

Edition: December 2015
Revision: December 2015
Pub. No. SM16EA0Z52U0

NISSAN MURANO MODEL Z52 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
	STR Starting System
	ACC Accelerator Control System
C HYBRID	
D TRANSMISSION & DRIVE-LINE	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
K BODY EXTERIOR, DOORS, ROOF & VEHICLE SECURITY	DLK Door & Lock
	SEC Security Control System
	GW Glass & Window System
	PWC Power Window Control System
	RF Roof
	EXT Exterior
	BRM Body Repair Manual
L DRIVER CONTROLS	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	CCS Cruise Control System
	DAS Driver Assistance System
P MAINTENANCE	MA Maintenance
Q INDEX	IDX Alphabetical Index

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FOREWORD

This manual contains maintenance and repair procedures for the 2016 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 Publications Department



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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: _____

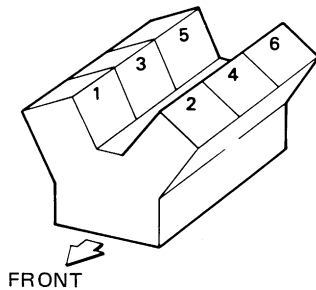
QUICK REFERENCE CHART: MURANO

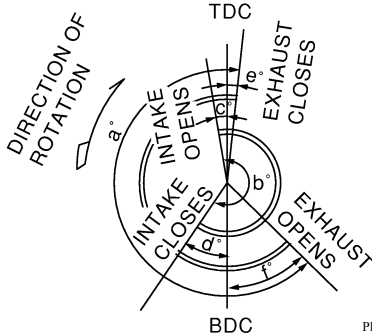
Engine Tune-up Data

INFOID:0000000013529919

GENERAL SPECIFICATIONS

Cylinder arrangement		V-6
Displacement cm^3 (cu in)		3,498 (213.45)
Bore and stroke mm (in)		95.5 x 81.4 (3.760 x 3.205)
Valve arrangement		DOHC
Firing order		1-2-3-4-5-6
Number of piston rings	Compression	2
	Oil	1
Number of main bearings		4
Compression ratio		10.3:1
Compression pressure kPa (kg/cm^2 , psi)/300 rpm	Standard	1,275 (12.75, 13.0, 185)
	Minimum	981 (9.81, 10.0, 142)
	Differential limit between cylinders	98 (0.98, 1.0, 14)

Cylinder number	 FRONT SEM713A
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Valve timing (Valve timing control - "OFF")	 PBIC0187E
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Unit: degree

a	b	c	d	e	f
240	240	-10	70	10	50

Drive Belt

INFOID:0000000013529918

Tension of drive belt	Belt tension is not necessary, as it is automatically adjusted by drive belt auto-tensioner.
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Spark Plug

INFOID:0000000013529651

Unit: mm (in)

Make	DENSO	
Standard type*	FXE22HR11	
Gap	Standard	1.1 (0.043)

*: Always check with the Parts Department for the latest parts information.

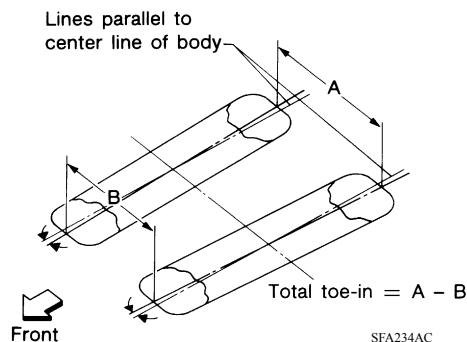
Front Wheel Alignment (Unladen*¹)

INFOID:0000000013529650

WARNING:

If the vehicle is equipped with the Intelligent Cruise Control (ICC) system and the rear toe has been adjusted during a wheel alignment, the ICC sensor must be aligned.

Measurement wheel		(LH) side	(RH) 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°)
	Difference (LH-RH)	0° 15'±0° 33' (0.25° ±0.55°)	
Caster Degree minute (Decimal degree)	Minimum	4° 00' (4.00°)	
	Nominal	4° 45' (4.75°)	
	Maximum	5° 30' (5.50°)	
	(LH) and (RH) difference	0.30' (0.50°) Maximum	
Kingpin inclination Degree minute (Decimal degree)	Minimum	12° 00' (12.00°)	12° 15' (12.25°)
	Nominal	12° 45' (12.75°)	13° 00' (13.00°)
	Maximum	13° 30' (13.50°)	13° 45' (13.75°)



Total toe-in	Distance (A - B)	Minimum	Out 0.6 mm (Out 0.024 in)
		Nominal	In 1.4 mm (In 0.055 in)
		Maximum	In 3.4 mm (In 0.134 in)
	Angle (LH) and (RH) Degree minute (Decimal degree)	Minimum	Out 0° 03' 30" (Out 0.06°)
		Nominal	In 0° 06' 00" (In 0.10°)
		Maximum	In 0° 15' 30" (In 0.26°)

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

Rear Wheel Alignment (Unladen*)

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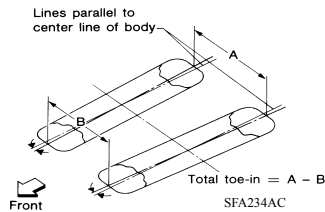
WARNING:

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2016

If the vehicle is equipped with the Intelligent Cruise Control (ICC) system and the rear toe has been adjusted during a wheel alignment, the ICC sensor must be aligned.

Item		Standard
Camber Degree minute (Decimal degree)	Minimum	-1° 15' (-1.25°)
	Nominal	-0° 45' (-0.75°)
	Maximum	-0° 15' (-0.25°)



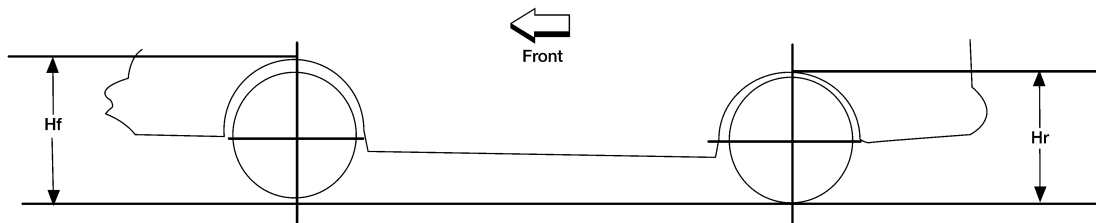
Total toe-in	Distance (A - B)	Minimum	In 0.5 mm (In 0.020 in)
		Nominal	In 3.3 mm (In 0.130 in)
		Maximum	In 6.1 mm (In 0.240 in)
	Angle (LH and RH) Degree minute (Decimal degree)	Minimum	In 0° 2' (In 0.04°)
		Nominal	In 0° 14' (In 0.24°)
		Maximum	In 0° 26' (In 0.44°)

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

Wheelarch Height (Unladen*)

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UNITED STATES

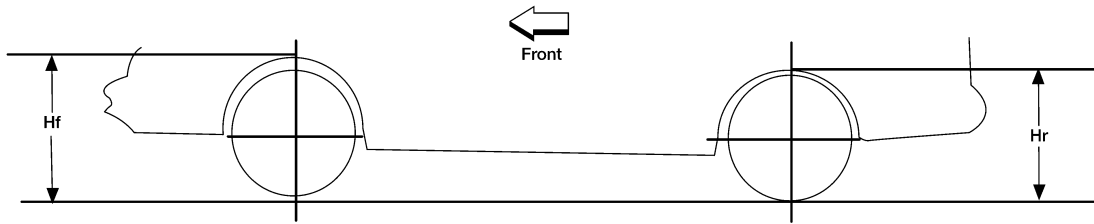


LEIA0085E

Tire size	235/65R18	235/55R20
Front (Hf)	835 mm (32.87 in)	834 mm (32.83 in)
Rear (Hr)	824 mm (32.44 in)	822 mm (32.36 in)

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

CANADA



LEIA0085E

Tire size	235/65R18	235/55R20
Front (Hf)	836 mm (32.91 in)	834 mm (32.83 in)
Rear (Hr)	824 mm (32.44 in)	822 mm (32.36 in)

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

Brake Specifications

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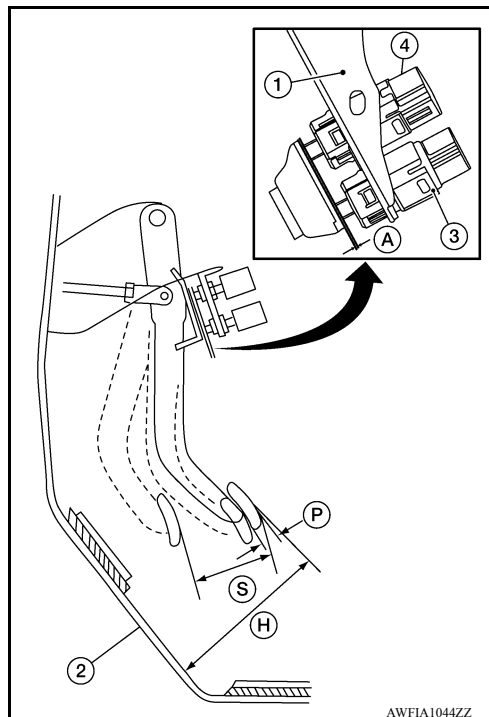
Unit: mm (in)

Front disc brake	Cylinder bore diameter	45.0 (1.772) × 2
	Pad length × width × thickness	131.4 (5.173) × 53.0 (2.087) × 10 (0.394)
	Disc brake rotor outer diameter × thickness	320 (12.598) × 28 (1.102)
Rear disc brake	Cylinder bore diameter	42.86 (1.6874)
	Pad length × width × thickness	83 (3.268) × 33 (1.299) × 8.5 (0.335)
	Disc brake rotor outer diameter × thickness	308 (12.126) × 16 (0.630)
Master cylinder	Cylinder bore diameter	27 (1.063)
Control valve	Valve type	Electric brake force distribution

Brake Pedal

INFOID:0000000013529646

Unit: mm (in)



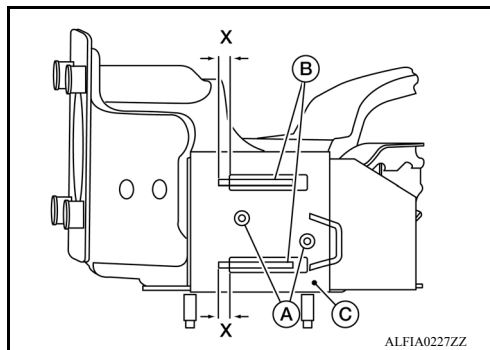
Item	Standard
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Brake pedal height (H)	196.1 – 206.1 (7.72 – 8.11)
Clearance (A) between brake pedal bracket, stop lamp switch (3) and brake pedal position switch (4) contact ends	0.74 – 1.96 (0.0291 – 0.0772)
Brake pedal full stroke (S)	135.8 (5.35)
Brake pedal play (P)	4.6 (0.18)

Unit: mm (in)



Overlap distance (X) between sub-bracket (B) and slide plate (C)	5.5 ± 0.5 (0.22 ± 0.02)
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Front Disc Brake

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Unit: mm (in)

Item		Limit
Brake pad	Wear thickness	2 (0.079)
	Wear thickness	26 (1.024)
Disc brake rotor	Thickness variation (measured at 8 positions)*	0.004 (0.0002)
	Runout (with disc brake rotor attached to the vehicle)	0.040 (0.0016) or less

* To check if rotor imbalance, rotor runout or rotor deformation exists.

Rear Disc Brake

INFOID:0000000013529644

Unit: mm (in)

Item		Limit
Brake pad	Wear thickness	2 (0.079)
	Wear thickness	14 (0.551)
Disc brake rotor	Thickness variation (measured at 8 positions)*	0.010 (0.0004)
	Runout (with disc brake rotor attached to the vehicle)	0.05 (0.0020) or less

* To check if rotor imbalance, rotor runout or rotor deformation exists.

Fluids and Lubricants

INFOID:0000000013529643

The following are approximate capacities, The actual refill capacities may be slightly different. When refilling, follow the procedures described elsewhere in this manual.

Fluid types		Capacity (Approximate)		
		Metric	US measure	Imp measure
Fuel		71.9 ℓ	19 gal	15-7/8 gal
Engine oil Drain and refill	With oil filter change	4.8 ℓ	5-1/8 qt	4-1/4 qt
	Without oil filter change	4.5 ℓ	4-3/4 qt	4 qt
	Dry engine (Over-haul)	5.2 ℓ	5-1/2 qt	4-5/8 qt

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Fluid types	Capacity (Approximate)		
	Metric	US measure	Imp measure
Engine coolant (with reservoir at MAX level)	8.7 ℓ	9-1/4 qt	7-5/8 qt
CVT fluid	8.8 ℓ	9-1/4 qt	7-3/4 qt
Differential gear oil	0.5 ℓ	1 pt	7/8 pt
Transfer fluid	0.31 ℓ	5/8 pt	1/2 pt
Power steering fluid (E-PSF)	1.0 ℓ	1-1/8 qt	7/8 qt
Brake fluid	—	—	—
Multi-purpose grease	—	—	—
Windshield washer fluid	4.6 ℓ	4-7/8 qt	4 qt
Air conditioning system refrigerant	0.55 ± 0.03 kg	1.21 ± 0.11 lb	1.21 ± 0.11 lb
Air conditioning system oil	100 m ℓ	3.4 fl oz	3.5 fl oz