

# Complete Speedometer Cluster with Gauges 0-90 MPH, 55-71 CJ-3B, 5 (Part#: 914845)

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## Questions?

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We are proud to announce our new speedometer cluster for Jeep CJ's. The exterior of the cluster was designed to look identical to the original cluster with the major changes made on the inside of the gauges. The factory gauge clusters were manufactured using 1940's and 1950's technology; resulting in two inherent issues; poor grounds and extremely fragile electronics.

Factory gauge clusters are designed to grounded themselves through the 4 mounting points, requiring the dashboard to have a good ground. This was an issue, even when the Jeeps were new. The re-engineered gauge cluster has dedicated grounds for both the gauges and the lights.

Electronics have come a long way when compared to the 1940's and 1950's. Both the factory gauge cluster and the cluster require power and ground to function properly. A poor or broken ground in a factory gauge cluster will damage the fuel and temperature gauge beyond repair. However, a gauge cluster with a poor or broken ground will cause the gauges to not function instead of becoming damaged. This eliminates the fragility that many have experienced with the factory gauge cluster.



**The installation of this speedometer cluster should only be made by a qualified, knowledgeable service technician. The wiring of the fuel level and coolant temperature gauges have changed in our revision of the factory cluster. Please read through these instructions completely before you begin installation.**

1. Disconnect the negative terminal of the battery.
2. Disconnect the speedometer cable from the speedometer cluster.
3. Disconnect the wires from the gauge cluster one by one and label the function of each as they are removed. This will aid in proper re-installation.

**NOTE:** If replacing faulty gauges it is important to find the cause of the fault prior to connecting the instrument cluster to the vehicle. Factors that should be considered are: grounds at the speedometer cluster and sending units, loose, broken, or frayed wires, faulty sending units, and incorrect wiring. After checking that all the wires, sending units, and connectors have been confirmed to be functioning properly, installation of the replacement cluster can start.

4. Once all wires have been removed from the factory gauge cluster the cluster can be removed.
5. Clean any rust and corrosion from the gauge wiring connections, light spring clips, bulb contact points, and the dashboard opening.
6. Install the replacement gauge cluster using the factory hardware.

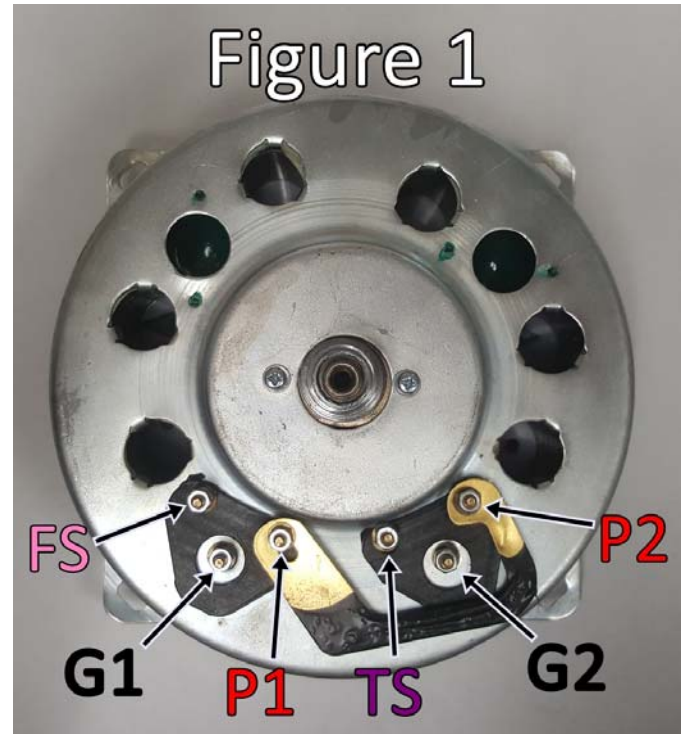
7. Use the information below and Figure 1 for wiring information. Follow the information closely as the wiring on the replacement gauges is different from the factory gauges.

- **FS** = Fuel Level Sensor (PINK wire)
- **G1** = Fuel Level Ground (create your own)
- **P1** = Fuel Level Power (RED wire)
- **TS** = Temperature Sensor (PURPLE wire)
- **G2** = Temperature & Lights Ground (create your own)
- **P2** = Temperature Power (RED wire)

**NOTE:** The factory wiring harness has only one 12V power (red) wire. You can connect that RED wire to either P1 or P2.

8. Create a ground strap that connects to both G1 and G2 on one end and on a known good ground on the other end.

**NOTE:** The factory wiring harness does not have a ground wire for the fuel level gauge, temperature gauge, or the lighting; instead they grounded themselves through the cluster. The result was poor grounds, causing gauges and lights to work sporadically or to not function at all. The gauges and lights in the replacement cluster have dedicated grounds, eliminating these issues. Creating a dedicated ground to both terminals on the cluster is necessary.



9. Snap the light sockets into the cluster. The labels that were placed on the sockets during disassembly will help with installation.

10. Ensure all connections are secure and in the correct position.

11. Connect the speedometer cable to the speedometer cluster hand tight. Over-tightening can result in the speedometer not functioning properly or damage to the speedometer cluster.

12. Connect the negative terminal to the battery.

13. Test the functionality of each light and gauge.

## **Troubleshooting**

### **Gauge Is Not Reading**

**Step 1:** Ensure the power wire at the gauge cluster is getting 12 Volts. Repair or replace as needed. Move to **Step 2** if the gauges are still not reading.

**Step 2:** Ensure the ground wires at the gauge cluster and sending units are properly grounded. Repair or replace as needed. Move to **Step 3** if the gauges are still not reading.

**Step 3:** Ground the sending unit wire at the fuel level or temperature gauge for only a few seconds. If the gauge sweeps to "Full" or "Hot" then the connection at the sending unit or the sending unit itself is faulty. Repair or replace as needed. If it does not sweep move to **Step 4**.

**Step 4:** Ground the sending unit wire at the back of the gauge that is not functioning properly. If the gauge sweeps to Full or Hot then the wiring to the sending unit is faulty. Repair or replace as needed. If the gauge does not sweep then the gauge is faulty.

### **Gauge Reads “Full” or “Hot” At All Times**

**Step 1:** Ensure the power wire at the gauge cluster is getting 12 Volts. Repair or replace as needed. Move to **Step 2** if the gauges still read “Full” or “Hot”.

**Step 2:** Ensure the ground wires at the gauge cluster and sending units are properly grounded. Repair or replace as needed. Move to **Step 3** if the gauges still read “Full” or “Hot”.

**Step 3:** Disconnect the sending unit wire at the sending unit. If the gauge returns to “Empty” or “Cold” then the connection at the sending unit or the sending unit itself is faulty. Move to **Step 4** if the gauges still read “Full” or “Hot”.

**Step 4:** Disconnect the sending unit wire at the back of the gauge that is not functioning properly. If the gauge returns to “Empty” or “Cold” then the wiring to the sending unit is faulty. Repair or replace as needed. If the gauge still reads “Full” or “Hot” then the gauge is faulty.

### **Gauge Reads Incorrect**

**Step 1:** Ensure the power wire at the gauge cluster is getting 12 Volts. Repair or replace as needed. Move to **Step 2** if the gauge still reads incorrectly.

**Step 2:** Ensure the ground wires at the gauge cluster and sending unit are properly grounded. Repair or replace as needed. Move to **Step 3** if the gauge still reads incorrectly.

**Step 3:** Check the resistance readings at the sending unit using the information below. If the readings are incorrect or inconsistent then the sending unit is at fault. Move to **Step 4** if the gauge still reads incorrectly.

<b>Fuel Gauge</b>	
Empty Tank	73 ohms
Half Tank	23 ohms
Full Tank	10 ohms

<b>Temperature Gauge</b>	
Totally Cold	High Resistance
Beginning of Green Band	36 ohms
End of Green Band	13 ohms
Hot	9 ohms

**Step 4:** Check the resistance reading for the sending unit at the gauge cluster using the information above. If the reading is incorrect or inconsistent then the wiring to the sending unit is at fault. If it still reads incorrect then the gauge is faulty.

### **Lights Are Dim / Not Lighting Up**

**Step 1:** Check the bulb for a broken filament. Replace as needed. Move to **Step 2** if the lights are still dim / not lighting up.

**Step 2:** Ensure the spring clips, bulb contact points, and bulbs are free of rust and corrosion. Clean, re-connect, and test functionality. Move to **Step 3** if the lights are dim / not lighting up.

**Step 3:** Ensure the power wire at the bulb connector is getting 12 Volts. Repair or replace as needed.

### **Speedometer Jumps / Doesn't Function**

**Step 1:** Ensure the speedometer cable isn't too tight. It should be hand-tightened. Repair and test functionality. Move to Step 2 if the speedometer still jumps / doesn't function.

**Step 2:** Disconnect the speedometer cable from the speedometer cluster. Drive the vehicle a short distance. If the speedometer cable doesn't spin or spins at a non-constant speed while driving then the speedometer cable or the drive gear is faulty. If the cable spins at a constant speed while driving then the speedometer is faulty.