GENERAL INFORMATION

Model years 2019 and beyond Ram 2500 (DJ) and 3500 (D2) pick-up trucks may experience multiple electrical / electronic issues if the box is removed. The issues experienced will be dependent on option content of the vehicle. The possible issues are listed below.

- Rear Bulb Out Detection May Cause Messages On EVIC & Fast Flash of Turn Indicators
- PWM of Factory Incandescent Bulbs May Causes Issues with LED Lighting On Up Fit
- 2019 And Later Trucks Have Separated Brake/Turn Lamps, Incompatible with Most Up Fits Which Have Combined Brake/Turn Lamp Systems
- Park Sense Sensors May Not Be Re-Installed Causing Faults & EVIC Messages
- Surround View Image Will Be Distorted If Backup Camera Is Not Mounted On the Same Vehicle Location as It Was in The Tail Gate
- Blind Spot Monitor Sensors, Located in The Tail Lights, May Not Be Re-Installed Causing Faults & EVIC Messages
- BCM Will Set Tail Gate Latch Faults If Tail Gate Release on Dash or FOB Is Pressed

All of these features are controlled by electronic configurations in the Body Control Module. (BCM) The procedure described below will modify those configurations to allow the pick up's rear facing electronic items to behave similar that of a chassis cab. The behavior changes are listed below.

- Rear Bulb Out Detection Will Be Disabled for All Rear Lighting, as in Chassis Cab
- PWM Will Be Disabled for Vehicles built with Factory Incandescent Lighting, It's Disabled from the Factory On Vehicles with LED Lighting (Sales Code LAY) and on all Chassis Cabs
- Separated Brake/Turn Lighting Will Be Combined, The Brake Circuits Will Function as Brake/Turn and Turn Circuits Will Be Disabled
- If the Vehicle is Equipped with Park Sense, (Sales Codes XAA or XAG) Enable/Disable Features Will Be Displayed in The "Commercial Settings" Menu On The EVIC, As in Chassis Cab
- If the Vehicle Is Equipped with Surround View, (Sales Code XAK) The 360 Degree View Will Change to 270 Degree View, As in Chassis Cab
- If The Vehicle Is Equipped with Blind Spot Monitor (Sales Code XAN) It Will Be Disabled, Chassis Cab Does Not Have XAN as an Option
- Tail Gate Latch Outputs, Switch Input and Associated Diagnostics Will Be Disabled

This procedure utilizes dealer service tools. If this is a service facility with access to DealerConnect and WiTech, the procedure can be performed. If there is no access to those systems/tools, the vehicle will need to be taken to a Ram dealer. This service will not be covered under warranty; dealer service charges may apply.

Note: This procedure is intended for use on 2019 and newer Ram 2500 (DJ) and 3500 (D2) pickups only. It does not work on model years 2018 and older Ram heavy duty pickup trucks. It does not work on any Ram chassis cabs, vans or light duty (1500 or 1500 Classic) pickups.

SERVICE DETAILS

Perform the following steps to add a sales code to the VIN and configure the vehicle electronics.

1. Add sales code **5D7** to the VIN. This is done on the VEHICLE OPTION UPDATES page in DEALERCONNECT. The page is found in the WARRANTY ADMINISTRATION section under the SERVICE tab. Once on the page, enter the last 8 digits of the VIN and click the "View" button. In the "Available Vehicle Option" window, scroll down and locate the line for sales code **5D7**. Highlight the line and click the "Add" button. You will see the sales code move to the "Selected Vehicle Option" window. Click "Save".
2. Reconfigure the vehicle electronics. This is a WiTech routine called RESTORE VEHICLE CONFIGURATION and is found under the GUIDED DIAGNOSTICS menu. Follow the on-screen prompts to complete the procedure. This will re-configure the BCM based on the sales code add in step 1.
3. Perform a hard reset of the BCM. This is a WiTech routine called RESET ECU found under the GUIDED DIAGNOSTICS menu. Follow the on-screen prompts and select BCM. This will clear any remaining faults and adaptive memory in the BCM.
4. Reinitialize the ABS. This is a WiTech routine called ABS INITIALIZATION found under the MISCELANEOUS FUNCTIONS tab in the ABS view. Follow the on-screen prompts to initialize the ABS. This step must be performed any time the RESTORE VEHICLE CONFIGURATIOS routine is run.
5. If the truck DID NOT originally have Blind Spot Monitor, (Sales Code XAN) proceed to step 6. If the truck did have XAN, perform a hard reset of the Radio. This is the same WiTech routine used in step 3. Follow the on-screen prompts and select RADIO. This will clear any "BSM Sensor" fault(s) out of the radio. Sometimes you may need to run the reset routine twice to get the faults to clear and not return.

6. Clear all other fault codes. This is a WiTech routine called CLEAR ALL DTC'S found under the ALL DTC'S tab. Follow the on-screen prompts to clear all DTC's in all ECU's. This will clear any remaining faults that may have been set in the rest of the ECUs on the vehicle during the process.

ELECTRICAL/WIRING TIPS

1. Factory LED tail lamps (Sales Code LAY) have a separate diagnostic circuit for left and right bulb out detection. (both WH/BG) These 2 circuits will be disabled. Leave them disconnected.
2. Sales code LB6 no longer needs to be added for bulb out detection removal if this procedure is performed. (5D7 added and BCM re-configured)
3. Vehicle's left and right turn circuits (both WH/YE) will be disabled. Leave them disconnected.
4. The blind spot monitor sensors, located in the tail lamps, use a left and right power feed (both PK/YE), Left CAN IHS + (DB/WH), Right CAN IHS + (DG/WH) and left & right CAN IHS - (both WH). These 6 circuits will not be used. Leave them disconnected.
5. Chassis brake circuits now function as brake/turn. Connect chassis left and right brake circuits (both WH/GN) to up fit's left and right brake/turn circuits.
6. Vehicle will have a left and right park lap circuits. (both WH/OG) These 2 circuits are solid state outputs. The BCM uses circuit diagnostics to protect for overloads. These 2 circuits cannot be connected together. If they are, the BCM will shut the outputs down. Many up fits have side marker, running and park lamps all connected together in a common daisy chain. The up fit's daisy chain must be split in half. Drive one half with the chassis left park lamp circuit and the other half with the chassis right park lamp circuit.
7. Chassis back up circuits function as they did before. Connect chassis left and right back up circuits (both WH/VT) to up fit's left and right back up lamp circuits. If the up fit only has 1 back up lamp/circuit, connect one of the chassis circuits to the up fit's back up lamp circuit. Leave the remaining chassis back up circuit disconnected. Do not connect both chassis back up lamp circuits together.
8. If the park sense sensors are being re-installed on the up fit, they must be re-mounted in the same location and orientation as they were in the valance of the pickup. The face of the sensor should be perpendicular to the ground. If the sensors are not oriented properly, the system will not work. If the sensors are not on location or perpendicular to ground, system performance can be degraded. The further from the factory location the sensors are, the greater the system performance degradation becomes.

9. Park Sense Enable/Disable menus are now displayed in the commercial settings menu on the EVIC. If the sensors are not re-installed, rear park sense can be turned off in that menu.
10. Back up camera mounting is discussed in a separate document on the BBG. That document can be found under the ELECTRICAL WIRING INFORMATION category, CAMERA SYSTEMS topic. Please open and view the document titled DIGITAL (STANDARD WITH BOX ON).

ELECTRICAL BEST PRACTICES

1. When splicing wires, use solder connections. No “butt splices”, “quick splices” or “scotch locks”.
2. Crimp style splices may be used providing that they are soldered after they are crimped.
3. Cover all splices and unconnected circuits ends with appropriately sized Heat Shrink Tubing.
4. Use only Dual Wall or Multi Wall, **Adhesive Lined**, Heat Shrink Tubing.
5. Follow Heat Shrink Tubing manufacturer’s recommendations for appropriate tube size.
6. Follow Heat Shrink Tubing manufacturer’s recommendations for appropriate heating/sealing of tubing.
7. Overlap wire insulation with Heat Shrink Tubing a minimum of ½ inch on each end of the solder splice.
8. Cut the conductor of unconnected wires even with the end of the wire insulation. (Blunt Cut)
9. Cover unconnected blunt cut wires with heat shrink tubing as outlined in items 4, 5 and 6 above.
10. Extend Heat Shrink Tubing at least ½ inch up the wire and at least ¼ inch past the blunt cut end.

Caution: **For vehicles originally equipped with Blind Spot Monitor (Sales Code XAN) pay particular attention to the unused BSM circuits identified in item 4 of the “Electrical/Wiring Tips” section above. If those circuits are not sealed properly, it could lead to circuit corrosion or moisture wicking which could cause other electrical/electronic issues.**

11. Cover exposed wire bundles with convolute
12. Tie wire bundles to the non-moving structure of vehicle or up fit using tie wraps or other suitable wire retaining device(s).

13. Where a wire bundle is tied to 2 separate structures that move independently of each other, make sure to provide a sufficient “drip loop” to compensate for that movement.
14. Insure that wires and/or wire bundles are kept clear of sharp or pointy objects that can cut the wire or wire insulation.

Caution: **Failure to follow the “Electrical Wiring Tips” or “Electrical Best Practices” listed above may result in other electrical or electronic issues which may not be covered under terms of the factory warranty.**