

Edition: July 2008

Revision: October 2008

Publication No. SM9E-1N50U

NISSAN XTERRA

MODEL N50 SERIES

All rights reserved. No part of this Service Manual may be reproduced or stored in a retrieval system, or transmitted in any form, or by any means, electronic, mechanical, photo-copying, recording or otherwise, without the prior written permission of Nissan North America, Inc.

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
	HBC Hybrid Control System
	HBB Hybrid Battery System
C HYBRID	CL Clutch
D TRANSMISSION & DRIVE-LINE	TM Transaxle & Transmission
	DLN Driveline
	FAX Front Axle
	RAX Rear Axle
	FSU Front Suspension
E SUSPENSION	RSU Rear Suspension
	SCS Suspension Control System
	WT Road Wheels & Tires
	BR Brake System
	PB Parking Brake System
F BRAKES	BRC Brake Control System
	ST Steering System
	STC Steering Control System
G STEERING	SB Seat Belt
H RESTRAINTS	SBC Seat Belt Control System
	SR SRS Airbag
	SRC SRS Airbag Control System
	VTL Ventilation System
I VENTILATION, HEATER & AIR CONDITIONER	HA Heater & Air Conditioning System
	HAC Heater & Air Conditioning Control System
	INT Interior
J BODY INTERIOR	IP Instrument Panel
	SE Seat
	ADP Autodrive Positioner System
	AP Adjustable Pedals
	DLK Door & Lock
K BODY EXTERIOR, DOORS, ROOF & VEHICLE SECURITY	SEC Security Control System
	GW Glass & Window System
	PWC Power Window Control System
	RF Roof
	EXT Exterior
	BRM Body Repair Manual
	MIR Mirrors
L DRIVER CONTROLS	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	
M ELECTRICAL & POWER CONTROL	MWI Meter, Warning Lamp & Indicator
	WCS Warning Chime System
	SN Sonar System
	AV Audio, Visual & Navigation System
O CRUISE CONTROL	CCS Cruise Control System
P MAINTENANCE	MA Maintenance

A

B

C

D

E

F

G

H

I

J

K

L

M

N

O

P

FOREWORD

This manual contains maintenance and repair procedure for the 2009 NISSAN XTERRA.

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.



NISSAN NORTH AMERICA, INC.
Technical Publications Department



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
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

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: XTERRA

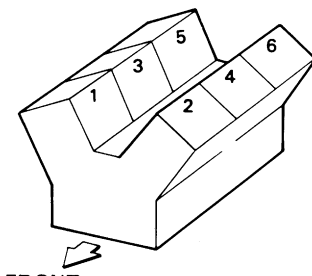
Engine Tune-up Data

INFOID:000000003303250

GENERAL SPECIFICATIONS

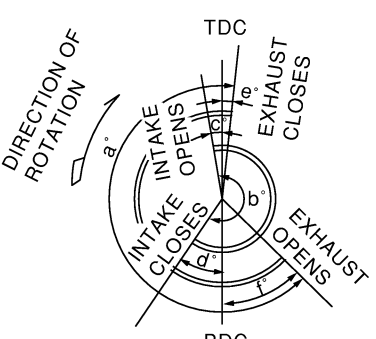
Cylinder arrangement		V-6
Displacement cm ³ (cu in)		3,954 (241.30)
Bore and stroke mm (in)		95.5 × 92.0 (3.76 × 3.622)
Valve arrangement		DOHC
Firing order		1-2-3-4-5-6
Number of piston rings	Compression	2
	Oil	1
Number of main bearings		4
Compression ratio		9.7
Compression pressure (kg/cm ² , psi)/300 rpm	kPa	
	Standard	1,275 (13.0, 185)
	Minimum	981 (10.0, 142)
Differential limit between cylinders		98 (1.0, 14)

Cylinder number



SEM713A

Valve timing
(Intake valve timing control - "OFF")



PBIC0187E

Unit: degree

a	b	c	d	e	f
244	240	-4	64	6	58

SPARK PLUG

Make	NGK
Standard type	DILFR5A-11
Gap (nominal)	1.1 mm (0.043 in)

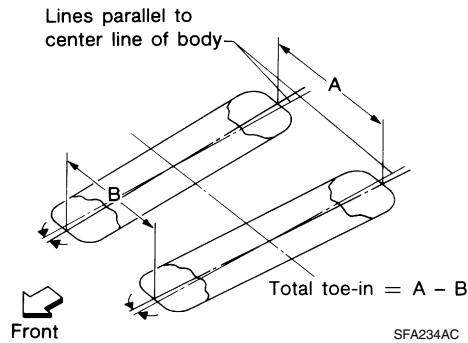
QUICK REFERENCE CHART: XTERRA

2009

Front Wheel Alignment (Unladen*1)*6

INFOID:000000003303254

Drive type		2WD	4WD
Camber Degree minute (decimal degree)	Minimum	-0° 30' (-0.50°)	-0° 15' (-0.25°)
	Nominal	0° 15' (0.25°)	0° 30' (0.50°)
	Maximum	1° 0' (1.00°)	1° 15' (1.25°)
	Cross camber	0° 45' (0.75°) or less	0° 45' (0.75°) or less
Caster Degree minute (decimal degree)	Minimum	2° 15' (2.25°)	2° 0' (2.00°)
	Nominal	3° 0' (3.00°)	2° 45' (2.75°)
	Maximum	3° 45' (3.75°)	3° 30' (3.50°)
	Cross caster	0° 45' (0.75°) or less	0° 45' (0.75°) or less
Kingpin inclination Degree minute (decimal degree)	Nominal	13° 0' (13.00°)	12° 45' (12.75°)



Total toe-in	Distance (A - B)	Minimum	3.0 mm (0.12 in)	3.0 mm (0.12 in)
		Nominal	4.0 mm (0.16 in)	4.0 mm (0.16 in)
		Maximum	5.0 mm (0.20 in)	5.0 mm (0.20 in)
	Angle (left wheel or right wheel) Degree minute (decimal degree)	Minimum	0° 7' (0.12°)	0° 7' (0.12°)
		Nominal	0° 9' (0.15°)	0° 9' (0.15°)
		Maximum	0° 11' (0.18°)	0° 11' (0.18°)
Wheel turning angle (full turn)	Inside Degree minute (Decimal degree)	33° 27' - 35° 27' *2 (33.45° - 35.45°)	33° 41' - 35° 41' *4 (33.68° - 35.68°)	
	Outside Degree minute (Decimal degree)	29° 25' - 31° 25' *3 (29.42° - 31.42°)	29° 57' - 31° 57' *5 (29.95° - 31.95°)	

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

*2: Target value 35° 27' (35.45°)

*3: Target value 31° 25' (31.42°)

*4: Target value 35° 41' (35.68°)

*5: Target value 31° 57' (31.95°)

*6: Some vehicles may be equipped with straight (non-adjustable) lower link bolts and washers. In order to adjust camber and caster on these vehicles, first replace the lower link bolts and washers with adjustable (cam) bolts and washers.

Rear Suspension Information

INFOID:000000003303266

Suspension type	Rigid axle with semi-elliptic leaf springs
Shock absorber type	Double-acting hydraulic

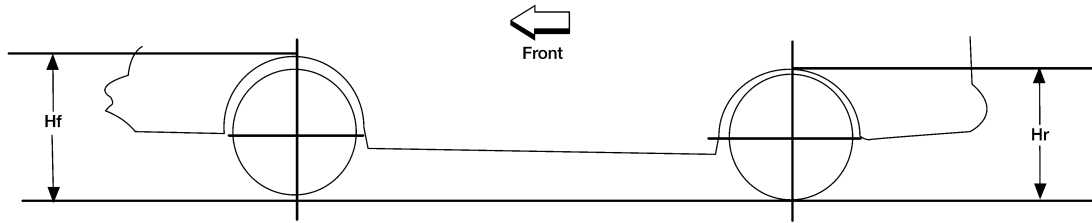
QUICK REFERENCE CHART: XTERRA

2009

Wheelarch Height (Unladen*¹)

INFOID:000000003303260

Unit: mm (in)



LEIA0085E

Engine type	VQ40DE				
Drive type	2WD		4WD		
Applied models	X and S	SE	X and S	O/R	SE
Tire size	265/70R16	265/65R17	265/70R16	265/75R16	265/65R17
Front wheelarch height (Hf)	839 (33.03)	841 (33.11)	858 (33.78)	870 (34.25)	859 (33.82)
Rear wheelarch height (Hr)	872 (34.33)	872 (34.33)	892 (35.12)	904 (35.59)	892 (35.12)

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

Brake Specification

INFOID:000000003303267

Unit: mm (in)

Front brake	Brake model	CLZ33VB
	Rotor outer diameter × thickness	296 × 28 (11.654 × 1.102)
	Pad Length × width × thickness	111.0 × 73.5 × 11.88 (4.73 × 2.894 × 0.468)
	Cylinder bore diameter	51 (2.01)
Rear brake	Brake model	CLZ14VB
	Rotor outer diameter × thickness	286 × 18.0 (11.260 × 0.709)
	Pad Length × width × thickness	83.0 × 33.0 × 11.0 (3.268 × 1.299 × 0.433)
	Cylinder bore diameter	38.1 (1.50)
Control valve	Valve model	Electric brake force distribution
Brake booster	Booster model	C215T
	Diaphragm diameter	215 (8.46)

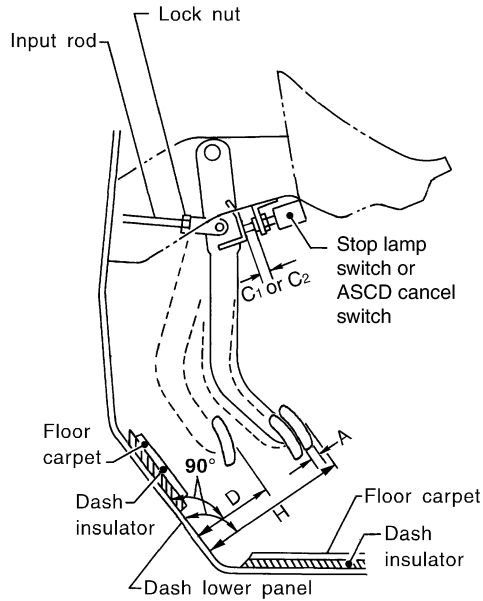
QUICK REFERENCE CHART: XTERRA

2009

Brake Pedal

INFOID:000000003303268

Unit: mm (in)



WFIA0160E

Free height "H"	182.1 - 192.1 (7.17 - 7.56)
Depressed pedal height ("D" [under a force of 490 N (50 kg-f, 110 lb-f) with engine running])	105 - 115 (4.13 - 4.53)
Clearance between pedal stopper and threaded end of stop lamp switch and ASCD switch "C1" or "C2"	0.74 - 1.96 (0.029 - 0.077)
Pedal play "A"	3 - 11 (0.12 - 0.43)

Front Disc Brake

INFOID:000000003303269

Unit: mm (in)

Brake model	CLZ33VB	
Brake pad	Standard thickness (new)	11.88 (0.468)
	Repair limit thickness	2.0 (0.079)
Disc rotor	Standard thickness (new)	28.0 (1.102)
	Repair limit thickness	26.0 (1.024)
	Maximum uneven wear (measured at 8 positions)	0.015 (0.0006)
	Runout limit (with it attached to the vehicle)	0.05 (0.0020)

Rear Disc Brake

INFOID:000000003303270

Brake model	CLZ14VB	
Brake pad	Standard thickness (new)	11.0 mm (0.433 in)
	Repair limit thickness	2.0 mm (0.079 in)
Disc rotor	Standard thickness (new)	18.0 mm (0.709 in)
	Repair limit thickness	16.0 mm (0.630 in)
	Maximum uneven wear (measured at 8 positions)	0.015 mm (0.0006 in)
	Runout limit (with it attached to the vehicle)	0.05 mm (0.0020 in)

QUICK REFERENCE CHART: XTERRA

2009

INFOID:000000003303272

Fluids and Lubricants

Description		Capacity (Approximate)		
		Metric	US measure	Imp measure
Fuel		80 ℓ	21 1/8 gal	17 5/8 gal
Engine oil Drain and refill	With oil filter change	5.1 ℓ	5 3/8 qt	4 1/2 qt
	Without oil filter change	4.8 ℓ	5 1/8 qt	4 1/4 qt
Dry engine (engine overhaul)		6.3 ℓ	6 5/8 qt	5 1/2 qt
Cooling system (with reservoir at "MAX" level)		10.2 ℓ	2 3/4 gal	2 1/4 gal
Automatic transmission fluid (ATF)		10.3 ℓ	10 7/8 qt	9 1/8 qt
Manual transmission (MT)	2WD	3.98 ℓ	4 1/4 qt	3 1/2 qt
	4WD	4.18 ℓ	4 3/8 qt	3 5/8 qt
Rear final drive oil	C200	1.6 ℓ	3 3/8 pt	2 7/8 pt
	M226	2.01 ℓ	4 1/4 pt	3 1/2 pt
Transfer fluid	TX15B	2.0 ℓ	2 1/8 qt	1 3/4 qt
Front final drive oil	R180A	0.85 ℓ	1 3/4 pt	1 1/2 pt
Power steering fluid (PSF)		1.0 ℓ	2 1/8 pt	1 3/4 pt
Brake and clutch fluid		—	—	—
Multi-purpose grease		—	—	—
Windshield washer fluid		4.5 ℓ	1 1/4 gal	1 gal
A/C system refrigerant		0.70 ± 0.05 kg	1.54 ± 0.11 lb	1.54 ± 0.11 lb
A/C system oil		180 m ℓ	6.1 fl oz	6.3 fl oz