

Manual Transmission — Section 13

| | MEASUREMENT | STANDARD (NEW) | SERVICE LIMIT |
|---|---|---|--|
| Transmission oil | Capacity ℓ (US qt, Imp qt) | 2.6 (2.7, 2.3) for overhaul 2.3 (2.4, 2.0) for oil change | |
| Mainshaft | Diameter of bearing contact area Clutch housing side A Transmission housing side C Transmission cover side D 3rd gear B Runout | 27.977–27.990 (1.1015–1.1020) 30.987–31.000 (1.2200–1.2205) 27.987–28.000 (1.1018–1.1024) 37.989–38.000 (1.4956–1.4961) 0.02 (0.001) max. | 27.930 (1.0996) 30.940 (1.2181) 27.937 (1.0999) 37.935 (1.4935) 0.05 (0.002) |
| Countershaft | Diameter of bearing contact area Clutch housing side A Transmission housing side B Transmission cover side C Runout | 33.000–33.015 (1.2992–1.2998) 31.975–31.988 (1.2589–1.2594) 27.987–28.000 (1.1018–1.1024) 0.02 (0.001) max. | 32.950 (1.2972) 31.928 (1.2570) 27.937 (1.0999) 0.05 (0.002) |
| Reverse idler shaft | Diameter bearing contact area | 19.989–20.000 (0.7870–0.7874) | 19.93 (0.785) |
| Reverse drive gear | I.D. Thickness | 25.007–25.020 (0.9845–0.9850) 26.45–26.50 (1.041–1.043) | 25.078 (0.9873) 26.38 (1.039) |
| Mainshaft 3rd gear | I.D. Thickness End play (when tightening by specified torque) | 44.009–44.025 (1.7326–1.7333) 31.39–31.47 (1.236–1.239) 0.06–0.19 (0.002–0.008) | 44.080 (1.7354) 31.32 (1.233) 0.30 (0.012) |
| Mainshaft 4th gear | I.D. Thickness End play (when tightening by specified torque) | 44.009–44.025 (1.7326–1.7333) 29.39–29.47 (1.157–1.160) 0.06–0.19 (0.002–0.008) | 44.080 (1.7354) 29.32 (1.154) 0.30 (0.012) |
| Mainshaft 5th gear | I.D. Thickness End play (when tightening by specified torque) | 44.009–44.025 (1.7326–1.7333) 29.39–29.47 (1.157–1.160) 0.06–0.19 (0.002–0.008) | 44.080 (1.7354) 29.32 (1.154) 0.30 (0.012) |
| Mainshaft 6th gear* | I.D. Thickness End play (when tightening by specified torque) | 44.009–44.025 (1.7326–1.7333) 29.39–29.47 (1.157–1.160) 0.06–0.19 (0.002–0.008) | 44.080 (1.7354) 29.32 (1.154) — |
| Distance collar (Mainshaft 4th, 5th gear) | I.D. Diameter of needle bearing contact area Thickness of needle bearing contact area | 30.992–31.002 (1.2201–1.2205) 37.989–38.000 (1.4956–1.4961) 29.56–29.61 (1.164–1.166) | 31.050 (1.2224) 37.940 (1.4937) 29.54 (1.163) |
| Distance collar (Mainshaft 6th, gear)* | I.D. Diameter of needle bearing contact area Thickness of needle bearing contact area | 27.992–28.002 (1.1020–1.1024) 37.989–38.000 (1.4956–1.4961) 29.56–29.61 (1.164–1.166) | 31.050 (1.2224) 37.940 (1.4937) 29.54 (1.163) |
| Countershaft 1st gear | I.D. Thickness End play (when tightening by specified torque) | 53.010–53.029 (2.0870–2.0878) 35.92–36.00 (1.414–1.417) 0.04–0.10 (0.002–0.004) | 53.081 (2.0898) 35.85 (1.411) Adjust with a shim |
| Countershaft 2nd gear | I.D. Thickness End play (when tightening by specified torque) | 53.010–53.029 (2.0870–2.0878) 35.92–36.00 (1.414–1.417) 0.04–0.10 (0.002–0.004) | 53.081 (2.0898) 35.85 (1.411) Adjust with a collar |

*: Except Sedan L, LS

(cont'd)

Standards and Service Limits

Manual Transmission (cont'd)— Section 13

| | MEASUREMENT | STANDARD (NEW) | SERVICE LIMIT |
|--|---|--|--------------------------------|
| Distance collar (countershaft 2nd gear) | I.D. | 37.950–37.960 (1.4941–1.4945) | 38.008 (1.496) |
| | O.D. | 46.989–47.000 (1.8500–1.8504) | 46.940 (1.848) |
| | Thickness | 36.07–36.09 (1.420–1.421) | Adjust with a collar |
| | A B | 36.03–36.05 (1.418–1.419) | |
| Countershaft reverse gear | O.D. Thickness | 46.989–47.000 (1.8500–1.8504) 50.45–50.55 (1.986–1.990) | 46.94 (1.848) 50.38 (1.983) |
| Synchro ring | Ring-to-gear clearance (ring pushed against gear) | 0.85–1.10 (0.033–0.043) | 0.4 (0.02) |
| Double cone synchro ring | Clearance (ring pushed against gear) | | |
| | Outer synchro ring-to-gear | 0.95–1.68 (0.037–0.066) | 0.6 (0.02) |
| | Synchro cone-to-gear | 0.5–1.0 (0.02–0.04) | 0.3 (0.01) |
| | Outer synchro ring-to-synchro cone | 0.5–1.0 (0.02–0.04) | 0.3 (0.01) |
| Shift fork 1st/2nd 3rd/4th and 5th or 5th/6th* | Finger thickness | 7.4–7.6 (0.291–0.299) | — |
| | finger-to-synchro sleeve clearance | 0.35–0.65 (0.014–0.026) | 1.00 (0.039) |
| Reverse shift fork | Finger thickness | 6.4–6.6 (0.25–0.26) | — |
| | Finger-to-reverse synchro sleeve clearance | 0.35–0.65 (0.014–0.026) | 1.00 (0.039) |
| | Groove width | 13.20–13.30 (0.520–0.524) | — |
| | Fork-to-reverse shift arm clearance | 0.20–0.50 (0.008–0.020) | 0.8 (0.031) |
| Shift fork shaft | Shaft-to-shift piece clearance | 0.25–0.55 (0.010–0.022) | 0.85 (0.033) |
| | Groove width of the shift piece contact point | 12.20–12.40 (0.480–0.488) | — |
| Shift arm | Diameter (at the contact point with the change piece) | 7.9–8.0 (0.311–0.315) | — |
| | Arm-to-change piece clearance | 0.1–0.3 (0.004–0.012) | 0.55 (0.022) |
| | Diameter (at the contact point with the shift piece) | 7.9–8.0 (0.311–0.315) | — |
| | Arm-to-shift piece clearance | 0.1–0.3 (0.004–0.012) | 0.55 (0.022) |
| Change piece | Groove width of the shift arm contact point | 8.1–8.2 (0.319–0.323) | — |
| Shift piece | Diameter (at the contact point with the shift fork shaft) | 11.85–11.95 (0.467–0.470) | — |
| Reverse shift holder | Diameter (at the contact point with the reverse shift piece) | 12.80–13.00 (0.504–0.512) | — |
| | Diameter (at the contact point with the reverse shift fork shaft) | 12.80–13.00 (0.504–0.512) | — |
| | Holder-to-reverse shift piece clearance | 0.20–0.60 (0.008–0.024) | 0.8 (0.032) |
| | Holder-to-reverse shift fork clearance | 0.20–0.50 (0.008–0.020) | 0.8 (0.032) |
| Secondary gear | Backlash | 0.061–0.121 (0.0024–0.0048) | — |
| | Preload N·m (kg·cm, lb·in) | 1.4–2.6 (14–26, 12.2–22.5) | Adjust with a shim |
| | Diameter of bearing contact area | | |
| | Clutch housing side | 55.002–55.021 (2.1654–2.1662) | — |
| | Transmission housing side | 45.002–45.018 (1.7717–1.7724) | — |
| | Diameter of oil seal contact area | | |
| | Clutch housing side | 54.894–54.940 (2.1612–2.1630) | — |
| | Transmission housing side | 44.911–44.950 (1.7681–1.7697) | — |
| Extension shaft | Diameter of oil seal contact area | 37.438–37.500 (1.4739–1.4764) | — |
| Oil pump | Clutch housing-to-outer rotor clearance | 0.03–0.13 (0.001–0.005) | 0.18 (0.007) |
| | Inner-to-outer rotor clearance | 0.14 (0.006) | 0.2 (0.01) |
| | Clutch housing-to-rotor axial clearance | 0.10–0.20 (0.004–0.008) | 0.22 (0.009) |

*: Except Sedan L, LS