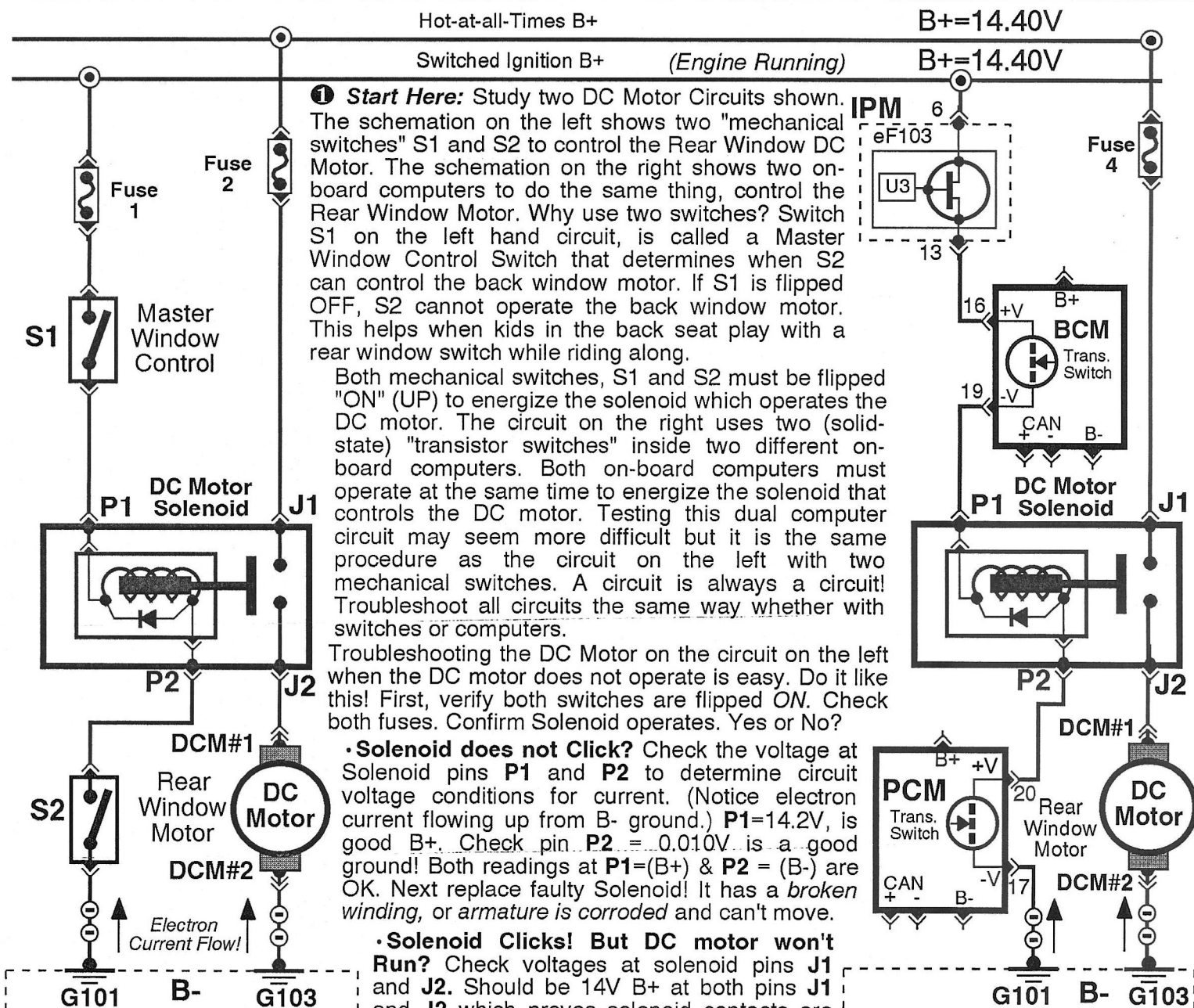


A Circuit is a Circuit - 1ST Part of 2



② Next! Is DC Motor bad?

Check for voltage at pin DCM#1 for B+ of about 14V. OK? Check DCM#2, motor ground side to G103. This is where a DMM provides valuable information proving good ground side voltage but is often misunderstood. A lot of techs will miss this!

• **First! Verify the black (-)DMM test lead connects to a good ground. Use either the -BATT terminal - or - the case of the generator (-GEN) for the best DMM ground connection.**

Do not rely on random locations on sheetmetal for a DMM ground connection when accurate ground side voltage measurements are needed. The best DMM ground is -BATT post.

③ Confirm B+ is present at DCM#1. Now check B- at DCM#2. A good ground circuit allows electron current through the ground circuit (see electrons moving up in schematic at G103). A good ground voltage reading at DCM#2 is about 0.15V to 0.2V. This Vd confirms electron current is flowing and wire is a good ground circuit "under load" (means when current is flowing.) You should recognize the slight difference between DCM#2 (higher) and a little lower at G103 because electron current flows up through the ground circuit and creates a small Vd.

④ There is a very small voltage drop in the motor ground wire as current flows up. A DMM grounded at -BATT detects this level for advanced Vd testing on ground side of a circuit. For more in-depth training about these topics see recommend book:

• **"Vehicle Electrical Troubleshooting SHORTCUTS."**

In the next paper:

"A Circuit is a Circuit, Part 2" Troubleshooting the circuit at the above right with on-board computers controlling the DC Motor is covered in Part 2.

Figure 10-2026 "A Circuit is a Circuit - 1ST Part 1 of 2"