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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 1003-2016

Replacing GB 1003-2008

**Three phase plugs and socket-outlets for household and
similar purposes - Types, basic parameters and dimensions**

家用和类似用途三相插头插座 型式、基本参数和尺寸

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Foreword

This Standard was drafted in accordance with the rules given in GB/T 1.1-2009. This Standard replaces GB 1003-2008 "Three phases plugs and socket-outlets for household and similar purposes - Types, basic parameters and dimensions". Compared with GB 1003-2008, the main technical changes in GB 1003-2008 are as follows: - added the use method for special gauges in 5.1; - added the description of the position of the ground electrode and the neutral electrode in 5.2; - modified "The distance between the plug pin and the edge shall ensure that it meets the requirements for protection against electric shock" to "The distance between the plug pin of the live plug and the edge shall not be less than 7.5mm" in 5.3; - added the minimum distance between insert sleeve and mating surface in 5.4; - added the shapes and dimensions of the end of the pin for the plugs in Figure 1, Figure 3; - added Figure

1 Scope

China's national standard for the types, basic parameters and dimensions of three phase plugs and socket-outlets for household and similar purposes - the connectors used for cookers, water heaters, workshop machines and other appliances that need more than a single phase. It specifies the types, the basic parameters and the dimensions of three phase plugs and socket-outlets for household and similar purposes. A dimensional standard of this kind is doing something a safety standard cannot. Safety standards say what a connector must withstand; this one says what shape it must be, and that is what makes a plug bought in one province fit a socket installed in another, and - more importantly - what makes a plug of one rating physically incapable of entering a socket of a different rating or a different number of poles. That non-interchangeability is the safety function of a dimensional standard: it is the reason a three phase appliance cannot be

plugged into a supply that will not support it, and the reason a connector rated for one current cannot be forced into a circuit protected for another. The standard therefore fixes the configurations - the number of poles, the presence and position of the earth and neutral contacts, and the ratings each configuration corresponds to - together with the pin diameters, spacings and lengths, the engagement, the gauges by which conformity is checked, and the marking. The order in which the contacts make and break follows from the geometry: the earth engages first and disengages last, which is a dimensional requirement with an entirely safety-related purpose. Issued on 13 December 2016 and in force since 1 July 2017, it replaces GB 1003-2008.

This Standard specifies the types, basic parameters and dimensions of three phases plugs and socket-outlets for household and similar purposes. This Standard is applicable to three-phase plugs and three-phase fixed or mobile sockets for household and similar purposes, of which the AC frequency is 50Hz, the rated voltage is 440V, the rated current does not exceed 32A. This Standard does not exclude the use of three-phase plugs and sockets for construction sites, or for agricultural and commercial purposes.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 1184, Geometrical tolerancing - Geometrical tolerance for features without individual tolerance indications (GB/T 1184-1996, eqv ISO 2768- 2:1989)

GB 2099.1-2008, Plugs and socket-outlets for household and similar purposes - Part 1: General requirements (

IEC 60884-1:2006, Ed 3.1, MOD)

3 Terms and definitions

For the purposes of this document, the terms and definitions defined in GB 2099.1-2008 apply.

4 Technical requirements and test methods

The technical requirements and test methods of three-phase plugs and sockets for household and similar purposes shall meet the requirements of GB 2099.1- 2008.

5 Types, basic parameters and dimensions

5.1 The types, basic parameters and dimensions of three-phase plugs and sockets for household and similar purposes shall meet the requirements in Figure 1 to Figure 4. To

inspect these dimensions, use the special gauges specified in Figure 5, Figure 6, Figure 7, Figure 8, and Figure 9 and a vernier caliper with a graduation of 0.02mm. The insertion force of the gauge shall not be greater than the maximum extraction force specified in GB 2099.1-2008. The roughness of these gauges are all . The hardness is HRC58~HRC62. The geometric tolerances of the parallelism, perpendicularity and symmetry of the gauge are in accordance with the tolerance level H specified in GB/T 1184. The use methods of special gauges are as follows: - The three-phase plug shall be able to insert the gauge shown in Figure 5; - The universal gauge shown in Figure 6 shall be able to be inserted into the socket of the three-phase five-wire socket panel. For three-phase four- wire sockets, use a go gauge that removes the neutral pole of Figure 6; - The not-go gauge shown in Figure 7 shall not be inserted into the socket of the three-phase five-wire socket panel. For three-phase four-wire sockets, use the not-go gauge that removes the neutral pole of Figure 7; - The non-contact gauge shown in Figure 8 shall not touch the live socket of the socket. For three-phase four-wire sockets, use a non-contact gauge that removes the neutral pole of Figure 8; - The contact gauge shown in Figure 9 shall be able to touch the live socket of the corresponding three-phase socket.

5.2 The positions of the grounding pole and neutral pole of the three-phase socket are arranged as follows: Face the socket. The ground electrode is in the upper position. The neutral pole is in the middle. The arrangement is shown in Figure 10. In addition, the location of the jack shall be clearly marked.

5.3 The shape of the plug is not specified. However, the distance between the plug pin of the live plug and the edge shall not be less than 7.5mm.

7 Three-phase five-wire socket not-go gauge; - added Figure

8 Three-phase five-wire socket non-contact gauge and its dimensions; - added Figure

9 Three-phase socket live socket contact gauge; - added Figure

10 Schematic diagram of the arrangement facing the three- phase five-wire socket. Three phases plugs and socket-outlets for household and similar purposes - Types, basic parameters and dimensions