
**Motorcycles and mopeds — Controls
— Types, positions and functions**

Motocycles et cyclomoteurs — Commandes — Types, positions et fonctions

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 38, *Motorcycles and mopeds*.

This second edition cancels and replaces the first edition (ISO 9021:1988), which has been technically revised.

The main changes compared to the previous edition are as follows:

- the scope has been expanded to mopeds, and the second edition of ISO 4151:1987 which was technically revised has been integrated, and
- new controls have been added due to technology changes.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Motorcycles and mopeds — Controls — Types, positions and functions

1 Scope

This document describes the types, positions and functions of the rider-operated controls on a motorcycle/moped¹⁾, in order to facilitate use.

[Annex A](#) specifies controls, indicators and tell-tales for which identification is obligatory and the appropriate graphical symbols. [Annex B](#) provides the information for applying for electrically propelled motorcycle/moped¹⁾.

This document applies to those controls which, when fitted, are commonly used by the rider of a motorcycle/moped.

The definition or specification of a control does not signify the mandatory presence of each and every control listed in this document on a vehicle.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 6727, *Road vehicles — Motorcycles and Mopeds — Symbols for controls, indicators and tell-tales*
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3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1 vehicle

motorcycles and mopeds as defined in ISO 3833 but not including a steering wheel type

3.2 device

element or assembly of elements used to perform one or more functions

3.3 control

device ([3.2](#)) operated by the rider to obtain functions for which the different mechanisms of the *vehicle* ([3.1](#)) are designed

EXAMPLE Accelerator, brake, etc.

1) “motorcycle/moped” as defined in ISO 3833 but does not include a steering wheel type.

3.4

handlebar

any part of the bar or bars connected to the fork top by means of which the *vehicle* (3.1) is steered

3.5

handgrip

part of the *handlebars* (3.4), furthest from the centre, by which the rider holds the handlebars

3.5.1

rotating handgrip

handgrip (3.5), operating some functional mechanism of the *vehicle* (3.1), which is free to rotate round the *handlebars* (3.4) when so turned by the rider

3.6

frame

any part of the frame, chassis or cradle of the *vehicle* (3.1) to which the engine and/or transmission unit and/or the engine and transmission unit itself are attached

3.7

lever

device (3.2) consisting of an arm turning on a fulcrum, by means of which some functional mechanism of the *vehicle* (3.1) is operated

3.7.1

hand lever

lever (3.7) operated by the rider's hand

Note 1 to entry: Unless otherwise stated, a hand lever is operated by compression (i.e. moving the apex of the lever towards the supporting structure), e.g. for braking or declutching.

3.7.2

foot lever

lever (3.7) operated by contact between the rider's foot and a spur projecting from the lever arm

3.7.3

pedal

lever (3.7) operated by contact between the rider's foot and a pad on the lever, so placed as to allow pressure to be applied to the lever arm

Note 1 to entry: Unless otherwise stated, a pedal is operated by depression, e.g. for braking.

3.7.4

riding pedal

device (3.2) which is linked to some form of transmission and may be used to propel a moped

3.7.5

rocker arm

lever (3.7), pivoted at or near its centre and having a pad or spur at each end, operated by contact between the driver's foot and the pads or spurs

3.8

combined service brake

system of operation (by hydraulic action or mechanical linkage or both or by any actuation by means of electrical and/or electronic signal and equipment) whereby both the front and the rear brakes of the *vehicle* (3.1) are brought into operation, at least partially, by the use of only one *control* (3.3)

3.9

indicator

device (3.2) which presents information on the functioning or situation of a system or part of a system

3.10**tell-tale**

display that indicates, by means of a light-emitting *device* (3.2), the actuation of a device, a correct or defective functioning or condition, or a failure to function

3.11**symbol**

visually perceptible figure used to transmit information independently of language, produced by drawing, printing or other means

4 General requirements**4.1 Type and position**

When a control is fitted, it shall be of the type and in the position specified in [Clause 5](#).

4.2 General design

4.2.1 All the controls specified in [5.1](#), [5.2](#), [5.3](#), [5.4](#) and [5.5](#) shall be within the rider's reach when seated in the riding position and shall be located in the positions or areas specified in those subclauses.

4.2.2 The controls specified in [5.6](#) ("cold starting device/manual choke" and "manual fuel shut-off control/manual fuel shut-off valve") shall be located so that they are operable and within reach of the rider when seated. These controls may not be visible from the rider's position.

4.2.3 The position of the controls on the handlebars shown below shall be such that they can be reached without the rider moving his hand from the respective handgrip.

- Engine cut-out (see [5.2.3.1](#)).
- Front brake (see [5.3.1](#)).
- Rear brake (alternative) (see [5.3.2.2](#)).
- Clutch (see [5.4.1](#)).
- Horn (audible warning device) (see [5.5.1](#)).
- High (main/driving) beam/low (dipped/passing) beam control (see [5.5.2.2](#)).
- Direction-indicator control (see [5.5.3](#)).
- Hazard warning signal control (see [5.5.4](#)).
- Electrically selected gears selection (in case of equipped on hand-operated switch) (see [5.4.2.2.1](#)).

4.3 Access

The rider's reach to the controls shall not be impeded by intrusion of any other control or any part of the structure of the vehicle.

4.4 Identification

The identification of the controls, indicators and tell-tales, if fitted to the vehicle, shall be in accordance with the requirements of [Annex A](#).

4.5 Orientation and directions

4.5.1 Right side/left side

The right/left sides in 5.2, 5.3, 5.4 and 5.5 shall be right side or left side respectively of the longitudinal median plane of the vehicle when facing forward.

4.5.2 Forward (in relation to the handlebars)

The forward in 5.3 and 5.4 shall be the part of the handlebars lying furthest from the driver when seated in the riding position.

4.5.3 Clockwise/anticlockwise

The clockwise/anticlockwise in 5.1, 5.2, 5.4 and 5.5 shall be around the axis when viewed from the upper or outer side of the part considered.

5 Individual requirements

5.1 Electrical controls

5.1.1 Ignition switch/main switch

The device that enables the engine to run and may also allow operation of other electrical systems on a vehicle.

In the case of a rotary switch, the direction of motion shall be clockwise from the ignition “off” position to the ignition “on” position.

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5.2 Engine controls

5.2.1 Starting

5.2.1.1 Starter switch/electric starter

The starter switch/electric starter shall be operated as follows:

- Position of control: on handlebars, right side
- Type of control: push

5.2.1.2 Combined ignition/starter switch

In the case of a rotary switch, motion shall be clockwise, passing from ignition “off” to ignition “on” and then to the starter energizing position.

5.2.2 Speed

5.2.2.1 Speed control (accelerator or throttle)

The speed of the engine shall be adjusted by a hand-operated control as follows:

- Position of control: on handlebars, right side
- Type of control: rotating handgrip
- Direction of rotation: anticlockwise to increase speed

The control shall be self-closing to idle in a clockwise direction after release of the hand unless a vehicle speed control device is activated.

5.2.3 Stop

5.2.3.1 Engine cut-out

As a means of stopping the engine, alternative to the engine ignition switch (see [5.1.1](#)) the vehicle may be equipped with an electrical power cut-out.

- Position of control: on handlebars, right side
- Type of control: no special requirement

5.3 Brakes

5.3.1 Front (wheel) brake

The front brake shall be operated as follows:

- Position of control: on handlebars, right side, forward
- Type of control: hand lever

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5.3.2 Rear (wheel) brake

5.3.2.1 Vehicles with hand-operated clutch

In case of vehicles with hand-operated clutch, the rear brake shall be operated as follows:

- Position of control: around rider's foot, right side
- Type of control: pedal

5.3.2.2 Vehicles without hand-operated clutch

In case of vehicles without hand-operated clutch, they may conform to the requirement either a) or b).

- a) Position of control: on handlebars, left side, forward
- Type of control: hand lever

- b) Position of control: around rider's foot, right side
- Type of control: pedal

5.3.3 Combined service brake

Nothing in the requirements of [5.3.1](#) or [5.3.2](#) shall prohibit a vehicle from being equipped with a combined service brake, the position and type of control of which shall be as specified in [5.3.1](#) or [5.3.2](#).