ICS 43.180
CCS R 17

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 33570-2017

Four-wheel aligners

四轮定位仪

Issued on: May 12, 2017 **Implemented on: December 1, 2017**

Issued by: General Administration of Quality Supervision, Inspection and Quarantine;
Standardization Administration of the PRC

Table of Contents

Foreword

This standard is drafted in accordance with the rules given in GB/T 1.1-2009. This standard is proposed by the Ministry of Transport of the People's Republic of China. This standard by the National Automotive Maintenance Standardization Technical Committee (SAC/TC247) centralized. The drafting of this standard unit. Jilin University, Institute of Automotive Transport Engineering, the Ministry of Communications Automotive Warranty Equipment Quality Supervision, Inspection and Testing Center, Crane Mountain City Panther Electronic Machinery Manufacturing Co., Ltd., Yingkou vigorously car care equipment Technology Co., Ltd., Shanghai into a vehicle testing equipment Technology Co., Ltd. Division, Yingkou Han for Technology Co., Ltd. The main drafters of this standard. Su Jian, Xu Guan, Shao Chenghui, Pan Hongda, Zhang Libin, Chen Rong, Tong Xiaoping, Dai Jianguo, Zhang Qingrui, Lin Huiying, Li Xiangyang, Zong Li Ben, Liu Jindong, Zhang Shenggang, Li Zhiwei. Four wheel locator

1 Scope

China's national standard for four-wheel alignment equipment. It specifies the product classification and models, the technical requirements, the test methods, the inspection rules, the marking and instruction manual, and the packaging, transport and storage, with informative annexes on the test instruments used to check an aligner and on the inspection record. Wheel alignment is the set of angles at which a vehicle's wheels sit relative to the body and to the road - camber, caster, toe, steering axis inclination and the rest - and it is the geometry that determines whether the car goes straight, returns to centre after a turn, and wears its tyres evenly. Those angles are set at manufacture and drift with use: bushes wear, a kerb strike bends a control arm, and suspension settles. So alignment is checked as routine service work, and the aligner is one of the most common pieces of equipment in a workshop. What makes it demanding to specify is that it is a precision measuring instrument used in an imprecise place. It must resolve angles to a few hundredths of a degree, on a vehicle that is not in a fixture, on a lift that is not perfectly level, operated by a technician rather than a metrologist. So the standard's requirements are about measurement accuracy and about the compensation methods that remove the errors the environment introduces - and the test methods, which occupy the largest part of the

document, are how an aligner's claimed accuracy is verified. Issued on 12 May 2017 and in force since 1 December 2017.

This standard specifies the four-wheel locator product classification and model, technical requirements, test methods, inspection rules, signs, instruction manual, package Equipment, transportation and storage. This standard applies to four wheel locators.

2 Normative reference documents

The following documents are indispensable for the application of this document. For dated references, only the dated edition applies to this article Pieces. For undated references, the latest edition (including all modifications) applies to this document.

GB/T 191 packaging and storage icon

GB/T 2423.1 Environmental testing for electric and electronic products - Part 2. Test methods - Test A. Low temperature

GB/T 2423.2 Environmental testing for electric and electronic products - Part 2. Test methods - Test B. High temperature

GB/T 2423.8 Environmental testing for electric and electronic products - Part 2. Test methods - Test Ed. Free fall

GB/T 2423.10 Environmental testing for electric and electronic products - Part 2. Test methods - Test Fc. Vibration (sinusoidal) General rules for the use of industrial products

GB/T 9969 General specification for packaging of electromechanical products GB/T 13384

GB/T 18268.1 Electromagnetic compatibility requirements for electrical equipment for measurement, control and laboratory use - Part 1. General requirements

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Measuring the four-wheel positioning parameters of the instrument.

3.2 Wheel front beam wheeltoe-in Including the first round of the front beam angle, the first round of the beam value, the total front beam angle and the total front beam value of four parameters, the wheel front beam shown in Figure 1.

3.3 Single wheel frontier individualwheeltoe-in Including the single-round front and the first round of the beam before the beam value. The rotation plane of the left and right wheels is in the horizontal plane relative to the longitudinal axis of the vehicle (geometric centerline) (Thetar (thetar)], the wheel front-end bias to the longitudinal direction of the car is positive and vice versa. Single round front beam value ll (lr) is. ll (lr) = d x sinthetal (thetar) (1) Where. ll (lr)

--- left (right) side of the first round of the front beam value, in millimeters (mm); d - the diameter of the wheel front beam measuring point in millimeters (mm); thetal (thetar)

--- left (right) side of the single round of the front beam angle, the unit is degrees (°).