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

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**Gasoline engines with direct fuel injection - Installation of the  
high pressure fuel pump to the engine**

直喷式汽油发动机 高压燃油泵的安装技术要求

**(English Translation)**

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## Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is modified to adopt ISO 21042:2018 "Technical requirements for the installation of high-pressure fuel pumps in direct injection gasoline engines (GDI engines)".

beg".

The technical differences between this document and ISO 21042:2018, and the reasons therefor, are as follows.

---In Chapter 1, the scope of this document was expanded, and the details regarding the location of the high-pressure fuel pump interface and the external dimensions of the high-pressure fuel pump were removed.

The relevant wording should conform to the writing requirements of national standards;

---The chamfer dimensions in the X view of Figure 2 have been changed to conform to the actual situation of high-pressure fuel pump products in the Chinese market;

---The D2 dimension value in Table 1 has been changed to conform to the actual situation of high-pressure fuel pump products in the Chinese market;

---The L1 dimension in Table 1 has been modified to conform to the actual situation of high-pressure fuel pump products in the Chinese market;

---Section 4.4 will cover the relevant technical aspects of the high-pressure end interface of the high-pressure fuel pump as described in ISO 18418-1 and ISO 2974.

Content should be directly reflected in this document, avoiding nested references to ISO 18418-1 and ISO 2974;

---In Figure 4 (referenced from ISO 18418-1 Figure 1), the cone angle is changed to  $60^{\circ} \pm 2^{\circ}$  and the cone surface runout requirement is changed to 0.2 to comply with Chinese standards.

The actual situation of high-pressure fuel pump products in the market.

The following editorial changes have been made to this document.

---The standard title has been changed to "Technical Requirements for Installation of High-Pressure Fuel Pumps for Direct Injection Gasoline Engines" to better suit Chinese terminology.

---ISO 2974, ISO 18418-1, and SAE J2044 have been removed from the normative references; the relevant references are now directly reflected in [the relevant documentation/documents].

---The dimensions referred to by L2 and L4 in Figures 1 and 2 have been changed so that the numerical subscripts correspond to their order of appearance in the text.

order;

---Footnotes a and b have been deleted from Figure 1, and the contents of the original footnotes are directly expressed in Table 1;

---Index numbers have been added to Figure 2;

---Footnote a has been deleted from Figure 2, and the content of the original footnote is directly expressed in Table 1.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

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

This document is under the jurisdiction of the National Automotive Standardization Technical Committee (SAC/TC114).

## 1 Scope

This document specifies the dimensional requirements for installing or integrating a high-pressure fuel pump into a direct injection gasoline engine.

This document applies to direct injection gasoline engines used in automobiles.

## 2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are listed below.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

ISO 13948-2:2024 Diesel engine fuel injection pumps and injectors low-pressure connections - Part 2: Non-threaded (push-in) connect threaded(push-on)connections

## 3 Terms and Definitions

This document does not contain any terms or definitions that need to be defined.

### 4.1 Overview

The high-pressure fuel pump of a direct injection gasoline engine is usually mounted on the engine housing (such as the cylinder head), and its internal plunger and matching tappet are also mounted on it.

Driven by a separate cam on the engine camshaft. This document specifies the interface dimensions (i.e., flange dimensions) between the high-pressure fuel pump and the engine housing.

(inches), low-pressure end interface size of high-pressure fuel pump, high-pressure end interface size of high-pressure fuel pump.

### 4.2 Dimensions of the interface between the high-pressure fuel pump and the engine housing

#### 4.2.1

The main components and assembly diagram of the high-pressure fuel pump are shown in Figure 1.