

## Truck Identification and Diagnosis of Malfunctions

No.	If You See	System Affected	Look For	To Do
1	Ammeter shows continuous maximum charge.	Electrical	A short circuit in the wiring.	Disconnect battery terminal until short has been repaired.
2	Ammeter shows discharge with the motor running.	Electrical	Points in voltage regulator or cutout sticking. Loose connection or short in wiring, Battery installed wrong. Burned out or improperly adjusted generator or alternator. Loose or broken alternator.	Have mechanic repair. Tighten connection. Reverse battery leads. Have replaced or repaired by mechanic. Replace or tighten belt.
3	High engine temperature	Cooling	Low water level. Frozen radiator. Broken fan belt. Retarded water or oil. Defective fan clutch or shutters.	Shut off engine. Allow to cool to normal. Add water. Cover radiator, run motor slowly, add water as needed. Replace fan belt. Have checked and repaired by mechanic.
4	Coolant, oil or fuel dripping	Cooling, Lubricating, or Fuel System	Check for source of leak.	Have repaired by mechanic.
5	Gauge reading out of proper range		Check the system that the gauge refers to.	Have mechanic check gauge and the appropriate system.

No.	If You See	System Affected	Look For	To Do
6	Excessive exhaust smoke	Exhaust or turbo system	Air cleaner dirty. Poor grade fuel. Return fuel line blocked, bent or squeezed together. Engine over-fueled. Fuel pump malfunctioning.	Clean filter Let mechanic check
7	Black exhaust smoke	Engine, fuel system	Over rich mixture due to: -Restricted air. -Poor fuel spray distribution. -Improperly adjusted fuel control racks. Overloading or lugging the engine.	Clean or change filters. Let mechanic check. Shift to lower gear to keep engine speed up.

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8	White (sometimes grey) exhaust smoke	Engine, fuel system	<p>Due to incomplete combustion in a cold engine. Should clear up when engine warms.</p> <p>If it doesn't, look for misfiring due to:</p> <ul style="list-style-type: none"> <li>-worn injector spray holes.</li> <li>-Low cylinder compression.</li> <li>-Faulty cooling system</li> <li>-Low fuel volatility.</li> </ul>	Have mechanic check
9	Blue exhaust smoke	Engine, fuel system	<p>Due to the burning of large quantities of lubricating oil as a result of:</p> <ul style="list-style-type: none"> <li>-Worn intake valve guides.</li> <li>-Poor oil control ring action.</li> <li>-Worn blower shaft seals.</li> <li>-Overfilled oil bath air cleaner.</li> </ul>	Have mechanic check

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10	Low oil pressure reading	Lubrication system	Oil has become diluted by fuel or coolant leaks High oil temperature. Worn oil pump. Wrong weight oil for type of weather, conditions. Dirty filters. Worn bearings. Oil and filter needs changing. Oil leak	Let mechanic check. Change oil . Replace change oil and filter. Let mechanic check.
11	Metallic click in time with wheel revolutions.	Suspension, wheels or tires	Wheel loose on axle. Loose wheel or tire lugs. Piece of metal in tire.	Tighten axle nut, Tighten lugs, Remove metal or change tire,
12	Dull thud in time with wheel revolutions	Wheels and tires	Flat tire. Loose wheel or tire lugs. Rock between duals.	Change tire. Tighten lugs. Remove rock.
13	Clanking noise in time with wheel revolutions	Tire or drive train system	Lock rim off tire. Loose drive shaft.	Change tire. Have tightened by mechanic.
14	Dull thud or loud rap in time with motor.	Engine	Burned out main or connecting rod bearing piston slap.	Shut off motor contact garage. for instructions.

No.	If You See	System Affected	Look For	To Do
15	Air escaping	Tires, air system, braking system	Punctured or damaged. Open petcock on air tank. Air lines or fittings leaking. Brake application or relay valve sticking. Ice on brake valves.	Change tire, Close petcock, Repair lines, tighten or change fittings, Apply air to brakes several times, Apply heat,
16	Snap or click when starting from a dead stop.	Drive train system	Loose universal joint. Bolts. Excessive wear in universal joint or differential.	Tighten bolts. Report to mechanic.
17	Under floor noises	Drive train	Clutch trouble, Bad throw-out bearing, Bent drive shaft, broken teeth in transmission.	Have mechanic check,
19	Whine or harsh sound with high pitch	Drive train on engine system	Worn accessory drive gears or loose belts.	Let mechanic check Tighten belts
20	Whine--short with high pitch.	Engine	Ball bearing spinning in housing. Generator or alternator malfunctioning. Water pump malfunctioning.	Have mechanic check, If water pump, shut off engine immediately
21	Clicking sound in engine with loss of power, sluggishness and overheating.	Engine	Broken valve spring. Worn timing gear.	Have mechanic check

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22	Sudden loss of power	Brake, drive train, engine or fuel system	Brakes dragging. Clutch slipping. Spark plug wire disconnected. Overheated engine Vapor lock.	Have mechanic check
23	Engine surges	Fuel or engine system	Air in fuel system. Worn gear on fuel pump. Throttle linkage loose. Low fuel supply. Buffer screw not properly set.	Have mechanic check
24	Brakes grab	Braking system	Grease on brake lining. Improperly adjusted brakes	Have grease removed by mechanic, Have readjusted by mechanic,

No.	If You See	System Affected	Look For	To Do
25	Vibration in engine	Engine system	One or more cylinders not firing, caused by defective spark plugs, shorted spark plugwires, or wires off spark plus. Sticky valve. Broken valve. Blown cylinder head gasket. Vibration damper loose or worn. Unbalanced or damaged fan. Engine mounting loose or worn. Engine out of line in frame. Clutch out of balance. Drive line out of balance or line. Bad injectors.	Change plugs or make necessary adjustments. Have repairs made by mechanic.
26	Vibration in steering in time with rotation of wheels	Tire, wheel or rim	Wheels out of balance. Bubble on side of tire. Broken lock rim on tire. Bent wheels or rims. Uneven tire wear caused by other defects. Tire mounted on wheel incorrectly. Loose wheel lugs, broken studs.	-Have adjustments made by mechanic -Change tire -Change tire -Change tire -Have defects remedied by mechanic. -Loosen tire lugs and tighten evenly -Tighten lugs, have broken studs replaced.

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27	Gradual loss of power	Fuel or engine system	Fuel filter dirty or clogged. Throttle linkage worn. Air filter clogged. Fuel pump gear worn. Dirty air filter. Cam lobes worn. Faulty valve.	Clean or replace the fuel filter. Let mechanic check.
28	Burning rags smell	Drive train, engine, or brake system	Overheated engine. Clutch slipping (engine will race). Hot or dragging brakes. Hand brake not released.	Have clutch adjusted by mechanic.
29	Burning rubber smell	Braking system, tire or electrical system	Tire on fire. Hot or dragging brakes. Short circuit in wiring. Belt slipping or frozen pulley bearing.	Extinguish immediately and remove from vehicle. Have adjusted by mechanic. Disconnect battery terminal. Tighten or replace.
30	Diesel fuel in oil	Fuel systems	Any leaks in system	Have repaired by mechanic
31	Burning oil (May also smell like burning rags)	Lubrication or engine system	Oil dripping on exhaust manifold or pipe Overheated engine	Find source of oil leak wipe off excess oil Ascertain cause of overheating and repair or have repaired
32	Exhaust odor	Exhaust System	Cracked manifold Loose connection in exhaust system Leaking muffler Improperly located tail	Have repaired by mechanic Keep cab well ventilated until repairs have been made