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**AUTOMOTIVE INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

QC/T 283-2025

**Automobile engine - Piston with ring carrier
(English Translation)**

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Foreword

This Document was drafted as per the rules specified in GB/T 1.1-2020 Directives for Standardization - Part 1.Rules for the Structure and Drafting of Standardizing Documents.

This Document replaced QC/T 465-1999 Automotive Mechanical Transmission Terminology and Definition. Compared with QC/T 465-1999, the major technical changes of this Document

are as follows besides the structural adjustments and editorial modifications.

- Add the scope (see Clause 1 of this Edition);
- Add normative references (see Clause 2 of this Edition);
- Delete the terms for fully constant mesh all spur gear transmission and fully constant mesh all helical gear transmission (see 2.3, 2.4 of the 1999 Edition);
- Delete the definition by the number of the installed synchronizers (see Clause 3 of the

1999 Edition);

- Add basic definitions (see 3.1 of this Edition);
- Modify the terms for single countershaft transmission (see 3.2.1.1 of this Edition; 1.1.1 of the 1999 Edition);
- Modify the English equivalents for dual countershafts transmission (see 3.2.1.2 of this Edition; 1.1.2 of the 1999 Edition);
- Modify the English equivalents for multiple countershafts transmission (see 3.2.1.3 of this Edition; 1.1.3 of the 1999 Edition);

--- Modify the classification of constant mesh transmission (see 3.3.2.1, 3.3.2.2, 3.3.2.3 of this Edition; 3.1 and 3.2 of the 1999 Edition are adjusted to the classification of constant mesh transmission);

--- Modify the English equivalent and definition of full synchromesh transmission (see

3.3.2.3 of this Edition; 3.2 of the 1999 Edition)

--- Modify the English equivalent of main transmission or basic transmission (see 3.6.1.1 of this Edition; 6.1.1 of the 1999 Edition);

--- Modify the English equivalent of splitter group or additional transmission (see 3.6.1.2 of this Edition; 6.1.2 of the 1999 Edition);

--- Add a note on "ratio spread" (see 3.6.1.2 of this Edition);

--- Add the definition by arrangement (see 3.7 of this Edition);

--- Delete the terms for manual shift transmission and automatic shift mechanical transmission (see 5.1 and 5.4 of the 1999 Edition);

--- Delete the terms for planetary gear pair transmission (see 6.3 of the 1999 Edition);

--- Delete the terms for transmission with main reducer (see 7.1 of the 1999 Edition).

Please note some contents of this Document may involve patents. The issuing agency of this

Document shall not assume the responsibility to identify these patents.

This Document was proposed by and under the jurisdiction of National Technical Committee

of Auto Standardization (SAC/TC 114).

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The historical editions replaced by this Document are as follows.

--- QC/T 465-1999;

--- It is first-time revised hereby.

Automotive Mechanical Transmission Terminology and
Definition

1 Scope

This Document specifies the terms and definitions for the classification of mechanical transmissions with certain design and technical characteristics in automobiles.

This Document applies to Type-M and Type-N automotive mechanical transmissions defined

in GB/T 15089-2001.

2 Normative References

The provisions in following documents become the essential provisions of this Document through reference in this Document. For the dated documents, only the versions with the dates

indicated are applicable to this Document; for the undated documents, only the latest version

(including all the amendments) is applicable to this Document.

GB/T 15089-2001 Classification of Power-Driven Vehicles and Trailers

3.1.1 Mechanical transmission

A transmission device that uses manual control to obtain multiple transmission ratios through

gears and other mechanical elements, giving the vehicle forward and reverse functions.

3.2.1 Fixed shaft transmission

A transmission in which the rotation center of all shafts remains unchanged. It is divided into

single countershaft transmission, dual countershafts transmission, multiple countershafts transmission and two-shaft transmission.

3.2.1.1 Single countershaft transmission

A fixed shaft transmission with only one countershaft.

3.2.1.2 Dual countershafts transmission

A fixed shaft transmission with two countershafts.

3.2.1.3 Multiple countershafts transmission

A fixed shaft transmission with three or more countershafts.

3.2.1.4 Twin-shaft transmission

A fixed shaft transmission that consists of an input shaft and an output shaft, with a single-stage gear transmission for the forward gear, and an output shaft (single or two) that is constantly meshed with the main reduction driven gear.

3.2.2 Planetary transmission

A transmission that is driven by the planetary gears.

3.3.1 Sliding gear transmission

A transmission that most gears obtain different transmission ratios by axially sliding the gear to mesh with another gear.

3.3.2 Constant mesh transmission

A transmission that the gears of most gears are often meshed, and obtains different transmission ratios by axially moving the gear sleeve or synchronizer to engage with the meshing teeth of the corresponding gears.

3.4.1 Direct drive transmission

A transmission whose highest gear is direct gear (its output speed is equal to the input speed).