

28. Engine Trouble in General

A: INSPECTION

NOTE:

The "RANK" shown in the chart shows the possibilities of the cause of trouble in order from "Very often" to "Rarely".

A — Very often

B — Sometimes

C — Rarely

Symptoms	Problem parts etc.	Possible cause	RANK
1. Engine does not start.			
1) Starter does not turn.	Starter	Defective battery-to-starter harness	B
		Defective starter switch	C
		Defective inhibitor switch or neutral switch	C
		Defective starter	B
	Battery	Improper connection of terminal	A
		Run-down battery	A
		Defective charging system	B
	Friction	Seizure of crankshaft and connecting rod bearing	C
		Seized camshaft	C
		Seized or stuck piston and cylinder	C
2) Initial combustion does not occur.	Starter	Defective starter	C
	Engine control system <Ref. to EN(H6DO)(diag)-2, Basic Diagnostic Procedure.>		A
	Fuel line	Defective fuel pump and relay	A
		Clogged fuel line	C
		Lack of or insufficient fuel	B
	Timing chain	Trouble	B
		Defective timing	B
	Compression	Incorrect valve clearance	C
		Loosened spark plug or defective gasket	C
		Loosened cylinder head bolt or defective gasket	C
		Improper valve sealing	C
		Defective valve stem	C
		Worn or broken valve spring	B
		Worn or stuck piston rings, cylinder and piston	C
		Incorrect valve timing	B
		Improper engine oil (low viscosity)	B
		Trouble of valve lifter	C
		Trouble of valve lifter. In case noise occurs with valve moving. Or when the harness involved to oil switching solenoid valve, variable valve lift diagnosis oil pressure switch and variable valve lift has trouble in a past.	B

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Symptoms	Problem parts etc.	Possible cause	RANK
3) Initial combustion occurs.	Engine control system <Ref. to EN(H6DO)(diag)-2, Basic Diagnostic Procedure.>	A	
	Intake system	Defective intake manifold gasket Defective throttle body gasket	B B
	Fuel line	Defective fuel pump and relay Clogged fuel line Lack of or insufficient fuel	C C B
	Timing chain	Trouble Defective timing	B B
	Compression	Incorrect valve clearance Loosened spark plug or defective gasket Loosened cylinder head bolt or defective gasket Improper valve sealing Defective valve stem Worn or broken valve spring Worn or stuck piston rings, cylinder and piston Incorrect valve timing Improper engine oil (low viscosity) Trouble of valve lifter	C C C C C B C B B C
		Trouble of valve lifter. In case noise occurs with valve moving. Or the harness involved to oil switching solenoid valve, variable valve lift diagnosis oil pressure switch and variable valve lift has trouble in a past.	B
4) Engine stalls after initial combustion.	Engine control system <Ref. to EN(H6DO)(diag)-2, Basic Diagnostic Procedure.>	A	
	Intake system	Loosened or cracked intake duct Loosened or cracked PCV hose Loosened or cracked vacuum hose Defective intake manifold gasket Defective throttle body gasket Dirty air cleaner element	B C C B B C
	Fuel line	Clogged fuel line Lack of or insufficient fuel	C B
	Timing chain	Trouble Defective timing	B B
	Compression	Incorrect valve clearance Loosened spark plug or defective gasket Loosened cylinder head bolt or defective gasket Improper valve sealing Defective valve stem Worn or broken valve spring Worn or stuck piston rings, cylinder and piston Incorrect valve timing Improper engine oil (low viscosity) Trouble of valve lifter	C C C C C B C B B C
		Trouble of valve lifter. In case noise occurs with valve moving. Or the harness involved to oil switching solenoid valve, variable valve lift diagnosis oil pressure switch and variable valve lift has trouble in a past.	B

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Symptoms	Problem parts etc.	Possible cause	RANK
2. Rough idle and engine stall	Engine control system <Ref. to EN(H6DO)(diag)-2, Basic Diagnostic Procedure.>		A
	Intake system	Loosened or cracked intake duct Loosened or cracked PCV hose Loosened or cracked vacuum hose Defective intake manifold gasket Defective throttle body gasket Defective PCV valve Loosened oil filler cap Dirty air cleaner element	A A A B B C B C
	Fuel line	Defective fuel pump and relay Clogged fuel line Lack of or insufficient fuel	C C B
	Timing chain	Defective timing	C
	Compression	Incorrect valve clearance Loosened spark plug or defective gasket Loosened cylinder head bolt or defective gasket Improper valve sealing Defective valve stem Worn or broken valve spring Worn or stuck piston rings, cylinder and piston Incorrect valve timing Improper engine oil (low viscosity) Trouble of valve lifter	B B B B C B B A B C
		Trouble of valve lifter. In case noise occurs with valve moving. Or the harness involved to oil switching solenoid valve, variable valve lift diagnosis oil pressure switch and variable valve lift has trouble in a past.	B
	Lubrication system	Incorrect oil pressure Defective rocker cover gasket	B C
	Cooling system	Overheat	C
	Others	Evaporative emission control system malfunction Stuck or damaged throttle valve	A B

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Symptoms	Problem parts etc.	Possible cause	RANK
3. Low output, hesitation and poor acceleration	Engine control system <Ref. to EN(H6DO)(diag)-2, Basic Diagnostic Procedure.>		A
	Intake system	Loosened or cracked intake duct Loosened or cracked PCV hose Loosened or cracked vacuum hose Defective intake manifold gasket Defective throttle body gasket Defective PCV valve Loosened oil filler cap Dirty air cleaner element	A A B B B B B A
	Fuel line	Defective fuel pump and relay Clogged fuel line Lack of or insufficient fuel	B B C
	Timing chain	Defective timing	B
	Compression	Incorrect valve clearance Loosened spark plug or defective gasket Loosened cylinder head bolt or defective gasket Improper valve sealing Defective valve stem Worn or broken valve spring Worn or stuck piston rings, cylinder and piston Incorrect valve timing Improper engine oil (low viscosity) Trouble of valve lifter Trouble of valve lifter. In case noise occurs with valve moving. Or the harness involved to oil switching solenoid valve, variable valve lift diagnosis oil pressure switch and variable valve lift has trouble in a past.	B B B B C B C A B C B
	Lubrication system	Incorrect oil pressure	B
	Cooling system	Overheat Over-cooling	C C
	Others	Evaporative emission control system malfunction	A

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Symptoms	Problem parts etc.	Possible cause	RANK
4. Surging	Engine control system <Ref. to EN(H6DO)(diag)-2, Basic Diagnostic Procedure.>		A
	Intake system	Loosened or cracked intake duct Loosened or cracked PCV hose Loosened or cracked vacuum hose Defective intake manifold gasket Defective throttle body gasket Defective PCV valve Loosened oil filler cap Dirty air cleaner element	A A A B B B B B
	Fuel line	Defective fuel pump and relay Clogged fuel line Lack of or insufficient fuel	B B C
	Timing chain	Defective timing	B
	Compression	Incorrect valve clearance Loosened spark plug or defective gasket Loosened cylinder head bolt or defective gasket Improper valve sealing Defective valve stem Worn or broken valve spring Worn or stuck piston rings, cylinder and piston Incorrect valve timing Improper engine oil (low viscosity) Trouble of valve lifter	B C C C C C C A B C
		Trouble of valve lifter. In case noise occurs with valve moving. Or the harness involved to oil switching solenoid valve, variable valve lift diagnosis oil pressure switch and variable valve lift has trouble in a past.	B
	Cooling system	Overheat	B
	Others	Evaporative emission control system malfunction	C
5. Engine does not return to idle.	Engine control system <Ref. to EN(H6DO)(diag)-2, Basic Diagnostic Procedure.>		A
	Intake system	Loosened or cracked vacuum hose	A
	Others	Stuck or damaged throttle valve	A
6. Dieseling (Run-on)	Engine control system <Ref. to EN(H6DO)(diag)-2, Basic Diagnostic Procedure.>		A
	Cooling system	Overheat	B
	Others	Evaporative emission control system malfunction	B

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Symptoms	Problem parts etc.	Possible cause	RANK
7. After burning in exhaust system	Engine control system <Ref. to EN(H6DO)(diag)-2, Basic Diagnostic Procedure.>		A
	Intake system	Loosened or cracked intake duct	C
		Loosened or cracked PCV hose	C
		Loosened or cracked vacuum hose	B
		Defective PCV valve	B
	Timing chain	Loosened oil filler cap	C
		Defective timing	B
	Compression	Incorrect valve clearance	B
		Loosened spark plug or defective gasket	C
		Loosened cylinder head bolt or defective gasket	C
		Improper valve sealing	B
		Defective valve stem	C
		Worn or broken valve spring	C
		Worn or stuck piston rings, cylinder and piston	C
		Incorrect valve timing	A
		Trouble of valve lifter	C
		Trouble of valve lifter. In case noise occurs with valve moving. Or the harness involved to oil switching solenoid valve, variable valve lift diagnosis oil pressure switch and variable valve lift has trouble in a past.	B
	Lubrication system	Incorrect oil pressure	C
	Cooling system	Over-cooling	C
	Others	Evaporative emission control system malfunction	C
8. Knocking	Engine control system <Ref. to EN(H6DO)(diag)-2, Basic Diagnostic Procedure.>		A
	Intake system	Loosened oil filler cap	B
	Timing chain	Defective timing	B
	Compression	Incorrect valve clearance	C
		Incorrect valve timing	B
		Trouble of valve lifter	C
		Trouble of valve lifter. In case noise occurs with valve moving. Or the harness involved to oil switching solenoid valve, variable valve lift diagnosis oil pressure switch and variable valve lift has trouble in a past.	B
	Cooling system	Overheat	A
9. Excessive engine oil consumption	Intake system	Loosened or cracked PCV hose	A
		Defective PCV valve	B
		Loosened oil filler cap	C
	Compression	Defective valve stem	A
		Worn or stuck piston rings, cylinder and piston	A
	Lubrication system	Loosened oil pump attaching bolts and defective gasket	B
		Defective oil filter O-ring	B
		Defective crankshaft oil seal	B
		Defective rocker cover gasket	B
		Loosened oil drain plug or defective gasket	B
		Loosened oil pan fitting bolts or defective oil pan	B

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Symptoms	Problem parts etc.	Possible cause	RANK
10. Excessive fuel consumption	Engine control system <Ref. to EN(H6DO)(diag)-2, Basic Diagnostic Procedure.>		A
	Intake system	Dirty air cleaner element	A
	Timing chain	Defective timing	B
	Compression	Incorrect valve clearance	B
		Loosened spark plug or defective gasket	C
		Loosened cylinder head bolt or defective gasket	C
		Improper valve sealing	B
		Defective valve stem	C
		Worn or broken valve spring	C
		Worn or stuck piston rings, cylinder and piston	B
		Incorrect valve timing	B
		Trouble of valve lifter	C
		Trouble of valve lifter. In case noise occurs with valve moving. Or the harness involved to oil switching solenoid valve, variable valve lift diagnosis oil pressure switch and variable valve lift has trouble in a past.	B
	Lubrication system	Incorrect oil pressure	C
	Cooling system	Over-cooling	C