

Measuring the horn circuit

As an example for this task, the horn circuit of the Alfa Romeo Montreal is shown in figure 1. For more details, consult the complete diagram. The circuit is powered from the starter motor terminal.

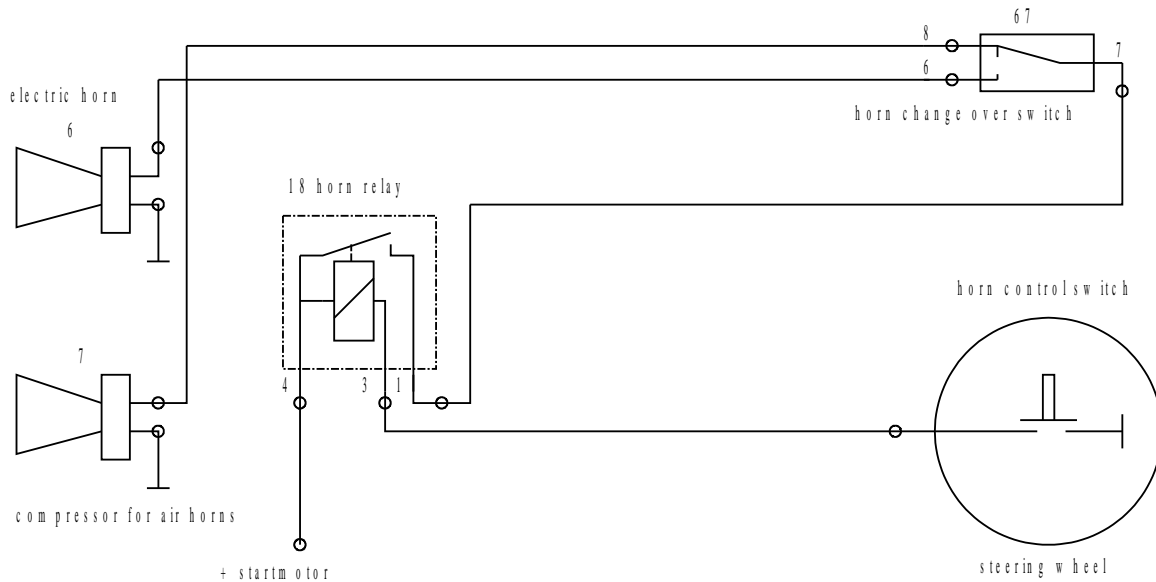


Fig. 1 Partial diagram of the horn circuit

Assignment

1. Using your demonstration car, check to see how the horn is connected. Use the demonstration car's electrical diagram for this. Locate the various components.
2. Draw your own partial diagram of the horn circuit and mark the measurement points for the task.
3. If desired, add simple malfunctions to the circuit on the car such as:
 - broken wire
 - poor ground connection
 - burnt-out fuse or wrong amp fuse
 - extra resistance at the switch
 - malfunctioning relay
 - too large a resistance over the relay points
4. If possible, eliminate the noise of the horn by replacing it with, for example, a light bulb.

Make sure that the measurement points are accessible for the students.

As an example, figure 2 shows a number of measurement points in the circuit along with a number of measurement tasks.

In this case, the negative probe on the multimeter must be connected to the negative pole of the battery.

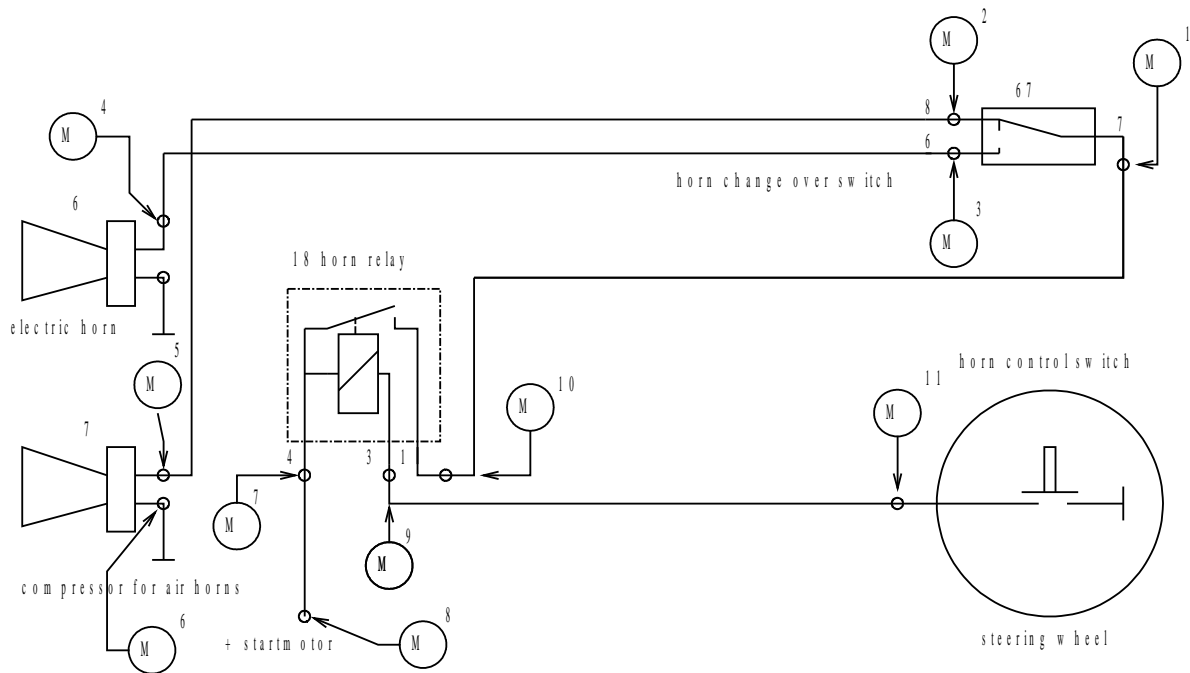


Fig. 2 Horn circuit diagram with possible measurement points

Measurement tasks

Fill in the chart below with voltmeter readings in the following situations:

- situation 1: the electric horn and the air horn are not in use
- situation 2: the electric horn is activated
- situation 3: the air horn is activated

	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11
situation 1											
situation 2											
situation 3											

Conclusion:

The measured values in situation 1 are normal / abnormal
 If they are abnormal, give a possible cause.

The measured values in situation 2 are normal / abnormal
 If they are abnormal, give a possible cause.

The measured values in situation 3 are normal / abnormal
 If they are abnormal, give a possible cause.