

## AA80E AUTOMATIC TRANSMISSION > SERVICE DATA

### AUTOMATIC TRANSMISSION ASSEMBLY

|   |                              |  |
|---|------------------------------|--|
| Line pressure<br>Fluid temperature 80 to 120°C (176 to 248°F)<br>Engine Idling                          | D position                   | 365 to 435 kPa (3.7 to 4.4 kgf*cm <sup>2</sup> , 53 to 63 psi)         |
|   | R position                   | 375 to 445 kPa (3.8 to 4.5 kgf*cm <sup>2</sup> , 54 to 64 psi)         |
| Line pressure<br>Fluid temperature 80 to 120°C (176 to 248°F)<br>AT stall (Throttle valve fully opened) | D position                   | 1,410 to 1,610 kPa (14.4 to 16.4 kgf*cm <sup>2</sup> , 204 to 233 psi) |
|   | R position                   | 1,500 to 1,700 kPa (15.3 to 17.3 kgf*cm <sup>2</sup> , 216 to 246 psi) |
| Engine stall revolution<br>D and R positions  | 1UR-FSE                      | 2,300 +/-150 rpm   |
|   | 1UR-FE                       | 2,200 +/-150 rpm   |
| Time lag  | N → D position               | Less than 0.80 seconds   |
|   | N → R position               | Less than 1.20 seconds   |
| Engine idle speed<br>(A/C OFF)  | N position                   | 700 to 800 rpm   |
| Drive plate runout  | Max.                         | 0.20 mm (0.79 in.)   |
| Torque converter runout   | Max.                         | 0.30 mm (0.0118 in.)   |
| Automatic transmission rear oil seal depth  |                              | 3.5 +/-0.2 mm (0.138 +/-0.008 in.)                                     |
| Shift schedule  |                              |  |
| D, S position (normal mode)<br>(Throttle valve fully opened)  | 1 → 2                        | 58 to 70 km/h (36 to 43 mph)   |
|   | 2 → 3                        | 93 to 106 km/h (58 to 66 mph)  |
|   | 3 → 4                        | 137 to 157 km/h (85 to 98 mph)   |
|   | 4 → 5                        | 177 to 199 km/h (110 to 124 mph)                                       |
|   | 5 → 6                        | 211 to 235 km/h (131 to 146 mph)                                       |
|   | 7 → 6                        | 206 to 226 km/h (128 to 140 mph)                                       |
|   | 6 → 5                        | 151 to 168 km/h (94 to 104 mph)  |
|   | 5 → 4                        | 103 to 113 km/h (64 to 70 mph)   |
|   | 4 → 3                        | 76 to 84 km/h (47 to 52 mph)   |
|   | 3 → 2                        | 45 to 52 km/h (28 to 32 mph)   |
|   | 2 → 1                        | 3 to 8 km/h (2 to 5 mph)   |
| D, S position (power mode)<br>(Throttle valve fully opened)   | 1 → 2                        | 58 to 70 km/h (36 to 43 mph)   |
|   | 2 → 3                        | 93 to 106 km/h (58 to 66 mph)  |
|   | 3 → 4                        | 137 to 157 km/h (85 to 98 mph)   |
|   | 4 → 5                        | 177 to 199 km/h (110 to 124 mph)                                       |
|   | 5 → 6                        | 211 to 235 km/h (131 to 146 mph)                                       |
|   | 7 → 6                        | 206 to 226 km/h (128 to 140 mph)                                       |
|   | 6 → 5                        | 181 to 199 km/h (112 to 124 mph)                                       |
|   | 5 → 4                        | 156 to 173 km/h (97 to 108 mph)  |
|   | 4 → 3                        | 106 to 116 km/h (66 to 72 mph)   |
| 3 → 2   | 45 to 52 km/h (28 to 32 mph) |  |

|  |                  |                              |
|--|------------------|------------------------------|
|  | 2 → 1            | 3 to 8 km/h (2 to 5 mph)     |
| Lock up point (Throttle valve opening 5%)                              |                  |                              |
| D, S position<br>8th gear  | Lock-up ON       | 76 to 84 km/h (47 to 52 mph) |
|  | Lock-up OFF      | 72 to 80 km/h (45 to 50 mph) |
| D, S position<br>7th gear  | Lock-up ON       | 63 to 71 km/h (39 to 44 mph) |
|  | Lock-up OFF      | 59 to 67 km/h (37 to 42 mph) |
| D, S position<br>6th gear  | Lock-up ON       | 53 to 60 km/h (33 to 37 mph) |
|  | Lock-up OFF      | 48 to 55 km/h (30 to 34 mph) |
| Flex lock-up point<br>Accelerate condition (Throttle valve opening 3%) |                  |                              |
| D, S position<br>8th gear  | Flex lock-up ON  | 61 to 69 km/h (38 to 43 mph) |
|  | Flex lock-up OFF | 59 to 67 km/h (37 to 42 mph) |
| D, S position<br>7th gear  | Flex lock-up ON  | 51 to 58 km/h (32 to 36 mph) |
|  | Flex lock-up OFF | 49 to 56 km/h (30 to 35 mph) |
| D, S position<br>6th gear  | Flex lock-up ON  | 42 to 49 km/h (26 to 30 mph) |
|  | Flex lock-up OFF | 40 to 46 km/h (25 to 29 mph) |
| D, S position<br>5th gear  | Flex lock-up ON  | 34 to 40 km/h (21 to 25 mph) |
|  | Flex lock-up OFF | 32 to 38 km/h (20 to 24 mph) |
| D, S position<br>4th gear  | Flex lock-up ON  | 26 to 32 km/h (16 to 20 mph) |
|  | Flex lock-up OFF | 24 to 29 km/h (15 to 18 mph) |
| Flex lock-up point<br>Deceleration condition (Throttle valve closed)   |                  |                              |
| D, S position<br>A/C off   | 8 → 7            | 62 to 69 km/h (39 to 43 mph) |
| D, S position<br>A/C off   | 7 → 6            | 48 to 55 km/h (30 to 34 mph) |
| D, S position<br>A/C off   | 6 → 5            | 42 to 59 km/h (26 to 37 mph) |
| D, S position<br>A/C on  | 8 → 7            | 78 to 86 km/h (48 to 53 mph) |
| D, S position<br>A/C on  | 7 → 6            | 64 to 72 km/h (40 to 45 mph) |
| D, S position<br>A/C on  | 6 → 5            | 53 to 60 km/h (33 to 37 mph) |

**NOTICE:**

- All shift point values indicated in the above tables are actual values. Therefore, if checking a shift point with a chassis dynamometer, keep in mind that there is a range of error in the chassis dynamometer indication.

- If checking a shift point against the speed indicated on the speedometer, remember to consider the speedometer correction rate and range of error in the tester indication.

## AUTOMATIC TRANSMISSION UNIT

|   |             |  |
|---|-------------|--|
| Front planetary gear pinion thrust clearance        |             | Standard: 0.2 to 0.6 mm (0.008 to 0.024 in.)         |
| Reverse clutch return spring free length            |             | Standard: 22.21 mm (0.8744 in.)                      |
| Overdrive clutch return spring free length          |             | Standard: 21.09 mm (0.8303 in.)                      |
| No. 3 clutch drum bushing inside diameter           | front side: | Standard: 67.40 to 67.44 mm (2.6535 to 2.6551 in.)   |
|   | rear side:  | Standard: 55.62 to 55.64 mm (2.1898 to 2.1905 in.)   |
| Forward clutch return spring free length            |             | Standard: 20.82 mm (0.8197 in.)                      |
| Forward clutch drum bushing inside diameter         |             | Standard: 33.200 to 33.225 mm (1.3071 to 1.3081 in.) |
| Sun gear input drum bushing inside diameter         |             | Standard: 45.075 to 45.100 mm (1.7746 to 1.7756 in.) |
| Rear planetary sun gear bushing inside diameter     |             | Standard: 28.700 to 28.721 mm (1.1299 to 1.1307 in.) |
| Rear planetary gear pinion thrust clearance         |             | Standard: 0.2 to 0.6 mm (0.008 to 0.024 in.)         |
| Rear planetary gear bushing inside diameter         | front side: | Standard: 71.60 to 71.63 mm (2.8189 to 2.8201 in.)   |
|   | rear side:  | Standard: 28.700 to 28.721 mm (1.1299 to 1.1307 in.) |
| Direct clutch return spring free length             |             | Standard: 20.76 mm (0.8173 in.)                      |
| 2nd brake return spring free length                 |             | Standard: 23.36 mm (0.9197 in.)                      |
| Automatic transmission case bushing inside diameter |             | Standard: 49.07 to 49.155 mm (1.9319 to 1.9352 in.)  |
| Automatic transmission rear oil seal depth          |             | Standard: 3.5 +/-0.2 mm (0.138 +/-0.008 in.)         |
| No. 2 brake flange thickness                        | Mark 0      | 1.95 to 2.05 mm (0.0768 to 0.0807 in.)               |
|   | Mark 1      | 2.05 to 2.15 mm (0.0807 to 0.0846 in.)               |
|   | Mark 2      | 2.15 to 2.25 mm (0.0846 to 0.0886 in.)               |
|   | Mark 3      | 2.25 to 2.35 mm (0.0886 to 0.0925 in.)               |
|   | Mark 4      | 2.35 to 2.45 mm (0.0925 to 0.0965 in.)               |
|   | Mark 5      | 2.45 to 2.55 mm (0.0965 to 0.1004 in.)               |
|   | Mark 6      | 2.55 to 2.65 mm (0.1004 to 0.1043 in.)               |
|   | Mark 7      | 2.65 to 2.75 mm (0.1043 to 0.1083 in.)               |
|   | Mark 8      | 2.75 to 2.85 mm (0.1083 to 0.1122 in.)               |
| No. 2 clutch flange thickness                       | Mark 40     | 3.95 to 4.05 mm (0.1555 to 0.1594 in.)               |
|   | Mark 41     | 4.05 to 4.15 mm (0.1594 to 0.1634 in.)               |
|   | Mark 42     | 4.15 to 4.25 mm (0.1634 to 0.1673 in.)               |
|   | Mark 43     | 4.25 to 4.35 mm (0.1673 to 0.1713 in.)               |
|   | Mark 44     | 4.35 to 4.45 mm (0.1713 to 0.1752 in.)               |
|   | Mark 45     | 4.45 to 4.55 mm (0.1752 to 0.1791 in.)               |
|   | Mark 46     | 4.55 to 4.65 mm (0.1791 to 0.1831 in.)               |

|  |                                       |  |
|--|---------------------------------------|--|
|  | Mark 47                               | 4.65 to 4.75 mm (0.1831 to 0.1870 in.) |
|  | Mark 48                               | 4.75 to 4.85 mm (0.1870 to 0.1909 in.) |
| Rear cover sleeve thickness              | Mark 02                               | 1.725 to 1.775 (0.0679 to 0.0699 in.)  |
|  | Mark 03                               | 1.775 to 1.825 (0.0699 to 0.0719 in.)  |
|  | Mark 04                               | 1.825 to 1.875 (0.0719 to 0.0738 in.)  |
|  | Mark 05                               | 1.875 to 1.925 (0.0738 to 0.0758 in.)  |
|  | Mark 06                               | 1.925 to 1.975 (0.0758 to 0.0778 in.)  |
|  | Mark 07                               | 1.975 to 2.025 (0.0778 to 0.0797 in.)  |
|  | Mark 08                               | 2.025 to 2.025 (0.0778 to 0.0797 in.)  |
|  | Mark 09                               | 2.075 to 2.125 (0.0817 to 0.0837 in.)  |
|  | Mark 10                               | 2.125 to 2.175 (0.0837 to 0.0856 in.)  |
|  | Mark 11                               | 2.175 to 2.225 (0.0778 to 0.0797 in.)  |
|  | Mark 12                               | 2.225 to 2.275 (0.0876 to 0.0896 in.)  |
|  | Mark 13                               | 2.275 to 2.325 (0.0896 to 0.0915 in.)  |
|  | Mark 14                               | 2.325 to 2.375 (0.0915 to 0.0935 in.)  |
|  | Mark 15                               | 2.375 to 2.425 (0.0935 to 0.0955 in.)  |
| Mark 16                                  | 2.425 to 2.475 (0.0955 to 0.0974 in.) |  |
| Forward multiple clutch flange thickness | Mark 0                                | 4.35 to 4.45 mm (0.1713 to 0.1752 in.) |
|  | Mark 1                                | 4.45 to 4.55 mm (0.1752 to 0.1791 in.) |
|  | Mark 2                                | 4.55 to 4.65 mm (0.1791 to 0.1831 in.) |
|  | Mark 3                                | 4.65 to 4.75 mm (0.1831 to 0.1870 in.) |
|  | Mark 4                                | 4.75 to 4.85 mm (0.1870 to 0.1909 in.) |
|  | Mark 5                                | 4.85 to 4.95 mm (0.1909 to 0.1949 in.) |
|  | Mark 6                                | 4.95 to 5.05 mm (0.1949 to 0.1988 in.) |
|  | Mark 7                                | 5.05 to 5.15 mm (0.1988 to 0.2029 in.) |
|  | Mark 8                                | 5.15 to 5.25 mm (0.2029 to 0.2067 in.) |
| Reverse clutch flange thickness          | Mark 0                                | 2.95 to 3.05 mm (0.1161 to 0.1201 in.) |
|  | Mark 1                                | 3.05 to 3.15 mm (0.1201 to 0.1240 in.) |
|  | Mark 2                                | 3.15 to 3.25 mm (0.1240 to 0.1280 in.) |
|  | Mark 3                                | 3.25 to 3.35 mm (0.1280 to 0.1319 in.) |
|  | Mark 4                                | 3.35 to 3.45 mm (0.1319 to 0.1358 in.) |
|  | Mark 5                                | 3.45 to 3.55 mm (0.1358 to 0.1398 in.) |
|  | Mark 6                                | 3.55 to 3.65 mm (0.1398 to 0.1437 in.) |
|  | Mark 7                                | 3.65 to 3.75 mm (0.1437 to 0.1476 in.) |
|  | Mark 8                                | 3.75 to 3.85 mm (0.1476 to 0.1516 in.) |
| No. 3 clutch flange thickness            | Mark 0                                | 3.95 to 4.05 mm (0.1555 to 0.1594 in.) |
|  | Mark 1                                | 4.05 to 4.15 mm (0.1594 to 0.1634 in.) |
|  | Mark 2                                | 4.15 to 4.25 mm (0.1634 to 0.1673 in.) |
|  | Mark 3                                | 4.25 to 4.35 mm (0.1673 to 0.1713 in.) |
|  | Mark 4                                | 4.35 to 4.45 mm (0.1713 to 0.1752 in.) |
|  | Mark 5                                | 4.45 to 4.55 mm (0.1752 to 0.1791 in.) |
|  | Mark 6                                | 4.55 to 4.65 mm (0.1791 to 0.1831 in.) |
| No. 1 brake flange thickness             | Mark 0                                | 4.45 to 4.55 mm (0.1752 to 0.1791 in.) |
|  | Mark 1                                | 4.55 to 4.65 mm (0.1791 to 0.1831 in.) |

|   |        |  |
|---|--------|--|
|   | Mark 2 | 4.65 to 4.75 mm (0.1831 to 0.1870 in.) |
|   | Mark 3 | 4.75 to 4.85 mm (0.1870 to 0.1909 in.) |
|   | Mark 4 | 4.85 to 4.95 mm (0.1909 to 0.1949 in.) |
|   | Mark 5 | 4.95 to 5.05 mm (0.1949 to 0.1988 in.) |
|   | Mark 6 | 5.05 to 5.15 mm (0.1988 to 0.2028 in.) |
|   | Mark 7 | 5.15 to 5.25 mm (0.2028 to 0.2067 in.) |
|   | Mark 8 | 5.25 to 5.35 mm (0.2067 to 0.2106 in.) |
| Manual valve lever shaft oil seal depth |        | Standard 0 +/-0.3 mm (0 +/-0.012 in.)  |

## OIL PUMP

|                                       |            |   |
|---------------------------------------|------------|---|
| No. 1 brake return spring free length |            | Standard 6.52 mm (0.2567 in.)                   |
| Oil pump body bushing inside diameter |            | Standard: 45.078 mm (1.7747 in.)                |
| Stator shaft bushing inside diameter  | front side | Standard 25.925 mm (1.0209 in.)                 |
|                                       | rear side  | Standard 35.251 mm (1.3878 in.)                 |
| Body clearance                        |            | Standard 0.10 to 0.17 mm (0.0039 to 0.0067 in.) |
| Tip clearance                         |            | Standard 0.07 to 0.15 mm (0.0028 to 0.0059 in.) |
| Side clearance                        |            | Standard 0.03 to 0.05 mm (0.0012 to 0.002 in.)  |
| Drive and driven gear thickness       | Mark 0     | 11.636 to 11.642 mm (0.4581 to 0.4583 in.)      |
|                                       | Mark 1     | 11.643 to 11.649 mm (0.4584 to 0.4586 in.)      |
|                                       | Mark 2     | 11.650 to 11.656 mm (0.4587 to 0.4589 in.)      |
|                                       | Mark 3     | 11.657 to 11.663 mm (0.4589 to 0.4592 in.)      |
|                                       | Mark 4     | 11.664 to 11.670 mm (0.4592 to 0.4594 in.)      |
|                                       | Mark 5     | 11.671 to 11.677 mm (0.4595 to 0.4597 in.)      |
|                                       | Mark 6     | 11.678 to 11.684 mm (0.4598 to 0.4600 in.)      |