

CYLINDER HEAD/VALVE

TORQUE VALUES

Cylinder head cover	
10 mm cap nut	35–45 N·m (3.5–4.5 kg·m, 25–33 ft·lb)
8 mm bolt	20–25 N·m (2.0–2.5 kg·m, 14–18 ft·lb)
Cam chain cover	
8 mm bolt/cap nut	20–25 N·m (2.0–2.5 kg·m, 14–18 ft·lb)
Oil pass pipe	10–14 N·m (1.0–1.4 kg·m, 6–9 ft·lb)
Spark plug sleeve	10–15 N·m (1.0–1.5 kg·m, 7–11 ft·lb)
	– Apply molybdenum disulfide grease to the threads.
Cam sprocket bolt	16–20 N·m (1.6–2.0 kg·m, 12–14 ft·lb)

TOOLS

Special

Valve Guide Reamer	07984–6570100
Valve Guide Driver	07942–6110000
Valve Guide Driver Attachment (IN)	07943–6570100
(EX)	07943–6890100
Hydraulic Tappet Bleeder	07973–ME90000
Spark Plug Sleeve Socket	07930–KA50100

Common

Valve Spring Compressor	07757–0010000 or 07957–3290001
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TROUBLESHOOTING

Engine top-end problems usually affect engine performance. These can be diagnosed by a compression test, or by tracing noises to the top-end with a sounding rod or stethoscope.

Low Compression

1. Valves

- hydraulic tappet locked.
(Engine will not start)
- Depress hydraulic tappet.
(Chatter noise)
 - insufficient air bleeding, noise will stop after about 10 minutes.
- Burned or bent valves.
- Broken or damaged valve springs.
- Incorrect valve timing.
- Valve stuck open.

2. Cylinder head

- Leaking or damaged head gasket.
- Warped or cracked cylinder head.

3. Cylinder and piston (Refer to Section 13)

Compression too high

- Excessive carbon build-up on piston or combustion chamber.

Excessive Noise

1. Hydraulic tappet.

- Worn or damaged tappet.
- Clogged oil hole or oil passage to cylinder head.
- Weak or damaged assist spring.
- Worn or damaged assist shaft.
- Worn or damaged rocker arm or shaft.
- Worn or damaged rocker arm shaft mount hole in head cover.
- Air in oil passage caused by low oil level.
- Excessively worn valve seat.
- Worn rocker arm follower or valve stem end.

2. Sticking valve or broken valve spring.

3. Weak valve spring.

4. Worn or damaged camshaft.

5. Worn or damaged cam chain.

6. Worn or damaged cam chain tensioner.

7. Worn cam sprocket.