

Vehicle User Manual

*Template for vehicle user manual*

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1. Introduction

* 1. Purpose and Scope

The vehicle manufacturer shall give detailed information about the operating, charging and safety characteristics of the vehicle. Special attention is needed to the electric safety. This information should be given next to the normal user information of the vehicle (e.g. lighting, dashboard information, … ).

This template can be used to set-up the detailed information about the high voltage parts and risks.

* 1. Abbreviations

|  |  |
| --- | --- |
| Abbreviation | Description |
|  |  |
|  |  |
|  |  |
|  |  |

Table 1: Used Abbreviations

* 1. References

|  |  |
| --- | --- |
| Reference | Description |
| <[1] or [Project]> | <title 1  Author: Mr/Ms T. Swan, Company: TBD  Version: x.y, Date: dd-mm-yyyy> |
| <[2] or [CMP]> | <title 2  Author: Mr/Ms T. Swan, Company: TBD  Version: x.y, Date: dd-mm-yyyy> |

Table : Used References

1. General information: type of the battery and vehicle

Part to give information on:

* Type of battery
* Location of battery
* Indications of high voltage components (symbol and orange cables)

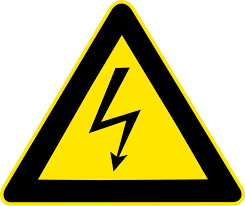


Figure 1: Indication of high voltage elements in the vehicle

1. Hazards associated with the high-voltage battery and electric power train

In this section information on the hazards associated with the high-voltage battery and components can be listed. Precautions related to the fluids and materials stored, used, or processed in the vehicle should be given

Possible hazards are:

* Electrocution
* Dangers by spills and leaks
* Hazards associated with Lithium-Ion Battery Fire

1. Charging of the high voltage battery

When applicable information shall be given on how the vehicle can be charged and which charging equipment has to be used.

* 1. Charging equipment

Details of the needed equipment and indication if it is delivered with the vehicle or not.

If it is delivered with the vehicle, details on installations and the installation requirements.

* Power supply
* Need for a dedicated circuit or not

If not delivered with the vehicle, information on which charger can be used.

* 1. Charging procedure

Information on:

* State of the vehicle for charging (e.g. vehicle must be placed in P)
* Location of the charge port
* How to connect the charger
* How to start charging
* Information on diagnostic lights during charging (e.g. blinking light indicate charging, solid light means that vehicle is connected but not charging, red light indicates a fault, ...)
* When and how to removed the connector after charging

Where needed, add figures to improve information

1. Normal use of the vehicle

In this part detailed info on how to drive the electric/hybrid vehicle can be given.

Restriction related to operation, parking, placing vehicle in garages, shipping requirement must be mentioned in the user manual

1. Diagnostics of the high-voltage battery and circuit

The diagnostics of the vehicle can detect problems in the high-voltage circuit or battery. Via the HMI, information can be given to the user. This part can be used to describe the needed actions of the user when a problem is detected.

1. High-voltage service disconnect
   1. Purpose of the high-voltage service disconnect

Add here information on the use of the high voltage disconnect,



Figure 2: Example of a service disconnect

* 1. Location of the high-voltage service disconnect

Add here the location of the high-voltage service disconnect in the vehicle.

* 1. Disconnecting the high-voltage service disconnect

Define the steps which the user needs to take to remove the service disconnect

* 1. Placing the high-voltage service disconnect back

Define the steps which the user needs to take to place the service disconnect back

1. Emergency situation

Information on how to handle in emergency situations need to be given to the user. This include information on how to tow the vehicle and the needed precautions.

The emergency response guide can be added to the user manuals. This information shall contain:

Information shall be available for the safety personnel and/or emergency responders with regard to dealing with accidents involving these vehicles.

The following items are recommended to be included:

* Explanation of hazards associated with the fluids, hazardous voltage systems, and any materials or components in the high voltage system or vehicle in general.
* Identification of vehicle.
* Procedure for verifying that automatic fuel shut-off and electrical disconnection functions have occurred.
* Location and procedures for manual shut-off of fuels and disconnection of electrical bus, if applicable.

1. Maintenance

Information should be given on operator service procedures, checks, and maintenance schedules:

* Periodicity of maintenance
* Maintenance may only be executed by a professional who is trained to work on electric vehicles.
* The user may never work on or close to the high voltage parts