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# NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

ICS 43.140

T 80

GB 20075-2020

Replacing GB 20075-2006

# Passenger Handholds and Footrests on Motorcycles

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Issued on: December 24, 2020 Implemented on: January 1, 2022

Issued by: State Administration for Market Regulation;

Standardization Administration of the People's Republic of China.

## GB/T 20075-2020

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## Passenger Handholds and Footrests on Motorcycles

## 1 Scope

This Standard specifies the technical requirements and test methods for passenger handholds (handhold straps, hand-grip bars) and footrests for motorcycles and mopeds (hereinafter referred to as "motorcycles").

This Standard applies to two-wheeled motorcycles, three-wheeled motorcycles with sidecars, and right three-wheeled motorcycles with saddles.

## 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) is applicable to this Document.

GB/T 5359.1 Term for motorcycles and mopeds - Part 1: Types of vehicles

## 3 Terms and Definitions

For the purposes of this Document, the terms and definitions given in GB/T 5359.1 and the following apply.

#### 3.1 Passenger handholds

A device that is fixed on the motorcycle and can be held by the passenger while riding.

NOTE: Including handhold straps, and hand-grip bars.

#### 3.2 Handhold straps

A strap-like device that is fixed on the motorcycle and can be held by the passengers.

#### 3.3 Hand-grip bars

A handle-like device that is fixed on the motorcycle and can be held by the passengers.

#### 3.3.1 Single hand-grip bars

A handle-like device that is fixed on the frame as a whole and can be held by the passengers.

#### 3.3.2 Two hand-grip bars

A handle-like device that is symmetrically fixed on the frame as two parts and can be held by the passengers.

#### 3.4 Footrests

A footrest or pedal device that is fixed on the motorcycle and can be stepped on by the driver and passengers.

#### 3.5 Assistive device

A device with the functions of passenger handholds and footrests that is fixed on the motorcycle and can be held by the passenger or stepped on by the driver and passengers.

#### 3.6 Additional device

A device with passenger handholds and footrests attached to a special-purpose motorcycle that can be held by the passenger or stepped on by the driver and passengers.

## **4 General Requirements**

#### 4.1 Handhold straps and hand-grip bars

When a motorcycle can carry passengers, the motorcycle model shall be equipped with a handhold strap or a hand-grip bars; and each device shall comply with the requirements of this Standard. If assistive or additional devices that may mislead the passengers are installed, they shall meet the relevant requirements of this Standard.

#### 4.2 Footrests

All riding positions of the motorcycle shall be equipped with footrests, and each device shall meet the requirements of this Standard. The minimum dimensions of the upper space of the footrests are 300mm long and 110mm wide; and its spatial position shall ensure that the driver and passenger's feet can be placed safely and without obstruction. The pedal device shall avoid direct contact between the feet/legs and rotating parts of the vehicle (such as wheels) when the vehicle is driving.

#### 4.3 Others

Motorcycle on-board technical documents shall clearly indicate the passenger handhold system and clearly indicate the devices and locations.

## **5 Special Requirements**

#### 5.1 Handhold straps

The handhold straps shall be installed on the seat or other accessories connected to the frame. The installation of the strap shall be convenient for the passengers to use. The strap and its connectors shall be able to withstand a vertical upward tensile force of 2000N without breaking. This tensile force is statically applied to the center of the strap surface, and the maximum pressure shall be no greater than 2MPa.

Please refer to Appendix A for the test method of the handhold strap.

#### 5.2 Hand-grip bars

For a passenger handhold with a singe hand-grip bar, the hand-grip bar shall be close to the seat and perpendicular to the longitudinal center plane of the vehicle and left-and-right symmetrical; and its position shall be conducive to easy use by the passengers. The hand-grip bar and its connectors shall be able to withstand a vertical upward tensile force of 2000N without breaking. This tensile force is statically applied to the center of the hand-grip bar surface, and the maximum pressure shall be no greater than 2MPa.

For passenger handhold with two hand-grip bars, the hand-grip bars shall be symmetrically arranged on both sides of the vehicle seat, and their positions shall be conducive to easy use by the passengers. Each hand-grip bar and its connectors shall be able to withstand a vertical upward tensile force of 1000N without breaking. This tensile force is statically applied to the center of the hand-grip bar surface, and the maximum pressure shall be no greater than 1MPa.

Please see Appendix B for the test method of the hand-grip bars.

#### 5.3 Footrests

Each footrest or pedal of a motorcycle and its connectors shall be able to withstand a vertical downward pressure of 1700N without breaking or not causing any permanent deformation that affects its function. For footrests, the pressure shall be applied statically 15 mm from the outermost end of the footrest. For pedals, the pressure shall be applied statically within the pedal area. For pedals that do not indicate the pedal area, the location shall be 15mm from the outermost edge of the pedal, and the maximum pressure shall be no greater than 2MPa.

Please see Appendix C for the test method of footrests.

# 6 Additional Requirements

Assistive devices or additional devices of the motorcycle are divided by function into categories such as handhold straps, hand-grip bars or footrests; the technical requirements for relevant

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