

GRAND TOTAL

ENGINE MALFUNCTIONS

The following list contains example of engine and hydraulic system malfunctions for both diesel and gasoline tractors.

Diesel Tractor

Failure of Engine To Crank

- dual-range shift lever not in neutral position
- loose, grounded, shorted, or broken wiring
- discharged or weak battery
- inoperative starting motor

Engine Cranks but Fails To Start

Fuel System

- lack of fuel in tank
- excessive air
- fuel shut-off control rod in the "off" position
- fuel tank sediment bowl shut-off valve in the "off" position
- fuel filters clogged
- injection pump idle speed set too slow

Air System

- air cleaner inlet tube restricted
- plugged or clogged air cleaner

Rough Engine Operation

- injection pump incorrectly timed
- faulty injectors
- faulty injection pump

Excessive Engine Exhaust Smoke

- faulty injectors
- incorrect injection pump timing
- clogged air cleaner
- improper valve adjustment
- burned, worn, or sticking valves
- excessive operation at low idle speed or loads

Loss of Power

- plugged fuel filter
- worn rings, pistons, or sleeves, burned or sticking valves
- faulty injection pump governor action
- faulty throttle or governor linkage
- blown head gasket
- brakes dragging
- improper valve adjustment
- connecting rod or main bearings too tight
- clogged air cleaner
- fuel shut-off rod linkage incorrect
- faulty pump timing

Excessive Fuel Consumption

- faulty injectors
- pump timing incorrect

- excessive fuel pressure line leakage
- throttle linkage incorrect
- burned, worn, or sticking valves
- worn pistons, rings, or sleeves
- improper valve adjustment, worn or bent push rods
- engine overheating
- clutch slippage
- brakes dragging
- excessive exhaust back pressure
- faulty cooling system thermostat
- clogged air cleaner or air pipe

Erratic Misfire

- faulty injectors
- weak or broken valve springs
- sticky valves
- excessive air in the system
- plugged fuel filters
- water in fuel

Gasoline Tractor

Failure of Engine To Crank

- dual-range shift lever not in neutral position
- loose, grounded, shorted, or broken wiring
- discharged battery
- inoperative starting motor

Engine Cranks but Fails To Start

(Ignition Spark Failure)

- loose, grounded, shorted, or broken ignition wiring
- mechanical failure of spark plugs-cracked or broken porcelain, incorrect gap setting, electrodes fouled
- distributor failure
- faulty coil

Engine Cranks but Fails To Start

(Carburetion Failure)

- choke not pulled out when engine is cold
- throttle closed
- fuel shut-off valve not open
- fuel tank empty
- clogged vent in fuel cap
- clogged fuel filter or screens
- restricted fuel line
- restricted carburetor passages
- maladjustment of needle valves
- water deposits in carburetor
- air cleaner inlet tube restricted
- clogged air cleaner
- throttle and/or governor linkage inoperative or incorrectly adjusted

- air leak in fuel line
- cracked or broken intake manifold
- valves sticking

Engine Cranks Slowly

- weak battery
- crankcase oil too heavy for temperature
- defective starter or connections

Excessive Fuel Consumption

- fuel leak
- fouled air cleaner
- idle adjustment incorrect
- main jet adjustment incorrect
- timing incorrect
- automatic spark advance not working properly
- distributor points need replacing
- spark plugs need torquing or replacing
- faulty wiring
- improper valve timing
- burned, worn, or sticking valves
- worn pistons, rings, or sleeves
- improper valve adjustment, worn or bent push rods
- engine overheating
- clutch slipping
- brakes dragging
- excessive exhaust back pressure

Excessive Oil Consumption

- oil leak
- plugged breather pipe
- worn valve guides
- worn, broken, or ill-fitted rings
- worn, scored, or out-of-round cylinders or pistons
- worn ring grooves
- inverted rings
- stuck piston rings
- worn neoprene oil guard gaskets on the intake valves

Loss of Power

- dirty or improperly adjusted carburetor
- faulty ignition
- worn rings, pistons, or sleeves; burned or sticking valves
- faulty governor operation
- faulty throttle, governor, or choke linkage
- crank in intake manifold or leaky gasket
- blown head gasket
- brakes dragging
- improper valve adjustment, worn or bent push rods
- connecting rods or main bearings too tight
- excessive exhaust back pressure
- clogged air cleaner

Erratic Misfire

- dirty carburetor
- weak or broken valve springs
- sticking valves
- faulty ignition

Pre-ignition

- poor grade of fuel
- ignition timing too far advanced
- engine overheating
- heavy carbon deposits in the combustion chamber
- spark plugs of improper heat range
- insufficient tappet clearance
- burned or worn valves
- improper distributor advance

Continuous Misfire

- stuck or burned valves
- blown head gasket
- faulty ignition
- improper timing

Engine Overheating

- thermostat stuck closed
- water leakage
- fan belt slippage
- clogged radiator core
- carburetor mixture too lean
- improper ignition timing
- fouled cooling system
- engine too tight
- improper valve timing

Hydraulic System Problems

Low Oil Pressure (Power Shift Transmission)

- clogged transmission oil filter element
- clogged hydraulic oil filter element
- low oil supply

Transmission Oil Overheats

(Power Shift Transmission)

- low oil supply
- oil cooler air passages clogged
- excessive shifting under heavy load

Hydraulic Oil Overheats

- low oil supply
- oil cooler air passage clogged

Insufficient Hitch Transport Clearance

- center link too long
- lift links too long
- implement not level
- implement improperly adjusted

Hitch Fails To Lift

- excessive load on hitch
- Hitch Drops Slowly
- speed-of-drop valve set improperly

Hitch Too Active

- selector lever in wrong position
- No Hitch Response To Draft Load
- selector level in wrong position
 - speed-of-drop too slow

Remote Cylinder Will Not Lift Load

- excessive load
- breakaway coupler not completely engaged

Remote Cylinder Rate of Travel Incorrect

- incorrect flow control valve setting

No Remote Cylinder Float Position

- control rod in lower hole on control lever

Direction of Remote Cylinder Travel Reversed

- improper hose connections

Brake Pedal Bottoms When Engine Stops

- bleed screws left open
- air in system