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GI General Information

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

TM Transaxle & Transmission

DLN Driveline

FAX Front Axle

RAX Rear Axle

FSU Front Suspension

RSU Rear Suspension

WT Road Wheels & Tires

BR Brake System

PB Parking Brake System

BRC Brake Control System

ST Steering System

STC Steering Control System

SB Seat Belt

SR SRS Airbag

SRC SRS Airbag Control System

VTL Ventilation System

HA Heater & Air Conditioning System

HAC Heater & Air Conditioning Control System

INT Interior

IP Instrument Panel

SE Seat

ADP Automatic Drive Positioner

DLK Door & Lock

SEC Security Control System

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

PWO Power Outlet

BCS Body Control System

LAN LAN System

PCS Power Control System

CHG Charging System

PG Power Supply, Ground & Circuit Elements

MWI Meter, Warning Lamp & Indicator

WCS Warning Chime System

AV Audio, Visual & Navigation System

CCS Cruise Control System

MA Maintenance

NISSAN MURANO MODEL Z51 SERIES

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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.
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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.*

Please describe the issue or problem in detail: _____

Is the organization of the manual clear and easy to follow? (circle your answer) YES NO

Please comment: _____

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

DATE: _____ YOUR NAME: _____ POSITION: _____

DEALER: _____ DEALER NO.: _____ ADDRESS: _____

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

QUICK REFERENCE CHART MURANO

PFP:00000

ENGINE TUNE-UP DATA (VQ35DE)

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
		1.1 mm (0.043 in)
	Limit	1.4 mm (0.055 in)

FRONT WHEEL ALIGNMENT FOR USA AND MEXICO MODELS

ELS0003X

Item		Standard	
Measurement wheel		Left side	Right side
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	
Measurement wheel		Left side	Right side
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