

## 2004 Toyota RAV4

### 2004 ENGINE Engine Mechanical (Service Specifications) - RAV4

#### 2004 ENGINE

#### Engine Mechanical (Service Specifications) - RAV4

### SERVICE DATA

|                                              |                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Compression pressure                         | at 250rpm STD<br>Minimum<br>Difference of pressure between each cylinder                                                                                                                                                                                                        | 1,300 kPa (13.8 kgf/cm <sup>2</sup> , 196 psi)<br>1.00 MPa (10 kgf/cm <sup>2</sup> , 142 psi)<br>100 kPa (1.0 kgf/cm <sup>2</sup> , 14 psi) or less                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Valve clearance                              | at cold Intake<br>Exhaust<br>Valve lifter for repair part<br>No. 06<br>08<br>10<br>12<br>14<br>16<br>18<br>20<br>22<br>24<br>26<br>28<br>30<br>32<br>34<br>36<br>38<br>40<br>42<br>44<br>46<br>48<br>50<br>52<br>54<br>56<br>58<br>60<br>62<br>64<br>66<br>68<br>70<br>72<br>74 | 0.19 to 0.29 mm (0.008 to 0.011 in.)<br>0.30 to 0.40 mm (0.012 to 0.016 in.)<br>5.060 mm (0.1992 in.)<br>5.080 mm (0.2000 in.)<br>5.100 mm (0.2008 in.)<br>5.120 mm (0.2016 in.)<br>5.140 mm (0.2024 in.)<br>5.160 mm (0.2031 in.)<br>5.180 mm (0.2039 in.)<br>5.200 mm (0.2047 in.)<br>5.220 mm (0.2055 in.)<br>5.240 mm (0.2063 in.)<br>5.260 mm (0.2071 in.)<br>5.280 mm (0.2079 in.)<br>5.300 mm (0.2087 in.)<br>5.320 mm (0.2094 in.)<br>5.340 mm (0.2102 in.)<br>5.360 mm (0.2110 in.)<br>5.380 mm (0.2118 in.)<br>5.400 mm (0.2126 in.)<br>5.420 mm (0.2134 in.)<br>5.440 mm (0.2142 in.)<br>5.460 mm (0.2150 in.)<br>5.480 mm (0.2157 in.)<br>5.500 mm (0.2165 in.)<br>5.520 mm (0.2173 in.)<br>5.540 mm (0.2181 in.)<br>5.560 mm (0.2189 in.)<br>5.580 mm (0.2197 in.)<br>5.600 mm (0.2205 in.)<br>5.620 mm (0.2213 in.)<br>5.640 mm (0.2220 in.)<br>5.660 mm (0.2228 in.)<br>5.680 mm (0.2236 in.)<br>5.700 mm (0.2244 in.)<br>5.720 mm (0.2252 in.)<br>5.740 mm (0.2260 in.) |
| Ignition timing                              | w/ Terminals TC and CG connected of DLC3<br>Further ignition timing                                                                                                                                                                                                             | 8 to 12° BTDC @ idle<br>5 to 15° BTDC @ idle                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Idle speed                                   | A/T<br>M/T                                                                                                                                                                                                                                                                      | 610 to 710 rpm<br>610 to 710 rpm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Chain and timing sprocket                    | Chain length at 16 links<br>Camshaft timing sprocket wear (w/ chain)<br>Crankshaft timing sprocket wear (w/ chain)                                                                                                                                                              | Maximum<br>Minimum<br>Minimum                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Chain tensioner slipper and vibration damper | Wear                                                                                                                                                                                                                                                                            | Maximum                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                              |                                                                                                                                                                                                                                                                                 | 122.6 mm (4.827 in.)<br>97.3 mm (3.831 in.)<br>51.6 mm (2.031 in.)<br>1.0 mm (0.039 in.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

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Fig. 1: Engine Mechanical Service Specifications (1 Of 4)

## 2004 Toyota RAV4

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Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

|                       |                                                     |                              |                                                                 |
|-----------------------|-----------------------------------------------------|------------------------------|-----------------------------------------------------------------|
| Cylinder head         | Warpage                                             | Maximum                      | 0.08 mm (0.0031 in.)                                            |
|                       | Valve seat                                          |                              |                                                                 |
|                       | Refacing angle                                      |                              | 30°, 45°, 75°                                                   |
|                       | Contacting angle                                    |                              | 45°                                                             |
|                       | Contacting width                                    |                              | 1.0 to 1.4 mm (0.039 to 0.055 in.)                              |
|                       | Cylinder head bolt length                           | STD<br>Maximum               | 161.3 to 162.7 mm (6.350 to 6.405 in.)<br>164.2 mm (6.4646 in.) |
| Valve guide<br>busing | Inside diameter                                     |                              | 5.510 to 5.530 mm (0.2169 to 0.2177 in.)                        |
| Valve                 | Valve overall length                                | STD Intake                   | 101.71 mm (4.0043 in.)                                          |
|                       |                                                     | Exhaust                      | 101.15 mm (3.9823 in.)                                          |
|                       |                                                     | Minimum Intake               | 101.21 mm (3.9846 in.)                                          |
|                       |                                                     | Exhaust                      | 100.70 mm (3.9646 in.)                                          |
|                       | Valve face angle                                    |                              | 44.5°                                                           |
|                       | Stem diameter                                       | Intake                       | 5.470 to 5.485 mm (0.2154 to 0.2159 in.)                        |
|                       |                                                     | Exhaust                      | 5.465 to 5.480 mm (0.2152 to 0.2158 in.)                        |
|                       | Stem oil clearance                                  | STD Intake                   | 0.025 to 0.060 mm (0.0010 to 0.0024 in.)                        |
|                       |                                                     | Exhaust                      | 0.030 to 0.065 mm (0.0012 to 0.0026 in.)                        |
|                       |                                                     | Maximum Intake               | 0.08 mm (0.0031 in.)                                            |
|                       |                                                     | Exhaust                      | 0.10 mm (0.0039 in.)                                            |
|                       | Margin thickness                                    | STD                          | 1.0 mm (0.039 in.)                                              |
|                       |                                                     | Minimum                      | 0.5 mm (0.028 in.)                                              |
| Valve spring          | Deviation                                           | Maximum                      | 1.6 mm (0.063 in.)                                              |
|                       | Angle (Reference)                                   | Maximum                      | 2°                                                              |
|                       | Free length                                         |                              | 45.7 mm (1.799 in.)                                             |
|                       | Installed tension at 34.0 mm (1.339 in.)            |                              | 184.3 to 203.7 N (18.8 to 20.8 kgf, 41.4 to 45.9 lbf)           |
|                       | Maximum working tension at 24.6 mm 0.969 in.)       |                              | 344.8 to 381.2 N (35.2 to 38.9 kgf, 77.4 to 85.8 lbf)           |
| Valve lifter          | Lifter diameter                                     |                              | 30.966 to 30.976 mm (1.2191 to 1.2195 in.)                      |
|                       | Lifter bore diameter                                |                              | 31.009 to 31.025 mm (1.2208 to 1.2215 in.)                      |
|                       | Oil clearance                                       | STD                          | 0.033 to 0.059 mm (0.0013 to 0.0023 in.)                        |
|                       |                                                     | Maximum                      | 0.079 mm (0.0031 in.)                                           |
| Camshaft              | Thrust clearance                                    | STD Intake                   | 0.040 to 0.095 mm (0.0016 to 0.0037 in.)                        |
|                       |                                                     | Exhaust                      | 0.080 to 0.135 mm (0.0032 to 0.0053 in.)                        |
|                       |                                                     | Maximum Intake               | 0.110 mm (0.0043 in.)                                           |
|                       |                                                     | Exhaust                      | 0.150 mm (0.0059 in.)                                           |
|                       | Journal oil clearance                               | STD Intake No. 1 journal     | 0.007 to 0.038 mm (0.0003 to 0.0015 in.)                        |
|                       |                                                     | Other journal                | 0.025 to 0.062 mm (0.0010 to 0.0024 in.)                        |
|                       |                                                     | Exhaust No. 1 journal        | 0.040 to 0.079 mm (0.0015 to 0.0031 in.)                        |
|                       |                                                     | Other journal                | 0.025 to 0.062 mm (0.0010 to 0.0024 in.)                        |
|                       |                                                     | Maximum Intake No. 1 journal | 0.07 mm (0.0028 in.)                                            |
|                       |                                                     | Except intake No. 1 journal  | 0.10 mm (0.0039 in.)                                            |
|                       |                                                     | No. 1                        | 35.971 to 35.985 mm (1.4162 to 1.4167 in.)                      |
|                       |                                                     | Others                       | 22.959 to 22.975 mm (0.9040 to 0.9045 in.)                      |
|                       | Journal diameter                                    | Maximum                      | 0.03 mm (0.0012 in.)                                            |
|                       | Circle runout                                       |                              |                                                                 |
|                       | Cam lobe height                                     | STD Intake                   | 46.495 to 46.595 mm (1.8305 to 1.8345 in.)                      |
|                       |                                                     | Exhaust                      | 45.983 to 46.083 mm (1.8106 to 1.8143 in.)                      |
|                       |                                                     | Minimum Intake               | 46.385 mm (1.8262 in.)                                          |
|                       |                                                     | Exhaust                      | 45.873 mm (1.8060 in.)                                          |
|                       | Camshaft bearing center wall thickness              | Mark 1                       | 2.000 to 2.004 mm (0.0787 to 0.0789 in.)                        |
|                       |                                                     | 2                            | 2.005 to 2.008 mm (0.0789 to 0.0791 in.)                        |
|                       |                                                     | 3                            | 2.009 to 2.012 mm (0.0791 to 0.0792 in.)                        |
| Exhaust manifold      | Warpage                                             | Maximum                      | 0.7 mm (0.0027 in.)                                             |
| Cylinder block        | Cylinder head surface warpage                       | Maximum                      | 0.08 mm (0.0031 in.)                                            |
|                       | Cylinder bore diameter                              | STD                          | 88.500 to 88.513 mm (3.4843 to 3.4847 in.)                      |
|                       |                                                     | Maximum                      | 88.633 mm (3.4894 in.)                                          |
|                       | Crankshaft main bearing cap bolt at tension portion | STD                          | 7.5 to 7.6 mm (0.2953 to 0.2992 in.)                            |
|                       |                                                     | Minimum                      | 7.2 mm (0.284 in.)                                              |

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**Fig. 2: Engine Mechanical Service Specifications (2 Of 4)**

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

|                              |                                                          |                               |                                            |
|------------------------------|----------------------------------------------------------|-------------------------------|--------------------------------------------|
| Piston and piston ring       | Piston diameter                                          |                               | 88.439 to 88.449 mm (3.4818 to 3.4822 in.) |
|                              | at 30.4 mm (1.1968 in.) from the piston head             |                               |                                            |
| Piston oil clearance         | STD                                                      |                               | 0.051 to 0.074 mm (0.0020 to 0.0029 in.)   |
|                              | Maximum                                                  |                               | 0.10 mm (0.0039 in.)                       |
| Piston ring groove clearance | No. 1                                                    |                               | 0.170 to 0.220 mm (0.0066 to 0.0086 in.)   |
|                              | No. 2                                                    |                               | 0.170 to 0.210 mm (0.0066 to 0.0082 in.)   |
|                              | Oil (Side rail)                                          |                               | 0.210 to 0.290 mm (0.0082 to 0.0114 in.)   |
| Piston ring and gap          | STD No. 1                                                |                               | 0.22 to 0.32 mm (0.0087 to 0.0126 in.)     |
|                              | No. 2                                                    |                               | 0.50 to 0.60 mm (0.0197 to 0.0236 in.)     |
|                              | Oil ring                                                 |                               | 0.10 to 0.35 mm (0.0039 to 0.0138 in.)     |
|                              | Maximum No. 1                                            |                               | 0.89 mm (0.0350 in.)                       |
|                              | No. 2                                                    |                               | 1.35 mm (0.0531 in.)                       |
|                              | Oil ring                                                 |                               | 0.73 mm (0.0287 in.)                       |
| Connecting rod               | Thrust clearance                                         | STD                           | 0.160 to 0.362 mm (0.0063 to 0.0143 in.)   |
|                              |                                                          | Maximum                       | 0.362 mm (0.0143 in.)                      |
|                              | Piston ring groove clearance                             | No. 1                         | 0.170 to 0.220 mm (0.0066 to 0.0086 in.)   |
|                              |                                                          | No. 2                         | 0.170 to 0.210 mm (0.0066 to 0.0082 in.)   |
|                              |                                                          | Oil (Side rail)               | 0.210 to 0.290 mm (0.0082 to 0.0114 in.)   |
|                              | Connecting rod thickness                                 |                               |                                            |
|                              | Connecting rod bearing center wall thickness (Reference) |                               |                                            |
|                              |                                                          | Mark 1                        | 1.485 to 1.488 mm (0.0585 to 0.0586 in.)   |
|                              |                                                          | 2                             | 1.489 to 1.491 mm (0.0586 to 0.0587 in.)   |
|                              |                                                          | 3                             | 1.492 to 1.494 mm (0.0587 to 0.0588 in.)   |
|                              | Connecting rod oil clearance                             | STD                           | 0.024 to 0.048 mm (0.0009 to 0.0019 in.)   |
|                              |                                                          | Maximum                       | 0.08 mm (0.0031 in.)                       |
|                              | Rod out-of-alignment                                     | Maximum per 100 mm (3.94 in.) | 0.05 mm (0.0020 in.)                       |
|                              | Rod twist                                                | Maximum per 100 mm (3.94 in.) | 0.15 mm (0.0059 in.)                       |
|                              | Bushing inside diameter                                  |                               | 22.005 to 22.014 mm (0.8663 to 0.8667 in.) |
|                              | Piston pin diameter                                      |                               | 21.997 to 22.006 mm (0.8660 to 0.8664 in.) |
|                              | Bushing oil clearance                                    | STD                           | 0.005 to 0.011 mm (0.0002 to 0.0004 in.)   |
|                              |                                                          | Maximum                       | 0.05 mm (0.0020 in.)                       |
|                              | Cylinder head journal bore diameter                      | Mark 1                        | 40.000 to 40.008 mm (1.5748 to 1.5751 in.) |
|                              |                                                          | 2                             | 40.009 to 40.017 mm (1.5752 to 1.5755 in.) |
|                              |                                                          | 3                             | 40.018 to 40.025 mm (1.5755 to 1.5758 in.) |
|                              | Connecting rod bolt diameter at tension portion          | STD                           | 7.2 to 7.3 mm (0.283 to 0.287 in.)         |
|                              |                                                          | Minimum                       | 7.0 mm (0.275 in.)                         |

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**Fig. 3: Engine Mechanical Service Specifications (3 Of 4)**

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

## 2004 Toyota RAV4

### 2004 ENGINE Engine Mechanical (Service Specifications) - RAV4

|               |                                                |         |                                            |
|---------------|------------------------------------------------|---------|--------------------------------------------|
| Crankshaft    | Thrust clearance                               | STD     | 0.04 to 0.24 mm (0.0016 to 0.0094 in.)     |
|               | Thrust washer thickness                        |         | 1.93 to 1.98 mm (0.0760 to 0.0780 in.)     |
|               | Main journal oil clearance                     | STD     | 0.017 to 0.040 mm (0.0007 to 0.0016 in.)   |
|               |                                                | Maximum | 0.05 mm (0.0020 in.)                       |
|               | Main journal diameter                          |         | 54.988 to 55.000 mm (2.1649 - 2.1654 in.)  |
|               | Main bearing center wall thickness (Reference) | Mark 1  | 1.993 to 1.996 mm (0.0785 to 0.0786 in.)   |
|               |                                                | 2       | 1.996 to 1.999 mm (0.0786 to 0.0787 in.)   |
|               |                                                | 3       | 2.000 to 2.002 mm (0.0787 to 0.0788 in.)   |
|               |                                                | 4       | 2.003 to 2.005 mm (0.0789 to 0.0789 in.)   |
|               | Crank pin diameter                             |         | 47.990 to 48.000 mm (1.8894 to 1.8898 in.) |
|               | Circle runout                                  | Maximum | 0.03 mm (0.0012 in.)                       |
| Balance shaft | Main journal taper and out-of round            | Maximum | 0.003 mm (0.0001 in.)                      |
|               | Crank pin taper and out-of round               | Maximum | 0.003 mm (0.0001 in.)                      |
|               | Thrust clearance                               | STD     | 0.050 to 0.090 mm (0.00197 to 0.00354 in.) |
|               |                                                | Maximum | 0.090 mm (0.00354 in.)                     |
|               | Journal diameter                               |         |                                            |
|               | Oil clearance                                  | STD     | 0.004 to 0.049 mm (0.00016 to 0.00192 in.) |
|               | Housing journal bore diameter                  | Mark 1  | 26.000 to 26.006 mm (1.0236 to 1.0238 in.) |
|               |                                                | Mark 2  | 26.006 to 26.012 mm (1.0239 to 1.0240 in.) |
|               |                                                | Mark 3  | 26.012 to 26.018 mm (1.0241 to 1.0243 in.) |
|               |                                                |         | 22.985 to 23.000 mm (0.9049 to 0.9055 in.) |
|               | Journal diameter                               |         |                                            |
|               | Bearing center wall thickness                  | Mark 1  | 1.486 to 1.489 mm (0.0585 to 0.0586 in.)   |
|               |                                                | Mark 2  | 1.490 to 1.492 mm (0.0586 to 0.0587 in.)   |
|               |                                                | Mark 3  | 1.493 to 1.495 mm (0.0587 to 0.0588 in.)   |

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**Fig. 4: Engine Mechanical Service Specifications (4 Of 4)**  
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## TORQUE SPECIFICATION

## 2004 Toyota RAV4

### 2004 ENGINE Engine Mechanical (Service Specifications) - RAV4

| Part tightened                                      |                     | N·m      | kgf·cm   | ft·lbf     |
|-----------------------------------------------------|---------------------|----------|----------|------------|
| Bearing cap x Cylinder head                         | No. 1               | 29.5     | 301      | 22         |
|                                                     | No. 2               | 29.5     | 301      | 22         |
|                                                     | No. 3               | 9.0      | 92       | 80 in.·lbf |
| Camshaft timing sprocket x Exhaust Camshaft         |                     | 54       | 551      | 40         |
| VVT timing sprocket x Intake camshaft               |                     | 54       | 551      | 40         |
| Chain vibration damper x Cylinder block             |                     | 9.0      | 92       | 80 in.·lbf |
| Timing chain guide x No. 1 crankshaft bearing cap   |                     | 9.0      | 92       | 80 in.·lbf |
| Chain tensioner slipper x Cylinder block            |                     | 19       | 194      | 14         |
| Timing chain cover (See page EM-20)                 | for bolt A          | 9.0      | 92       | 80 in.·lbf |
|                                                     | for bolt B          | 21       | 214      | 15         |
|                                                     | for bolt C          | 43       | 439      | 32         |
|                                                     | for bolt D          | 43       | 439      | 32         |
|                                                     | for nut             | 9.0      | 92       | 80 in.·lbf |
| Stud bolt for drive belt tensioner x Cylinder block |                     | 9.5      | 97       | 84 in.·lbf |
| Drive belt tensioner x Engine                       |                     | 59.5     | 607      | 44         |
| Crankshaft position sensor x Timing chain cover     |                     | 9.0      | 92       | 80 in.·lbf |
| Oil pan x Crank case                                |                     | 9.0      | 92       | 80 in.·lbf |
| Crankshaft pulley x Crankshaft                      |                     | 180      | 1,836    | 132        |
| Chain tensioner x Timing chain cover                |                     | 9.0      | 92       | 80 in.·lbf |
| Cylinder head cover x Cylinder head                 |                     | 11       | 112      | 8          |
| Ignition coil x Cylinder head cover                 |                     | 9.0      | 92       | 80 in.·lbf |
| Vane pump x Engine                                  |                     | 30       | 306      | 22         |
|                                                     | For use without SST | 43       | 439      | 32         |
| Generator x Engine                                  | for bolt A          | 52       | 530      | 38         |
|                                                     | for bolt B          | 21       | 214      | 15         |
| Wire clip x Generator                               |                     | 7.7      | 78.5     | 68 in.·lbf |
| Generator wire x Generator                          |                     | 9.7      | 99       | 86 in.·lbf |
| RH engine mounting insulator x Body                 |                     | 52       | 530      | 38         |
| RH engine mounting insulator x Timing chain cover   |                     | 52       | 530      | 38         |
| ABS actuator x Body                                 |                     | 19       | 194      | 14         |
| Camshaft position sensor x Cylinder head            |                     | 9.0      | 92       | 80 in.·lbf |
| Cam timing oil control valve x Cylinder head        |                     | 9.0      | 92       | 80 in.·lbf |
| ECT sensor x Cylinder head                          |                     | 20       | 204      | 15         |
| Oil pressure switch x Cylinder head                 |                     | 13       | 133      | 10         |
| Cylinder head x Cylinder block                      | 1st                 | 79       | 806      | 58         |
|                                                     | 2nd                 | Turn 90° | Turn 90° | Turn 90°   |
| Intake manifold x Cylinder head                     |                     | 30       | 306      | 22         |
| Upper heat insulator x Exhaust manifold             |                     | 12       | 122      | 9          |
| No. 2 lower heat insulator x Exhaust manifold       |                     | 12       | 122      | 9          |
| No. 1 lower heat insulator x Exhaust manifold       |                     | 12       | 122      | 9          |
| Exhaust manifold x Cylinder head                    |                     | 37       | 377      | 27         |
| Exhaust manifold stay x Exhaust manifold            |                     | 40       | 408      | 30         |
| Exhaust manifold stay x Crank case                  |                     | 40       | 408      | 30         |
| Exhaust manifold x Front exhaust pipe               |                     | 43       | 439      | 32         |
| Delivery pipe x Cylinder head                       |                     | 20       | 204      | 15         |

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**Fig. 5: Engine Mechanical Torque Specifications (1 Of 2)**  
**Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.**

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### 2004 ENGINE Engine Mechanical (Service Specifications) - RAV4

|                                                          |            |          |          |            |
|----------------------------------------------------------|------------|----------|----------|------------|
| Engine hanger x Cylinder head                            |            | 38       | 388      | 28         |
| Oil pan x Drain plug                                     |            | 24.5     | 250      | 18         |
| A/C compressor x Engine                                  |            | 24.5     | 250      | 18         |
| Drive plate x Crankshaft                                 | A/T        | 98       | 1,000    | 72         |
| Flywheel x Crankshaft                                    | M/T        | 130      | 1,326    | 96         |
| Clutch cover x Flywheel                                  |            | 19       | 194      | 14         |
| Engine x Transaxle                                       | for bolt A | 46       | 470      | 34         |
|                                                          | for bolt B | 64       | 653      | 47         |
|                                                          | Lower bolt | 44       | 449      | 32         |
| Drive plate x Torque converter                           |            | 41       | 418      | 30         |
| Center bearing bracket x Engine                          | 2WD        | 34       | 347      | 25         |
| Stiffener plate x Engine                                 | 4WD        | 34       | 347      | 25         |
| Rear engine mounting bracket x Rear mounting insulator   |            | 88       | 898      | 65         |
| Front engine mounting bracket x Front mounting insulator |            | 56       | 571      | 41         |
| LH engine mounting bracket x LH mounting insulator       |            | 56       | 571      | 41         |
| Suspension crossmember and engine mounting member x Body | for bolt A | 39       | 398      | 29         |
|                                                          | for bolt B | 113      | 1,152    | 83         |
|                                                          | for bolt C | 157      | 1,601    | 116        |
| PS gear x Crossmember                                    |            | 137      | 1,397    | 101        |
| Stabilizer bar link x Stabilizer bar                     |            | 44       | 449      | 32         |
| Front Exhaust pipe x Center exhaust pipe                 |            | 49       | 500      | 36         |
| Propeller Shaft x Body                                   | 4WD        | 37       | 377      | 27         |
| Propeller Shaft x Differential carrier                   |            | 74       | 755      | 55         |
| Front drive shaft x Front axle hub                       |            | 216      | 2,203    | 159        |
| Ground cable x Transaxle                                 |            | 19       | 194      | 14         |
| Shift control cable x Transaxle                          | A/T        | 15       | 153      | 11         |
| Clutch release cylinder and tube x Transaxle             | for bolt A | 25       | 255      | 18         |
|                                                          | for bolt B | 12       | 122      | 9          |
|                                                          | for bolt C | 5.0      | 51       | 44 in.-lbf |
| Clutch Heat insulator x Transaxle                        | M/T        | 12       | 122      | 9          |
| Starter cable x Starter                                  |            | 8.8      | 90       | 78 in.-lbf |
| Starter x Transaxle                                      |            | 37       | 377      | 27         |
| Discharge tube x A/C compressor                          |            | 9.8      | 100      | 87 in.-lbf |
| Liquid tube x A/C compressor                             |            | 9.8      | 100      | 87 in.-lbf |
| Pressure feed tube x Vane pump                           |            | 51.5     | 525      | 38         |
| Crankshaft main bearing cap x Cylinder block             | 1st        | 20       | 204      | 15         |
|                                                          | 2nd        | 40       | 408      | 30         |
|                                                          | 3rd        | Turn 90° | Turn 90° | Turn 90°   |
| Balanceshaft housing x Stiffening crankcase assy         | 1st        | 22       | 224      | 16         |
|                                                          | 2nd        | Turn 90° | Turn 90° | Turn 90°   |
| Connecting rod cap x Connecting rod                      | 1st        | 24.5     | 250      | 18         |
|                                                          | 2nd        | Turn 90° | Turn 90° | Turn 90°   |
| Crank case x Cylinder block                              |            | 32.5     | 330      | 24         |
| Oil filter union x Crank case                            |            | 29.5     | 331      | 22         |
| Oil pump x Crank case                                    |            | 19       | 194      | 14         |
| Oil pump sprocket x Oil pump                             |            | 29.5     | 301      | 22         |
| Chain tensioner x No. 1 crankshaft bearing cap           |            | 12       | 122      | 9          |
| Water bypass pipe x Cylinder block                       |            | 9.0      | 92       | 80 in.-lbf |
| Oil dipstick guide x Water bypass pipe                   |            | 9.0      | 92       | 80 in.-lbf |
| Engine coolant drain union x Crank case                  |            | 25       | 255      | 18         |
| Water inlet x Cylinder block                             |            | 9.0      | 92       | 80 in.-lbf |
| Plug x Cylinder block                                    |            | 26       | 265      | 19         |
| Water pump x Cylinder block                              |            | 9.0      | 92       | 80         |
| Tailpipe x Center exhaust pipe                           |            | 49       | 500      | 36         |

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**Fig. 6: Engine Mechanical Torque Specifications (2 Of 2)**  
**Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.**