

# 12. CRANKSHAFT/TRANSMISSION/BALANCER

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## SERVICE INFORMATION

### GENERAL

- The crankcase must be separated to service the crankshaft, transmission and balancer. Refer to section 11 for crankcase separation/assembly.
- Be careful not to damage the crankshaft main journal and journal bearing while removing or installing the crankshaft.
- Mark and store the disassembled parts to ensure that they are installed in their original locations.
- Mark and store the bearing inserts to ensure that the parts are in their correct locations during reassembly. If the inserts are improperly installed, they will block the oil hole, causing insufficient lubrication and eventual engine seizure.
- The main journal bearing inserts are a select fit and are identified by color codes. Select replacement bearings from the code tables. After installing new bearings, recheck them with a plastigauge to verify clearance. Apply molybdenum disulfide oil to the main journal during assembly.

### SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Crankshaft	Side clearance	0.05 – 0.20 (0.002 – 0.008)	0.30 (0.012)
	Runout	—	0.30 (0.012)
	Main journal oil clearance	0.017 – 0.035 (0.0007 – 0.0014)	0.045 (0.0018)
Transmission	Gear I.D.	M4, M5	31.000 – 31.025 (1.2205 – 1.2215)
		C1	26.000 – 26.021 (1.0236 – 1.0244)
		C2, 3	33.000 – 33.025 (1.2992 – 1.3002)
	Bushing O.D.	M4, M5	30.950 – 30.975 (1.2185 – 1.2195)
		C2	32.955 – 32.980 (1.2974 – 1.2984)
		C3, distance collar	32.950 – 32.975 (1.2972 – 1.2982)
	Bushing I.D.	M4	27.985 – 28.006 (1.1018 – 1.1026)
		C2	29.985 – 30.006 (1.1805 – 1.1813)
	Gear-to-bushing clearance	M4, M5	0.020 – 0.062 (0.0008 – 0.0024)
		C2	0.020 – 0.070 (0.0008 – 0.0028)
		C3	0.025 – 0.075 (0.0010 – 0.0030)
	Mainshaft O.D.	M4	27.967 – 27.980 (1.1011 – 1.1016)
		Clutch outer guide	27.980 – 27.993 (1.1016 – 1.1021)
	Countershaft O.D.	C2	29.967 – 29.980 (1.1798 – 1.1803)
	Bushing-to-shaft clearance	M4	0.005 – 0.039 (0.0002 – 0.0015)
C2		0.005 – 0.039 (0.0002 – 0.0015)	