

# 1. Engine Trouble in General

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

- 1 — Very often
- 2 — Sometimes
- 3 — Rarely

| TROUBLE                |                                    |                            |   |                             |  |         |                                 |                    |                                 |          |                                  | POSSIBLE CAUSE |   |
|------------------------|------------------------------------|----------------------------|---|-----------------------------|--|---------|---------------------------------|--------------------|---------------------------------|----------|----------------------------------|----------------|---|
| Engine will not start. |                                    |                            |   | Rough idle and engine stall | Low output, hesitation and poor acceleration | Surging | Engine does not return to idle. | Dieseling (Run-on) | After burning in exhaust system | Knocking | Excessive engine oil consumption |                | Excessive fuel consumption  |
| Starter does not turn. | Initial combustion does not occur. | Initial combustion occurs. | Engine stalls after initial combustion. |                             |  |         |                                 |                    |                                 |          |                                  |                |   |
|                        |                                    |                            |   |                             |  |         |                                 |                    |                                 |          |                                  |                |   |
|                        |                                    |                            |   |                             |  |         |                                 |                    |                                 |          |                                  |                | STARTER   |
|                        |                                    |                            |   |                             |  |         |                                 |                    |                                 |          |                                  |                | ● Defective battery-to-starter harness                              |
|                        |                                    |                            |   |                             |  |         |                                 |                    |                                 |          |                                  |                | ● Defective starter switch  |
|                        |                                    |                            |   |                             |  |         |                                 |                    |                                 |          |                                  |                | ● Defective inhibitor switch  |
|                        |                                    |                            |   |                             |  |         |                                 |                    |                                 |          |                                  |                | ● Defective starter   |
|                        |                                    |                            |   |                             |  |         |                                 |                    |                                 |          |                                  |                | BATTERY   |
|                        |                                    |                            |   |                             |  |         |                                 |                    |                                 |          |                                  |                | ● Poor terminal connection  |
|                        |                                    |                            |   |                             |  |         |                                 |                    |                                 |          |                                  |                | ● Run-down battery  |
|                        |                                    |                            |   |                             |  |         |                                 |                    |                                 |          |                                  |                | ● Defective charging system   |
|                        | 1                                  | 1                          | 1                                       | 1                           | 1  | 1       | 1                               | 1                  | 1                               | 1        |                                  | 1              | Fuel injection system <Ref. to 2-7 On-Board Diagnostics II System.> |

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|                        |                                    |                            |   |                             |  |         |                                 |                    |                                 |          |                                  |                            | INTAKE SYSTEM                                      |
|                        |                                    |                            | 2                                       | 1                           | 1  | 1       |                                 |                    | 3                               |          |                                  |                            | ● Loosened or cracked intake air pipe              |
|                        |                                    |                            | 3                                       | 1                           | 1  | 1       |                                 |                    | 3                               |          | 1                                |                            | ● Loosened or cracked blow-by hose                 |
|                        |                                    |                            | 3                                       | 1                           | 2  | 1       | 1                               |                    | 2                               |          |                                  |                            | ● Loosened or cracked vacuum hose                  |
|                        |                                    | 2                          | 2                                       | 2                           | 2  | 2       |                                 |                    |                                 |          |                                  |                            | ● Defective intake manifold gasket                 |
|                        |                                    | 2                          | 2                                       | 2                           | 2  | 2       |                                 |                    |                                 |          |                                  |                            | ● Defective throttle body gasket                   |
|                        |                                    |                            |   | 3                           | 2  | 2       |                                 |                    | 2                               |          | 2                                |                            | ● Defective PCV valve                              |
|                        |                                    |                            |   | 2                           | 2  | 2       |                                 |                    | 3                               | 2        | 3                                |                            | ● Loosened oil filler cap                          |
|                        |                                    |                            | 3                                       | 3                           | 1  | 2       |                                 |                    |                                 |          |                                  | 1                          | ● Dirty air cleaner element                        |
|                        |                                    |                            |   |                             |  |         |                                 |                    |                                 |          |                                  |                            | FUEL LINE  |
|                        | 1                                  | 3                          |   | 3                           | 2  | 2       |                                 |                    |                                 |          |                                  |                            | ● Defective fuel pump and relay                    |
|                        |                                    | 3                          | 3                                       | 3                           | 2  | 2       |                                 |                    |                                 |          |                                  |                            | ● Clogged fuel line                                |
|                        | 2                                  | 2                          | 2                                       | 2                           | 3  | 3       |                                 |                    |                                 |          |                                  |                            | ● Lack of or insufficient fuel                     |
|                        |                                    |                            |   |                             |  |         |                                 |                    |                                 |          |                                  |                            | BELT   |
|                        | 2                                  | 2                          | 2                                       |                             |  |         |                                 |                    |                                 |          |                                  |                            | ● Defective  |
|                        | 2                                  | 2                          | 2                                       | 3                           | 2  | 2       |                                 |                    | 2                               | 2        |                                  | 2                          | ● Defective timing                                 |
|                        |                                    |                            |   |                             |  |         |                                 |                    |                                 |          |                                  |                            | FRICITION  |
| 3                      |                                    |                            |   |                             |  |         |                                 |                    |                                 |          |                                  |                            | ● Seizure of crankshaft and connecting rod bearing |
| 3                      |                                    |                            |   |                             |  |         |                                 |                    |                                 |          |                                  |                            | ● Seized camshaft                                  |
| 3                      |                                    |                            |   |                             |  |         |                                 |                    |                                 |          |                                  |                            | ● Seized or stuck piston and cylinder              |
|                        |                                    |                            |   |                             |  |         |                                 |                    |                                 |          |                                  |                            | COMPRESSION  |
|                        | 3                                  | 3                          | 3                                       | 2                           | 2  | 2       |                                 |                    | 2                               | 3        |                                  | 2                          | ● Defective hydraulic lash adjuster                |
|                        | 3                                  | 3                          | 3                                       | 2                           | 2  | 3       |                                 |                    | 3                               |          |                                  | 3                          | ● Loosened spark plugs or defective gasket         |
|                        | 3                                  | 3                          | 3                                       | 2                           | 2  | 3       |                                 |                    | 3                               |          |                                  | 3                          | ● Loosened cylinder head bolts or defective gasket |
|                        | 3                                  | 3                          | 3                                       | 2                           | 2  | 3       |                                 |                    | 2                               |          |                                  | 2                          | ● Improper valve seating                           |
|                        | 3                                  | 3                          | 3                                       | 3                           | 3  | 3       |                                 |                    | 3                               |          | 1                                | 3                          | ● Defective valve stem                             |
|                        | 2                                  | 2                          | 2                                       | 2                           | 2  | 3       |                                 |                    | 3                               |          |                                  | 3                          | ● Worn or broken valve spring                      |
|                        | 3                                  | 3                          | 3                                       | 2                           | 3  | 3       |                                 |                    | 3                               |          | 1                                | 2                          | ● Worn or stuck piston rings, cylinder and piston  |
|                        | 2                                  | 2                          | 2                                       | 1                           | 1  | 1       |                                 |                    | 1                               | 2        |                                  | 2                          | ● Incorrect valve timing                           |
|                        | 2                                  | 2                          | 2                                       | 2                           | 2  | 2       |                                 |                    |                                 |          |                                  |                            | ● Improper engine oil (low viscosity)              |

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|                        |                                    |                            |   |                             |  |         |                                 |                    |                                 |          |                                  |                            |  | LUBRICATION SYSTEM                                       |
|                        |                                    |                            |   | 2                           | 2  |         |                                 |                    | 3                               |          |                                  | 3                          |  | ● Incorrect oil pressure                                 |
|                        |                                    |                            |   |                             |  |         |                                 |                    |                                 |          | 2                                |                            |  | ● Loosened oil pump attaching bolts and defective gasket |
|                        |                                    |                            |   |                             |  |         |                                 |                    |                                 |          | 2                                |                            |  | ● Defective oil filter seal                              |
|                        |                                    |                            |   |                             |  |         |                                 |                    |                                 |          | 2                                |                            |  | ● Defective crankshaft oil seal                          |
|                        |                                    |                            |   | 3                           |  |         |                                 |                    |                                 |          | 2                                |                            |  | ● Defective rocker cover gasket                          |
|                        |                                    |                            |   |                             |  |         |                                 |                    |                                 |          | 2                                |                            |  | ● Loosened oil drain plug or defective gasket            |
|                        |                                    |                            |   |                             |  |         |                                 |                    |                                 |          | 2                                |                            |  | ● Loosened oil pan fitting bolts or defective oil pan    |
|                        |                                    |                            |   |                             |  |         |                                 |                    |                                 |          |                                  |                            |  | COOLING SYSTEM   |
|                        |                                    |                            |   | 3                           | 3  | 2       |                                 | 2                  |                                 | 1        |                                  |                            |  | ● Overheating  |
|                        |                                    |                            |   |                             | 3  |         |                                 |                    | 3                               |          |                                  | 3                          |  | ● Over cooling   |
|                        |                                    |                            |   |                             |  |         |                                 |                    |                                 |          |                                  |                            |  | OTHERS   |
|                        |                                    |                            |   | 1                           | 1  | 3       |                                 |                    | 3                               |          |                                  |                            |  | ● Malfunction of Evaporative Emission Control System     |
|                        |                                    |                            |   | 2                           |  |         | 1                               |                    |                                 |          |                                  |                            |  | ● Stuck or damaged throttle valve                        |
|                        |                                    |                            |   | 3                           |  |         | 2                               | 2                  |                                 |          |                                  | 2                          |  | ● Accelerator cable out of adjustment                    |