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NISSAN ALTIMA

MODEL L32 SERIES

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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	HBC Hybrid Control System
		HBB Hybrid Battery System
HBR Hybrid Brake System		
D TRANSMISSION & DRIVE-LINE	CL Clutch	
	TM Transaxle & Transmission	
	DLN Driveline	
	FAX Front Axle	
	RAX Rear Axle	
E SUSPENSION	FSU Front Suspension	
	RSU Rear Suspension	
	SCS Suspension Control System	
	WT Road Wheels & Tires	
F BRAKES	BR Brake System	
	PB Parking Brake System	
	BRC Brake Control System	
G STEERING	ST Steering System	
H RESTRAINTS	STC Steering Control System	
	SB Seat Belt	
	SBC Seat Belt Control System	
	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	
	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	
	EXL Exterior Lighting System	
L DRIVER CONTROLS	INL Interior Lighting System	
	WW Wiper & Washer	
	DEF Defogger	
	HRN Horn	
	PWO Power Outlet	
	BCS Body Control System	
	LAN LAN System	
M ELECTRICAL & POWER CONTROL	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	
O CRUISE CONTROL	CCS Cruise Control System	
P MAINTENANCE	MA Maintenance	

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FOREWORD

This manual contains maintenance and repair procedure for the 2011 NISSAN ALTIMA GCC.

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.*

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QUICK REFERENCE CHART: ALTIMA GCC

Engine Tune-up Data - QR25DE

INFOID:000000006967988

GENERAL SPECIFICATIONS

Cylinder arrangement		In-line 4
Displacement cm ³ (in ³)		2,488 (151.82)
Bore and stroke mm. (in)		89.0 x 100 (3.50 x 3.94)
Valve arrangement		DOHC
Firing order		1-3-4-2
Number of piston rings	Compression	2
	Oil	1
Compression ratio		9.5:1
Compression pressure kPa (bar, kg/cm ² , psi) / 250 rpm	Standard	1,250 (12.50, 12.8, 181.3)
	Minimum	1,060 (10.60, 10.8, 153.7)
	Differential limit between cylinders	100 (1.00, 1.0, 14)
Valve timing	<p style="text-align: right;">PBIC0187E</p>	

Unit: degree

a	b	c	d	e	f
220	232	-12	64	10	30

DRIVE BELTS

Tension of drive belts	Auto adjustment by auto tensioner
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SPARK PLUG

Unit: mm. (in)

Make	NGK	
Type*	Standard	DILKAR6A-11
Gap (nominal)	1.1 (0.043)	

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

Engine Tune-up Data - VQ35DE

INFOID:000000006967985

GENERAL SPECIFICATIONS

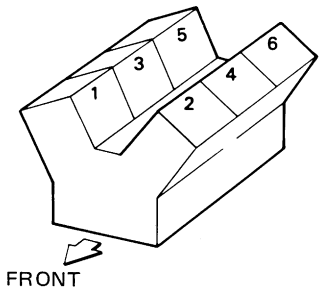
Cylinder arrangement	V-6
Displacement cm ³ (cu in)	3,498 (213.45)

QUICK REFERENCE CHART: ALTIMA GCC

2011

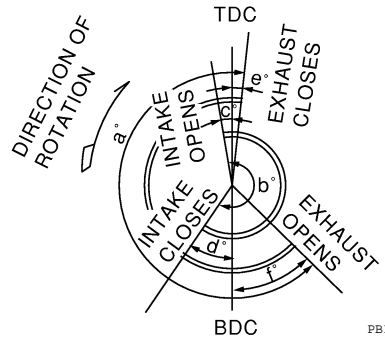
Bore and stroke mm (in)		95.5 x 81.4 (3.760 x 3.205)
Valve arrangement		DOHC
Firing order		1-2-3-4-5-6
Number of piston rings	Compression	2
	Oil	1
Number of main bearings		4
Compression ratio		10.3:1
Compression pressure kPa (bar, kg/cm ² , psi)/300 rpm	Standard	1,275 (12.75, 13.0, 185)
	Minimum	981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

Cylinder number



SEM713A

Valve timing
(Valve timing control - "OFF")



PBIC0187E

Unit: degree

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

Drive Belt

INFOID:000000006967986

DRIVE BELT

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:000000006967987

SPARK PLUG

Unit: mm (in)

Make	DENSO	
Standard type*	FXE22HR-11	
Gap	Standard	1.1 (0.043)

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

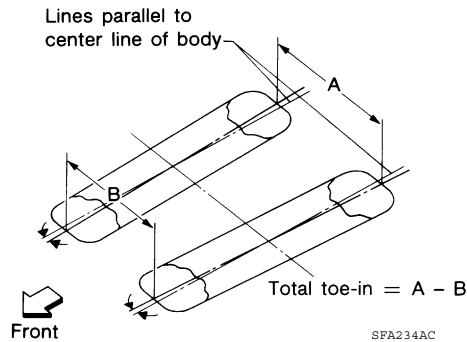
QUICK REFERENCE CHART: ALTIMA GCC

2011

Front Wheel Alignment (Unladen *1)

INFOID:000000006967984

Model		Sedan		Coupe	
Engine type		QR25DE	VQ35DE	QR25DE	VQ35DE
Tire size		205/65R16	215/55R17	215/55R17	235/45R18
Camber *2 Degree minute (Decimal degree)	LH	Minimum	-1°15' (-1.25°)		
		Nominal	-0°30' (-0.50°)		
		Maximum	0°15' (0.25°)		
	RH	Minimum	-1°30' (-1.50°)		
		Nominal	-0°45' (-0.75°)		
		Maximum	0°0' (0.00°)		
Caster *3 Degree minute (Decimal degree)		4°54' (4.90°)		4°36' (4.60°)	
Kingpin offset Degree minute (Decimal degree)	Minimum	11°57' (11.95°)		12°00' (12.00°)	
	Nominal	12°42' (12.70°)		12°45' (12.75°)	
	Maximum	13°27' (13.45°)		13°30' (13.50°)	



Total toe-in	Distance (A - B)	Minimum	0.0 mm (0.00 in)
		Nominal	1.0 mm (0.04 in) *4
		Maximum	2.0 mm (0.08 in)

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

*2: The RH camber angle shall be $-0.25^\circ \pm 0.55^\circ$ with respect to the LH camber angle.

*3: For the caster angle, the difference between right and left against the ground surface shall be $\pm 0.55^\circ$ maximum.

*4: Equivalent nominal degree minute (decimal degree) is $0^\circ 3'$ (0.050°).

Rear Wheel Alignment (Unladen*)

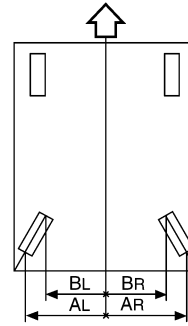
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SEDAN

Camber Degree minute (Decimal degree)	Minimum	-1° 02' (-1.031°)
	Nominal	-0° 32' (-0.531°)
	Maximum	-0° 02' (-0.031°)

QUICK REFERENCE CHART: ALTIMA GCC

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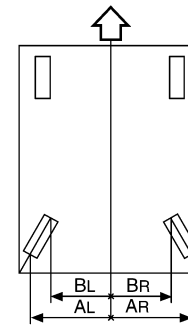
ALEIA0059ZZ

Toe-in	Difference between RH and LH side (AR - BR) - (AL - BL) ↔: Front mm (in)	Minimum	-2 (-0.08)
		Nominal	0 (0)
		Maximum	2 (0.08)
	Angle Difference between RH and LH side Degree minute (decimal degree)	Minimum	-0° 5' (-0.08°)
		Nominal	0° 00' (0.00°)
		Maximum	0° 5' (0.08°)
	Distance (left or right) (Ar - Br) or (Al - Bl) ↔: Front mm (in)		2.8 (0.11)
	Angle (left or right)	Degree minute second (decimal degree)	0° 7' 5" (0.118°)

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

COUPE

Camber Degree minute (Decimal degree)	Minimum	-0° 35' (-0.584°)
	Nominal	-0° 05' (-0.084°)
	Maximum	0° 25' (0.416°)



ALEIA0059ZZ

Toe-in	Difference between RH and LH side (AR - BR) - (AL - BL) ↔: Front mm (in)	Minimum	-2 (-0.08)
		Nominal	0 (0)
		Maximum	2 (0.08)
	Angle Difference between RH and LH side Degree minute (decimal degree)	Minimum	-0° 5' (-0.08°)
		Nominal	0° 00' (0.00°)
		Maximum	0° 5' (0.08°)
	Distance (left or right) (Ar - Br) or (Al - Bl) ↔: Front mm (in)		2.5 (0.10)
	Angle (left or right)	Degree minute second (decimal degree)	0° 6' 43" (0.112°)

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

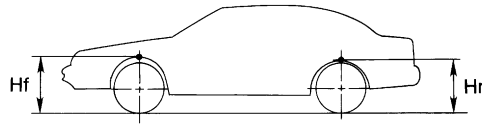
QUICK REFERENCE CHART: ALTIMA GCC

2011

Wheelarch Height (Unladen*1)

INFOID:000000006967983

Unit: mm (in)



SFA818A

Model	Sedan		Coupe	
	QR25DE	VQ35DE	QR25DE	VQ35DE
Engine	QR25DE	VQ35DE	QR25DE	VQ35DE
Tire size	205/65R16	215/55R17	215/55R17	235/45R18
Front (Hf)	715 (28.15)	717 (28.23)	715 (28.15)	—
Rear (Hr)	716 (28.19)	713 (28.07)	723 (28.46)	—

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

Brake Specifications

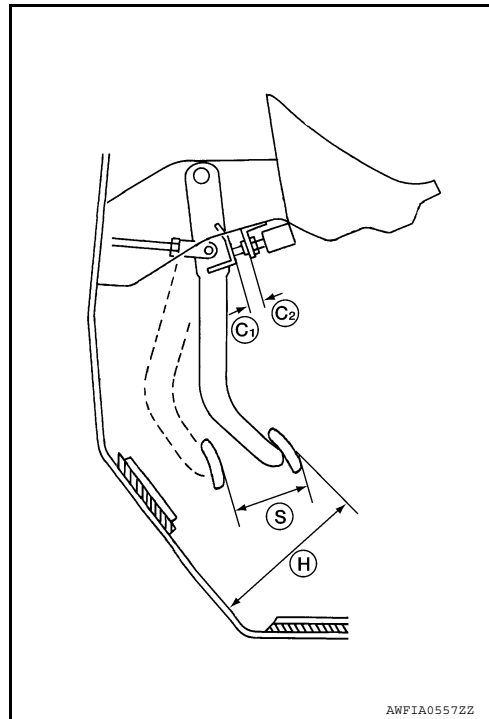
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Unit: mm (in)

Front brake	Brake model	CLZ25VD
	Cylinder bore diameter	57.2 (2.25)
	Pad length × width × thickness	125.6 × 52 × 11 (4.98 × 2.047 × 0.433)
	Rotor outer diameter × thickness	296 × 26 (11.65 × 1.024)
Rear brake	Brake model	AD9VA
	Cylinder bore diameter	34.93 (1.375)
	Pad length × width × thickness	83 × 33 × 8.5 (3.268 × 1.299 × 0.335)
	Rotor outer diameter × thickness	292 × 9 (11.50 × 0.354)
Master cylinder	Cylinder bore diameter	25.4 (1)
Control valve	Valve model	Electric brake force distribution
Brake booster	Booster model	Bosch
	Diaphragm diameter	280 (11)
Recommended brake fluid		DOT 3

Brake Pedal

INFOID:000000006967980



Brake pedal height (H) (from dash lower panel top surface)	CVT	190.7 - 202.7 mm (7.51 - 7.98 in)
	M/T	181.3 - 193.3 mm (7.14 - 7.61 in)
Brake pedal full stroke (S)	CVT	130 mm (5.12 in)
	M/T	130 mm (5.12 in)
Clearance between stopper bracket and threaded end of the stop lamp switch (C1) and ASCD cancel switch (C2)		0.74 - 1.96 mm (0.0291 - 0.0772 in)

Front Disc Brake

INFOID:000000006967978

Brake model	CLZ25VD	
Brake pad	Standard thickness (new)	11.0 mm (0.433 in)
	Wear limit thickness	2.0 mm (0.079 in)
Disc rotor	Standard thickness (new)	26.0 mm (1.024 in)
	Wear limit thickness	24.0 mm (0.945 in)
	Thickness variation (measured at 8 positions)	0.015 mm (0.0006 in)
	Maximum runout (with it attached to the vehicle)	0.040 mm (0.0016 in)

Rear Disc Brake

INFOID:000000006967979

Brake model	AD9VA	
Brake pad	Standard thickness (new)	8.5 mm (0.335 in)
	Wear limit thickness	1.0 mm (0.039 in)
Disc rotor	Standard thickness (new)	9.0 mm (0.354 in)
	Wear limit thickness	8.0 mm (0.315 in)
	Thickness variation (measured at 8 positions)	0.015 mm (0.0006 in)
	Maximum runout (with it attached to the vehicle)	0.05 mm (0.0020 in)

QUICK REFERENCE CHART: ALTIMA GCC

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Fluids and Lubricants

INFOID:000000006967977

Description			Capacity (Approximate)		
			Liter	US measure	Imp measure
Fuel		QR25DE	75.6	20 gal	16 5/8 gal
		VQ35DE	75.6	20 gal	16 5/8 gal
Engine oil (drain and refill)	With oil filter change	QR25DE	4.6	4 7/8 qt	4 qt
		VQ35DE	4.8	5 1/8 qt	4 1/4 qt
	Without oil filter change	QR25DE	4.3	4 1/2 qt	3 3/4 qt
		VQ35DE	4.5	4 3/4 qt	4 qt
Dry engine (Overhaul)		QR25DE	5.4	5 3/4 qt	4 3/4 qt
		VQ35DE	5.3	5 5/8 qt	4 5/8 qt
Engine coolant (with reservoir tank at MAX level)		QR25DE	7.7	8 1/8 qt	6 3/4 qt
		VQ35DE	9.0	9 1/2 qt	7 7/8 qt
CVT fluid	RE0F10A	QR25DE	7.3	7 3/4 qt	6 3/4 qt
	RE0F09B	VQ35DE	10.2	10 3/4 qt	9 qt
Manual transaxle fluid (MTF)			1.7	3 5/8 pt	3 pt
Power steering fluid (PSF)			1.0	1 1/8 qt	7/8 qt
Brake and clutch fluid			—	—	—
Multi-purpose grease			—	—	—
Windshield washer fluid			4.5 ℓ	4 3/4 qt	4 qt
Air conditioning system refrigerant			0.55 ± 0.025 kg	1.21 ± 0.055 lb	1.21 ± 0.055 lb
Air conditioning system oil			150 m ℓ	5.03 fl oz	5.3 fl oz