

**QUICK REFERENCE INDEX**

**NISSAN**  
**Murano**  
**CrossCabriolet**  
**MODEL Z51 SERIES**

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

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# FOREWORD

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This manual contains maintenance and repair procedure for the 2013 NISSAN Murano CrossCabriolet.

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

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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.

NISSAN MOTOR CO., LTD.



## 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:

Nissan North America, Inc.  
Technical Service Information  
39001 Sunrise Drive, P.O. Box 9200  
Farmington Hills, MI USA 48331  
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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.*

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**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: \_\_\_\_\_

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

Please comment: \_\_\_\_\_

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

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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 CVT (In "P" or "N" position)	rpm	600 ± 50
Ignition timing (BTDC at idle speed) CVT (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 <sup>2</sup> , psi)	122.3 - 151.7 (1.2 - 1.5, 17.7 - 22.0)
	Standard	
	Limit	108 (1.1, 15.6)
Cooling system leakage testing pressure	kPa (kg/cm <sup>2</sup> , psi)	156 (1.59, 22.6)
Compression pressure	kPa (kg/cm <sup>2</sup> , psi)/rpm	1,275 (13.0, 185)/300
	Standard	
	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		
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 (In 0.059 in)	
		Maximum	In 3.5 mm (In 0.137 in)	
	Total toe-angle Degree minute (Decimal degree)	Minimum	Out 0° 02' (Out 0.03°)	
		Nominal	In 0° 06' (In 0.1°)	
		Maximum	In 0° 14' (In 0.23°)	

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' (Out 0.03°)	
		Nominal	In 0° 06' (In 0.1°)	
		Maximum	In 0° 14' (In 0.23°)	

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' (In 0.07°)
		Nominal	In 0° 12' (In 0.20°)
		Maximum	In 0° 20' (In 0.33°)

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' (In 0.07°)
		Nominal	In 0° 12' (In 0.20°)
		Maximum	In 0° 20' (In 0.33°)

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 the 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  
Vacuum type**

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