

10. CYLINDER HEAD / VALVE

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SERVICE INFORMATION

GENERAL

- The engine uses hydraulic tappets. After installing the cylinder head covers, fill the de-foaming chambers in the head covers with fresh engine oil as described in this section.
- To service the cylinder heads, the engine must be removed from the frame. See Section 5 for removal and installation of the engine.
- Camshaft lubricating oil is fed through an oil line. Be sure the hole in the oil line is not clogged.
- During assembly, apply molybdenum disulfide grease to the camshaft holders and rocker arm shafts to provide initial lubrication.
- The hydraulic tappets must be adjusted with shims whenever the following parts are replaced:
 - Cylinder head cover.
 - Cylinder head.
 - Valve, valve guide and valve seat refacing.
 - Camshaft.
 - Rocker arm and rocker arm shaft.

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SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT	
Compression pressure		12 ± 2 kg/cm ² (171 ± 28 psi)	—	
Camshaft	Cam lobe height	IN	36.497 (1.4369)	
		EX	36.497 (1.4369)	
	Runout		0.03 (0.0010)	
	Oil clearance	Both ends	0.020–0.062 (0.0008–0.0024)	0.07 (0.0027)
Center		0.020–0.062 (0.0008–0.0024)	0.07 (0.0027)	
Rocker arm	Rocker arm I.D.		13.750–13.768 (0.5413–0.5420)	
	Rocker arm shaft O.D.	IN	13.716–13.734 (0.5400–0.5406)	
		EX	13.716–13.737 (0.5400–0.5408)	
	Camshaft holder I.D.		20.000–20.021 (0.7874–0.7882)	
	Tappet assist spring free length		19.46 (0.7661)	
Tappet compression stroke with kerosene		—	0.20 (0.0079)	
Valves and valve guides	Valve stem O.D.	IN	6.570–6.595 (0.2587–0.2596)	
		EX	6.550–6.575 (0.2579–0.2589)	
	Valve guide I.D.		6.600–6.620 (0.2598–0.2606)	
	Stem-to-guide clearance	IN	0.005–0.050 (0.0002–0.0020)	
		EX	0.025–0.070 (0.0010–0.0028)	
Valve seat width		0.9–1.1 (0.0354–0.0433)	1.50 (0.0591)	
Valve springs	Free length	OUTER	IN	45.70 (1.7992)
			EX	43.50 (1.7126)
		INNER	IN	37.9 (1.4921)
			EX	37.9 (1.4921)
Cylinder head warpage		—	0.10 (0.0040)	