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NISSAN
MURANO
MODEL Z50 SERIES

QUICK REFERENCE INDEX

| | | |
|--------------------------------------|---|-------------------------------|
| A GENERAL INFORMATION | GI General Information | |
| B ENGINE | EM Engine Mechanical | |
| | LU Engine Lubrication System | |
| | CO Engine Cooling System | |
| | EC Engine Control System | |
| | FL Fuel System | |
| | EX Exhaust System | |
| | ACC Accelerator Control System | |
| C TRANSMISSION/ TRANSAXLE | CVT CVT | |
| D DRIVELINE/AXLE | TF Transfer | |
| | PR Propeller Shaft | |
| | RFD Rear Final Drive | |
| | FAX Front Axle | |
| | RAX Rear Axle | |
| | FSU Front Suspension | |
| E SUSPENSION | RSU Rear Suspension | |
| | WT Road Wheels & Tires | |
| | BR Brake System | |
| F BRAKES | PB Parking Brake System | |
| | BRC Brake Control System | |
| | PS Power Steering System | |
| G STEERING | SB Seat Belts | |
| H RESTRAINTS | SRS Supplemental Restraint System (SRS) | |
| | BL Body, Lock & Security System | |
| I BODY | GW Glasses, Window System & Mirrors | |
| | RF Roof | |
| | EI Exterior & Interior | |
| | IP Instrument Panel | |
| | SE Seat | |
| | AP Adjustable Pedal | |
| | ATC Automatic Air Conditioner | |
| J AIR CONDITIONER | SC Starting & Charging System | |
| K ELECTRICAL | LT Lighting System | |
| | DI Driver Information System | |
| | WW Wiper, Washer & Horn | |
| | BCS Body Control System | |
| | LAN LAN System | |
| | AV Audio Visual, Navigation & Telephone System | |
| | ACS Auto Cruise Control System | |
| | PG Power Supply, Ground & Circuit Elements | |
| | L MAINTENANCE | MA Maintenance |
| | M INDEX | IDX Alphabetical Index |

A
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FOREWORD

This manual contains maintenance and repair procedure for the 2005 NISSAN MURANO.

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.

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 NISSAN 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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Technical Service Information
39001 Sunrise Drive, P.O. Box 9200
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FAX: (248) 488-3910

SERVICE MANUAL: Model: _____ **Year:** _____

PUBLICATION NO. (Refer to Quick Reference Index): _____

Please describe any Service Manual issues or problems in detail:

Page number(s) _____ *Note: Please include a copy of each page, marked with your comments.*

Are the trouble diagnosis procedures logical and easy to use? (circle your answer) YES NO

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

DATE: _____ YOUR NAME: _____ POSITION: _____

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CITY: _____ STATE/PROV./COUNTRY: _____ ZIP/POSTAL CODE: _____

INCH TO METRIC CONVERSION TABLE

(Rounded-off for automotive use)

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

METRIC TO INCH CONVERSION TABLE

(Rounded-off for automotive use)

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

QUICK REFERENCE CHART MURANO
ENGINE TUNE-UP DATA (VQ35DE)

PFP:00000

ELS0003W

| | | | | | | |
|--|--------------------------------|--------------------------------------|----------------------------|------------------------------|--|--|
| Engine model | | VQ35DE | | | | |
| Firing order | | 1-2-3-4-5-6 | | | | |
| Idle speed CVT (In "P" or "N" position) | rpm | 650±50 | | | | |
| Ignition timing (BTDC at idle speed) CVT (In "P" or "N" position) | | 15°± 5° | | | | |
| CO% at idle | | 0.7 - 9.9 % and engine runs smoothly | | | | |
| Drive Belt | Deflection adjustment | | Unit: mm (in) | Tension adjustment | | Unit: N (kg, lb) |
| | Used belt | | New belt | Used belt | | New belt |
| | Limit | After adjustment | | Limit | After adjustment | |
| Alternator and A/C compressor belt | 7 (0.28) | 4.2 - 4.6 (0.17 - 0.18) | 3.7 - 4.1 (0.15 - 0.16) | 294 (30, 66) | 730 - 818 (74.5 - 83.5, 164 - 184) | 838 - 926 (85.5 - 94.5, 188 - 208) |
| Power steering oil pump belt | 11 (0.43) | 7.3 - 8 (0.29 - 0.30) | 6.5 - 7.2 (0.26 - 0.28) | 196 (20, 44) | 495 - 583 (50.5 - 59.5, 111 - 131) | 603 - 691 (61.5 - 70.5, 135.6 - 155.4) |
| Applied pushing force | 98N (10kg, 22lb) | | | — | | |
| Radiator cap relief pressure | | kPa (kg/cm ² , psi) | | | | |
| Standard | | | | 78 - 98 (0.8 - 1.0, 11 - 14) | | |
| Limit | | | | 59 (0.6, 9) | | |
| Cooling system leakage testing pressure | kPa (kg/cm ² , psi) | | 157(1.6, 23) | | | |
| Compression pressure | | kPa (kg/cm ² , psi)/rpm | | | | |
| Standard | | | | 1,275 (13.0, 185) /300 | | |
| Minimum | | | | 981 (10.0, 142)/300 | | |
| Spark plug | Make | | NGK | | | |
| | Standard type | | PLFR5A - 11 | | | |
| | Hot type | | PLFR4A - 11 | | | |
| | Cold type | | PLFR6A - 11 | | | |
| | Gap (Nominal) | mm(in) | 1.1 (0.043) | | | |

FRONT WHEEL ALIGNMENT (Unladen*)

ELS0003X

| | | | |
|---------------------------------|---|---------------------------|------------------------|
| Camber | Degree minute (Decimal degree) | Minimum | - 1° 05' (- 1.08°) |
| | | Nominal | - 0° 20' (- 0.33°) |
| | | Maximum | 0° 25' (0.41°) |
| | | Left and right difference | 45' (0.75°) or less |
| Caster | Degree minute (Decimal degree) | Minimum | 1° 50' (1.83°) |
| | | Nominal | 2° 35' (2.58°) |
| | | Maximum | 3° 20' (3.33°) |
| | | Left and right difference | 45' (0.75°) or less |
| Kingpin inclination | Degree minute (Decimal degree) | Minimum | 13° 35' (13.58°) |
| | | Nominal | 14° 20' (14.33°) |
| | | Maximum | 15° 05' (15.08°) |
| Total toe-in | Distance (A - B) | Minimum | - 0.5 mm (- 0.02 in) |
| | | Nominal | 0.5 mm (0.02 in) |
| | | Maximum | 1.5 mm (0.06 in) |
| | Angle (left plus right) Degree minute (Degree) | Minimum | - 1' (- 0.02°) |
| | | Nominal | 1' (0.02°) |
| | | Maximum | 3' (0.05°) |
| Wheel turning angle (Full turn) | Inside Degree minute (Decimal degree) | Minimum | 34° 30' (34.5°) |
| | | Nominal | 38° 00' (38.0°) |
| | | Maximum | 39° 00' (39.0°) |
| | Outside Degree minute (Decimal degree) | Nominal | 31° 30' (31.5°) |

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

REAR WHEEL ALIGNMENT (Unladen*)

ELS0003Y

| Grade | | Except SE | SE |
|--|--|----------------------|----------------------|
| Camber Degree minute (Decimal degree) | Minimum | - 1° 16' (- 1.27°) | - 1° 18' (- 1.30°) |
| | Nominal | - 0° 46' (- 0.77°) | - 0° 48' (- 0.80°) |
| | Maximum | - 0° 16' (- 0.27°) | - 0° 18' (- 0.30°) |
| Total toe-in | Distance (A - B) | Minimum | 1.4 mm (0.055 in) |
| | | Nominal | 3.2 mm (0.126 in) |
| | | Maximum | 5.0 mm (0.197 in) |
| | Angle (left plus right) Degree minute (Degree) | Minimum | 3' (0.05°) |
| | | Nominal | 7' (0.12°) |
| | | Maximum | 11' (0.18°) |

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

BRAKE

ELS0003Z

| | | |
|-------------------------|--------------------|-------------------------------------|
| Front brake | Pad wear limit | 2.0 (0.079) |
| | Rotor repair limit | 26.0 mm (1.024 in) |
| Rear brake | Pad wear limit | 2.0 mm (0.079 in) |
| | Rotor repair limit | 14.0 mm (0.551 in) |
| Pedal free height | | 199.5 - 209.5 mm (7.85 - 8.25 in) |
| Pedal depressed height* | | 120 mm (4.72 in) |

* : Under force of 490 N(50 kg, 110 lb) with engine running.

QUICK REFERENCE CHART MURANO

2005

REFILL CAPACITIES

ELS00040

| UNIT | | Liter | US measure |
|--|---------------------------|---------|--------------|
| Fuel tank | | 82 | 21 - 5/8 gal |
| Coolant (With reservoir tank at "MAX" level) | | 9.2 | 9 - 3/4 qt |
| Engine | Drain and refill | | |
| | With oil filter change | 4.0 | 4 - 1/4 qt |
| | Without oil filter change | 3.7 | 3 - 7/8 qt |
| | Dry engine (Overhaul) | 5.0 | 5 - 1/4 qt |
| Transmission | CVT | 10.2 | 10 - 6/8 qt |
| Transfer | | 0.31 | 5/8 pt |
| Differential carrier | | 0.55 | 1 - 1/8 pt |
| Power steering system | | 1.0 | 1 - 1/8 qt |
| Air conditioning system | Compressor oil | 0.15 | 5.03 fl oz |
| | Refrigerant | 0.55 kg | 1.21 lb |