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QC/T 465-2023

Replacing QC/T 465-1999

**Automotive Mechanical Transmission Terminology and
Definition**

汽车机械式变速器分类的术语及定义

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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);

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 Terms and Definitions

3.1 Basic definitions

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 Definition by shaft motion

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, dule 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 Definition by gear shifting

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.

3.3.2.1 Full gear clutch transmission or full dog clutch transmission

A constant mesh transmission with all forward gears shifted by sliding gear sleeves.

3.3.2.2 Synchromesh transmission

A constant mesh transmission with synchronizers in some forward gears.

3.3.2.3 Full synchromesh transmission

A constant mesh transmission with synchronizers in all forward gears.

3.4 Definition by highest gear structure type

3.4.1 Direct drive transmission

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

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