

# 6. CYLINDER HEAD/VALVES

<b>SERVICE INFORMATION</b>	<b>6-1</b>	<b>VALVE SEAT INSPECTION/REFACING</b>	<b>6-9</b>
<b>TROUBLESHOOTING</b>	<b>6-2</b>	<b>CAM CHAIN TENSIONER</b>	<b>6-11</b>
<b>CYLINDER HEAD COVER REMOVAL/ DISASSEMBLY</b>	<b>6-3</b>	<b>CYLINDER HEAD ASSEMBLY</b>	<b>6-12</b>
<b>CAM CHAIN TENSIONER LIFTER DISASSEMBLY</b>	<b>6-4</b>	<b>CYLINDER HEAD INSTALLATION</b>	<b>6-13</b>
<b>CAMSHAFT REMOVAL</b>	<b>6-5</b>	<b>CAMSHAFT INSTALLATION</b>	<b>6-14</b>
<b>CYLINDER HEAD REMOVAL</b>	<b>6-6</b>	<b>CAM CHAIN TENSIONER LIFTER ASSEMBLY</b>	<b>6-15</b>
<b>CYLINDER HEAD DISASSEMBLY</b>	<b>6-7</b>	<b>CYLINDER HEAD COVER ASSEMBLY/INSTALLATION</b>	<b>6-17</b>

6

## SERVICE INFORMATION

### GENERAL

- This section covers the cylinder head, valves, camshaft, rocker arm and cam chain tensioner lifter services. The camshaft and rocker arm services can be performed with the engine in the frame.
- Camshaft lubrication oil is fed to the cylinder head through an oil pipe. Be sure this pipe is not clogged before installation.
- Before assembly, apply molybdenum disulfide grease to the camshaft bearings to provide initial lubrication.
- Pour clean engine oil into the oil pockets in the cylinder head during assembly to lubricate the camshaft lobes.

### SPECIFICATIONS

ITEM			STANDARD	SERVICE LIMIT
Cylinder compression			1,250 ± 100 kPa (12.5 ± 1.0 kg/cm <sup>2</sup> , 178 ± 14.2 psi)	—
Camshaft	Cam height	IN	36.096 mm (1.4211 in)	35.916 mm (1.4140 in)
		EX	35.889 mm (1.4129 in)	35.709 mm (1.4059 in)
	Journal O.D.	R	23.954–23.975 mm (0.9431–0.9439 in)	23.90 mm (0.941 in)
		C	23.934–23.955 mm (0.9423–0.9431 in)	23.88 mm (0.940 in)
		L	19.954–19.975 mm (0.7856–0.7864 in)	19.90 mm (0.784 in)
	Bearing I.D.	R, C	24.000–24.021 mm (0.9449–0.9457 in)	24.05 mm (0.947 in)
		L	20.000–20.021 mm (0.7874–0.7882 in)	20.05 mm (0.789 in)
	Oil clearance	R, L	0.025–0.067 mm (0.0010–0.0026 in)	0.10 mm (0.004 in)
C		0.045–0.087 mm (0.0018–0.0034 in)	0.12 mm (0.005 in)	
Cylinder head warpage			—	0.10 mm (0.004 in)
Rocker arm	I.D.		11.988–12.006 mm (0.4720–0.4727 in)	12.038 mm (0.4739 in)
	Shaft O.D.		11.966–11.984 mm (0.4711–0.4718 in)	11.92 mm (0.469 in)
	Arm-to-shaft clearance		0.004–0.040 mm (0.0002–0.0016 in)	0.068 mm (0.0027 in)
Valve spring	Free length	Inner	35.15 mm (1.384 in)	32.2 mm (1.27 in)
		Outer	39.29 mm (1.547 in)	36.3 mm (1.43 in)
	Preload	Inner	6.3 ± 0.6 kg/26.8 mm (13.89 ± 1.32 lb/1.06 in)	—
		Outer	16 ± 1.6 kg/30.8 mm (35.28 ± 3.53 lb/1.21 in)	—
Valve, valve guide	Stem O.D.	IN	5.480–5.490 mm (0.2157–0.2161 in)	5.45 mm (0.215 in)
		EX	5.460–5.470 mm (0.2150–0.2154 in)	5.43 mm (0.214 in)
	Guide I.D.	IN	5.500–5.512 mm (0.2165–0.2170 in)	5.525 mm (0.2175 in)
		EX	5.500–5.512 mm (0.2165–0.2170 in)	5.525 mm (0.2175 in)
	Stem-to-guide clearance	IN	0.010–0.032 mm (0.0004–0.0012 in)	0.12 mm (0.005 in)
		EX	0.030–0.052 mm (0.0012–0.0020 in)	0.14 mm (0.006 in)
Valve seat width			1.2 mm (0.05 in)	1.5 mm (0.06 in)