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**Specification for Swap Trailer  
Transport of Road Vehicles**

道路甩挂运输车辆技术条件

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## Table of Contents

|                               |   |
|-------------------------------|---|
| Foreword.....                 | 3 |
| 1 Scope.....                  | 4 |
| 2 Normative References .....  | 4 |
| 3 Terms and Definitions ..... | 5 |
| 4 General Requirements.....   | 6 |
| 5 Semi-Trailer Tractor .....  | 6 |
| 6 Semi-Trailer .....          | 8 |
| 7 Articulated Train .....     | 9 |

# Specification for Swap Trailer Transport of Road Vehicles

## 1 Scope

This Standard specifies the general requirements for the swap trailer transport of road vehicle, and the relevant requirements for semi-trailer tractor, semi-trailer, articulated train with maximum allowable total mass of 49t below.

This Standard is applicable to the manufacture and use of the swap trailer transport of road vehicle.

## 2 Normative References

The following documents are essential to the application of 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) are applicable to this document.

GB 1589 Limits of Dimensions, Axle Load and Masses for Motor Vehicles, Trailers and Combination Vehicles

GB/T 3730.1 Motor Vehicles and Trailers – Types - Terms and Definitions

GB/T 3730.2 Road Vehicle – Masses - Vocabulary and Codes

GB/T 3730.3 Motor Vehicles and Towed Vehicles - Dimensions of Vehicles - Terms and Definitions

GB/T 4606 Road Vehicles - 50 Semi-Trailer Fifth Wheel Coupling Pin - Basic and Mounting/Interchangeability Dimensions

GB/T 5053.1-2006 Road Vehicles - Connectors for the Electrical Connection of Towing and Towed Vehicles - 7-Pole Connector Type 24 N (Normal) for Vehicles with 24 V Nominal Supply Voltage

GB/T 5922 Motor Vehicles and Towed Vehicles - Pressure Test Connection for Compressed - Air Pneumatic Braking Equipment

GB 7258 Safety Specifications for Power-Driven Vehicles Operating on Roads

GB 12676 Technical Requirements and Testing Methods for Commercial Vehicle and Trailer Braking Systems

GB/T 13594 Antilock Braking Performance and Test Procedure for Motor Vehicles and Their Trailers

GB/T 13880 Road Vehicles - Fifth Wheels – Interchangeability

GB/T 13881 Braking Connections Between Motor Vehicles and Towed Vehicles

GB/T 18505 Dynamic Balance Test Method for Motor Vehicle Tires

GB 18565 Multiple Performance Requirement and Detecting Methods for Commercial Vehicles

GB/T 20070 Road Vehicles - Mechanical Coupling Between Tractors and Semi-Trailers – Interchangeability

GB/T 20716.1 Road Vehicles - Connectors for the Electrical Connection of Towing and Towed Vehicles - Part 1: Connectors for Braking Systems and Running Gears of Vehicles with 24V Nominal Supply Voltage

GB/T 26777 Semitrailer Landing Gears

GB/T 31879 Road Vehicles - General Technical Requirements for Fifth Wheel

GB/T 32861 Road Vehicles – Location of Electrical and Pneumatic Connections Between Towing Vehicles and Trailers

JT/T 475 Trailer Axle

JT/T 794 GNSS System for Operating Vehicles - Technical Specification for Vehicle Terminals

### 3 Terms and Definitions

For the purpose of this document, the terms and definitions given in GB/T 3730.1, GB/T 3730.2, GB/T 3730.3 and the following apply.

#### 3.1 Swap trail transport of road

The transport organization mode for the articulated car trains, according to the scheduled operation plan, drag down the trailers at the swap trail station; and then continue to run by replacing other trailers.

#### 3.2 Front fitting radius of fifth wheels on semi-trailer tractor

7258 and GB 12676.

**6.1.2** The fixed position of the air brake connector, electrical connector and anti-lock brake system connector on the front-end beam of the semi-trailer shall conform to the provisions of GB/T 32861.

**6.1.3** The position for center of mass, load layout plan or corresponding technical documents of the semi-trailer shall be provided.

## **6.2 Size matching requirements**

**6.2.1** The front fitting radius of the semi-trailer ( $R_2$ ) shall be no greater than 2040mm (see Figure 2).

**6.2.2** The gas radius of the semi-trailer shall be no less than 2300mm.

**6.2.3** Under the no-load condition of the semi-trailer, the height of the traction pin seat plate from the ground shall be 1230mm~1250mm; high container transport semi-trailer shall be 1020mm~1040mm.

**6.2.4** The horizontal distance from the center axis of the traction pin of the semi-trailer to the most rear end of the semi-trailer shall be no greater than 12000mm [except for the semi-trailer carrying 45ft (1ft=0.3048m) container].

## **6.3 Other requirements**

**6.3.1** The semi-trailer shall adopt the 50# traction pin conforming to the provisions of GB/T 4606.

**6.3.2** The semi-trailer shall adopt the 10t-level axles conforming to the provisions of JT/T 475.

**6.3.3** The semi-trailer shall adopt the double linkage support device conforming to the provisions of GB/T 26777.

## **7 Articulated Train**

**7.1** The specific power of the articulated train (maximum net power of the engine/total mass of the car train) shall be no less than 5.4kW/t; the maximum speed of full load shall be no less than 100km/h.

**7.2** The comprehensive fuel consumption of the articulated train at full load shall conform to the provisions of mandatory standard.

**7.3** The longitudinal inclination angle, lateral inclination angle, articulation angle of the semi-trailer against the semi-trailer tractor, as well as the free space between the

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