

# ENGINE NOISE

MECHANICAL

## 23.Engine Noise

### A: INSPECTION

| Type of sound   | Condition  | Possible cause   |
|---|--|--|
| Regular clicking sound  | Sound increases as engine speed increases.   | <ul style="list-style-type: none"> <li>• Valve mechanism is defective.</li> <li>• Incorrect valve clearance</li> <li>• Worn valve rocker</li> <li>• Worn camshaft</li> <li>• Broken valve spring</li> </ul>                |
| Heavy and dull clank  | Oil pressure is low.   | <ul style="list-style-type: none"> <li>• Worn crankshaft main bearing</li> <li>• Worn connecting rod bearing (big end)</li> </ul>  |
|   | Oil pressure is normal.  | <ul style="list-style-type: none"> <li>• Loose flywheel mounting bolts</li> <li>• Damaged engine mounting</li> </ul>   |
| High-pitched clank (Spark knock)  | Sound is noticeable when accelerating with an overload.                                  | <ul style="list-style-type: none"> <li>• Ignition timing advanced</li> <li>• Accumulation of carbon inside combustion chamber</li> <li>• Wrong spark plug heat range</li> <li>• Improper gasoline octane rating</li> </ul> |
| Clank when engine speed is medium (1,000 to 2,000 rpm).                       | Sound is reduced when fuel injector connector of noisy cylinder is disconnected. (NOTE*) | <ul style="list-style-type: none"> <li>• Worn crankshaft main bearing</li> <li>• Worn bearing at crankshaft end of connecting rod</li> </ul>   |
| Knocking sound when engine is operating under idling speed and engine is warm | Sound is reduced when fuel injector connector of noisy cylinder is disconnected. (NOTE*) | <ul style="list-style-type: none"> <li>• Worn cylinder liner and piston ring</li> <li>• Broken or stuck piston ring</li> <li>• Worn piston pin and hole at piston end of connecting rod</li> </ul>                         |
|   | Sound is not reduced if each fuel injector connector is disconnected in turn. (NOTE*)    | <ul style="list-style-type: none"> <li>• Unusually worn valve lifter</li> <li>• Worn cam gear</li> <li>• Worn camshaft journal bore in crankcase</li> </ul>  |
| Squeaky sound   | —  | <ul style="list-style-type: none"> <li>• Insufficient generator lubrication</li> </ul>   |
| Rubbing sound   | —  | <ul style="list-style-type: none"> <li>• Defective generator brush and rotor contact</li> </ul>  |
| Gear scream when starting engine  | —  | <ul style="list-style-type: none"> <li>• Defective ignition starter switch</li> <li>• Worn gear and starter pinion</li> </ul>  |
| Sound like polishing glass with a dry cloth                                   | —  | <ul style="list-style-type: none"> <li>• Loose drive belt</li> <li>• Defective water pump shaft</li> </ul>   |
| Hissing sound   | —  | <ul style="list-style-type: none"> <li>• Loss of compression</li> <li>• Air leakage in air intake system, hoses, connections or manifolds</li> </ul>   |
| Timing belt noise   | —  | <ul style="list-style-type: none"> <li>• Loose timing belt</li> <li>• Belt contacting case or adjacent part</li> </ul>   |
| Valve tappet noise  | —  | <ul style="list-style-type: none"> <li>• Incorrect valve clearance</li> </ul>  |

**NOTE\*:**

When disconnecting fuel injector connector, Malfunction Indicator Light illuminates and DTC is stored in ECM memory. Therefore, carry out the CLEAR MEMORY MODE <Ref. to EN(H4SO)-49, OPERATION, Clear Memory Mode.> and INSPECTION MODE <Ref. to EN(H4SO)-40, OPERATION, Inspection Mode.> after connecting fuel injector connector.