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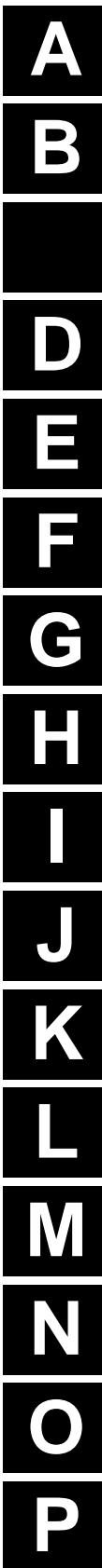
QUICK REFERENCE INDEX

**NISSAN
MURANO
MODEL Z51 SERIES**

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
	STR Starting System
	ACC Accelerator Control System
C ELECTRIC POWER TRAIN	
D TRANSMISSION & DRIVELINE	TM Transaxle & Transmission
	DLN Driveline
	FAX Front Axle
	RAX Rear Axle
E SUSPENSION	FSU Front Suspension
	RSU Rear Suspension
	WT Road Wheels & Tires
F BRAKES	BR Brake System
	PB Parking Brake System
	BRC Brake Control System
G STEERING	ST Steering System
	STC Steering Control System
H RESTRAINTS	SB Seat Belt
	SR SRS Airbag
	SRC SRS Airbag Control System
I VENTILATION, HEATER & AIR CONDITIONER	VTL Ventilation System
	HA Heater & Air Conditioning System
	HAC Heater & Air Conditioning Control System
J BODY INTERIOR	INT Interior
	IP Instrument Panel
	SE Seat
	ADP Automatic Drive Positioner
	DLK Door & Lock
	SEC Security Control System
K BODY EXTERIOR, DOORS, ROOF & VEHICLE SECURITY	GW Glass & Window System
	PWC Power Window Control System
	RF Roof
	EXT Exterior
	BRM Body Repair
	MIR Mirrors
	EXL Exterior Lighting System
	INL Interior Lighting System
	WW Wiper & Washer
DEF Defogger	
HRN Horn	
M ELECTRICAL & POWER CONTROL	PWO Power Outlet
	BCS Body Control System
	LAN LAN System
	PCS Power Control System
	CHG Charging System
	PG Power Supply, Ground & Circuit Elements
N DRIVER INFORMATION & MULTIMEDIA	MWI Meter, Warning Lamp & Indicator
	WCS Warning Chime System
	AV Audio, Visual & Navigation System
O CRUISE CONTROL & DRIVER ASSISTANCE	CCS Cruise Control System
P MAINTENANCE	MA Maintenance

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FOREWORD

This manual contains maintenance and repair procedure for the 2012 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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PLEASE HELP MAKE THIS SERVICE MANUAL BETTER!

Your comments are important to NISSAN and will help us to improve our Service Manuals. Use this form to report any issues or comments you may have regarding our Service Manuals. Please print this form and type or write your comments below. Mail or fax to:

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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

If no, what page number(s)? _____ *Note: Please include a copy of each page, marked with your comments.*

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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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**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 (In "P" or "N" position)	rpm	600 ± 50
Ignition timing (BTDC at idle speed) (In "P" or "N" position)	12° ± 5°	
Tensions of drive belt	Belt tension is not necessary, as it is automatically adjusted by drive belt auto-tensioner.	
Radiator cap relief pressure	kPa (kg/cm ² , psi)	
	Standard	122.3 - 151.7 (1.2 - 1.5, 17.7 - 22.0)
	Limit	108 (1.1, 15.6)
Cooling system leakage testing pressure	kPa (kg/cm ² , psi)	156 (1.59, 22.6)
Compression pressure	kPa (kg/cm ² , psi)/rpm	
	Standard	1,275 (13.0, 185)/300
	Minimum	981 (10.0, 142)/300
Spark plug	Make	DENSO
	Standard type	FXE22HR11
	Gap	Standard
Limit		1.4 mm (0.055 in)

**FRONT WHEEL ALIGNMENT
FOR USA AND MEXICO MODELS**

ELS0003X

Item		Standard		
		Left side	Right side	
Measurement wheel				
Camber Degree minute (Decimal degree)	Minimum	-1° 00' (-1.00°)	-1° 15' (-1.25°)	
	Nominal	-0° 15' (-0.25°)	-0° 30' (-0.50°)	
	Maximum	0° 30' (0.50°)	0° 15' (0.25°)	
	Left and right difference*1	-0° 18' (-0.30°) - 0° 48' (0.80°)		
Caster Degree minute (Decimal degree)	Minimum	3° 55' (3.92°)	4° 15' (4.25°)	
	Nominal	4° 40' (4.67°)	5° 00' (5.00°)	
	Maximum	5° 25' (5.41°)	5° 45' (5.75°)	
	Left and right difference*1	-0° 18' (-0.30°) - 0° 48' (0.80°)		
Kingpin inclination Degree minute (Decimal degree)	Minimum	12° 00' (12.00°)		
	Nominal	12° 45' (12.75°)		
	Maximum	13° 30' (13.50°)		
Toe-in	Total toe-in Distance	Minimum	Out 0.5 mm (Out 0.019 in)	
		Nominal	In 1.5 mm (0.059 in)	
		Maximum	In 3.5 mm (In 0.137 in)	
	Total toe-angle Degree minute (Decimal degree)	Minimum	Out 0° 02' 14" (Out 0.04°)	
		Nominal	In 0° 06' 36" (In 0.11°)	
		Maximum	In 0° 15' 36" (In 0.26°)	

Measure value under unladen*2 conditions.

*1: A difference when assuming the left side a standard.

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

FOR CANADA MODELS

Item		Standard		
		Left side	Right side	
Measurement wheel				
Camber Degree minute (Decimal degree)	Minimum	-1° 00' (-1.00°)	-1° 15' (-1.25°)	
	Nominal	-0° 15' (-0.25°)	-0° 30' (-0.50°)	
	Maximum	0° 30' (0.50°)	0° 15' (0.25°)	
	Left and right difference*1	-0° 18' (-0.30°) - 0° 48' (0.80°)		
Caster Degree minute (Decimal degree)	Minimum	3° 55' (3.92°)	4° 10' (4.17°)	
	Nominal	4° 40' (4.67°)	4° 55' (4.92°)	
	Maximum	5° 25' (5.41°)	5° 40' (5.66°)	
	Left and right difference*1	-0° 18' (-0.30°) - 0° 48' (0.80°)		
Kingpin inclination Degree minute (Decimal degree)	Minimum	11° 55' (11.92°)		
	Nominal	12° 40' (12.67°)		
	Maximum	13° 25' (13.41°)		
Toe-in	Total toe-in Distance	Minimum	Out 0.5 mm (Out 0.019 in)	
		Nominal	In 1.5 mm (In 0.059 in)	
		Maximum	In 3.5 mm (In 0.137 in)	
	Total toe-angle Degree minute (Decimal degree)	Minimum	Out 0° 02' 14" (Out 0.04°)	
		Nominal	In 0° 06' 36" (In 0.11°)	
		Maximum	In 0° 15' 36" (In 0.26°)	

Measure value under unladen*2 conditions.

*1: A difference when assuming the left side a standard.

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

**REAR WHEEL ALIGNMENT
FOR USA AND MEXICO MODELS**

ELS0003Y

Item		Standard	
Camber Degree minute (Decimal degree)	Minimum	-1° 13' (-1.21°)	
	Nominal	-0° 43' (-0.72°)	
	Maximum	-0° 13' (-0.21°)	
Toe-in	Total toe-in Distance	Minimum	In 0.9 mm (0.035 in)
		Nominal	In 2.7 mm (0.106 in)
		Maximum	In 4.5 mm (0.177 in)
	Total toe-angle Degree minute (Decimal degree)	Minimum	In 0° 04' 12" (In 0.07°)
		Nominal	In 0° 12' 00" (In 0.20°)
		Maximum	In 0° 20' 24" (In 0.34°)

Measure value under unladen* conditions.

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

FOR CANADA MODELS

Item		Standard	
Camber Degree minute (Decimal degree)	Minimum	-1° 11' (-1.18°)	
	Nominal	-0° 41' (-0.68°)	
	Maximum	-0° 11' (-0.18°)	
Toe-in	Total toe-in Distance	Minimum	In 0.9 mm (0.035 in)
		Nominal	In 2.7 mm (0.106 in)
		Maximum	In 4.5 mm (0.177 in)
	Total toe-angle Degree minute (Decimal degree)	Minimum	In 0° 04' 12" (In 0.07°)
		Nominal	In 0° 12' 00" (In 0.20°)
		Maximum	In 0° 20' 24" (In 0.34°)

Measure value under unladen* conditions.

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

BRAKE PEDAL

ELS0003Z

Unit: mm (in)

Item	Standard
Brake pedal height	197.1 - 207.1 (7.76 - 8.15)
Clearance between stopper rubber and stop lamp switch and ASCD brake switch threaded end	0.20 - 1.96 (0.0079 - 0.0772)
Brake pedal play	3.0 - 11.0 (0.118 - 0.433)
Depressed brake pedal height [Depressing 490 N (50 kg, 110 lb) while turning the engine ON]	128 (5.04) or more

BRAKE BOOSTER

Unit: mm (in)

Item	Standard
Input rod length	127 (5.00)

FRONT DISC BRAKE

Unit: mm (in)

Item		Limit
Brake pad	Wear thickness	2.0 (0.079)
Disc rotor	Wear thickness	26.0 (1.024)
	Thickness variation (measured at 8 positions)	0.008 (0.0003)
	Runout (with it attached to the vehicle)	0.040 (0.0016) or less

REAR DISC BRAKE

Unit: mm (in)

Item		Limit
Brake pad	Wear thickness	2.0 (0.079)
Disc rotor	Wear thickness	14.0 (0.551)
	Thickness variation (measured at 8 positions)	0.020 (0.0008)
	Runout (with it attached to the vehicle)	0.050 (0.0020) or less

REFILL CAPACITIES

ELS00040

UNIT		Liter	US measure
Fuel tank		82	21-5/8 gal
Coolant (With reservoir tank at "MAX" level)		9.0	9-1/2 qt
Engine	Drain and refill		
	With oil filter change	4.6	4-7/8 qt
	Without oil filter change	4.3	4-1/2 qt
	Dry engine (Overhaul)	5.3	5-5/8 qt
Transmission	CVT	10.2	10-3/4 qt
Transfer		0.31	5/8 pt
Final drive		0.55	1-1/8 pt
Power steering system		1.0	1-1/8 qt
Air conditioning system	Compressor oil	0.15	5.07 fl oz
	Refrigerant	0.60 kg	1.32 lb