

## CYLINDER HEAD/VALVES

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### TORQUE VALUES

|   |                                       |
|---|---------------------------------------|
| Cylinder head cap nuts                  | 35–45 N·m (3.5–4.5 kg-m, 25–32 ft-lb) |
| Cylinder head bolts                     | 35–45 N·m (3.5–4.5 kg-m, 25–32 ft-lb) |
| Cam sprocket bolts                      | 17–23 N·m (1.7–2.3 kg-m, 12–17 ft-lb) |
| Valve adjusting screw lock nuts         | 15–18 N·m (1.5–1.8 kg-m, 11–13 ft-lb) |
| Oil bolts                               | 12–16 N·m (1.2–1.6 kg-m, 9–12 ft-lb)  |
| Spark plug                              | 15–20 N·m (1.5–2.0 kg-m, 11–15 ft-lb) |
| Cam chain tensioner lifter sealing bolt | 8–12 N·m (0.8–1.2 kg-m, 6–9 ft-lb)    |
| Cam chain tensioner lifter SH bolts     | 8–12 N·m (0.8–1.2 kg-m, 6–9 ft-lb)    |

### TOOLS

#### Special

Valve guide reamer, 5.5 mm 07984–2000000

#### Common

|                                       |                                |
|---------------------------------------|--------------------------------|
| Valve guide remover, 5.5 mm           | 07742–0010100 or 07942–3290100 |
| Valve spring compressor               | 07757–0010000 or 07957–3290001 |
| Valve seat cutter, 29 mm (EX 45°)     | 07780–0010300                  |
| Valve seat cutter, 33 mm (IN 45°)     | 07780–0010800                  |
| Valve seat cutter, 30 mm (EX 32°)     | 07780–0012200                  |
| Valve seat cutter, 35 mm (IN 32°)     | 07780–0012300                  |
| Valve seat cutter, 30 mm (EX, IN 60°) | 07780–0014000                  |
| Valve seat cutter holder              | 07781–0010101                  |

NOTE: Valve seat cutters are commercially available in U.S.A.

## TROUBLESHOOTING

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

#### Low compression

- Valves:
  - Incorrect valve adjustment.
  - Burned or bent valve.
  - Incorrect valve timing.
  - Weak valve spring.
- Cylinder head:
  - Leaking or damaged head gasket.
  - Warped or cracked cylinder head.
- Cylinder and piston (Section 7).

#### High compression

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

#### Excessive noise

- Incorrect valve adjustment.
- Sticking valve or broken valve spring.
- Damaged or worn rocker arm or camshaft.
- Worn or damaged cam chain.
- Worn or damaged cam chain tensioner.
- Worn cam sprocket teeth.

#### Poor idling

- Compression too low.