DPS Troubleshooting

Tubonator® VGT Troubleshooting:

Key Things:

- **Before calling tech support on the software and electronics please do the following:**
- Make sure you have the latest version of the Turbonator® VGT software installed on your computer.
    - Install BOTH files. The software and the driver.
- USING "CONTROL PANEL" ALWAYS UNINSTALL THE OLD SOFTWARE BEFORE INSTALLING THE NEW SOFTWARE OR IT WON'T INSTALL CORRECTLY.

Other Import Items About the Turbonator® VGT:

- Always Hot Torque all bolts after vehicle has been ran for approximately 100 miles, while it is hot (wear gloves)
    - Hot Torque the eight bolts going around the Turbonator® VGT Exhaust housing to 150 inch/pounds

Emergency Situations Only (Truck is Stuck)

VGT

- Loss of Power, exhaust brake feels stuck on
    - Step 1: Cycle power of tuck off and back on, If that doesn't work
    - Step 2: HD actuators only: Unplug wire from actuator (careful not to pull on wires, just plug), tie plug out of the way so doesn't get melted
        - Physically extend actuator out all the way, which will open vanes. This will allow truck to drive, but truck will not be as responsive.
        - Leave unplugged until you arrive at destination.

Actuator not responding:

- If actuator is not responding, either there is no power to the system (wired incorrectly)
    - ACC ignition wire is not connect properly. (make sure there is power to this wire when truck switch is turned on)
- Check that no wires have been pulled out of any connection, especially the actuator.
- Have someone watch actuator while someone else turns truck on and off. Actuator should cycle a little right when switch is turned on.
- Question: Did the system ever work?
    - If it did then it's likely a wire has been pulled out, unplugged or a fuse blown.
    - If it didn't then it's probably connected improperly or a wire is pulled out.
    - They should unplug each wire and check the pins as well as checking the wires going into the plugs.

  - Warn them to NOT pull on the wires but only the plug.
- With actuator unplugged extend and retract the actuator to see if it moves freely or binds.
  - Stators/Vanes Stuck: Remove the "e" clip on the vane arm (be careful not to lose it)
  - Cycle the vane arm
  - Start truck and allow to get to operating temp, cycle the vane arm again (wearing gloves)
  - If there is a point where it sticks and can't be moved with your fingers then you'll need to send in the turbo for inspection/repair. This is very uncommon.

Data logging:

- With software running, USB plugged into computer, truck running.
- Click CONNECT
- Click on the GAUGES tab at the far left.
- Click on DATA LOG
- Drive truck and try and duplicate any conditions that you are trying to data log.
  - Data log will run for approximately 4 minutes of driving time.
  - After 4 minutes click the DATA LOG button again to turn off and the click again to data log again.
- When finished click DATA LOG to save the file.
- The data log files are saved on the desktop.
- The file can be emailed to sales@dieselpowersource.com, or view with Excel.
- If USB will not connect, either the driver of software are installed incorrectly or
- Power to the system is not present, or

Exhaust Brake suddenly comes on, exhaust pressure spikes, boost drops, power drops EGT's soar

- Question: Have you installed the switch recall for all trucks before April 2021?
- Question: Truck year?
- Question: Have you ran a data log that you can send to us? Try and duplicate the situation while data logging (see Data Logging).
- Question: Under what situations does it occur?
- Question: When this happens is the commanded and feedback position different?
- Solution: 1998.5-2007 trucks. Go into the software EXHAUST BRAKE CONTROL tab change the Brake Trigger Threshold to 10 volts.
  - Explanation: some trucks produce voltage spikes. Changing this threshold higher should pull the threshold above the spike.
  - Note: Exhaust brake can not function just idling the truck, it only functions when truck is driving, this system is triggered by your truck ECM.
- Cycle power to actuator to reset actuator.

- 2007.5-2018 6.7 trucks, possible erratic, wrong or no voltage coming from exhaust brake wire

- Solution: Unter EXHAUST BRAKE CONTROL change BRAKE TRIGGER THRESHOLD up to 0.7 volts.
- With computer hooked up, go to VOLTAGES tab under the GAUGES tab on left of screen
- When brake switch turned on voltage should read approx. 0.45 volts, when throttle pedal is idling. When throttle is pressed it should read 4.5 volts approx.
- When brake switch turned off voltage should read 0.00-0.07 volts.
- If no voltage is present then:
    - The wrong APP sensor wire was tapped on truck
    - A better "crimp" needs made into the APP sensor wire on truck
    - On the DPS wire harness unplug the exhaust brake wire from the main harness and probe the inside pie that coincides with the incoming wire. With truck key turned on the voltage should read approx. 0.4 volts at idle and 4.5 volts pedal fully depressed.
    - If no voltage in this wire, or if the wrong voltage is on this wire this is the problem. Refer back to the install instructions "EXHAUST BRAKE WIRING 6.7 Cummins…" section approximately page 10.

- If truck will not run because actuator is stuck, refer to "Emergency Situations" section.

Exhaust Brake Not working/Exhaust Brake Pressure not high enough

- Check calibration or Recalibrate actuator (physically recalibrate)
- Either increase pressure in software to increase braking pressure (Don't exceed 45 psi)
- Increase engine RPM's during braking (downshifting)
- RPM's not high enough (put in tow haul, downshift, or get a clutch lockup switch to help)
    - RPM's must be around 2200 or higher to develop enough braking pressure.

- **2007.5-2018 Trucks**
- Probe APP sensor wire for proper voltage. Idle should be 0.45 volts with switch on.
- Unplug exhaust brake plug from the Turbonator® wire harness. Put voltage meter on pin that coincides with the incoming wire. Turn brake switch on. Voltage should read approximately 0.45 volts. When pedal is fully depressed voltage should increase up to approximately 4.5 volts.
    - If no voltage or incorrect voltage, then the brake wire is either connected to the APP sensor wire or there is not a good connection. Check the connection. This wire must have a clean voltage signal as described.
        - Check pins inside the connector.
    - Connect software and make sure the correct brake features and pressures are set. (Refer to VGT software instructions)
        - Under INPUT VOLTAGES make sure when switch is on idle voltage is approx.. 0.45 V.
    - Connect software and use data log feature. Email us the data log.

- If brake actuates and doesn't have enough pressure refer to (Exhaust Brake Pressure not high enough)

- **2003-2007 Trucks**
  - Make sure ECM connected properly in the correct pins
  - On this year of truck exhaust brake will not actuate unless you're running the truck with the switch on.
  - Make sure the exhaust brake ground wire is properly connected.
  - Connect software and use data log feature. Email us the datalog.
  - If brake actuates and doesn't have enough pressure refer to (Exhaust Brake Pressure not high enough)
  - Note: Exhaust brake can not function just idling the truck, it only functions when truck is driving, this system is triggered by your truck ECM.
  - With software hooked up, go to INPUT VOLTAGES, drive truck, turn switch on and see if voltage come in when you let off the throttle. If not voltage is seen then either:
    - Your pin connections in the truck ECM are not all the way in
    - You truck ECM is not sending the signal correctly
    - Check wiring for proper connections as per the instructions.

- **1998.5-2002 Trucks**
  - Make exhaust brake wire connected properly to ECM
  - On this year of truck exhaust brake will not actuate unless you're running the truck with the switch on.
  - Connect software and use datalog feature. Email us the datalog.
  - If brake actuates and doesn't have enough pressure refer to (Exhaust Brake Pressure not high enough)
- **1988-1998 12V Trucks**
  - When switch is on and two exhaust brake wires are touching the exhaust brake will come on.
  - Microswitch: You can use a microswitch mounted on the injection pump to actuate the exhaust brake.

USB Won't Connect Laptop to Control

- Check power connections
  - Red to Battery +, Black to battery (-) side, White to ACC (ignition power)
  - Watch actuator for movement when truck is turned on.
    - Actuator can manually be extended/retracted when off or if no power is present
    - Actuator can NOT manually be extended/retracted when power is present
  - If actuator moves then power is properly connected.

- If actuator has power it will hum and vibrate very slightly
- Make sure both the DRIVER and APPLICATION are installed on the computer. They are two separate files.
  - If says USB not detected, either driver is not installed or no power to actuator.
  - If says can't connect cycle power on truck, unplug USB and restart software.
- Shut down software and restart software each time connection fails.

VGT Software Steps to diagnose

- Once connected expand all items on the left side.
- See our Software Tutorial: https://www.youtube.com/watch?v=fQiqdkACEQ0
- Make sure to check all items mentioned the video
- Under GAUGES tab go to INPUT VOLTAGES tab make sure that at idle the following:
- Boost & Exhaust Pressure voltage are both from 0.39-0.50 volts
- Vehicle voltage is appx. 12-13 volts
- Exhaust Brake Trigger Voltage (varies per truck, see section in Exhaust Brake Issues

VGT Spool-up problems

- **Electronic Version:**
- Check INPUT VOLTAGES ensure exhaust and boost pressure are both at approx. 0.45 at idle
- In software under VARIABLE RATIO tab:
- Make sure Starting Position is approximately 27 to 33
- Adjusting Starting Position can make a big difference in spool-up
- Make sure VARIABLE RATIO ENABLED is green, and check box is checked
- Send screenshot of that screen so we can see your tune.
- Under EXHAUST BRAKE CONTROL check the box BYPASS BRAKE ENGINE RPM DISENGAGE
- Under COLD START tab, uncheck everything and disable this feature
- Under GAUGES tab run a data log while driving for 4-5 minutes, then email this data log to DB@DieselPowerSource.com

- **Mechanical Version:**
- See video: https://www.youtube.com/watch?v=W1s5BKKipOg&list=UU9aRgqW_hezn7wbk1RyFV3A&index=23
- Remove e-clip from linkage (spring loaded be careful not to lose)
- Adjust half turn either way and drive if it gets better continue adjusting in that same direction. If it performs worse turn it the opposite direction until you find the "Sweet Spot" for spool-up.