

ENGINE TROUBLE IN GENERAL

MECHANICAL

22.Engine Trouble in General

A: INSPECTION

NOTE:

“RANK” shown in the chart refer to the possibility of reason for the trouble in order (“Very often” to “Rarely”)

A — Very often

B — Sometimes

C — Rarely

| TROUBLE | PROBLEM PARTS, ETC. | POSSIBLE CAUSE | RANK |
|---------------------------------------|---|--|------|
| 1. Engine will 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 | • Poor terminal connection | 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(H4SO)-2, Basic Diagnostic Procedure.> | | A |
| | • Fuel line | • Defective fuel pump and relay | A |
| | | • Lack of or insufficient fuel | B |
| | • Belt | • Defective | B |
| | | • Defective timing | B |
| | • Compression | • Incorrect valve clearance | C |
| | | • Loosened spark plugs or defective gasket | C |
| | | • Loosened cylinder head bolts or defective gasket | C |
| | | • Improper valve seating | 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 | |
| 3) Initial combustion occur. | • Engine control system <Ref. to EN(H4SO)-2, Basic Diagnostic Procedure.> | | A |
| | • Intake system | • Defective intake manifold gasket | B |
| | | • Defective throttle body gasket | B |
| | • Fuel line | • Defective fuel pump and relay | C |
| | | • Clogged fuel line | C |
| | | • Lack of or insufficient fuel | B |
| | • Belt | • Defective | B |
| | | • Defective timing | B |
| | • Compression | • Incorrect valve clearance | C |
| | | • Loosened spark plugs or defective gasket | C |
| | | • Loosened cylinder head bolts or defective gasket | C |
| | | • Improper valve seating | 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 | | |

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| 4) Engine stalls after initial combustion. | • Engine control system <Ref. to EN(H4SO)-2, Basic Diagnostic Procedure.> | | A |
| | • Intake system | • Loosened or cracked intake duct | B |
| | | • Loosened or cracked PCV hose | C |
| | | • Loosened or cracked vacuum hose | C |
| | | • Defective intake manifold gasket | B |
| | | • Defective throttle body gasket | B |
| | | • Dirty air cleaner element | C |
| | • Fuel line | • Clogged fuel line | C |
| | | • Lack of or insufficient fuel | B |
| | • Belt | • Defective | B |
| | | • Defective timing | B |
| | • Compression | • Incorrect valve clearance | C |
| | | • Loosened spark plugs or defective gasket | C |
| | | • Loosened cylinder head bolts or defective gasket | C |
| | | • Improper valve seating | 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 | |
| 2. Rough idle and engine stall | • Engine control system <Ref. to EN(H4SO)-2, Basic Diagnostic Procedure.> | | A |
| | • Intake system | • Loosened or cracked intake duct | A |
| | | • Loosened or cracked PCV hose | A |
| | | • Loosened or cracked vacuum hose | A |
| | | • Defective intake manifold gasket | B |
| | | • Defective throttle body gasket | B |
| | | • Defective PCV valve | C |
| | | • Loosened oil filler cap | B |
| | | • Dirty air cleaner element | C |
| | • Fuel line | • Defective fuel pump and relay | C |
| | | • Clogged fuel line | C |
| | | • Lack of or insufficient fuel | B |
| | • Belt | • Defective timing | C |
| | • Compression | • Incorrect valve clearance | B |
| | | • Loosened spark plugs or defective gasket | B |
| | | • Loosened cylinder head bolts or defective gasket | B |
| | | • Improper valve seating | B |
| | | • Defective valve stem | C |
| | | • Worn or broken valve spring | B |
| | | • Worn or stuck piston rings, cylinder and piston | B |
| | | • Incorrect valve timing | A |
| | | • Improper engine oil (low viscosity) | B |
| | • Lubrication system | • Incorrect oil pressure | B |
| | | • Defective rocker cover gasket | C |
| | • Cooling system | • Overheating | C |
| | • Others | • Malfunction of evaporative emission control system | A |
| | | • Stuck or damaged throttle valve | B |
| | | • Accelerator cable out of adjustment | C |

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| 3. Low output, hesitation and poor acceleration | • Engine control system <Ref. to EN(H4SO)-2, Basic Diagnostic Procedure.> | | A |
| | • Intake system | • Loosened or cracked intake duct | A |
| | | • Loosened or cracked PCV hose | A |
| | | • Loosened or cracked vacuum hose | B |
| | | • Defective intake manifold gasket | B |
| | | • Defective throttle body gasket | B |
| | | • Defective PCV valve | B |
| | | • Loosened oil filler cap | B |
| | | • Dirty air cleaner element | A |
| | • Fuel line | • Defective fuel pump and relay | B |
| | | • Clogged fuel line | B |
| | | • Lack of or insufficient fuel | C |
| | • Belt | • Defective timing | B |
| | • Compression | • Incorrect valve clearance | B |
| | | • Loosened spark plugs or defective gasket | B |
| | | • Loosened cylinder head bolts or defective gasket | B |
| | | • Improper valve seating | B |
| | | • Defective valve stem | C |
| | | • Worn or broken valve spring | B |
| | | • Worn or stuck piston rings, cylinder and piston | C |
| | | • Incorrect valve timing | A |
| | | • Improper engine oil (low viscosity) | B |
| | • Lubrication system | • Incorrect oil pressure | B |
| • Cooling system | • Overheating | C | |
| | • Over cooling | C | |
| • Others | • Malfunction of evaporative emission control system | A | |
| 4. Surging | • Engine control system <Ref. to EN(H4SO)-2, Basic Diagnostic Procedure.> | | A |
| | • Intake system | • Loosened or cracked intake duct | A |
| | | • Loosened or cracked PCV hose | A |
| | | • Loosened or cracked vacuum hose | A |
| | | • Defective intake manifold gasket | B |
| | | • Defective throttle body gasket | B |
| | | • Defective PCV valve | B |
| | | • Loosened oil filler cap | B |
| | | • Dirty air cleaner element | B |
| | • Fuel line | • Defective fuel pump and relay | B |
| | | • Clogged fuel line | B |
| | | • Lack of or insufficient fuel | C |
| | • Belt | • Defective timing | B |
| | • Compression | • Incorrect valve clearance | B |
| | | • Loosened spark plugs or defective gasket | C |
| | | • Loosened cylinder head bolts or defective gasket | C |
| | | • Improper valve seating | C |
| | | • Defective valve stem | C |
| | | • Worn or broken valve spring | C |
| | | • Worn or stuck piston rings, cylinder and piston | C |
| | | • Incorrect valve timing | A |
| | | • Improper engine oil (low viscosity) | B |
| | • Cooling system | • Overheating | B |
| • Others | • Malfunction of evaporative emission control system | C | |

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| 5. Engine does not return to idle. | • Engine control system <Ref. to EN(H4SO)-2, Basic Diagnostic Procedure.> | | A |
| | • Intake system | • Loosened or cracked vacuum hose | A |
| | • Others | • Stuck or damaged throttle valve | A |
| | | • Accelerator cable out of adjustment | B |
| 6. Dieseling (Run-on) | • Engine control system <Ref. to EN(H4SO)-2, Basic Diagnostic Procedure.> | | A |
| | • Cooling system | • Overheating | B |
| | • Others | • Malfunction of evaporative emission control system | B |
| 7. After burning in exhaust system | • Engine control system <Ref. to EN(H4SO)-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 |
| | | • Loosened oil filler cap | C |
| | • Belt | • Defective timing | B |
| | • Compression | • Incorrect valve clearance | B |
| | | • Loosened spark plugs or defective gasket | C |
| | | • Loosened cylinder head bolts or defective gasket | C |
| | | • Improper valve seating | B |
| | | • Defective valve stem | C |
| | | • Worn or broken valve spring | C |
| | | • Worn or stuck piston rings, cylinder and piston | C |
| | | • Incorrect valve timing | A |
| • Lubrication system | • Incorrect oil pressure | C | |
| • Cooling system | • Over cooling | C | |
| • Others | • Malfunction of evaporative emission control system | C | |
| 8. Knocking | • Engine control system <Ref. to EN(H4SO)-2, Basic Diagnostic Procedure.> | | A |
| | • Intake system | • Loosened oil filler cap | B |
| | • Belt | • Defective timing | B |
| | • Compression | • Incorrect valve clearance | C |
| | | • Incorrect valve timing | B |
| | • Cooling system | • Overheating | 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 filler seal | 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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|--------------------------------|---|--|------|---|
| 10. Excessive fuel consumption | • Engine control system <Ref. to EN(H4SO)-2, Basic Diagnostic Procedure.> | | A | |
| | • Intake system | • Dirty air cleaner element | A | |
| | • Belt | • Defective timing | B | |
| | • Compression | • Incorrect valve clearance | | B |
| | | • Loosened spark plugs or defective gasket | | C |
| | | • Loosened cylinder head bolts or defective gasket | | C |
| | | • Improper valve seating | | B |
| | | • Defective valve stem | | C |
| | | • Worn or broken valve spring | | C |
| | | • Worn or stuck piston rings, cylinder and piston | | B |
| | | • Incorrect valve timing | | B |
| | • Lubrication system | • Incorrect oil pressure | | C |
| | • Cooling system | • Over cooling | | C |
| • Others | • Accelerator cable out of adjustment | | B | |