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**Safety requirements of battery swap for electric vehicles - Part
2: Commercial vehicle**

电动汽车换电安全要求 第2部分：商用车辆

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Table of Contents

Preface	III
Introduction	IV
1 Scope	1
2 Normative references	1
3 Terms and Definitions	1
4 Safety requirements	3
4.1 Vehicle Requirements	3
4.2 System Requirements	4
5 Test methods	5
5.1 Test conditions	5
5.2 Vehicle test	5
5.3 System Test	6
References	9

Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document is part 2 of GB/T 40032 Safety requirements for battery replacement in electric vehicles. GB/T 40032 has been published in the following parts.

- Safety requirements for battery replacement in electric vehicles (GB/T 40032-2021);
- Part 2: Commercial vehicles.

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

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Introduction

GB/T 40032 "Safety Requirements for Battery Swapping of Electric Vehicles" aims to regulate the safety of battery swapping electric vehicles during use and battery swapping operations.

It is planned to consist of two parts.

- Part 1: Passenger vehicles. The purpose is to standardize battery-swap electric passenger vehicles and on-board battery-swap systems, and special safety requirements for battery-swap To ensure the safety of personnel and property during operation.
- Part 2: Commercial vehicles. The purpose is to standardize the special safety requirements of battery-swap electric commercial vehicles and on-board battery-swap systems in terms of battery swapping.

To ensure the safety of personnel and property during operation.

Other safety risks caused by power batteries, high voltage electrical equipment, etc. have been specified in relevant standards. GB 18384 stipulates GB/T 31498 stipulates the general safety requirements for electric vehicles, GB 38031 stipulates the safety requirements for power storage Battery safety requirements, GB/T 43332 stipulates the safety requirements for charging and discharging of electric vehicles.

Safety requirements for battery replacement in electric vehicles Part 2: Commercial vehicles

1 Scope

This document specifies the safety requirements specific to N1, N2 and N3 battery-swap electric vehicles (hereinafter referred to as "vehicles") and describes the corresponding test Test method.

This document is applicable to N1, N2, and N3 battery-swap electric vehicles and on-board battery-swap systems, and other types of battery-swap vehicles shall be used as a reference.

2 Normative references

GB 1589-2016

GB/T 2423.56

GB/T 4208-2017

GB/T 11918.1-2014

GB/T 15089

GB 18384-2020

GB/T 19596

GB/T 30038

GB/T 37133-2025

GB 38031-2025

GB/T 40032-2021

3 Terms and definitions

GB/T 15089, GB/T 19596, GB/T 40032-2021 and QC/T 1201.1-2023 and the following terms and definitions The meanings apply to this document.

3.1 battery swap

The process of replenishing vehicle power by quickly replacing the power battery through special equipment or manual assistance.

Note. A complete battery replacement process generally takes no more than 5 minutes.

[Source. GB/T 40032-2021, 3.1]

3.2

An electric vehicle that can replenish energy by quickly replacing power batteries through special devices or manual assistance.

Note. Battery-swap electric vehicles are divided into vehicle-battery separated battery-swap electric vehicles and vehicle-battery integrated battery-swap electric vehicles.