

Edition: July 2007

Revision: February 2010

Publication No. SM8E-1N50U2

NISSAN XTERRA

MODEL N50 SERIES

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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

HBC Hybrid Control System

HBB Hybrid Battery System

CL Clutch

TM Transaxle & Transmission

DLN Driveline

FAX Front Axle

RAX Rear Axle

FSU Front Suspension

RSU Rear Suspension

SCS Suspension Control System

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

SBC Seat Belt Control System

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 Autodrive Positioner System

AP Adjustable Pedals

DLK Door & Lock

SEC Security Control System

GW Glass & Window System

PWC Power Window Control System

RF Roof

EXT Exterior

BRM Body Repair Manual

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

SN Sonar System

AV Audio, Visual & Navigation System

CCS Cruise Control System

MA Maintenance

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FOREWORD

This manual contains maintenance and repair procedure for the 2008 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.



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SERVICE MANUAL: Model: _____ Year: _____

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Please describe any Service Manual issues or problems in detail:

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Are the trouble diagnosis procedures logical and easy to use? (circle your answer) YES NO

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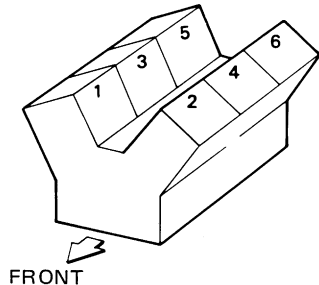
QUICK REFERENCE CHART: XTERRA

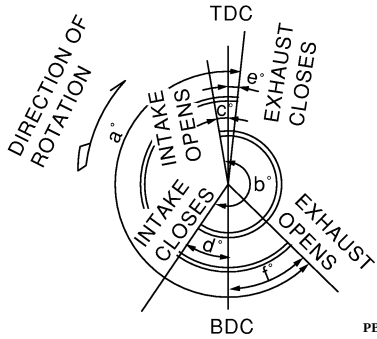
Engine Tune-up Data

INFOID:000000006179694

GENERAL SPECIFICATIONS

Cylinder arrangement		V-6
Displacement $\text{cm}^3(\text{cu in})$		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 $\text{kPa (kg/cm}^2, \text{psi)/300 rpm}$	Standard	1,275 (13.0, 185)
	Minimum	981 (10.0, 142)
	Differential limit between cylinders	98 (1.0, 14)

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

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

DRIVE BELT

Tension of drive belts	Auto adjustment by auto tensioner
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SPARK PLUG

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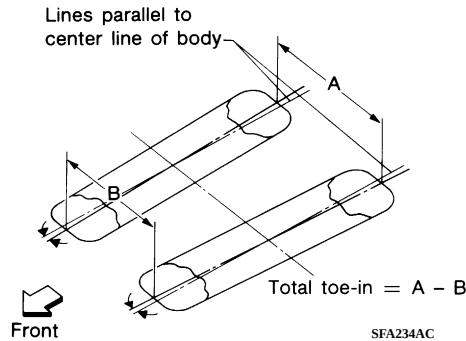
Make	NGK
Standard type*	DILFR5A-11
Gap (nominal)	1.1 mm (0.043 in)

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

Front Wheel Alignment (Unladen*1)*6

INFOID:000000006179693

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.

General Specification (Rear)

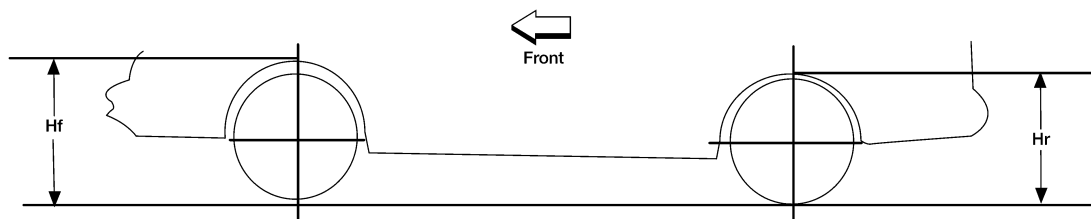
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Suspension type	Rigid axle with semi-elliptic leaf springs
Shock absorber type	Double-acting hydraulic

Wheelarch Height (Unladen*¹)

INFOID:000000006179692

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 Specifications

INFOID:000000006179689

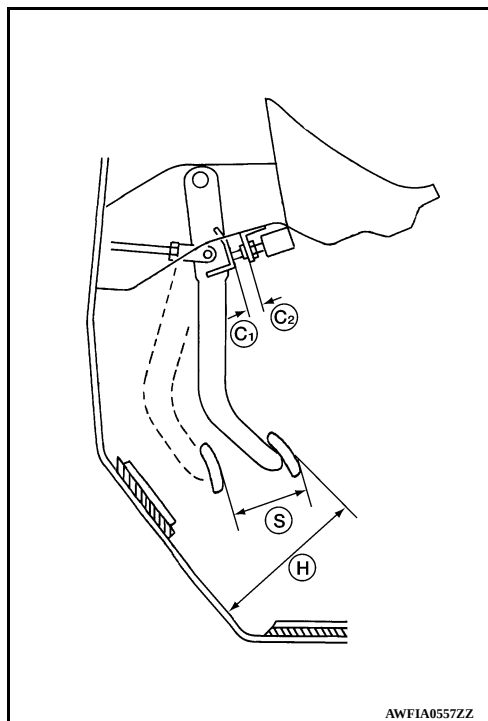
Unit: mm (in)

Front brake	Brake model	CLZ33VA
	Rotor outer diameter × thickness	296 × 28 (11.654 × 1.102)
	Pad length × width × thickness	140 × 50.5 × 10.0 (5.512 × 1.988 × 0.394)
	Cylinder bore diameter (each)	46.4 (1.83)
Rear brake	Brake model	CLZ14VA
	Rotor outer diameter × thickness	286 × 18 (11.260 × 0.709)
	Pad length × width × thickness	87.6 × 34 × 11.0 (3.449 × 1.339 × 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 (8.465)

Brake Pedal

INFOID:000000006179690

Unit: mm (in)



Pedal free height (H)	M/T	174.7 (6.88)
	A/T	182.1 (7.17)
Pedal full stroke (S) [Depressed under a force of 490 N (50 kg, 110 lb) with engine running]		153 (6.02)
Clearance between pedal stopper and threaded end of stop lamp switch (C1) or (C2)		0.74 - 1.96 (0.029 - 0.077)

Front Disc Brake

INFOID:000000006179687

Unit: mm (in)

Brake model		CLZ33VA
Brake pad	Standard thickness (new)	10.0 (0.394)
	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:000000006179688

Unit: mm (in)

Brake model		CLZ14VA
Brake pad	Standard thickness (new)	11.0 (0.433)
	Repair limit thickness	2.0 (0.079)
Disc rotor	Standard thickness (new)	18.0 (0.709)
	Repair limit thickness	16.0 (0.630)
	Maximum uneven wear (measured at 8 positions)	0.015 (0.0006)
	Runout limit (with it attached to the vehicle)	0.05 (0.0020)

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Fluids and Lubricants

INFOID:000000006179686

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 fluid (MTF)	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