

Trouble shooting for WD615 Diesel Engine

Failure to start

No.	Cause	Remedy
1	Fuel intake filter screen of supply pump or hose clogged	Clear away the dirt and check if the fuel is clean or not.
2	Air entered into the fuel system	Drain off the air, check the sealing of the connector and repair it.
3	Injection pump damaged	Check the plunger, fuel outlet valve and repair or replace the broken parts.
4	Injector damaged	Check the atomization of injector, and repair it.
5	Initial angles of valve gear or fuel delivery is wrong	Check and adjust it.
6	High pressure line damaged or leaked	Repair or replace.
7	Insufficient pressure in cylinder	Check the sealing of the valve and cylinder gasket, the wear of piston ring. Repair it.
8	The temperature is too low	With the addition of start-assist device.

Stop soon after starting

No.	Cause	Remedy
1	Fuel filter clogged	Dismantle and clean away dirt and water, replace the filter element if necessary.
2	The air entered into fuel system	Check fuel pipe and sealing of the connector, tighten air venting bolt, and drain off the air.
3	Supply pump doesn't work	Check piston and valve of supply pump, clean and repair.
4	Poor quality of fuel	Clean fuel filter and renew fuel.
5	Idling speed is too low	Readjust it.

Insufficient output

No.	Cause	Remedy
1	Air intake clogged (air cleaner choked)	Check the air cleaner and air intake pipe, clean or replace filter element.
2	Exhaust back pressure is too high	Check the valve-timing and exhaust pipe, adjust and repair.
3	Insufficient pressure in supercharged system	Block up the leakage of pipe's connection.

Faults in turbocharger

No.	Cause	Remedy
1	Compressor and turbine route choked up	Clean or replace.
2	Floating bearing cease to be in effect	Replace
3	Carbon deposit in clearance of turbine and compressor back	Clean
4	Intercooler damaged	Replace or repair.
5	Leakage or choke of fuel line	Check the sealing of pipe and connector, the fuel filter and fuel line. Repair, clean or replace.
6	Poor quality of fuel	Clean the fuel tank, filter parts and fuel pipe. Renew the fuel.
7	Excessive wear for injection pump or governor	Repair or replace.
8	Smoke-limiter diaphragm of injector pump damaged	Repair or replace.
9	Air pipe of smoke-limiter damaged	Replace

10	Poor atomizing	Check the injecting pressure, clean away the carbon deposit in the nozzle, adjust and repair injector.
11	Incorrect timing of valve gear or fuel delivery	Check and adjust it.
12	High-speed of governor is adjusted too low	Check the speed-governing, and adjust it.
13	Oil level is too high	Check the oil-dipstick and drain off unnecessary oil.
14	Leakage in cylinder gaskets	Check the compressed pressure at hot state, replace cylinder gaskets.
15	Piston ring broken, the clearance of main bearing is too large	Replace worn parts or overhaul the engine.
16	Cylinder liner or piston worn, or piston scuffing	Overhaul the engine.

Fuel consumption is too high

No.	Cause	Remedy
1	Air intake clogged (air cleaner choked)	Check air cleaner and air intake pipe, then clean them.
2	Exhaust back pressure is too high	Check exhaust pipe and brake valve, then clean them.
3	Poor quality of fuel	Renew the fuel according to requirements.
4	Fuel line choked	Check and repair.
5	Fuel line leaked	Check and repair.
6	Poor atomizing	Check, adjust and repair.
7	Incorrect timing of valve gear or fuel delivery	Adjust valve clearance and injection advance angle according to requirement.
8	Leakage in cylinder gaskets	Check pressure.
9	The clearance of main bearing is too large	Check and overhaul.
10	Piston scuffing	Replace cylinder liner, piston and piston ring.
11	Insufficient pressure in supercharged system	Block up the leakage of pipe's connection.
12	Faults in turbocharger	Check and replace.
13	Intercooler damaged or leaked	Replace or repair.

Black smoke exhaust

No.	Cause	Remedy
1	Air intake isn't free or exhaust back pressure is too high	Clean
2	Poor quality of fuel	Renew
3	Incorrect timing of valve gear or fuel supply	Adjust according to requirements.
4	Poor atomizing	Check, repair or replace injector.
5	Excessive injection quantity	Check and adjust it (by manufacture).
6	Insufficient pressure in supercharged system	Block up the leakage of pipe's connection.
7	Faults in turbocharger	Replace
8	Intercooler damaged or leaked	Replace or repair.
9	Incorrect working point of smoke-limiter	Readjust (by manufacture)

White, blue smoke exhaust

No.	Cause	Remedy
1	Poor quality of fuel, contains water	Renew fuel.
2	Temperature of cooling water is too low	Check working temperature of thermostat, replace if necessary.
3	Incorrect timing of valve gear or fuel delivery	Check and adjust.
4	Poor atomizing	Check and repair.
5	Incomplete combustion, scuffing and the pressure is too low	Check piston ring, cylinder liner, cylinder gasket, and repair them.
6	Wear-in between the piston rings and cylinder liners is not good	Go on wearing-in.

7	The gaps of the piston rings are not staggered	Adjust, reassembly.
8	piston oil rings cease to be in effect	Replace
9	The fit clearance between piston and cylinder liner is too large	Repair or replace.
10	The sealing ring of turbocharger worn	Check and replace.
11	The thrust bearing of turbocharger worn	Check and replace.
12	The oil return pipe of turbocharger choked	Clean or repair.

Lub-oil gathered in air intake port and air intake pipe of turbocharger

No.	Cause	Remedy
1	The sealing of turbocharger cease to be in effect	repair or replace turbocharge.
2	The gas-oil separator cease to be in effect	Repalce
3	Lub-oil level in oil sump is too high	Drain off the unnecessary oil according to requirements.

Uneven engine speed

No.	Cause	Remedy
1	Poor quality of fuel, contains water or wax	Clean fuel system and renew fuel.
2	air entered into the fuel suction pipe	Check the sealing of fuel pipe and connector, drain off air.
3	Faults in flyweight of governor and speed governing spring	Check and repair (by manufacture).
4	Uneven fuel delivery	Check and adjust.
5	Unstable atomizing	Check and repair.
6	Surge in turbocharger	Wash compressor route, clean away the carbon deposit from exhaust passage.
7	Bearing if turbocharger damaged	Replace it.

Lub-oil pressure is too low

No.	Cause	Remedy
1	oil level in oil sump is too low	Check oil leakage, add oil.
2	Faults in pressure regulating valve of main oil passage	Check valve, clean and repair it.
3	Strainer, oil pipes, connector gasket choked or broken	Check strainer and connector, repair it if necessary.
4	Lub-oil doesn't conform to specifications	Renew the lub-oil according to requirements.
5	Oil intake pipe of oil pump leaked	Check the oil pipe and connector, repair or replace.
6	Water temperature in cooling system and oil temperature are too high	Check cooling system and correct it.
7	Excessive resistance of oil filter	Renew the filter element.
8	Oil cooler choked	Check and clean.
9	Main oil passage choked	Check and clean.
10	The clearance of main bearing is too large or main bearing damaged.	Check and replace.
11	Excessive wear of parts, need to overhaul	Check the working time of the engine, overhaul.

Cooling water temperature is too high

No.	Cause	Remedy
1	Water level in water tank is too low	Check water leakage, add water.
2	Water tank clogged	Clean or repair.
3	The belt of water pump loosened	Adjust tension according to requirements.
4	Water pump gasket damaged, water pump impeller worn	Check and repair, or replace.
5	Faults in thermostat	Repalce it

6	Water pipe damaged and air entered	Check the water pipe,connector and gasket. Renew the damaged parts.
7	The oil level in oil sump is too low	Check oil leakage,repair and add oil.

Parts wore quickly

No.	Cause	Remedy
1	Filter element of air cleaner is unqualified or damaged	Check and replace filter element.
2	Air leakage in air intake system	Check air intake pipe,gasket and connecting sleeve, repair or replace.
3	oil level in oil sump is too low	Check oil leakage,repair and add oil.
4	Oil passage clogged	Clean it.
5	Oil doesn't conform to specifications	Renew lub-oil according to specifications.
6	Piston rings broken or worn	Replace them.
7	Cylinder liner or piston worn,or piston scuffing	Dismantle and check piston and liner,repair or replace.
8	Filter element of oil filter can not be replaced in time	Replace it.
9	Excessive wear of parts,need to overhaul	Check the mileage and overhaul.
10	Crankshaft isn't concentric with the shaft of engine follower	Check the mounting support,repair it.
11	Wrong oil grade	Adopt correct oil grade.

Noise is too high

No.	Cause	Remedy
1	Poor quality of fuel	Renew fuel.
2	Temperature of cooling water is too low	Check thermostat,replace it if necessary.
3	Incorrect timing of valve gear or fuel delivery	Check and adjust.
4	Poor atomizing	Check,repair and adjust.
5	Excessive injection quantity	Check and adjust(by manufacture).
6	vibration damper damaged	Check connecting bolt and replace damaged parts.
7	Leakage in valve or adjusted unsuitably	Dismantle and check valve,readjust it.
8	Excessive gear clearance or tooth broken	Check,repair and adjust.
9	Cylinder liner or piston worn,or piston scuffing	Check and repair,or replace.
10	Push rod bended or worn	Replace it.
11	Piston rings broken or worn	Check and replace the damaged parts.
12	Excessive wear in main bearing	Check and replace.
13	Excessive thrust clearance of crankshaft	Replace the thrust plate.
14	All main bearings are not concentric	Check and repair.
15	Crankshaft isn't concentric with the shaft of engine follower	Check the bolt.
16	Excessive wearing in parts,need to overhaul	Check the mileage and overhaul.
17	Surge in turbocharger	Clean compressor steets,and clean away the carbon deposit from exhaust passage.
18	sealing ring of trubocharger sintered	Replace turbocharger assembly.
19	Turbocharger bearing damaged,moving parts and fixed parts bumped each other	Replace turbocharger assembly.
20	Foreign body entered turbocharger turbine or compressor impeller	Replace turbocharger assembly.

Starting motor doesn't work

No.	Cause	Remedy
1	Insufficient charging for battery	check,change or replace.

2	Bad contact in connecting wire	Check up circuit,tighten terminal.
3	Fuse broken	Replace.
4	Bad contact in brush	Clean brush surface or replace brush.
5	Short circuit starting motor	Check and repair it,or replace the motor assembly.

Starting motor is powerless

No.	Cause	Remedy
1	insufficient voltage of battery	change of replace it.
2	Bearing bush worn	Replace bearing assembly.
3	Bad contact in brush	Clean brush surface or replace brush.
4	Commutator unclean or sintered	Clean away the dirt and furbished using sandpaper or replace commutator assembly.
5	Sealing off at wire end	Reweld it.
6	Bad contact for switch	Check and repair it.
7	Track slipped for wore clutch	Adjust working moment of clutch or replace.

Generator doesn't work

No.	Cause	Remedy
1	Wire connection broken,short circuit,joint loosened	Check the connecting wire of generator or galvanometer, repair it.
2	Coil of rotator shorted,broken	Repair or replace.
3	Rectifier tube damaged	Replace it.
4	Insufficient of terminal damaged,wire broken	Repair it.
5	Voltage regulated by regulator is too low	Repair it.
6	Contact of regulator fused	Repair or replace.

Insufficient charging of generator

No.	Cause	Remedy
1	Connection wire broken or shorted,terminal loosened	Repair it.
2	Coil of rotator shorte or broken partially	Repair or replace it.
3	Belt of generator loosened	Check and adjust tension.
4	Rectifier tube damaged,bad contact in brush	Repair it.
5	Insufficient voltage of regulator	Regulate
6	Field coil or resistance connection pipe broken	Repair or repalce them.
7	Insufficient eletrolyte of battery or battery is too old	Add electrolyte or renew battery.

Uneven charging current

No.	Cause	Remedy
1	Coil of rotator or stator shorted or broken	Repair or replace it.
2	Bad contact in brush	Repair it.
3	Terminal loosened and bad contact	Repair it.
4	Voltage regulator damaged	Repair it.
5	Incorrect regulated voltage	Check and regulate it.

Generator over-charged

No.	Cause	Remedy
1	Short in battery	Regulate
2	Voltage of regulator is too high	Repair or regulate
3	Bad contact in regulator	Repair it.
4	Faults in regulator contact,voltage coil or reistance connecting wire broken	Repair or replace.

Abnormal sound in generator

1	Incorrect mounting for generator	Repair it.
2	Bearing damaged	Replace it.
3	Moving parts bumping to fixed parts	Repair or replace.
4	Rectifier shorted	Replace it.
5	Stator coil shorted	Repair or replace it.