



东风乘用车

刮水器、清洁器和喇叭



东风乘用车

Wiper, Washer and Horn



- 1、熟悉E70刮水器、清洁器和喇叭的组成及各部件的功用
- 2、熟悉E70刮水器、清洁器和喇叭的工作原理
- 3、能对E70刮水器、清洁器和喇叭进行电路的故障诊断与排除
- 4、掌握E70刮水器、清洁器和喇叭相关部件的拆装更换方法及注意事项

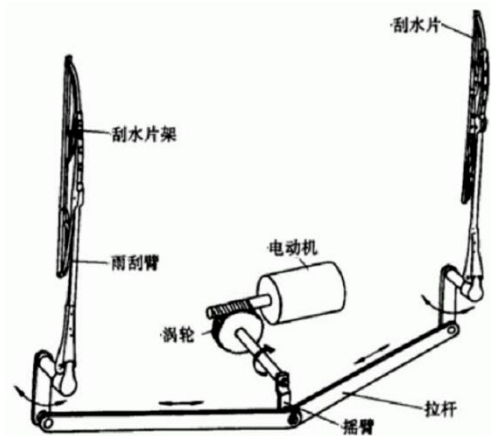
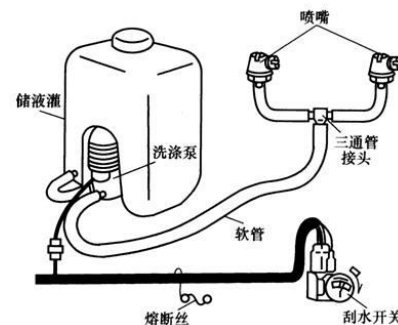
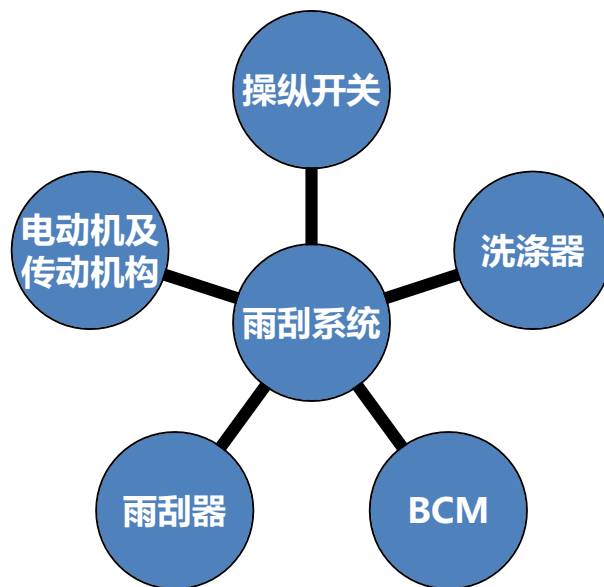


1. Familiar with the compositions of the E70 wiper, washer and horn and functions of their components
2. Familiar with the working principles of the E70 wiper, washer and horn
3. Troubleshoot the E70 wiper, washer and horn
4. Master the removal and refitting and replacement methods and precautions of the E70 wiper, washer and horn related components



一、E70刮水器、清洁器概述

- 1、作用：刮水、除雾、除尘，保证驾驶员有良好的视野，确保行车安全
- 2、工作模式：高速、低速、间歇（间歇时间可调）、点动及喷水

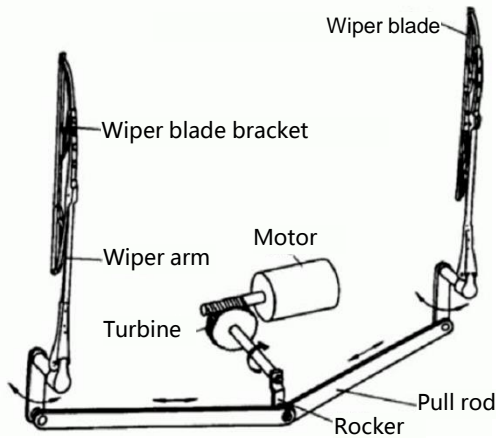
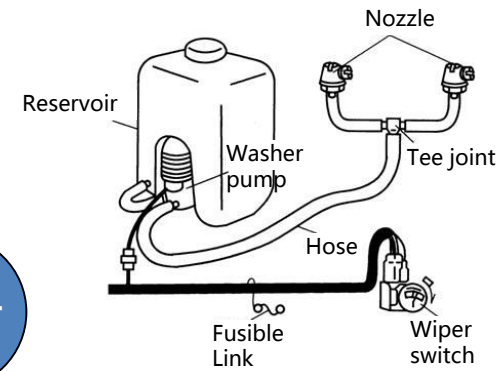
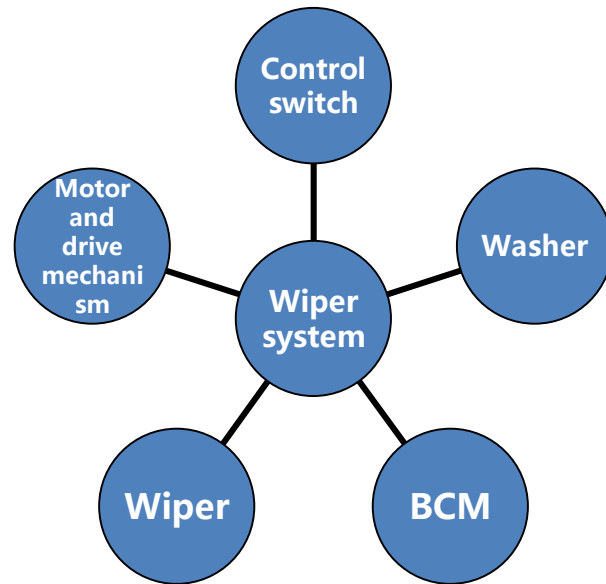


I. Overview of E70 wiper and washer



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1. Functions: wipe, defog, and dedust, to guarantee that the driver has a good view, to ensure safe driving.
2. Working mode: HI, LO, INT (intermittent time adjustable), inching and water spray.

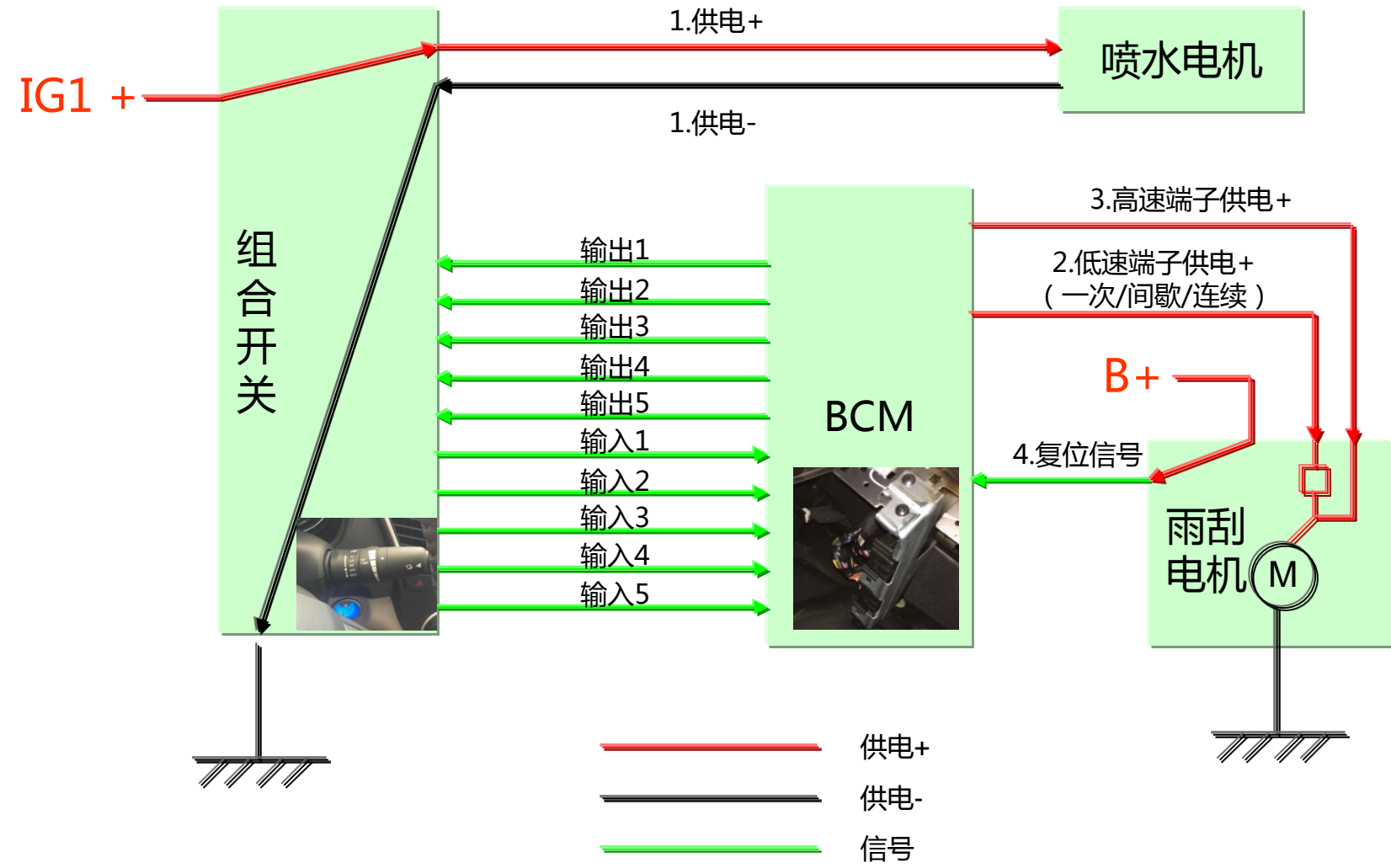


二、E70刮水器、清洁器工作原理及电路图

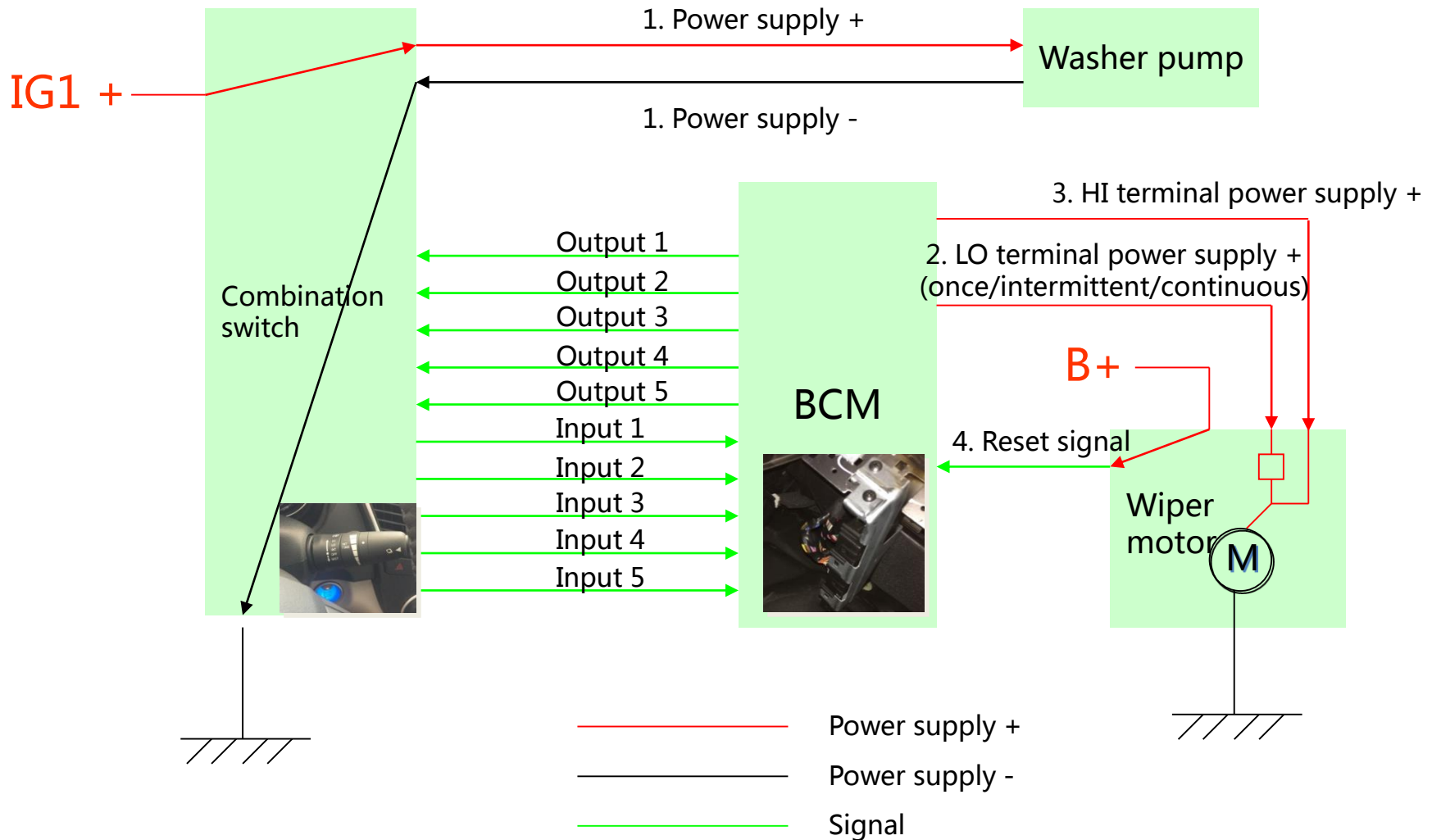


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控制的基本原理及电路图分析



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组合开关读取功能

概述

- BCM 读取组合开关的状态，并根据状态控制每个电气部件。
- 它能读取 5 个输入端口INPUT（输入）1-5 和 5 个输出端口OUTPUT（输出）1-5 组合的 20 种开关信息和 5 种诊断信息。

BCM 激活（开关状态检测机制）

- BCM 不断地输出来自输入端口的电源电压。输出端口按照顺序控制晶体管并向电路提供电流。如果此时开关接通，BCM中的CPU 就检测到电流流向相应的输入端口。因此 BCM 能判断开关接通。

II. Working principle and circuit diagram of E70 wiper and washer



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Reading function of combination switch

General

- The BCM reads the status of combination switch and controls all electrical components according to the read status.
- It can read 20 kinds of switch information and 5 kinds of diagnostic information of 5 INPUT ports 1-5 and 5 OUTPUT ports 1-5.

BCM activation (switch status detection mechanism)

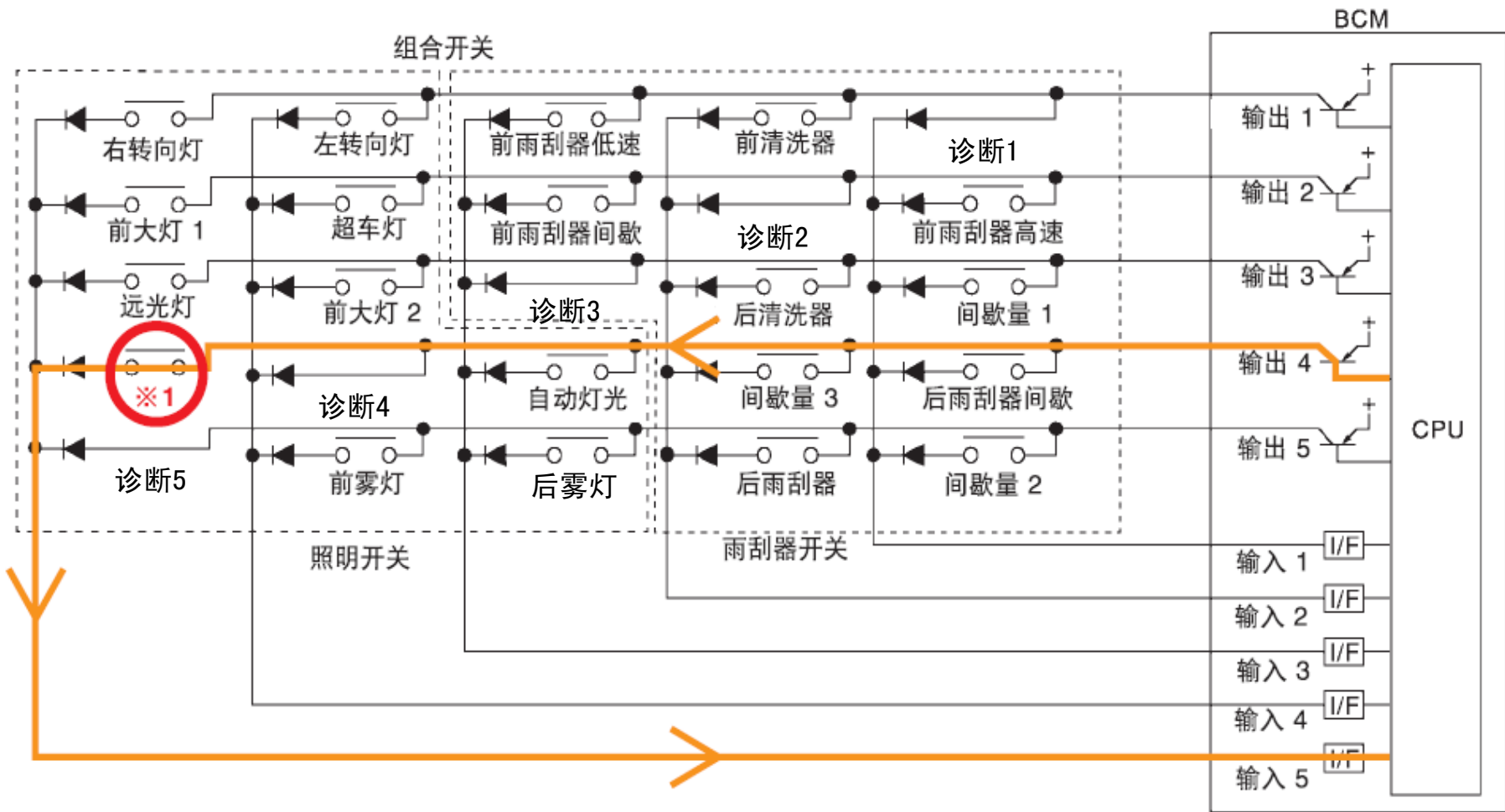
- The BCM continuously outputs the supply voltage from the input port. The output port controls the transistors in sequence and supplies current to the circuit. If the switch is turned on at this time, the CPU in the BCM can detect that current flows to the corresponding input port. Therefore, the BCM can judge that the switch is turned on.

二、E70刮水器、清洁器工作原理及电路图



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激活示例：图示1开关接通时

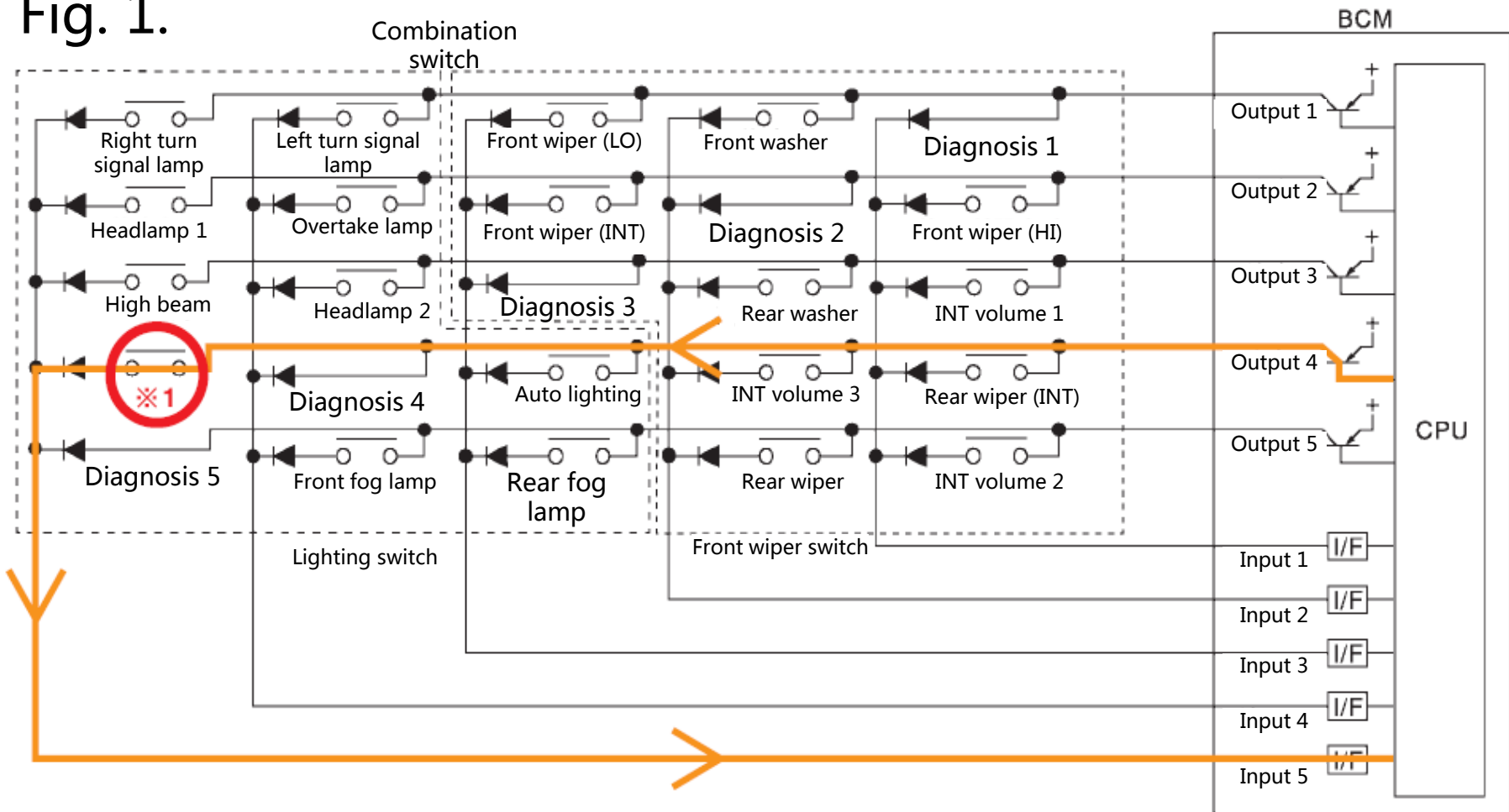


II. Working principle and circuit diagram of E70 wiper and washer



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Activation example: The switch is turned on as shown in Fig. 1.



三、E70刮水器、清洁剂维修注意事项



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- 如果雨刮器在工作中遇到障碍，可能停止雨刮器操作，以保护雨刮器电机。将雨刮器开关转到OFF 位置，清除障碍，等待20 秒以上时间，将雨刮器开关转到ON 位置。
- 如果挡风玻璃上有蜡、油膜或不均匀的玻璃涂层，雨刮器可能无法正确清除污垢。
- 切勿连续1 分钟使用挡风玻璃清洗器。

III. Precautions for service of E70 wiper and washer



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- If the wiper encounters an obstacle during operation, it may stop the wiper to protect wiper motor. Turn the wiper switch to OFF, remove the obstacle, and wait for more than 20s, then turn the wiper switch to ON position.
- If wax, oil film or uneven glass coating attaches to the windshield, the wiper may not remove the dirt properly.
- Do not operate the windshield washer continuously for 1min.

四、E70喇叭概述



作用：通过声响提示行人及车辆



喇叭开关



喇叭

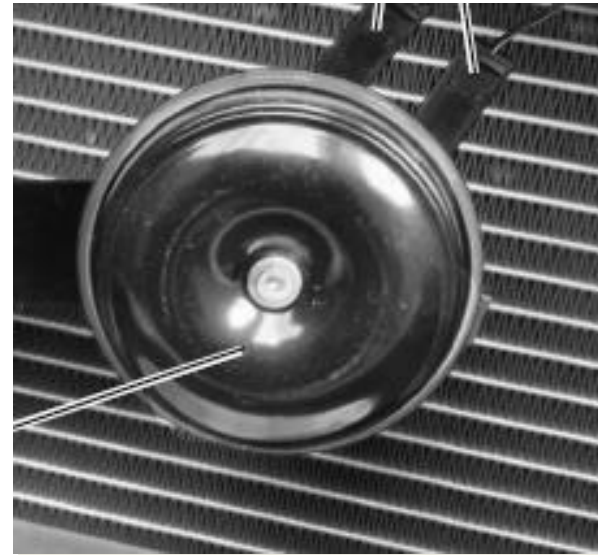
IV. Overview of E70 horn



Function: reminding pedestrians and vehicles by sound.



Horn switch



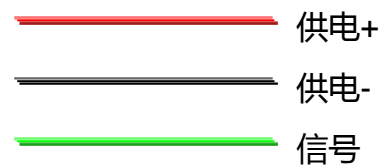
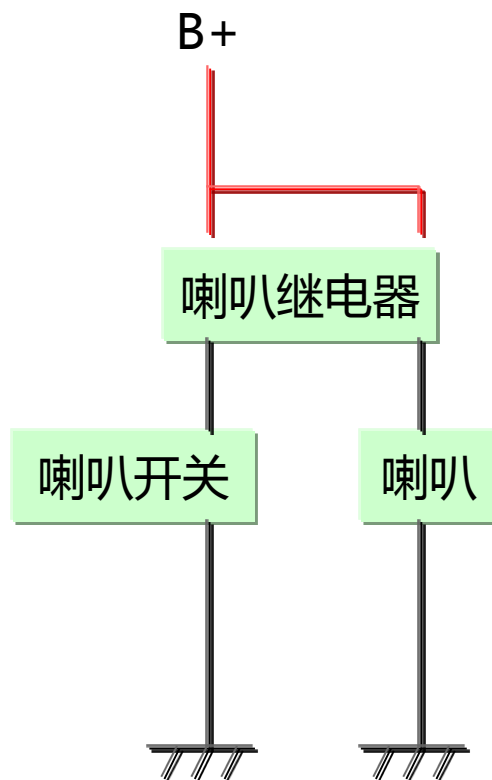
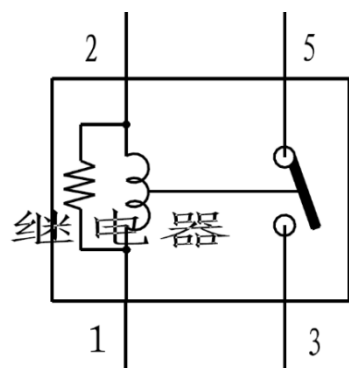
Horn

五、E70喇叭工作原理及电路图



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控制的基本原理及电路图分析

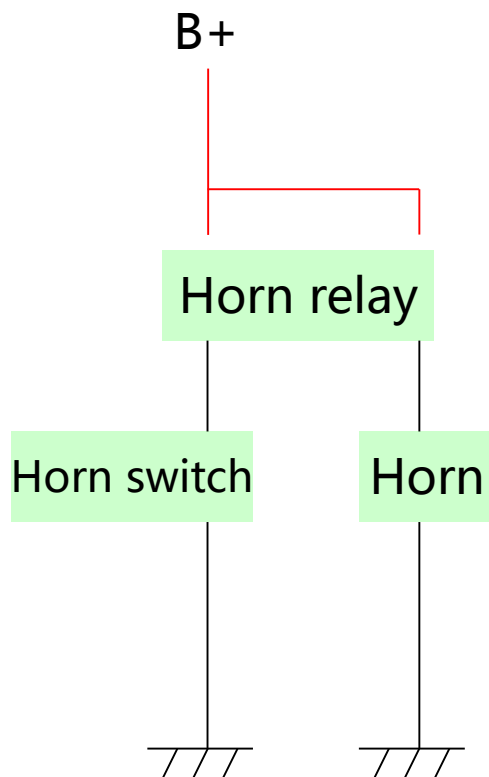
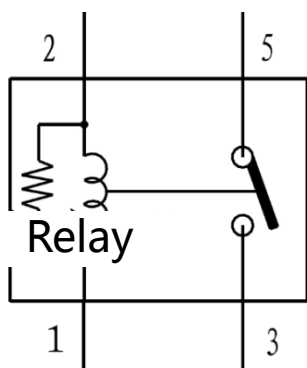


V. Working principle and circuit diagram of E70 horn



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Analysis of working principle and circuit diagram of EPS



- Power supply +
- Power supply -
- Signal