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**QC**

AUTO INDUSTRY STANDARD OF  
THE PEOPLE'S REPUBLIC OF CHINA

ICS 43.040

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**QC/T 1068-2017**

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**Asynchronous drive motor  
system for electric vehicles**

电动汽车用异步驱动电机系统

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People's Republic of China**

**Announcement**  
**of Ministry of Industry and Information Technology of the**  
**People's Republic of China**  
**No.2, 2017**

The Ministry of Industry and Information Technology approved 426 industry standards (see the annex for standard references, names, main content and dates of implementation) such as “Superconducting magnetic separator” including 249 mechanical industry standards, 42 automotive industry standards, 10 pharmaceutical industry standards, 106 light industry standards, 4 metallurgical industry standards, 2 chemical industry standards, 7 electronic industry standards, and 6 communications industry standards.

The above mechanical industry standards were published by the Machinery Industry Press. Automotive industry standards were published by Science and Technology Literature Publishing House. Pharmaceutical equipment industry standards were published by China Planning Press. Light industry standards were published by China Light Industry Press. Metallurgical industry standards were published by Metallurgical Industry Press. Chemical industry standards were published by Chemical Press. Electronic industry standards were published by the Institute of Electronic Industry Standardization, Ministry of Industry and Information Technology. Communication industry standards were published by the People's Posts and Telecommunications Press.

Annex: References, names and dates of implementation of 42 automotive industry standards.

Ministry of Industry and Information Technology of the People's Republic of  
China

January 9, 2017

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# Asynchronous drive motor system for electric vehicles

## 1 Scope

This Standard specifies the requirements, test methods, inspection rules, marks and identifications of asynchronous drive motor system for electric vehicles.

This Standard is applicable to the asynchronous drive motor system for electric vehicles.

## 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 755, *Packaging and storage marks*

GB/T 1032, *Test procedure for three-phase induction motors*

GB/T 2900.25, *Electrotechnical terminology - Rotating electrical machines*

GB/T 2900.33, *Electrotechnical terminology - Power electronics*

GB/T 18488.1-2015, *Drive motor system for electric vehicles - Part 1: Specification*

GB/T 18488.2-2015, *Drive motor system for electric vehicles - Part 2: Test methods*

GB/T 19596, *Terminology of electric vehicles*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions defined in GB/T 2900.25, GB/T 2900.33, GB/T 18488.1-2015 and GB/T 19596 as well as the followings apply.

### 3.1 asynchronous drive motor system

The tests specified in 5.2 and 5.3 are carried out under actual cold conditions. Test power supply is industrial frequency power supply.

## **5.2 No-load test of drive motor**

The drive motor that performs the type inspection must be subject to the measurement of no-load curve. The starting point voltage is 1.25 times the specified voltage of 4.2. Then gradually reduce the voltage to the lowest possible voltage (i.e., when the current begins to rise). Measure input voltage, no-load current, no-load loss, and power factor at each measurement point of the drive motor. At least 7 points are measured during the test, in which the no-load current at the voltage specified in 4.2 must be accurately measured. After the test, draw the corresponding curve according to the method specified in GB/T 1032, and calculate the wind wear and iron loss.

Drive motor for exit-factory inspection does not have to measure the no-load curve. Only need to measure the no-load current at the voltage specified in 4.2.

## **5.3 Locked test of drive motor**

The drive motor that performs the type inspection must measure the locked characteristic curve. Lock the drive motor rotor and apply the power frequency voltage. The locked current of the starting point is 1.2 times rated current. Then gradually reduce the voltage till the locked current is 0.4~0.5 times rated current. Record the voltage, input power and power factor of each measurement point. Measure at least 7 points during the test, which requires an accurate measurement of the voltage specified in 4.3 on the first drive motor. After the test, draw the curve between locked voltage, input power and power factor and locked current.

Drive motor for exit-factory inspection does not have to measure the locked curve. Only need to measure the locked current at the voltage specified in 4.3.

# **6 Inspection rules**

The inspection rules are in accordance with GB/T 18488.1-2015. See Annex A for the inspection items.

# **7 Marks and identification**

In accordance with GB/T 18488.1-2015.

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