

# National Standard of the People's Republic of China

GB 1002—2024

Replace GB/T 1002—2021

---

## Single phase plugs and socket-outlets for household and similar purposes - Types, basic parameters and dimensions

## 家用和类似用途单相插头插座 型式、基本参数和尺寸

(English Version)

**Issue date:** 2024 – 07 – 24

**Implementation date:** 2025 – 08 – 01

Issued by General Administration of Quality Supervision, Inspection and Quarantine of the  
People's Republic of China

Standardization Administration of the People's Republic of China



# Contents

Foreword .....	II
1 Scope .....	1
2 Normative references .....	1
3 Terms and definitions .....	2
4 Technical requirements .....	2
5 Test methods .....	7
6 Implementation of standard .....	9
Bibliography .....	32
Figure 1—Single phase two-pole plug .....	10
Figure 2—Single phase two-pole socket-outlet .....	11
Figure 3— $\leq 10$ A, 16 A single phase two-pole plug with earthing pin .....	12
Figure 4—10 A, 16 A single phase two-pole socket-outlets with earthing contact .....	13
Figure 5—32 A single phase two-pole plug with earthing pin .....	14
Figure 6—32 A single phase two-pole socket-outlet with earthing contact .....	15
Figure 7—Example of combination of socket-outlet configuration .....	15
Figure 8—Periphery of plug face .....	16
Figure 9—Insulating sleeve height of plug pin .....	16
Figure 10—The dimensions of the pin after the insulating sleeve is removed .....	17
Figure 11—The distance between the contact of the socket-outlet and the engagement face .....	17
Figure 12—Non-contact gauge for single phase two-pole socket-outlet .....	18
Figure 13—Non-contact gauge for 10 A, 16 A single-phase two-pole socket-outlet with earthing contact .....	19
Figure 14—Non-contact gauge for 32 A single-phase two-pole socket-outlet with earthing contact .....	20
Figure 15—The depth to accept the plug pin .....	21
Figure 16—Gauge for single-phase two-pole plug .....	21
Figure 17—Gauge for $\leq 10$ A, 16 A single-phase two-pole plug with earthing pin .....	22
Figure 18—Gauge for 32 A single-phase two-pole plug with earthing pin .....	23
Figure 19—“GO” gauge for single-phase two-pole socket-outlet .....	24
Figure 20—“GO” gauge for 10 A, 16 A single-phase two-pole socket-outlet with earthing contact .....	25
Figure 21—“GO” gauge for 32 A single-phase two-pole socket-outlet with earthing contact .....	26
Figure 22—“NOT-GO” gauge for single aperture for single-phase socket-outlet .....	27
Figure 23—Contact gauge for single-phase two-pole socket-outlet .....	28
Figure 24—Contact gauge for 10 A, 16 A single-phase two-pole socket-outlets with earthing contact .....	

..... 29

Figure 25—Contact gauge for 32 A single-phase two-pole socket-outlets with earthing contact ... 30

Figure 26—Bending test of pin with insulating sleeve ..... 31

Table 1—Minimum distance between live contact and engagement face ..... 6

Table 2—The depth of socket-outlet to accept the plug pin ..... 6

## Foreword

This document is drafted in accordance with the rules given in GB/T 1.1—2020 *Guidelines for Standardization Part 1: Structure and Drafting Rules of Standardized Documents*.

This document replaces GB/T 1002—2021 (*Single Phase Plugs and Socket-Outlets for Household and Similar Purposes-Types, Basic Parameters and Dimensions*) in whole.

In addition to a number of editorial changes, the following technical deviations have been made with respect to the GB/T 1002—2021 (*Single Phase Plugs and Socket-Outlets for Household and Similar Purposes-Types, Basic Parameters and Dimensions*)(the previous edition):

- Changed the scope of application of the standard (see Clause 1, Clause 1 of 2021 Edition);
- Add the definition of direct plug-in equipment (see 3.1);
- Add the contents of the arrangement and combination of socket-outlet configuration (see 4.1.3) and the schematic example (see Figure 7);
- Add the clarifications of the contact position for two-pole socket-outlet with earthing contact and the plug pin position for two-pole plug with earthing contact(see 4.1.4);
- Add single pin for plug should not rotate axially to change the position for plug's standard configuration (see 4.1.5);
- Add the requirements for the inner body of the fixed pins of the non-rewirable plug (see 4.1.6);
- Add the requirements for the projection part of the plug face and the measurement requirements for the length of the plug pin (see 4.2.1);
- Change the requirements of insulating sleeve on plug pin (see 4.2.2, 4.2.2 of 2021 edition);
- Change the content of single-phase two-pole plug without earthing contact (see 4.2.3);
- Add the content of plug for direct plug-in equipment (see 4.3);
- Change the distance requirement between the contact of the socket-outlet and the engagement face (see 4.4.1, 4.3.1 of 2021 edition);

- Add the minimum distance between the live contact in Figure 6 (see Table 1);
- Add the depth of the socket-outlet corresponding to the cavity into which the plug pin can be inserted (see 4.4.3);
- Add the method for measuring the pin length of the plug of the direct plug-in equipment (see 5.1);
- Add the test method of pin bending test (see 5.3);
- Add the test method of tumbling test (see 5.5);
- Add the implementation of standard in Clause 6 (see Clause 6);
- Change the dimension and tolerance of the plug pin' thickness  $t$  (see Figure 1 and Figure 3, Figures 1 and 3 of 2021 edition) and the dimension and tolerance of the corresponding gauge (see Figures 12, 13, 23 and 24, Figures 13, 14, 15 and 16 of 2021 edition);
- Add an example of the shape of the tip of pin (see Figure 1 and Figure 3, Figure 1 and Figure 3 of the 2021 edition);
- Add 32 A plug and socket-outlet type, size, gauge and corresponding technical requirement (see Figure 5, Figure 6, Figure 14, Figure 18, Figure 21 and Figure 25);
- Change the dimension of the gauge (see Figure 16, Figure 17, Figure 19, Figure 20 and Figure 22, Figure 8, Figure 9, Figure 10, Figure 11 and Figure 12 of the 2021 edition).

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

This document was proposed by Ministry of Industry and Information Technology of the People's Republic of China.

The previous editions of GB 1002—2024 are as follows:

- The first edition was issued in 1967 as GB 1002—1967, was first revised in 1980, second revision was issued in 1996, third revision was issued in 2008 and fourth revision was issued in 2021;
- This is the fifth revision, as a mandatory national standard.

# Single phase plugs and socket-outlets for household and similar purposes—Types, basic parameters and dimensions

## 1 Scope

This document specifies the types, basic parameters, dimensions and test methods of single phase plugs and socket-outlets for household and similar purposes.

This document applies to single phase plugs and socket-outlets AC 50 Hz only, with a rated voltage of 250 V and rated current not exceeding 32 A, intended for household and similar purposes.

NOTE Examples of products for which the types and dimensions of this document are applicable are:

- Socket-outlets used in home scenes;
- Plugs of electrical appliance;
- Plugs of direct plug-in equipment;
- Fixed and integrated AC power supply socket-outlet with rated voltage of 220 V for conductive charging of electric vehicles;
- Charging socket-outlets in centralized charging facilities for electric bicycles and motorcycles.

## 2 Normative references

The contents in the following documents constitute the essential clauses of this document through normative references in the text. For undated references, only the edition cited applies. For undated references, the latest edition of the referenced document(including any amendments) applies.

GB/T 1184—1996 Geometrical tolerancing - Geometrical tolerance for features without individual tolerance indications

GB/T 2099.1—2021 Plugs and Socket-outlets for Household and Similar Purposes—Part 1: General Requirements

GB 1002—2024

GB/T 2099.3 Plugs and Socket-outlets For Household and Similar Purposes—Part 2-5: Particular Requirements for Adaptors

GB/T 2900.70—2008 Electrotechnical Terminology—Electrical Accessories

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in GB/T 2900.70—2008 and GB/T 2099.1—2021, and the following apply.

#### 3.1

##### **Direct plug-in equipment**

Equipment in which the mains plug forms an integral part of the equipment enclosure.

NOTE Examples of direct plug-in equipment include razors with rechargeable batteries, night lights installed in socket-outlets, direct plug-in transformers and power adapters.

[Source: GB 4943.1—2022, 3.3.3.1, with modification and addition]

### 4 Technical requirements

#### 4.1 General requirements

**4.1.1** Single phase plugs and socket-outlets for household and similar purposes are classified into two basic types: two-pole without earthing contact/pin and two-pole with earthing contact/pin.

**4.1.2** The types, basic parameters and dimensions of single phase plugs and socket-outlets for household and similar purposes shall be as specified in Figure 1~ Figure 6.

**4.1.3** It is allowed to adopt the socket-outlets configuration shown in Figure 7, which is an example of the combination of the socket-outlets' aperture of Figure 2 and Figure 4, for portable socket-outlets, adaptors and socket-outlets for appliances, but not for fixed socket-outlets. Their shape's overlap or sharing between types of socket-outlet is not allowed.

NOTE 1 Combination of socket-outlets configuration here isn't considered as adding corresponding plug types.

NOTE 2 Figure 7 does not exclude other forms of combination.



NOTE 3 Examples of fixed socket-outlets are: wall-fixed socket-outlets.

**4.1.4** The contact position of two-pole socket-outlet with earthing contact shall follow that when facing the socket-outlet, the earthing contact (E pole) is on the top, the neutral contact (N pole) is on the left-hand and the line contact (L pole) is on the right-hand. The pin position of two-pole plug with earthing contact shall correspond to the socket-outlet.

**4.1.5** Individual pin of plug shall not be rotated axially to change the position for plug's standard configuration.

NOTE Axial rotation, for example, by twisting the pins, changes the two parallel pins of the plug in Figure 1 to the position form of line and neutral pins as shown in Figure 3.

**4.1.6** The inner body of non-rewirable plug which to fix the pins shall have sufficient strength to ensure the stability of the pin dimension, and the plug type and dimension shall meet the requirements of the corresponding dimension drawing.

## **4.2 Plug**

### **4.2.1 Plug Shape**

The shape of the plug is not specified, but the distance between the root of the live pins and the periphery of the plug face shall be not less than 6.5 mm.

NOTE 1 If there is an insulating sleeve, the metal pin after removing the insulating sleeve is considered as the root.

NOTE 2 If the engagement face of the plug is not a plane, the edge of the plug is the intersecting line with the body surface offset by 1mm from the highest point of the engagement face to the plane perpendicular to the pin axis, as the value of B in Figure 8.

The engagement face of plugs shall have no projections greater than 0.5 mm other than the pins. The length of the plug pin shall be measured from the vertical plane of the pin at the highest point of the plug face to the tip of the pin.

NOTE 3 Examples of "projection" include electrical parameters, trademarks and other marking on plug face formed by injection molding, or plug face construction that may affect plug engagement.

NOTE 4 For the plug with functional parts on the plug face, when it is inserted into the socket-outlets, the gap between the engagement face of the socket-outlet and the plug does not exceed 1 mm.

NOTE 5 The length of the plug pin is considered as the effective length of the metal pin inserted into the socket-outlets.

#### 4.2.2 Insulating sleeve on pins

**4.2.2.1** The live pins of the plug shall be provided with insulating sleeves.

NOTE The insulating sleeve can be made of insert injection molding, adhesive backing and other processes.

**4.2.2.2** For the plugs in Figure 1, the height of the insulation sleeve is  $7.0^{+0.5}_0$  mm; For the plugs in Figures 3 and 5, the height of the insulation sleeve is  $9.0^{+0.5}_0$  mm; See schematic G in Figure 9.

**4.2.2.3** The thickness (t) of the plug pin after the insulation sleeve is removed, as shown in Figure 10:

- ≤10 A: not less than 1.0 mm;
- 16 A: not less than 1.2 mm;
- 32 A: not less than 1.7 mm.

The width (w) of the plug pin after the insulation sleeve is removed, as shown in Figure 10:

- ≤10 A: not less than 5.2 mm;
- 16 A: not less than 6.7 mm;
- 32 A: not less than 9.0 mm.

**4.2.2.4** For non-rewirable or rewirable plugs, adaptors comply with GB/T 2099.3, the color of insulation sleeve shall be black, white or gray.

For the plug of direct plug-in equipment, the color of insulation sleeve can be selected by the manufacturer, but it shall not be yellow, green or yellow-green combination.

**4.2.2.5** The live pins of the plug with insulation sleeve shall meet the requirements of 5.3 bending test.

NOTE 1 The purpose of this test is to simulate the damage that may occur when the plug is walked on and the bent pins are straightened.

After the test, the pin shall not be broken off.

NOTE 2 Cracks less than the thickness of the pin are not deemed to be broken off.

#### 4.2.3 Single phase two-pole plug without earthing pin

Single phase two-pole plug without earthing pin includes:

- Plug complying with Figure 1; or
- The plug with the same type, basic parameters and dimensions as shown in Figure 3, but without earthing function, shall be non-rewirable. The position in Figure 3 for earthing pin shall be replaced with shutter opening pin and it's color is black. It is not connected to the earthing conductor and does not mark the earthing symbol; it is only used as the driving device to open the shutter when it is inserted into the socket-outlets. or
- Plug complying with Figure 3, but without earthing pin. This type of plug cannot be inserted into the socket-outlet which shutter is opened by earthing pin.

### 4.3 Additional requirements for plug of direct plug-in equipment

**4.3.1** The type and dimension of the plug of the direct plug-in equipment shall meet the requirements of this document.

**4.3.2** The insulation sleeve, if any, of the plug of the direct plug-in equipment shall cover the root of the metal part of the exposed pin.

There shall be no gap between the insulation sleeve and the equipment enclosure to expose the metal root of the live pins. In case of doubt, check it by 5.4. During the test, the probe shall not touch the live pins.

NOTE This test is only used to check plug part, and the protection against electric shock of the end product is checked according to its own standard.

**4.3.3** In case the plug of direct plug-in equipment can be rotated as a whole, the locking means should be taken in the normal use position, and the requirements of this document for the plug shall be met.

**4.3.4** The plug of the direct plug-in equipment shall be subjected to the tumbling test in 5.5 as for normal use.

After the test, the sample shall not be damaged as indicated in this document, and after correction, it shall be able to be normally inserted into the socket-outlets complying with the requirements of relevant standards, and shall meet the following requirements :

- The metal pin shall not be broken;
- No parts or components are loose.

If the protection against electric shock is not affected, even if there are small pieces falling off, it is considered as meeting the requirements, for example, the insulating sleeve falls off.

NOTE The damage of surface and small dents that will not reduce the creepage or clearance to less than the specified value in 27.1 in GB/T 2099.1—2021 can be ignored.

**4.3.5** The plug part of direct plug-in equipment shall also meet the requirements of applicable plug clauses in GB/T 2099.1—2021, including: 14.23, 24.6, 24.8, 24.11, 28.1.3 and Clause 30 in GB/T 2099.1—2021.

**4.4 Socket-outlets**

**4.4.1** The distance between the live contacts of the socket-outlets and the engagement face should not be less than the value specified in Table 1, as shown in Figure 11, which is indicated by K; And shall pass the corresponding Figure 12, Figure 13, Figure 14 non-contact gauge test.

**Table 1—Minimum Distance Between Live Contact and engagement face**

Socket-outlet Drawing Number	Minimum Distance “K” Between Live Contact and plug face
	mm
Figure 2	8.0
Figure 4	10.0
Figure 6	11.5

**4.4.2** The distance between the earthing contact and the engagement face shall not be greater than the distance between the live contact of the same socket-outlet (Figure 4 and Figure 6) and the engagement face.

**4.4.3** The depth of socket-outlet to accept the plug pin should not be less than the value specified in Table 2, as schematic H in Figure15.

**Table 2—The depth of socket-outlet to accept the plug pin**

Socket-outlet Drawing Number	Depth for live contact(H)	Depth for earthing contact(H)
	mm	mm
Figure 2	17.0	-
Figure 4	19.0	22.0
Figure 6	20.5	23.5

Note: “-” means not applicable.

## 5 Test methods

**5.1** To check the dimensions of single phase plugs and socket-outlets for household and similar purposes, the special gauges specified in Figures 12 ~ 14 and 16~ 25 and vernier calipers with accuracy not greater than 0.02 mm shall be used, and the dimensions of rounded parts at the tip of plug pins shall be measured with appropriate measuring tools. The surface roughness of these gauges is all  $Ra$  0.8, and the hardness is Rockwell hardness HRC58~HRC62. The geometrical tolerances of the gauges such as parallelism, verticality and symmetry are in accordance with the tolerance class H specified in GB/T 1184—1996.

For the plug of direct plug-in equipment, according to the manufacturer's instructions, directly insert the direct plug-in equipment into the socket-outlet in the most unfavorable situation, and then measure the length of the plug when it reaches stable condition.

**5.2** The pin of the plug shall pass the tests by use of corresponding gauges in Figures 16, 17 and 18.

**5.3** Three new plug samples are used to conduct the pin bending test according as follows:

NOTE 1 This clause only applies to plugs with insulating sleeves.

- a) Pins of assembled plugs shall be tested by clamping the plug in a rigid holding block and applying a bending force (as shown in Figure 26);
- b) The pins shall be straight at the beginning of the test. If there is any doubt about the straightness of the pin, it shall be checked by the appropriate plug gauge shown in Figure 16, Figure 17 and Figure 18.
- c) The point of application of the force shall be  $(14 \pm 0.5)$  mm from the face of the plug;
- d) The direction of the force shall be along a line parallel to the face of the plug;
- e) Line and neutral pins shall be forced towards the centroid of the plug and then back to the starting point;
- f) The distance moved from the point of application shall be  $7.5 \pm 0.3$  mm, and then the pin shall be forced back to the starting point. Any "spring-back" is ignored;

NOTE 2 'Spring-back' means that the pin is allowed to move back to a position less than the travel distance, when the force is removed.

- g) The travel from the starting point to the end point ( $7.5 \pm 0.3$  mm) and back to the starting point is one cycle (i.e. one cycle is two separate movements).
- h) The speed of deflections shall be a maximum of 50 mm/s, without intentional delay between consecutive movements within each cycle;
- i) The interval between successive cycles shall be a minimum of 10 s;
- j) The duration of one cycle shall be a maximum of 60 s;
- k) The pins shall be tested for 20 complete cycles;
- l) After the tests the pins shall be inspected with normal or corrected to normal vision;
- m) If in doubt, pins shall be disassembled from the plug and any insulation removed before inspection.

NOTE 3 In some cases the break may be below the face of the plug or the insulation may hold the broken pieces together, retaining electrical contact.

**5.4** After inserting the direct plug-in equipment into the socket-outlet as for normal use, apply a force of 1 N to the root of the pin with the steel probe shown in Figure 10 of GB/T 2099.1—2021, an electrical indicator with a voltage between 40 V and 50 V being used to show contact with relevant parts.

**5.5** Three new samples are used, the tumble barrel test of 24.3 in GB/T 2099.1—2021 was carried out on samples as for normal use. If the direct plug-in equipment has a flexible cable, the free length of the flexible cable extending from the direct plug-in equipment is cut to about 100 mm.

The number of falls being:

- 100 if the mass of the specimen without flexible cable does not exceed 100 g;
- 50 if the mass of the sample without flexible cable exceeds 100 g, but does not exceed 200 g, and;
- 25 if the mass of the specimen without flexible cable exceeds 200 g.

For the plugs with insulating sleeves, it needs to be checked by the relevant socket-outlet every 5 times and corrected manually.

**5.6** The use of socket-outlet gauge is as follows:

- The “GO” gauge shall be able to be inserted into the socket-outlet;

- The “NOT-GO” gauge shall not be able to be inserted into the socket-outlet;
- The contact gauge of the socket-outlet shall be able to contact the live contact of socket-outlet;

NOTE If the contact gauge touches the live contact, it is deemed to meet the requirements.

- The non-contact gauge of the socket-outlet shall not touch the live contact of socket-outlet.

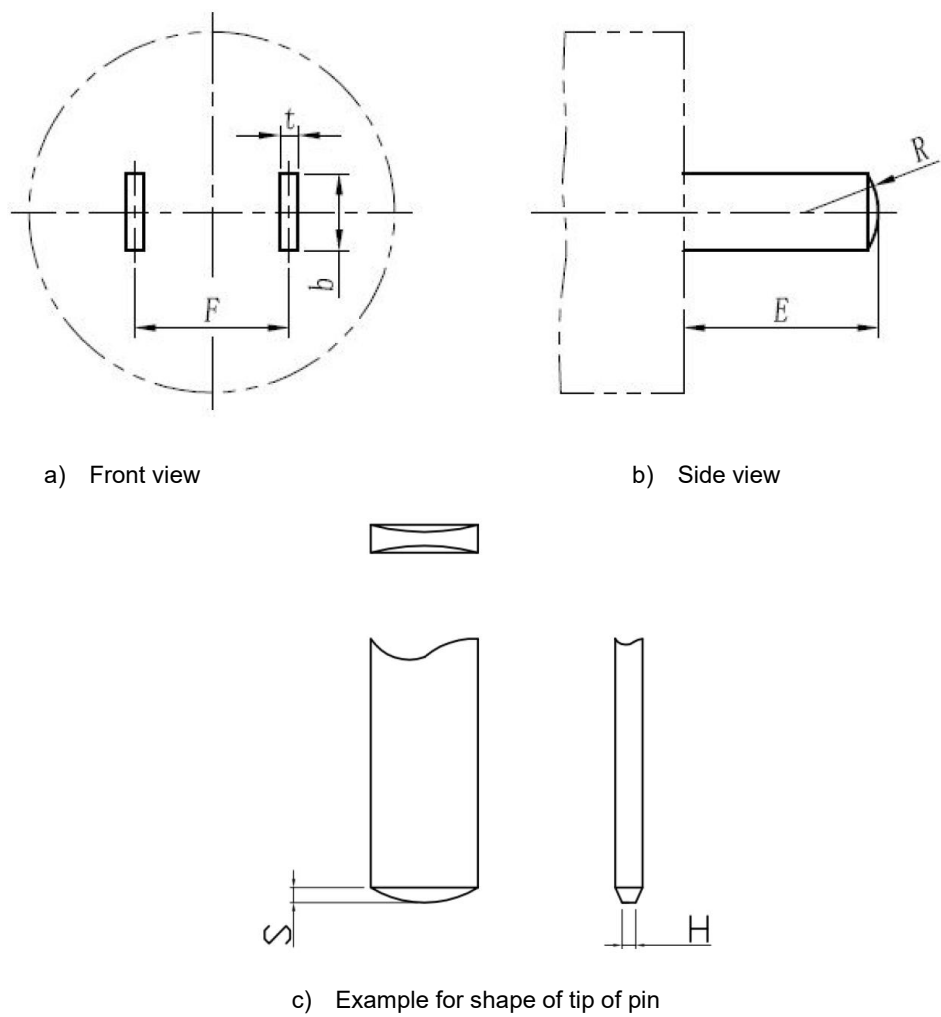
When using the gauge, if the socket-outlet has the shutter, the shutter shall be disabled so as not to affect the test.

The insertion force of the gauge shall not be greater than the maximum withdrawal force in Table 16 of GB/T 2099.1—2021.

## 6 Implementation of standard

6.1 For the plugs and socket-outlets for household and similar purposes which types and dimensions are in accordance with this document, and which have left factory or imported before the implementation date of this document, this document shall be implemented from the 13th month since the implementation date of this document.

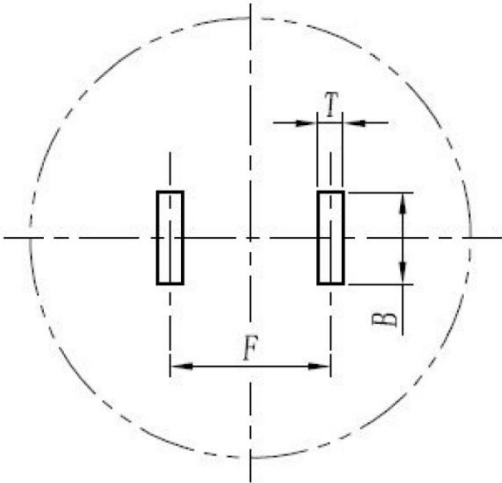
6.2 The requirement of insulation sleeves of the plug live pins(4.2.2) shall be implemented from the 25th month since the implementation date of this document.



Basic parameter		Main Dimensions of Single phase Two-pole Plugs					
		mm					
Rated Voltage V	Rated Current I	Opening Distance mm	Plug Pin Dimensions				
		<i>F</i>	<i>t</i>	<i>b</i>	<i>E</i> <sup>a</sup>	<i>R</i>	<i>H</i>
250	≤10	12.7±0.14	1.55±0.10	6.4 <sup>0</sup> <sub>-0.22</sub>	16±0.35	6.0±1	0.8±0.2
Description of Indexing symbol							
S-- chamfering length in millimeters (mm)							
NOTE 1 See Table 1 of GB/T 2099.1—2021 for the actual rated current of the plugs.							
NOTE 2 The values of <i>t</i> and <i>b</i> refer to the size of the exposed conductive metal part.							
<sup>a</sup> The thickness of the end of pin( <i>E</i> ) should be chamfered, and the maximum chamfering length <i>S</i> should be 1 mm.							

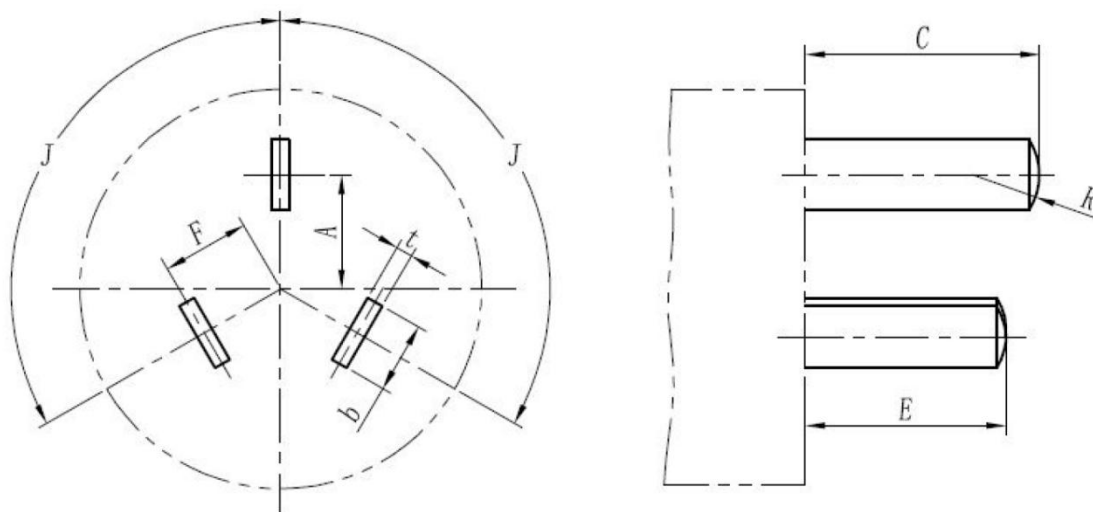


**Figure 1—Single phase two-pole plug**



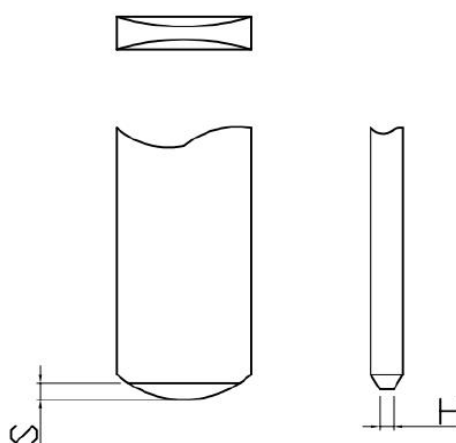
Basic parameter		Main dimensions of single phase two-pole socket-outlets		
		mm		
Rated voltage	Rated current	Opening distance	Socket-outlet aperture dimension	
V	A	$F$	$T$	$B$
250	10	12.7±0.14	$2.0_0^{+0.3}$	$7.3_0^{+0.3}$

Figure 2—Single phase two-pole socket-outlet



a) Front view

b) Side view

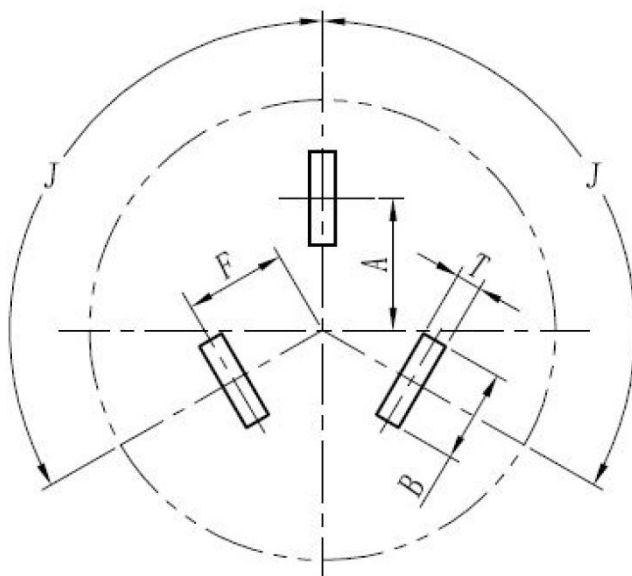


c) Example of shape for tip of pin

Basic parameter		Main dimensions of single phase two-pole plug with earthing pin								
		mm								
Rated voltage V	Rated current A	Opening distance mm		Opening angle	Plug pin dimension mm					
		A	F		t	b	C <sup>a</sup>	E <sup>a</sup>	R	H
250	≤10	10.3±0.14	7.9±0.11	120°±30'	1.55±0.10	6.4 0 -0.22	21±0.42	18±0.35	6.0±1	0.8±0.2
	16	11.1±0.14	9.5±0.11	120°±30'	1.8 <sup>+0.15</sup> <sub>-0.05</sub>	8.1	21±0.42	18±0.35	6.0±1	0.8±0.2

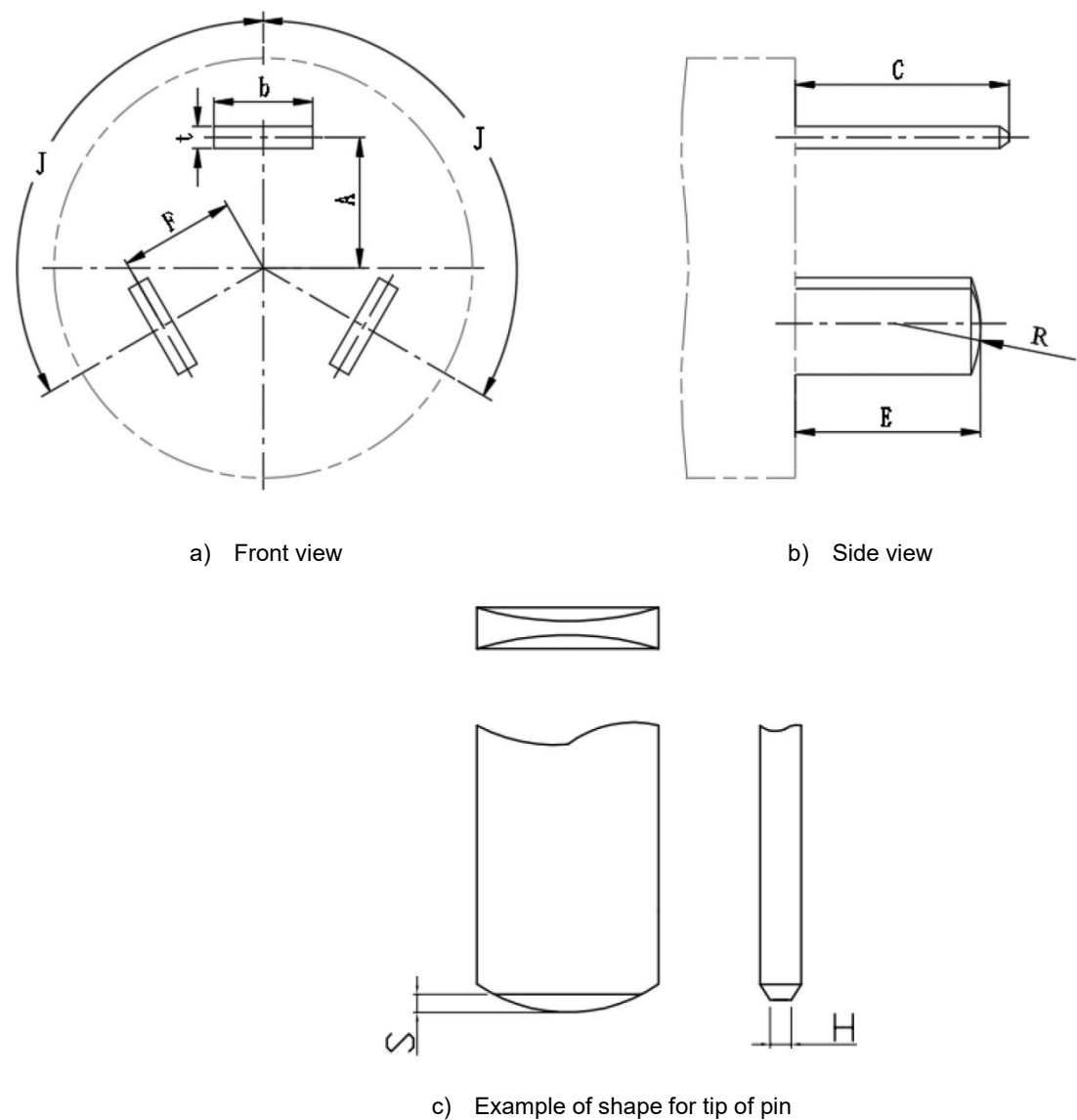
						0 -0.22				
<div>Description of Indexing symbol</div> <div>S-- chamfering length in millimeters (mm)</div> <div>NOTE 1 See Table 1 of GB/T 2099.1—2021 for the actual rated current of the plugs.</div> <div>NOTE 2 The values of t and b refer to the size of the exposed conductive metal part.</div> <div><sup>a</sup> The thickness of the end of pin(C and E) should be chamfered, and the maximum chamfering length S should be 1.2 mm.</div>										

Figure 3— ≤10 A, 16 A single phase two-pole plug with earthing pin



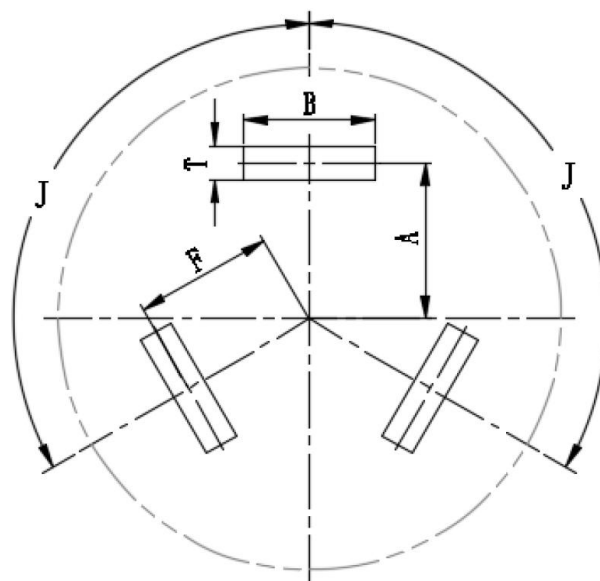
Basic parameter		Main dimensions of single phase two-pole socket-outlet with earthing contact mm				
Rated voltage V	Rated current A	Opening distance		Opening angle	Socket-outlet aperture dimension	
		A	F		T	B
250	10	10.3±0.14	7.9±0.11	120°±30′	2.0 <sub>0</sub> <sup>+0.3</sup>	7.3 <sub>0</sub> <sup>+0.3</sup>
	16	11.1±0.14	9.5±0.11	120°±30′	2.4 <sub>0</sub> <sup>+0.3</sup>	9.0 <sub>0</sub> <sup>+0.3</sup>

**Figure 4—10 A, 16 A single phase two-pole socket-outlets with earthing contact**



Basic parameter		Main dimensions of single phase two-pole plug with earthing pin								
		mm								
Rated voltage	Rated current	Opening distance		Opening angle	Plug pin dimension					
		A	F		t	b	C <sup>a</sup>	E <sup>a</sup>	R	H
250	10	13.7±0.14	12.2±0.14	120°±30'	2.5 <sup>+0.15</sup> <sub>-0.05</sub>	10.4 <sup>0</sup> <sub>-0.27</sub>	22.5±0.42	19.5±0.35	9.0±1	1.0±0.2
Indexing symbol interpretation										
S-- chamfering length in millimeters (mm)										
NOTE The values of t and b refer to the size of the exposed conductive metal part.										
<sup>a</sup> The thickness of end of pin (E and C) should be chamfered, and the maximum chamfering length S should be 1.2 mm.										

Figure 5—32 A single phase two-pole plug with earthing pin



Basic parameter		Main dimensions of single phase two-pole socket-outlet with earthing contact mm				
Rated voltage V	Rated current A	Opening distance		Opening angle	Socket-outlet aperture dimension	
		<i>A</i>	<i>F</i>	<i>J</i>	<i>T</i>	<i>B</i>
250	32	13.7±0.14	12.2±0.14	120°±30′	3.3 <sub>0</sub> <sup>+0.3</sup>	11.4 <sub>0</sub> <sup>+0.3</sup>

Figure 6—32 A single phase two-pole socket-outlet with earthing contact

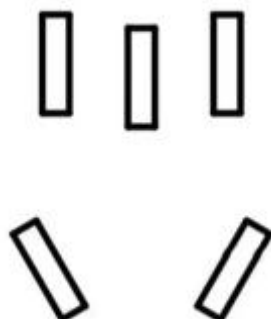
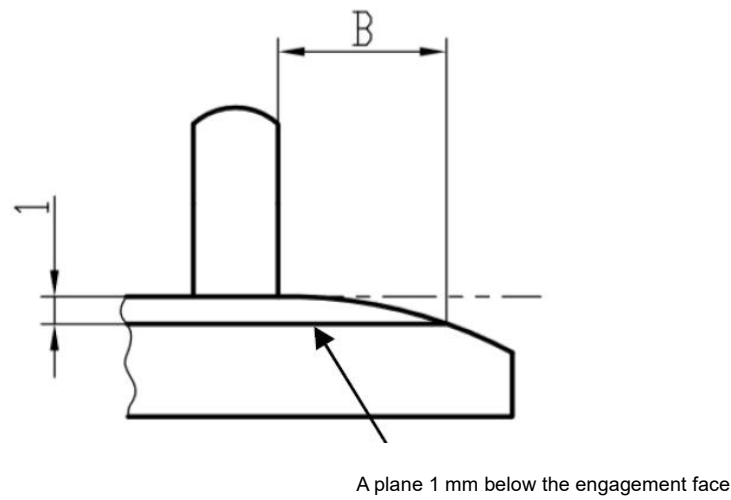


Figure 7—Example of combination of socket-outlet configuration

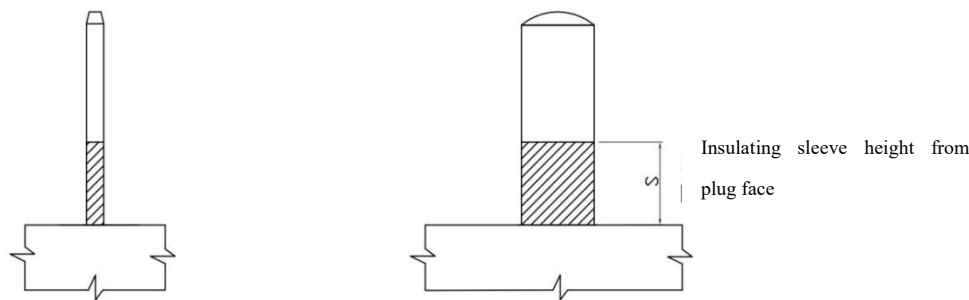
Unit: mm



Description of indexing symbol:

B The distance from the pin to the edge of the plug.

Figure 8—Periphery of plug face

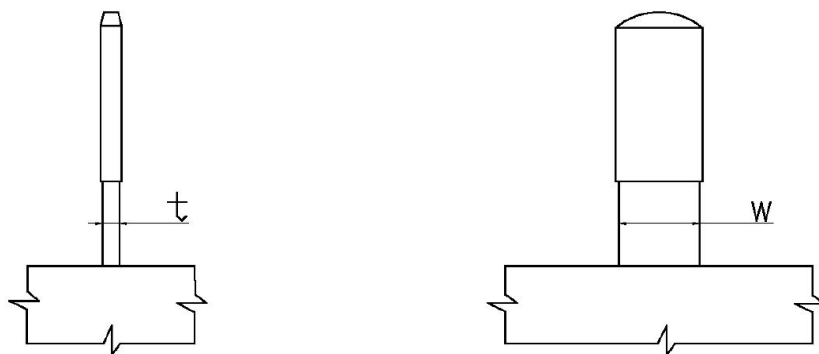


Description of indexing symbol :

G insulating sleeve height.

Figure 9—Insulating sleeve height of plug pin



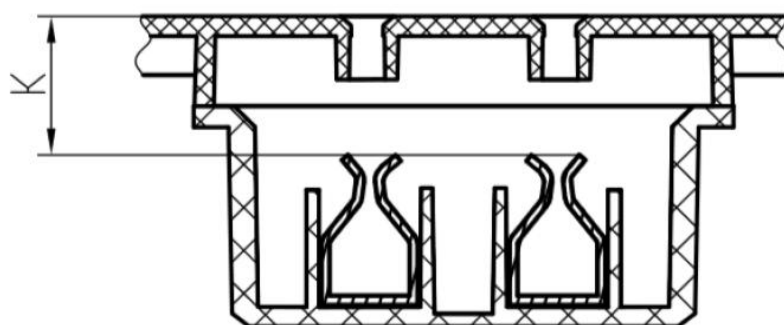


Description of indexing symbol :

t the thickness of the pin after the insulating sleeve is removed;

w Width of pin after the insulating sleeve is removed.

**Figure 10—The dimensions of the pin after the insulating sleeve is removed**

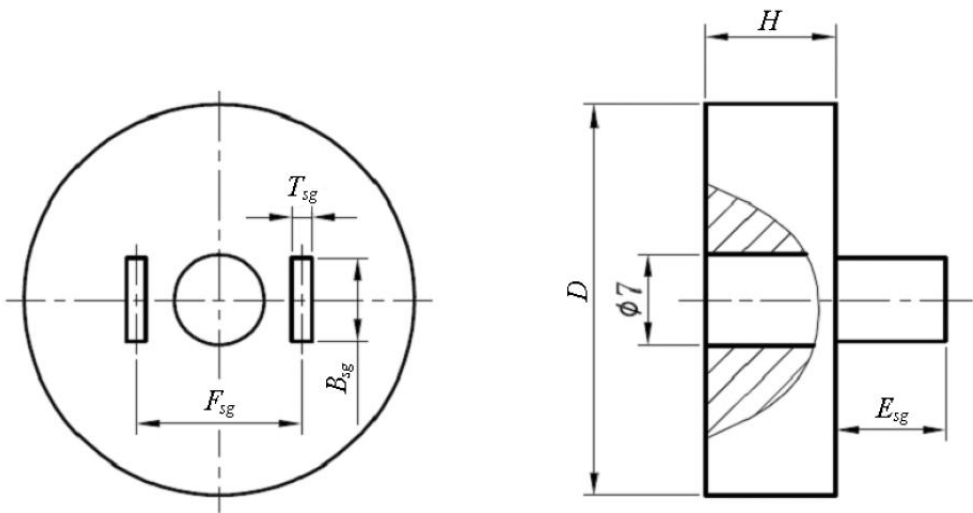


Description of indexing serial number:

K the distance between the contact of the socket-outlet and the engagement face.

**Figure 11—The distance between the contact of the socket-outlet and the engagement face**

Unit: mm

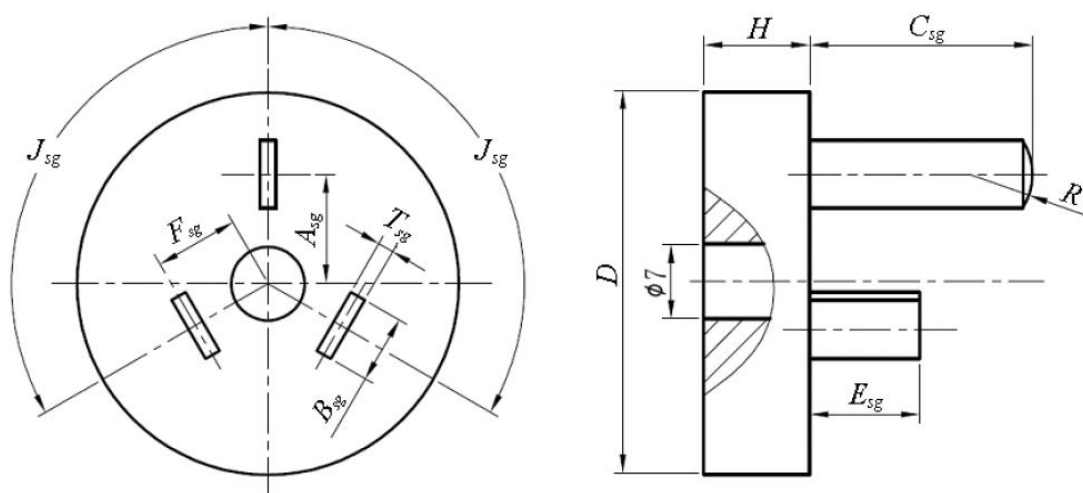


Basic parameter		Dimensions of Non-contact gauge for single phase two-pole socket-outlets					
		mm					
Rated voltage	Rated current	$F_{sg}$	$T_{sg}$	$B_{sg}$	$E_{sg}$	$D$	$H$
V	A						
250	10	12.7±0.14	1.55±0.10	6.4 <sup>0</sup> <sub>-0.22</sub>	8.0 <sup>-0.04</sup> <sub>-0.08</sub>	∅30	10

NOTE ∅7 and D are reference dimensions.

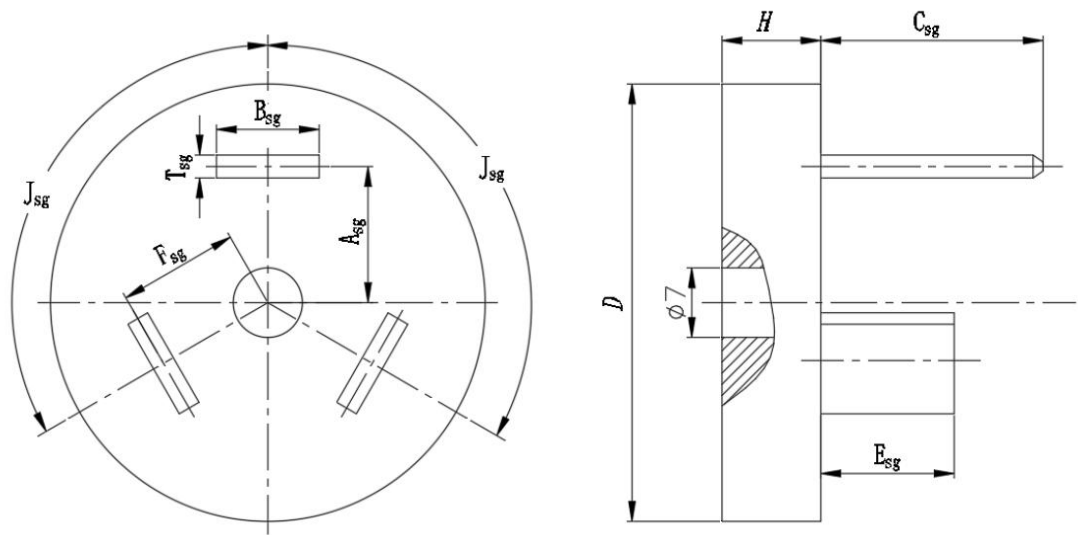
Figure 12—Non-contact for single phase two-pole socket-outlet

Unit: mm



Basic parameter		Dimensions of Non-contact gauge for single phase two-pole socket-outlets with earthing contact									
		mm									
Rated voltage V	Rated current A	$A_{sg}$	$F_{sg}$	$J_{sg}$	$T_{sg}$	$B_{sg}$	$C_{sg}^a$	$E_{sg}$	$R$	$D$	$H$
250	10	$10.3 \pm 0.14$	$7.9 \pm 0.11$	$120^\circ \pm 30'$	$1.55 \pm 0.10$	$6.4_{-0.22}^0$	$21 \pm 0.35$	$10.0_{-0.08}^{+0.04}$	$6.0 \pm 0.05$	$\phi 35$	10
	16	$11.1 \pm 0.14$	$9.5 \pm 0.11$	$120^\circ \pm 30'$	$1.8_{-0.05}^{+0.15}$	$8.1_{-0.22}^0$	$21 \pm 0.35$	$10.0_{-0.08}^{+0.04}$	$6.0 \pm 0.5$	$\phi 40$	10

NOTE  $\phi 7$  and  $D$  are reference dimensions.<sup>a</sup> The chamfering length of thickness of the end of  $C_{sg}$  is 1.2 mm.**Figure 13—Non-contact gauge for 10 A, 16 A single phase two-pole socket-outlet with earthing contact**

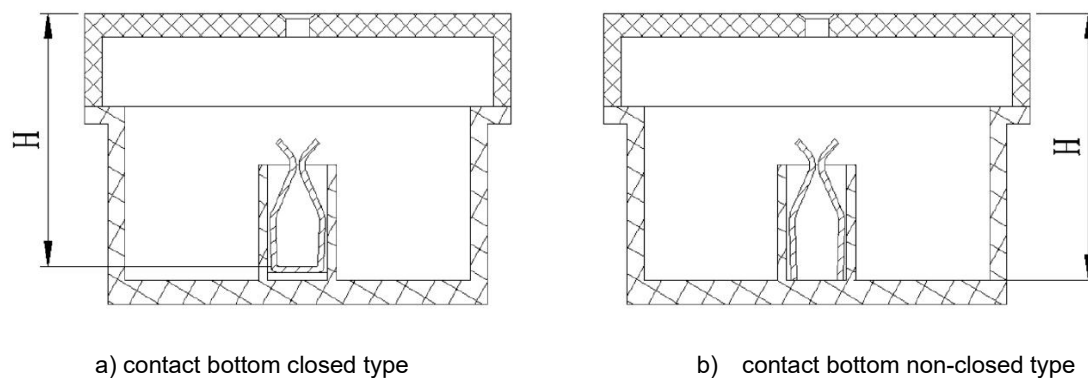


Basic parameter		Dimensions of non-contact gauge for single phase two-pole socket-outlet with earthing contact								
		mm								
Rated voltage	Rated current	$A_{sg}$	$F_{sg}$	$J_{sg}$	$T_{sg}$	$B_{sg}$	$C_{sg}^a$	$E_{sg}$	$D$	$H$
V	A									
250	32	$13.7\pm0.14$	$12.2\pm0.14$	$120^\circ\pm30'$	$2.5^{+0.15}_{-0.05}$	$10.4^{+0}_{-0.27}$	$22.5\pm0.35$	$11.5^{+0.04}_{-0.08}$	$\phi 45$	10

NOTE  $\phi 7$  and  $D$  are the reference size.

<sup>a</sup>  $C_{sg}$  Tips shall be properly rounded with a fillet of  $(9\pm0.5)$  mm; The thickness shall be chamfered, and the chamfer shall be 1.2 mm.

**Figure 14—Non-contact gauge for 32A single phase two-pole socket-outlet with earthing contact**

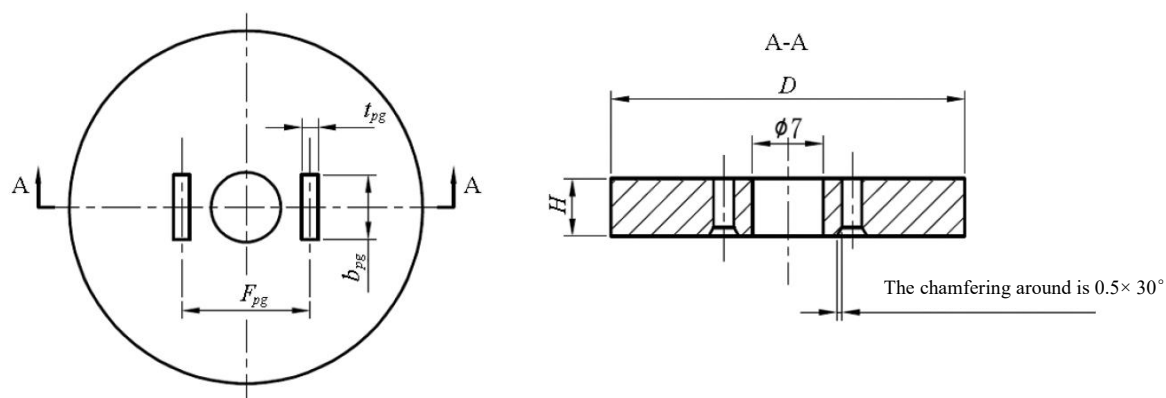


Description of indexing serial number:

H the depth of the socket-outlet corresponding to the cavity into which the plug pin can be inserted.

**Figure 15—The depth to accept the plug pin**

Unit: mm

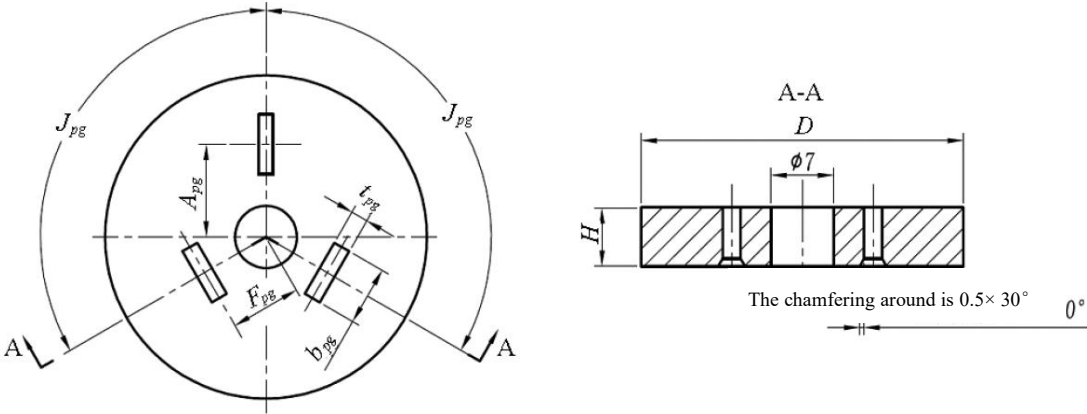


Basic parameter		Dimensions of single phase two-pole plug gauge				
		mm				
Rated voltage V	Rated current A	$F_{pg}$	$t_{pg}$	$b_{pg}$	$D$	$H$
250	≤10	12.7±0.02	1.79 <sup>+0.04</sup> <sub>+0.02</sub>	6.4 <sup>+0.06</sup> <sub>+0.04</sub>	ø30	6±0.5

NOTE ø7 and D are the reference size.

**Figure 16—Gauge for single phase two-pole plug**

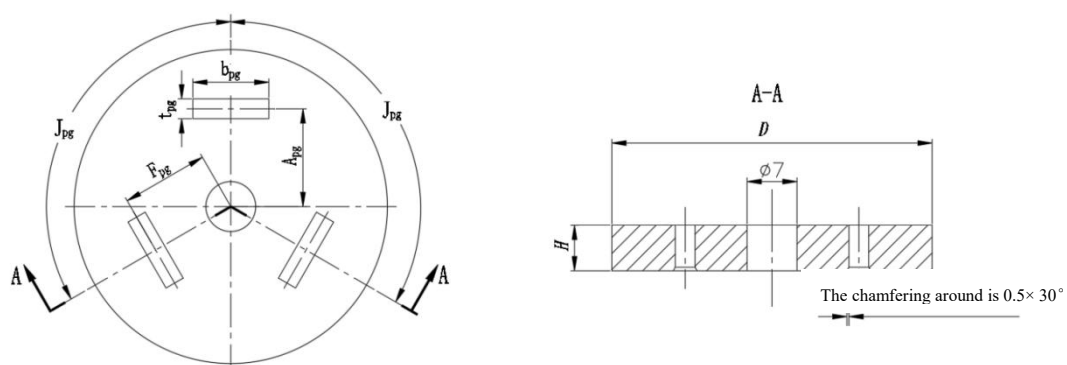
Unit: mm



Basic parameter		Dimensions of gauge for single phase two-pole plugs with earthing contact (mm)						Opening angle
Rated voltage V	Rated current A	$A_{pg}$	$F_{pg}$	$t_{pg}$	$b_{pg}$	$D$	$H$	$J_{pg}$
250	≤10	10.3±0.02	7.9±0.02	1.93 <sup>+0.04</sup> <sub>-0.02</sub>	6.68 <sup>+0.06</sup> <sub>-0.04</sub>	∅35	6 ±0.5	120°±10′
	16	11.1±0.02	9.5±0.02	2.24 <sup>+0.04</sup> <sub>-0.02</sub>	8.38 <sup>+0.06</sup> <sub>-0.04</sub>	∅40	6±0.5	120°±10′

NOTE ∅7 and D refer to the dimensions.

Figure 17—Gauge for ≤10 A, 16 A single phase two-pole plug with earthing pin

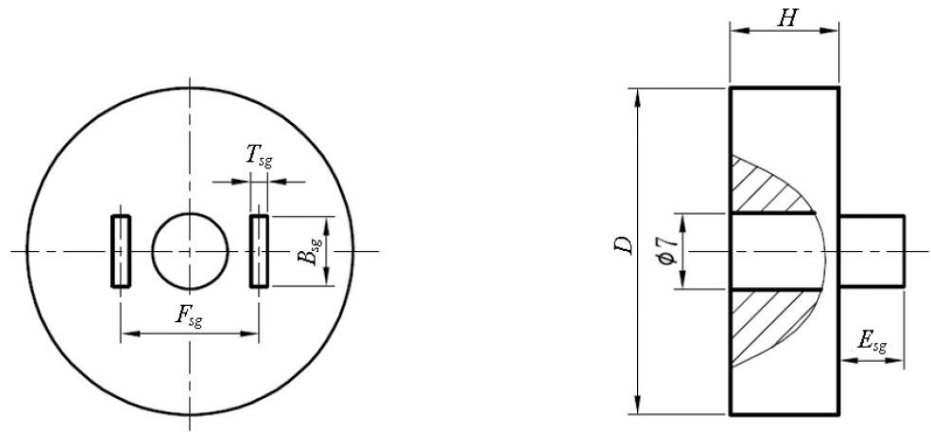


Basic parameter		Dimensions of gauge for single phase two-pole plug with earthing contact (mm)						Opening angle
Rated voltage V	Rated current A	$A_{pg}$	$F_{pg}$	$t_{pg}$	$b_{pg}$	$D$	$H$	$J_{pg}$
250	32	$13.7 \pm 0.02$	$12.2 \pm 0.02$	$3.02^{+0.04}_{+0.02}$	$10.64^{+0.06}_{+0.04}$	$\phi 45$	$6 \pm 0.5$	$120^\circ \pm 10'$

NOTE  $\phi 7$  and  $D$  refer to the dimensions.

**Figure 18—Gauge for 32A single phase two-pole plug with earthing pin**

Unit: mm



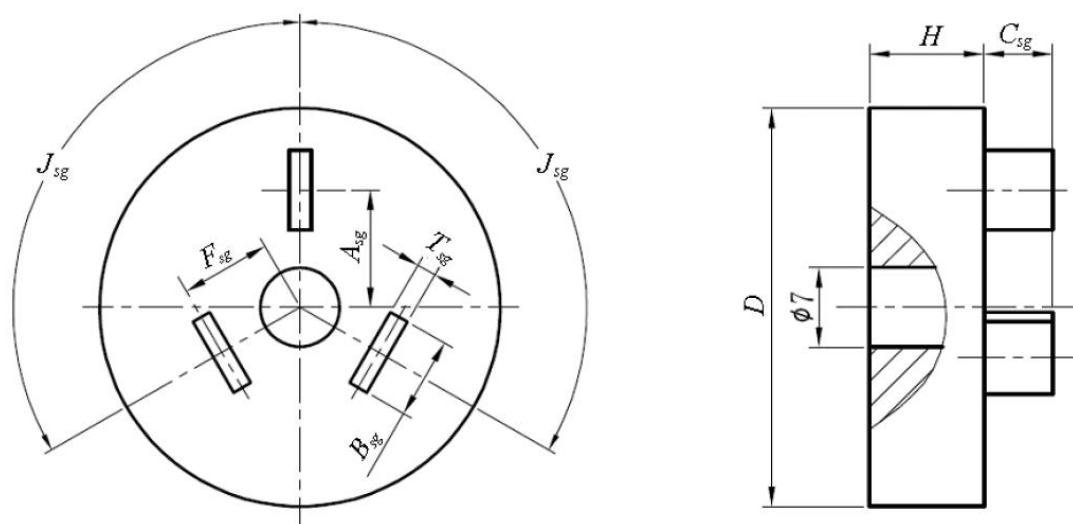
Basic parameter		Dimensions of “GO” gauge for single phase two-pole socket-outlet					
		mm					
Rated voltage	Rated current	$F_{sg}$	$T_{sg}$	$B_{sg}$	$E_{sg}$	$D$	$H$
V	A						
250	10	12.7±0.02	1.86 <sup>-0.02</sup> <sub>-0.04</sub>	7.3 <sup>-0.04</sup> <sub>-0.06</sub>	6.0 <sup>0</sup> <sub>-0.10</sub>	∅20	10

NOTE ∅ 7 and D are reference dimensions.

Figure 19—“GO” gauge for single phase two-pole socket-outlet



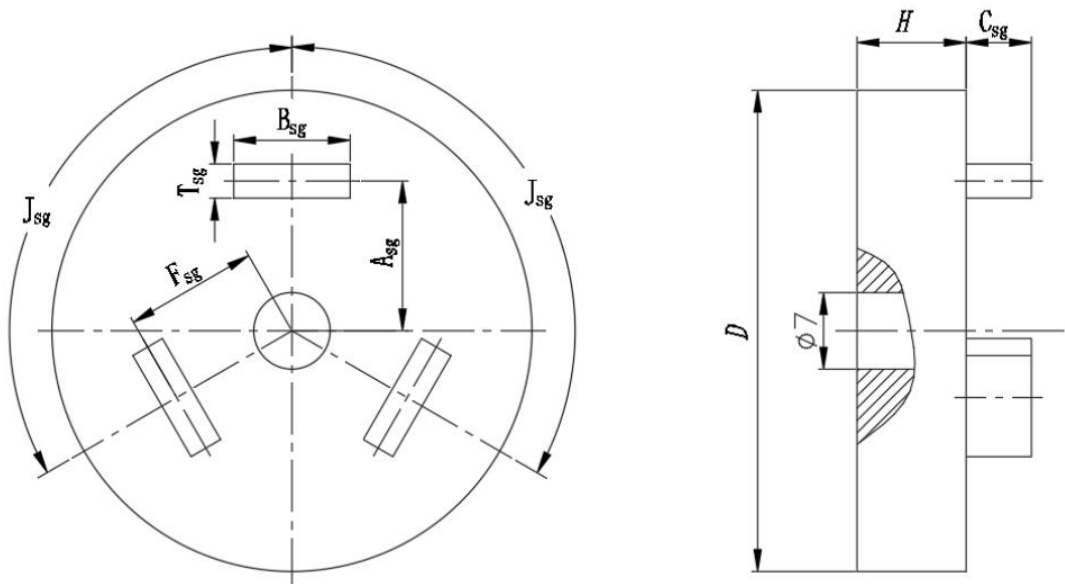
Unit: mm



Basic parameter		Dimensions of "GO" gauge for single phase two-pole socket-outlet with earthing Contact (mm)							Opening angle
Rated voltage V	Rated current A	$A_{sg}$	$F_{sg}$	$T_{sg}$	$B_{sg}$	$C_{sg}$	$D$	$H$	$J_{sg}$
250	10	$10.3 \pm 0.02$	$7.9 \pm 0.02$	$1.72^{+0.02}_{-0.04}$	$7.02^{+0.04}_{-0.06}$	$6.0^{+0}_{-0.10}$	$\phi 32$	10	$120^\circ \pm 10'$
	16	$11.1 \pm 0.02$	$9.5 \pm 0.02$	$2.1^{+0.02}_{-0.04}$	$8.72^{+0.04}_{-0.06}$	$6.0^{+0}_{-0.10}$	$\phi 35$	10	$120^\circ \pm 10'$

NOTE  $\phi 7$  and  $D$  are reference dimensions.

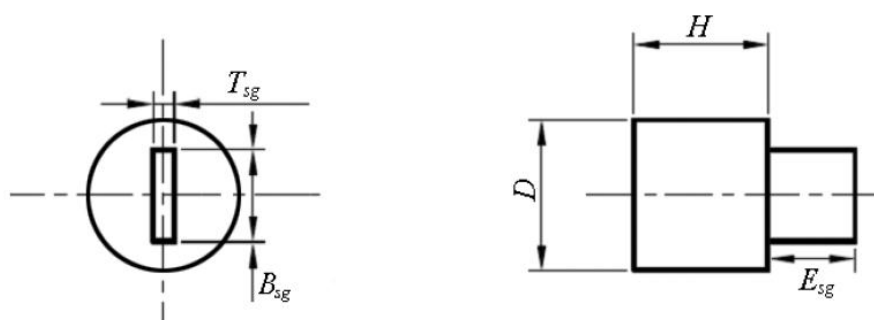
Figure 20—"Go" gauge for 10 A, 16 A single phase two-pole socket-outlet with earthing contact



Basic parameter		Dimensions of “Go” gauge for single phase two-pole socket-outlet with earthing contact (mm)							Opening angle
Rated voltage V	Rated current A	$A_{sg}$	$F_{sg}$	$T_{sg}$	$B_{sg}$	$C_{sg}$	$D$	$H$	$J_{sg}$
250	32	$13.7\pm0.02$	$12.2\pm0.02$	$2.92^{+0.02}_{-0.04}$	$11.16^{+0.04}_{-0.06}$	$6.0^{+0}_{-0.10}$	$\varnothing 36$	10	$120^{\circ}\pm10'$

NOTE  $\varnothing 7$  and  $D$  are reference dimensions.

Figure 21—“Go” gauge for 32 a single phase two-pole socket-outlet with earthing contact

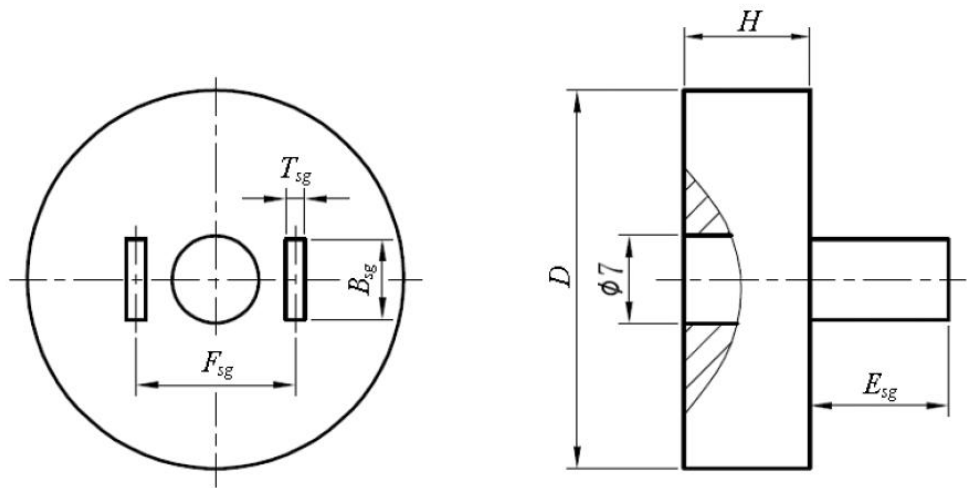


Basic parameter		Dimensions of “NOT-GO” gauge for single aperture for single phase socket-outlet mm				
Rated voltage V	Rated current A	$T_{sg}$	$B_{sg}$	$E_{sg}$	$D$	$H$
250	10	$2.5^{+0.02}_0$	$7.9^{+0.05}_0$	$6.0^{+0.0}_{-0.10}$	Ø 11	>10
	16	$2.9^{+0.02}_0$	$9.6^{+0.05}_0$	$6.0^{+0.0}_{-0.10}$	Ø13	>10
	32	$3.8^{+0.02}_0$	$12.0^{+0.05}_0$	$6.0^{+0.0}_{-0.10}$	Ø15	>10

NOTE D is reference dimensions.

**Figure 22—“NOT-GO” gauge for single aperture for single phase socket-outlet**

Unit: mm

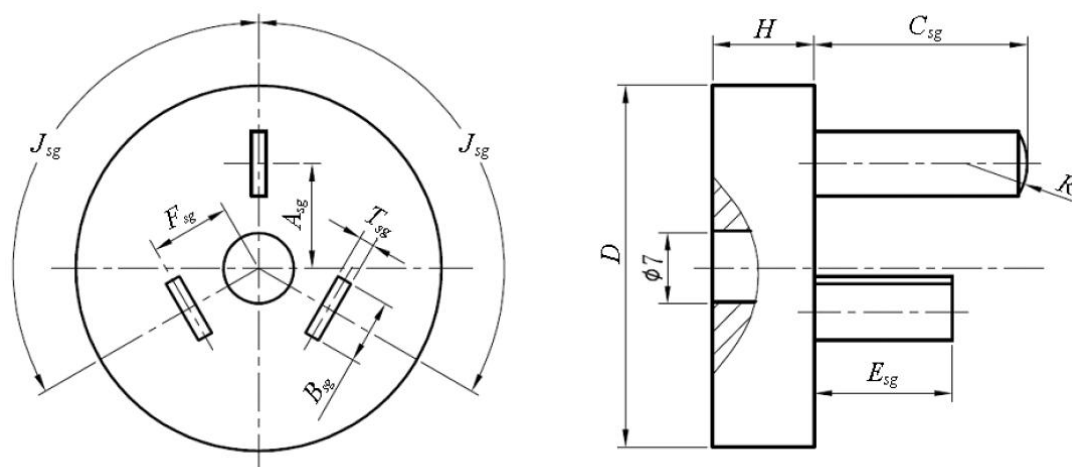


Basic parameter		Dimensions of contact gauge for single phase two-pole socket-outlets					
		mm					
Rated voltage	Rated current	$F_{sg}$	$T_{sg}$	$B_{sg}$	$E_{sg}$	$D$	$H$
V	A						
250	10	12.7±0.14	1.55+0.10	6.4 <sup>0</sup> <sub>-0.22</sub>	11.6 <sup>+0.05</sup> <sub>0</sub>	ø 30	10

NOTE ø 7 and D are reference dimensions.

Figure 23—Contact gauge for single phase two-pole socket -outlet

Unit: mm

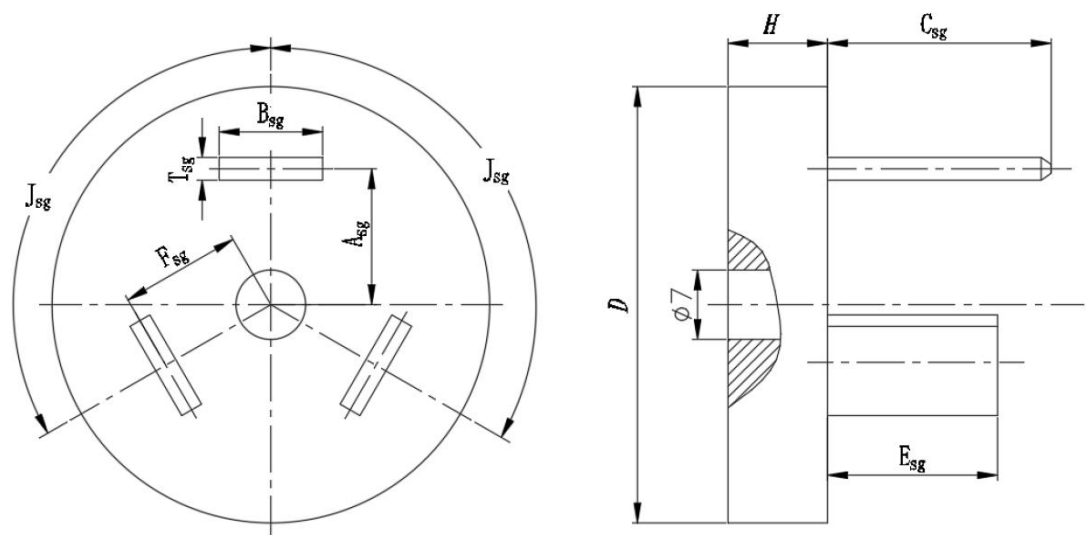


Basic parameter		Dimensions of contact gauge for single phase two-pole socket-outlets with earthing contact (mm)									Opening angle
Rated voltage V	Rated current A	$A_{sg}$	$F_{sg}$	$T_{sg}$	$B_{sg}$	$C_{sg}^a$	$E_{sg}$	$R$	$D$	$H$	$J_{sg}$
250	10	10.3±0.14	7.9±0.11	1.55±0.10	6.4 <sup>0</sup> <sub>-0.22</sub>	21±0.35	13.6	6±0.5	∅ 35	10	120°±30'
	16	11.1±0.14	9.5±0.11	1.8 <sup>+0.15</sup> <sub>-0.05</sub>	8.1 <sup>0</sup> <sub>-0.22</sub>	21±0.35	13.6	6±0.5	∅ 40	10	120°±30'

NOTE ∅ 7 and D are reference dimensions.

<sup>a</sup> The thickness chamfer of the tip of the earthing bolt  $C_{sg}$  is 1.2 mm.**Figure 24—Contact gauge for 10 a, 16 a single phase two-pole socket-outlet with earthing contact**

Unit: mm

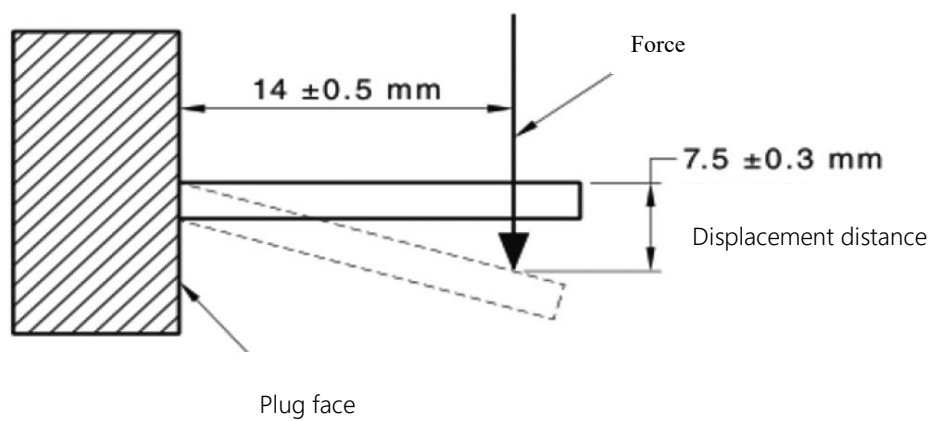


Basic parameter		Dimensions of contact gauge for single phase two-pole socket-outlets with earthing contact (mm)								Opening angle
Rated voltage V	Rated current A	$A_{sg}$	$F_{sg}$	$T_{sg}$	$B_{sg}$	$C_{sg}^a$	$E_{sg}$	$D$	$H$	$J_{sg}$
250	A. 1. 1 0	A. 1. 2 <sub>1</sub> 3.7±0.14	A. 1. 3 <sub>1</sub> 2.2±0.14	A. 1. 4 .5 <sup>+0.15</sup> <sub>-0.05</sub>	A. 1. 5 0.4 <sup>0</sup> <sub>-0.27</sub>	A. 1. 6 <sub>2</sub> 2.5±0.35	A. 1. 7 5.1 <sup>+0.0</sup> <sub>5 0</sub>	A. 1. 8 45	A. 1. 9 0	A. 1. 10 <sub>1</sub> 20° ± 30′

NOTE  $\phi 7$  and  $D$  are reference dimensions.

<sup>a</sup>  $C_{sg}$  tip should be properly rounded with a fillet of  $(9\pm0.5)$  mm; The thickness shall be properly chamfered, and the chamfer shall be 1.2 mm.

Figure 25—Contact gauge for 32 A single phase two-pole socket-outlet with earthing contact



**Figure 26—Bending test of pin with insulating sleeve**

## Bibliography

- [1] GB 4943.1—2022 Audio/video, information and communication technology equipment—Part 1: Safety requirements
  - [2] GB/T 7000.1—2023 Luminaires—Part 1: General requirements and tests
  - [3] GB/T 42236.1—2022 Electric bicycles centralized charging facilities—Part 1: Technical specification
  - [4] QC/T 1199—2023 Intergrated AC Standard socket-outlet of conductive charging for electric vehicles
  - [5] AS/NZS 3112:2017 Approval and test specification-Plugs and socket-outlets
-