6.20	0.24370	0.24409	0.24409	—
U	6.80	6.85	6.85	0.2678	0.2696	0.2696	—
V	8.00	8.03	8.03	0.31496	0.31614	0.31614	—
W	2.36	2.37	2.37	0.09292	0.09330	0.09330	—

1. Les trous B doivent être à 0,01 mm (0.0004") de leur position géométrique exacte par rapport au trou U et à la rainure W.
1. The eight holes B shall be within 0.01 mm (0.0004") of their true geometrical position in relation to the datum hole U and datum slot W.

Employer le procédé de calibrage No. 1. Use gauging procedure 1.

Pays/Country	Code	Nom/Name	Mode de projection: troisième angle Third angle projection		
Origin. PAYS BAS NETHERLANDS		CONTINENTAL LOCTAL — OR B — BASE GAUGE			
Allemagne/Germany		Lehre für continentalen Schlüssel-Sockel	Date: Septembre 1953 September		
67-I-8b					



Les dimensions en millimètres sont déduites des dimensions originales en inches.

The millimetre dimensions are derived from the original inch dimensions.

ref.	inches			millimetres			degrés degrees	notes
	min.	nom.	max.	min.	nom.	max.		
A	—	0.687	—	—	17.45	—	—	—
B	0.048	0.050	0.052	1.220	1.270	1.320	—	—
C	—	—	0.040	—	—	1.01	—	4.
D	1.170	—	1.187	29.72	—	30.14	—	—
E	0.235	—	—	5.97	—	—	—	2.
F	0.012	—	0.035	0.31	—	0.88	—	3.
G	—	—	0.035	—	—	0.88	—	5.
H	—	—	0.20	—	—	5.0	—	—
J	0.156	—	—	3.97	—	—	—	2.
K	0.364	0.500	—	9.25	12.70	—	—	2.
L	—	—	0.220	—	—	5.58	—	2.
M	—	—	0.075	—	—	1.90	—	—
N	—	—	0.030	—	—	0.76	—	2.
O	0.388	0.398	0.408	9.86	10.11	10.36	—	2.
P	0.529	0.534	0.561	13.44	13.56	14.25	—	2.
Q	0.250	0.274	0.315	6.35	6.96	8.00	—	2.
R ₁	0.015r	—	0.035r	0.39r	—	0.88r	—	—
R ₂	0.025r	—	0.050r	0.64r	—	1.27r	—	—
R ₃	—	0.031r	0.050r	—	0.79r	1.27r	—	—
R ₄	0.127r	—	—	3.23r	—	—	—	6.
U ₁	0.258	—	0.266	6.56	—	6.75	—	1.
U ₂	0.245	—	0.255	6.23	—	6.47	—	1.
V	0.300	—	0.314	7.62	—	7.97	—	—
W	0.070	—	0.090	1.78	—	2.28	—	—
Z	0.209	—	0.222	5.31	—	5.63	—	—
a	—	—	—	—	—	—	22° 30'	—
b	—	—	—	—	—	—	45°	—

Cette embase n'est pas exactement équivalente aux embases représentées sur les feuilles 7a et 8a.

This base is not fully interchangeable with the bases mentioned on sheets 7a and 8a.

1. L'ergot peut être conique ou cylindrique à l'intérieur des tolérances indiquées.
2. Ces dimensions sont mesurées à partir de la face extérieure de l'embase ou du bourrelet s'il y en a un.
3. Cette dimension peut varier dans les limites données en ce qui concerne le contour de l'extrémité de chaque broche.
La forme de cette partie de la broche doit être convexe ou conique et non pointue.
4. La forme du bossage indiqué sur le pourtour de l'embase n'est pas imposée.
5. Cette surface doit être plane.
6. Rayon à ajuster.

Pour vérifier l'alignement des broches, utiliser le calibre de la feuille 9b.

Les dimensions en inches indiquées sur cette feuille correspondent au BS 448 pour l'embase B8G.

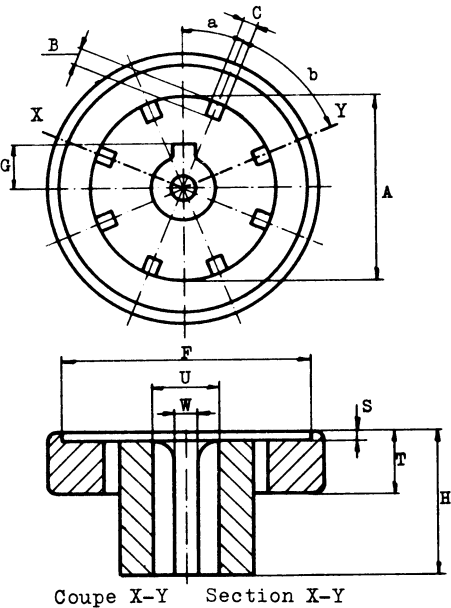
1. The spigot may be tapered or cylindrical within the limits given.
2. These dimensions are measured from the sole of the base or the turned-over shoulder if present.
3. This dimension may vary within the limits shown around the periphery of any individual pin. The surface of the pin shall be convex or conical in shape and shall not be brought to a sharp point.
4. The boss shown on the periphery of the base is optional.
5. This surface shall be flat.
6. Radius to blend.

For pin dispositions use the gauge as shown on sheet 9b.

The inch dimensions as given on this sheet are in accordance with BS 448 for the B8G base.

pour l'embase B8G.		B8G base.	
Pays/Country	Code	Nom/Name	Mode de projection: troisième angle Third angle projection
Origin: ROYAUME UNI/UNITED KINGDOM	B8G	B8G BASE	
			Date: Décembre 1958 December
67-I-9a			

Documents



Les dimensions en millimètres sont déduites des dimensions originales en inches. The millimetre dimensions are derived from the original inch dimensions.

ref.	inches			millimetres			degrés degrees	notes
	min.	nom.	max.	min.	nom.	max.		
A	0.7520	0.7525	0.7530	19.101	19.114	19.126	—	—
B	0.064	0.065	0.065	1.626	1.651	1.651	—	1.
C	0.064	0.065	0.065	1.626	1.651	1.651	—	1.
F	0.995	1.000	1.005	25.28	25.40	25.52	—	—
G	0.183	—	—	4.65	—	—	—	—
H	0.6	—	—	16	—	—	—	—
S	0.040	0.040	0.045	1.016	1.016	1.143	—	—
T	0.245	0.250	0.255	6.23	6.35	6.95	—	—
U	0.270	0.272	0.274	6.858	6.909	6.959	—	1.
W	0.0935	0.0940	0.0945	2.375	2.388	2.400	—	1.
a	—	—	—	—	—	—	22° 30'	—
b	—	—	—	—	—	—	45°	—

1. Les entailles C doivent être à 0.0004" (0,0102 mm) de leur position géométrique exacte par rapport au trou U et à la rainure W.

Quoique ce calibre ait des trous carrés, il est entendu que les broches de l'embase sont rondes.

Employer le procédé de calibrage No 1.
1. The eight slots C shall be within 0.0004" (0.0102 mm) of their true geometrical position in relation to the datum hole U and datum slot W.

Although this gauge has square holes, it should be understood that the pins on the base shall be round.

Use gauging procedure 1.

Les dimensions en inches indiquées sur cette feuille correspondent au BS 448 pour le calibre B8G. The inch dimensions as given on this sheet are in accordance with BS 448 for the B8G base gauge.

Pays/Country	Code	Nom/Name	Mode de projection: troisième angle	
Origin. ROYAUME UNI UNITED KINGDOM	B8G	B8G BASE GAUGE	Third angle projection	
			Date:	Septembre 1953 September
67-I-9b				