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**INFINITI**®  
**QX4**  
**MODEL R50 SERIES**

This service Manual is applicable for 1999 model year vehicles beginning with serial No. 060001~. This serial No. is shown on the Vehicle Identification Number plate.



**INFINITI**®

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# FOREWORD

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This manual contains maintenance and repair procedures for the 1999 INFINITI QX4.

In order to assure your safety and the efficient functioning of the vehicle, this manual should be read thoroughly. It is especially important that the PRECAUTIONS in the GI section be completely understood before starting any repair task.

All information in this manual is based on the latest product information at the time of publication. The right is reserved to make changes in specifications and methods at any time without notice.

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## IMPORTANT SAFETY NOTICE

The proper performance of service is essential for both the safety of the technician and the efficient functioning of the vehicle. The service methods in this Service Manual are described in such a manner that the service may be performed safely and accurately. Service varies with the procedures used, the skills of the technician and the tools and parts available. Accordingly, anyone using service procedures, tools or parts which are not specifically recommended by INFINITI must first be completely satisfied that neither personal safety nor the vehicle's safety will be jeopardized by the service method selected.



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Overseas Service Department  
Tokyo, Japan



**PLEASE HELP MAKE THIS SERVICE MANUAL BETTER!**

**INFINITI**®

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**SERVICE MANUAL: Model:**\_\_\_\_\_ **Year:**\_\_\_\_\_

**PUBLICATION NO. (Please photocopy back cover):**\_\_\_\_\_

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Please describe any issues or problems in detail:

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**What information should be included in INFINITI Service Manuals to better support you in servicing or repairing customer vehicles?**

\_\_\_\_\_  
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**DATE:**\_\_\_\_\_ **YOUR NAME:**\_\_\_\_\_ **POSITION:**\_\_\_\_\_

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## INCH TO METRIC CONVERSION TABLE

(Rounded-off for automotive use)

inches	mm	inches	mm
.100	<b>2.54</b>	.610	<b>15.49</b>
.110	<b>2.79</b>	.620	<b>15.75</b>
.120	<b>3.05</b>	.630	<b>16.00</b>
.130	<b>3.30</b>	.640	<b>16.26</b>
.140	<b>3.56</b>	.650	<b>16.51</b>
.150	<b>3.81</b>	.660	<b>16.76</b>
.160	<b>4.06</b>	.670	<b>17.02</b>
.170	<b>4.32</b>	.680	<b>17.27</b>
.180	<b>4.57</b>	.690	<b>17.53</b>
.190	<b>4.83</b>	.700	<b>17.78</b>
.200	<b>5.08</b>	.710	<b>18.03</b>
.210	<b>5.33</b>	.720	<b>18.29</b>
.220	<b>5.59</b>	.730	<b>18.54</b>
.230	<b>5.84</b>	.740	<b>18.80</b>
.240	<b>6.10</b>	.750	<b>19.05</b>
.250	<b>6.35</b>	.760	<b>19.30</b>
.260	<b>6.60</b>	.770	<b>19.56</b>
.270	<b>6.86</b>	.780	<b>19.81</b>
.280	<b>7.11</b>	.790	<b>20.07</b>
.290	<b>7.37</b>	.800	<b>20.32</b>
.300	<b>7.62</b>	.810	<b>20.57</b>
.310	<b>7.87</b>	.820	<b>20.83</b>
.320	<b>8.13</b>	.830	<b>21.08</b>
.330	<b>8.38</b>	.840	<b>21.34</b>
.340	<b>8.64</b>	.850	<b>21.59</b>
.350	<b>8.89</b>	.860	<b>21.84</b>
.360	<b>9.14</b>	.870	<b>22.10</b>
.370	<b>9.40</b>	.880	<b>22.35</b>
.380	<b>9.65</b>	.890	<b>22.61</b>
.390	<b>9.91</b>	.900	<b>22.86</b>
.400	<b>10.16</b>	.910	<b>23.11</b>
.410	<b>10.41</b>	.920	<b>23.37</b>
.420	<b>10.67</b>	.930	<b>23.62</b>
.430	<b>10.92</b>	.940	<b>23.88</b>
.440	<b>11.18</b>	.950	<b>24.13</b>
.450	<b>11.43</b>	.960	<b>24.38</b>
.460	<b>11.68</b>	.970	<b>24.64</b>
.470	<b>11.94</b>	.980	<b>24.89</b>
.480	<b>12.19</b>	.990	<b>25.15</b>
.490	<b>12.45</b>	1.000	<b>25.40</b>
.500	<b>12.70</b>	2.000	<b>50.80</b>
.510	<b>12.95</b>	3.000	<b>76.20</b>
.520	<b>13.21</b>	4.000	<b>101.60</b>
.530	<b>13.46</b>	5.000	<b>127.00</b>
.540	<b>13.72</b>	6.000	<b>152.40</b>
.550	<b>13.97</b>	7.000	<b>177.80</b>
.560	<b>14.22</b>	8.000	<b>203.20</b>
.570	<b>14.48</b>	9.000	<b>228.60</b>
.580	<b>14.73</b>	10.000	<b>254.00</b>
.590	<b>14.99</b>	20.000	<b>508.00</b>
.600	<b>15.24</b>		

## METRIC TO INCH CONVERSION TABLE

(Rounded-off for automotive use)

mm	inches	mm	inches
<b>1</b>	.0394	<b>51</b>	2.008
<b>2</b>	.079	<b>52</b>	2.047
<b>3</b>	.118	<b>53</b>	2.087
<b>4</b>	.157	<b>54</b>	2.126
<b>5</b>	.197	<b>55</b>	2.165
<b>6</b>	.236	<b>56</b>	2.205
<b>7</b>	.276	<b>57</b>	2.244
<b>8</b>	.315	<b>58</b>	2.283
<b>9</b>	.354	<b>59</b>	2.323
<b>10</b>	.394	<b>60</b>	2.362
<b>11</b>	.433	<b>61</b>	2.402
<b>12</b>	.472	<b>62</b>	2.441
<b>13</b>	.512	<b>63</b>	2.480
<b>14</b>	.551	<b>64</b>	2.520
<b>15</b>	.591	<b>65</b>	2.559
<b>16</b>	.630	<b>66</b>	2.598
<b>17</b>	.669	<b>67</b>	2.638
<b>18</b>	.709	<b>68</b>	2.677
<b>19</b>	.748	<b>69</b>	2.717
<b>20</b>	.787	<b>70</b>	2.756
<b>21</b>	.827	<b>71</b>	2.795
<b>22</b>	.866	<b>72</b>	2.835
<b>23</b>	.906	<b>73</b>	2.874
<b>24</b>	.945	<b>74</b>	2.913
<b>25</b>	.984	<b>75</b>	2.953
<b>26</b>	1.024	<b>76</b>	2.992
<b>27</b>	1.063	<b>77</b>	3.031
<b>28</b>	1.102	<b>78</b>	3.071
<b>29</b>	1.142	<b>79</b>	3.110
<b>30</b>	1.181	<b>80</b>	3.150
<b>31</b>	1.220	<b>81</b>	3.189
<b>32</b>	1.260	<b>82</b>	3.228
<b>33</b>	1.299	<b>83</b>	3.268
<b>34</b>	1.339	<b>84</b>	3.307
<b>35</b>	1.378	<b>85</b>	3.346
<b>36</b>	1.417	<b>86</b>	3.386
<b>37</b>	1.457	<b>87</b>	3.425
<b>38</b>	1.496	<b>88</b>	3.465
<b>39</b>	1.535	<b>89</b>	3.504
<b>40</b>	1.575	<b>90</b>	3.543
<b>41</b>	1.614	<b>91</b>	3.583
<b>42</b>	1.654	<b>92</b>	3.622
<b>43</b>	1.693	<b>93</b>	3.661
<b>44</b>	1.732	<b>94</b>	3.701
<b>45</b>	1.772	<b>95</b>	3.740
<b>46</b>	1.811	<b>96</b>	3.780
<b>47</b>	1.850	<b>97</b>	3.819
<b>48</b>	1.890	<b>98</b>	3.858
<b>49</b>	1.929	<b>99</b>	3.898
<b>50</b>	1.969	<b>100</b>	3.937

# QUICK REFERENCE CHART: QX4

# 1999

## ENGINE TUNE-UP DATA

Engine model	VG33E		
Firing order	1-2-3-4-5-6		
Idle speed	rpm	A/T (in "N" position)	750±50
Ignition timing	(degree BTDC at idle speed) 15°±2°		
CO% at idle	Idle mixture screw is preset and sealed at factory.		
Drive belt deflection (Cold)	mm (in)	Used belt	
		Limit	Deflection after adjustment
Generator	10.5 (0.413)	6 - 7 (0.24 - 0.28)	5.5 - 6.5 (0.217 - 0.256)
Air conditioner compressor	16.5 (0.650)	10.5 - 11.5 (0.413 - 0.453)	9 - 10 (0.35 - 0.39)
Power steering oil pump	18 (0.71)	11 - 13 (0.43 - 0.51)	9 - 10 (0.35 - 0.39)
Applied pressed force	N (kg, lb)	98 (10, 22)	
Drive belt tension adjustment (Cold)	N (kg, lb)	Used belt	
		Limit	After adjustment
Generator	324 (33, 73)	731 - 818 (74.5 - 83.5, 165 - 184)	839 - 926 (85.5 - 94.5, 189 - 208)
Air conditioner compressor	196 (20, 44)	555 - 642 (56.5 - 65.5, 125 - 144)	672 - 760 (68.5 - 77.5, 151 - 170)
Power steering pump	147 (15, 33)	329 - 416 (33.5 - 42.5, 74 - 93)	466 - 554 (47.5 - 56.5, 105 - 124)
Radiator cap relief pressure	kPa (kg/cm <sup>2</sup> , psi)	78 - 98 (0.8 - 1.0, 11 - 14)	
Cooling system leakage testing pressure	kPa (kg/cm <sup>2</sup> , psi)	157 (1.6, 23)	
Compression pressure	Standard	1,196 (12.20, 173.4)/300	
	Minimum	883 (9.01, 128.0)/300	
Spark plug	Standard	FR5AP-10	
	Cold	FR6AP-10	
	Hot	FR4AP-10	

## BRAKE

		Unit: mm (in)
Front brake	Pad wear limit	2.0 (0.079)
	Rotor repair limit	26.0 (1.024)
Rear brake	Lining wear limit	1.5 (0.059)
	Drum repair limit	296.5 (11.67)
Pedal free height	175 - 185 (6.89 - 7.28)	
Pedal depressed height*1	70 (2.76)	
Parking brake	Number of notches*2	
	6 - 8	

\*1 Under force of 490 N (50 kg, 110 lb) with engine running  
\*2 At pulling force: 196 N (20 kg, 44 lb)

## REFILL CAPACITIES

Unit		Liter	US measure
Coolant with reservoir		10.2	10-3/4 qt
Engine*	With oil filter	3.7	3-7/8 qt
	Without oil filter	3.4	3-5/8 qt
	Dry engine (engine overhaul)	4.2	4-1/2 qt
Transmission	A/T	8.5	9 qt
	4WD		
All-mode 4WD transfer		3.0	2-5/8 qt
Differential carrier	Front	1.85	3-7/8 pt
	Rear	2.8	5-7/8 pt
Power steering system		0.9	1 qt
Air conditioning system	Refrigerant	0.60 - 0.70 kg	1.32 - 1.54 lb
	Compressor oil	0.20	6.8 fl oz

\* For further details, see "Changing Engine Oil" in MA section.

## WHEEL ALIGNMENT (Unladen\*)

Applied model	245/70 R16 tire	
Camber	Minimum	-0°35' (-0.58°)
	Nominal	0°10' (0.17°)
	Maximum	0°55' (0.92°)
Caster	Left and right difference	45' (0.75°) or less
	Minimum	2°15' (2.25°)
	Nominal	3°00' (3.00°)
Total toe-in	Maximum	3°45' (3.75°)
	Left and right difference	45' (0.75°) or less
	Minimum	1 (0.04)
Distance (A - B)	Nominal	2 (0.08)
	Maximum	3 (0.12)
	Minimum	5' (0.08°)
Angle (left plus right)	Nominal	10' (0.17°)
	Maximum	15' (0.25°)
	Minimum	30°00' (30.00°)
Wheel turning angle (Full turn)	Nominal	33°00' (33.00°)
	Maximum	34°00' (34.00°)
	Minimum	28°00' (28.00°)
Inside	Nominal	31°00' (31.00°)
	Maximum	32°00' (32.00°)
	Minimum	28°00' (28.00°)
Outside	Nominal	31°00' (31.00°)
	Maximum	32°00' (32.00°)
	Minimum	28°00' (28.00°)

\* Fuel, radiator coolant and engine oil full.  
Spare tire, jack, hand tools and mats in designated positions.

## FRONT WHEEL BEARING

Preload (At hub bolt) N (kg, lb)	Wheel bearing lock nut	
	Tightening torque	78 - 98 (8 - 10, 58 - 72)
	Retightening torque after loosening wheel bearing lock nut	0.5 - 1.5 (0.05 - 0.15, 4.3 - 13.0)
	Axial end play	0 (0)
	Starting force at wheel hub bolt	A
	Turning angle	15° - 30°
	Starting force at wheel hub bolt	B
	Wheel bearing preload at wheel hub bolt B - A	7.06 - 20.99 (0.72 - 2.14, 1.59 - 4.72)

**TEST VALUE AND TEST LIMIT (GST ONLY — NOT APPLICABLE TO CONSULT-II)**

The following is the information specified in Mode 6 of SAE J1979.

The test value is a parameter used to determine whether a system/circuit diagnostic test is “OK” or “NG” while being monitored by the ECM during self-diagnosis. The test limit is a reference value which is specified as the maximum or minimum value and is compared with the test value being monitored.

Items for which these data (test value and test limit) are displayed are the same as SRT code items.

These data (test value and test limit) are specified by Test ID (TID) and Component ID (CID) and can be displayed on the GST screen.

SRT item	Self-diagnostic test item	DTC	Test value (GST display)		Test limit	Conversion
			TID	CID		
CATALYST	Three way catalyst function (Bank 1)	P0420	01H	01H	Max.	1/128
	Three way catalyst function (Bank 2)	P0430	03H	02H	Max.	1/128
EVAP SYSTEM	EVAP control system (Small leak)	P0440	05H	03H	Max.	1/128mm <sup>2</sup>
		P1440	05H	03H	Max.	1/128mm <sup>2</sup>
	EVAP control system purge flow monitoring	P1447	06H	83H	Min.	20mV
HO2S	Heated oxygen sensor 1 (Bank 1)	P0133	09H	04H	Max.	16ms
		P0131	0AH	84H	Min.	10mV
		P0130	0BH	04H	Max.	10mV
		P0132	0CH	04H	Max.	10mV
	Heated oxygen sensor 1 (Bank 2)	P0134	0DH	04H	Max.	1s
		P0153	11H	05H	Max.	16ms
		P0151	12H	85H	Min.	10mV
		P0150	13H	05H	Max.	10mV
		P0152	14H	05H	Max.	10mV
	Heated oxygen sensor 2 (Bank 1)	P0154	15H	05H	Max.	1s
		P0139	19H	86H	Min.	10mV/500ms
		P0137	1AH	86H	Min.	10mV
		P0140	1BH	06H	Max.	10mV
	Heated oxygen sensor 2 (Bank 2)	P0138	1CH	06H	Max.	10mV
		P0159	21H	87H	Min.	10mV/500ms
		P0157	22H	87H	Min.	10mV
P0160		23H	07H	Max.	10mV	
HO2S HTR	Heated oxygen sensor 1 heater (Bank 1)	P0158	24H	07H	Max.	10mV
		P0135	29H	08H	Max.	20mV
	Heated oxygen sensor 1 heater (Bank 2)	P0135	2AH	88H	Min.	20mV
		P0155	2BH	09H	Max.	20mV
	Heated oxygen sensor 2 heater (Bank 1)	P0155	2CH	89H	Min.	20mV
		P0141	2DH	0AH	Max.	20mV
	Heated oxygen sensor 2 heater (Bank 2)	P0141	2EH	8AH	Min.	20mV
		P0161	2FH	0BH	Max.	20mV
EGR SYSTEM	EGR function	P0161	30H	8BH	Min.	20mV
		P0400	31H	8CH	Min.	1°C
		P0400	32H	8CH	Min.	1°C
		P0400	33H	8CH	Min.	1°C
	EGRC-BPT valve function	P0400	34H	8CH	Min.	1°C
		P1402	35H	0CH	Max.	1°C
		P0402	36H	0CH	Max.	1count
		P0402	37H	8CH	Min.	1count