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

GB/T 3367.2-2018

Glossary of terms for diesel locomotives - Part 2: Diesel engine

内燃机车词汇 第2部分：柴油机

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Foreword

GB/T 3367 "Dictionary of Diesel Locomotive" is divided into five parts.

--- Part 1. Basic vocabulary;

--- Part 2. Diesel engine;

--- Part 3. car body, bogie and brake device;

--- Part 4. Hydraulic drive system;

--- Part 5. Auxiliary devices. This part is the second part of GB/T 3367. This part is drafted in accordance with the rules given in GB/T 1.1-2009. This part replaces GB/T 3367.1-2000

"The terminology of diesel engine parts for railway locomotives" and GB/T 3367.7-2000

"German locomotive terminology diesel engine terminology". The main technical changes in this section compared with GB/T 3367.1-2000 and GB/T 3367.7-2000 are as follows:

--- Modified standard name;

--- Revised the definition of medium speed diesel engine and high speed diesel engine (see 2.1.4, 2.1.5, 2.4/

2.5 in GB/T 3367.7-2000);

--- Removed the classification of naturally aspirated diesel engines and the classification of U-shaped diesel engines (

2.20 in GB/T 3367.7-2000);

- Increased the classification of single-cylinder and multi-cylinder machines (see 2.1.20, 2.1.21);
- Increased vocabulary and definitions related to emissions, pressurization, fuel injection processes (see 2.2.46, 2.2.61, 2.2.131~2.2.133, 2.2.152~) 2.2.177);
- Revised the pressure growth rate (see 2.2.74,

1 Scope

Part 2 of China's national vocabulary for diesel locomotives, covering the diesel engine itself. It defines the classification of diesel engines, the working process, the power and economy indices and performance, engine testing, and the main components, closing with a bibliography and an index. It replaces two documents at once - GB/T 3367.1-2000 on diesel engine parts for railway locomotives and GB/T 3367.7-2000 on diesel locomotive engine terminology - which is why it is the largest part of the series. The revision is substantial. The definitions of medium speed and high speed diesel engines are revised; the classification of naturally aspirated engines and of U-form engines is removed; single-cylinder and multi-cylinder classifications are added; a substantial body of vocabulary is added for emissions, turbocharging and fuel injection processes; the rate of pressure rise is revised; ignition speed terms are added; the separate, direct injection, main and pre-combustion chamber terms are deleted; and the definitions of minimum stable working speed and related terms are revised. Read together, those changes are the story of what happened to the diesel engine over eighteen years. Naturally aspirated and pre-chamber engines disappeared because turbocharging and direct injection won on every measure. And emissions vocabulary had to be created, because emissions went from a peripheral concern to the constraint that governs how a large diesel engine is designed. Issued on 7 June 2018 and in force since 1 January 2019.

This part of GB/T 3367 defines the classification of diesel engines for diesel locomotives, the working process of diesel engines, the power and economic indicators of diesel engines and Terms and definitions for performance, diesel testing and major components of diesel engines. This section applies to diesel engines for diesel locomotives.

2.1 Diesel engine classification

2.1.1 Two-stroke diesel engine two-strokedieselenengine The piston completes a duty cycle of the diesel engine through two strokes. [

GB/T 1883.1-2005, definition 7.3]

2.1.2 Four-stroke diesel engine four-strokedieselenengine The piston completes a duty cycle of the diesel engine through four strokes. [

GB/T 1883.1-2005, definition 7.2]

2.1.3 Low speed diesel low-speeddieselenine A diesel engine with a crankshaft speed $n \leq 300$ r/min or an average piston speed $v_m < 6$ m/s.

2.1.4 Medium speed diesel engine medium-speeddieselenine

2.1.5 High speed diesel high-speeddieselenine A diesel engine with a crankshaft speed $n > 1200$ r/min or an average piston speed $v_m > 12$ m/s.

2.1.6 Supercharged diesel engine superchargeddieselenine A diesel engine that uses a supercharger to increase the charge (2.2.16) density and increase the power.

2.1.7 Low pressure diesel engine lowpressure-chargingdieselenine A supercharged diesel engine with a supercharging pressure $p_b \leq 0.15$ MPa.

2.1.9 High pressure diesel engine highpressure-chargingdieselenine

2.1.10 Super high pressure diesel engine superhighpressure-chargingdieselenine A supercharged diesel engine with a supercharging pressure $p_b > 0.35$ MPa.

2.1.11 Exhaust gas turbocharged diesel turbochargingdieselenine A diesel engine that uses a diesel exhaust energy to drive an exhaust gas turbocharger for boosting.

2.1.12 Supercharged diesel engine mechanicalsuperchargingdieselenine A diesel engine that is mechanically driven by a diesel engine to supercharge the supercharger.

2.1.13 Two-stage supercharged diesel engine two-stagesuperchargeddieselenine The charge (2.2.16) is a two-pressed diesel engine.

2.1.14 Compound diesel compound-superchargingdieselenine In addition to driving the compressor, the exhaust gas turbine transmits the remaining power to the exhaust gas turbocharged diesel engine that is outputted by the diesel engine crankshaft.

2.1.15 Vertical diesel engine verticaldieselenine The cylinder centerline is perpendicular to the horizontal plane of the diesel engine.

2.1.16 Horizontal diesel engine horizontaldieselenine The cylinder centerline is parallel or close to the parallel diesel engine.

2.1.17 Inline diesel engine in-linedieselenine A diesel engine having two or more upright cylinders arranged in a row.

2.1.18 For piston-type diesel engines opposed-pistondieselenine There are two piston-operated diesel engines in the same cylinder.

2.1.19 V-type diesel engine V-typedieselenine A diesel engine having two or two columns

of cylinders with a V-shaped centerline angle and sharing a crankshaft.

2.1.20 Single cylinder diesel engine single-cylinderdieselenigne There is only one cylinder for the diesel engine.

2.1.21 Multi-cylinder diesel engine multi-cylinderdieselenigne A diesel engine with two or more cylinders.

2.2 Diesel engine working process

2.2.1 Cylinder diameter cylinderborediameter The diameter of the bore in the cylinder.

2.2.2 Crank radius crankradius The distance from the crankpin centerline of the crankshaft to the centerline of the main journal.

2.2.3 Piston stroke pistonstroke The distance between the upper and lower stop points of the piston.

2.2.4 Stroke bore ratio stroke-boreratio The ratio of stroke to bore.

2.2.5 Link length lengthofconnectingrod The distance between the centerline of the end hole size of the connecting rod.

2.2.6 Crank link than crankradius-connectingrodlengthratio The ratio of the crank radius to the length of the connecting rod.

2.2.7 Stop deadcentre When the piston reciprocates, its top surface changes from one direction to the position of the transition point in the opposite direction.

2.2.8 Top dead center topdeadcentre The stop point when the top surface of the piston is farthest from the centerline of the crankshaft.

2.2.9 Bottom deadbot bottomdeadcentre The stop point of the top surface of the piston closest to the centerline of the crankshaft.

2.2.10 Inner dead point innerdeadcentre The dead center of the piston top surface of the piston-type diesel engine (2.1.18) which is the farthest from the crankshaft center line.

2.2.11 External stop point outerdeadcentre The dead center of the piston top surface of the piston-type diesel engine (2.1.18) closest to the crankshaft centerline.

2.2.12 Cylinder maximum volume maximumcylindervolume The volume of the closed space above the piston at the bottom dead center (outside stop) of the piston.

Note. It is the sum of cylinder working volume and cylinder clearance volume.

2.2.13 Cylinder clearance volume cylinderclearancevolume The volume of the closed space above the piston at the top dead center (internal stop point) of the piston.