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NISSAN TITAN

MODEL A60 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	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	
	BR Brake System	
F BRAKES	PB Parking Brake System	
	BRC Brake Control System	
	ST Steering System	
	STC Steering Control System	
G STEERING	SB Seat Belt	
	SBC Seat Belt Control System	
H RESTRAINTS	SR SRS Airbag	
	SRC SRS Airbag Control System	
	VTL Ventilation System	
	HA Heater & Air Conditioning System	
I VENTILATION, HEATER & AIR CONDITIONER	HAC Heater & Air Conditioning Control System	
	INT Interior	
J BODY INTERIOR	IP Instrument Panel	
	SE Seat	
	ADP Automatic Drive Postioner	
	AP Adjustable Pedal	
	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	
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	
N DRIVER INFORMATION & MULTIMEDIA	SN Sonar System	
	AV Audio, Visual & Navigation System	
	CCS Cruise Control System	
O CRUISE CONTROL	MA Maintenance	
P MAINTENANCE		

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FOREWORD

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

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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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: TITAN

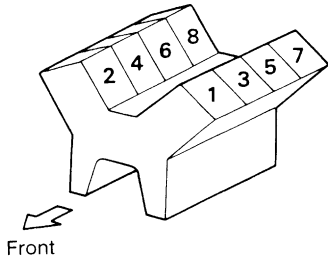
Engine Tune-up Data

INFOID:000000001711124

GENERAL SPECIFICATIONS

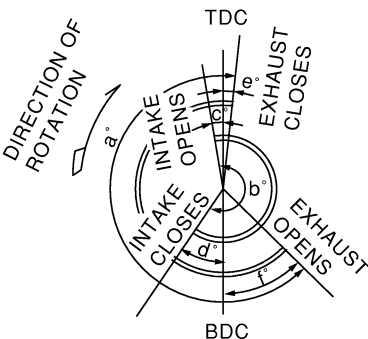
Cylinder arrangement		V-8
Displacement cm ³ (in ³)		5,552 (338.80)
Bore and stroke mm (in)		98 x 92 (3.86 x 3.62)
Valve arrangement		DOHC
Firing order		1-8-7-3-6-5-4-2
Number of piston rings	Compression	2
	Oil	1
Number of main bearings		5
Compression ratio		9.8:1
Compression pressure (kg/cm ² , psi)/rpm	kPa	
	Standard	1,520 (15.5, 220)/200
	Minimum	1,324 (13.5, 192)/200
Differential limit between cylinders		98 (1.0, 14)/200

Cylinder number



SEM957C

Valve timing



PBIC0187E

Unit: degree

a	b	c	d	e	f
244°	232°	-8°	60°	10°	54°

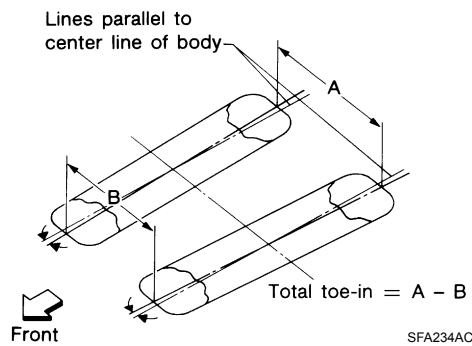
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2009

Front Wheel Alignment (Unladen*1)

INFOID:000000001711125

Drive type		2WD	4WD
Camber Degree minute (decimal degree)	Minimum	-0° 57' (-0.95°)	-0° 27' (-0.45°)
	Nominal	-0° 12' (-0.20°)	0° 18' (0.30°)
	Maximum	0° 33' (0.55°)	1° 03' (1.05°)
	Cross camber	0° 45' (0.75°) or less	0° 45' (0.75°) or less
Caster Degree minute (decimal degree)	Minimum	2° 15' (2.25°)	1° 27' (1.45°)
	Nominal	3° 0' (3.00°)	2° 12' (2.20°)
	Maximum	3° 45' (3.75°)	2° 57' (2.95°)
	Cross caster	0° 45' (0.75°) or less	0° 45' (0.75°) or less
Kingpin inclination (reference only) Degree minute (decimal degree)		13° 33' (13.55°)	13° 0' (13.00°)



Total toe-in	Distance (A - B)	Minimum	1.8 mm (0.07 in)	1.8 mm (0.07 in)
		Nominal	2.8 mm (0.11 in)	2.8 mm (0.11 in)
		Maximum	3.8 mm (0.15 in)	3.8 mm (0.15 in)
	Angle (left plus right) Degree minute (decimal degree)	Minimum	0° 3' (0.05°)	0° 3' (0.05°)
		Nominal	0° 5' (0.08°)	0° 5' (0.08°)
		Maximum	0° 7' (0.12°)	0° 7' (0.12°)
Wheel turning angle (full turn)	Inside Degree minute (decimal degree)	34° 30' - 38° 30' *2 (34.50° - 38.50°)	34° 56' - 38° 56' *4 (34.93° - 38.93°)	
	Outside Degree minute (decimal degree)	30° 58' - 34° 58' *3 (30.97° - 34.97°)	31° 01' - 35° 01' *5 (31.02° - 35.02°)	

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

*2: Target value 37° 30' (37.50°)

*3: Target value 33° 58' (33.97°)

*4: Target value 37° 56' (37.93°)

*5: Target value 34° 01' (34.02°)

General Specification (Rear)

INFOID:000000001711127

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

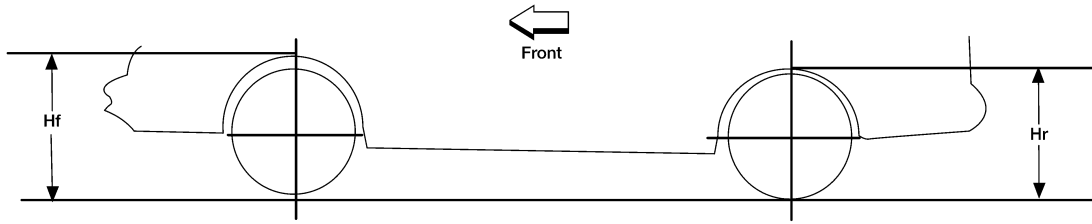
QUICK REFERENCE CHART: TITAN

2009

Wheelarch Height (Unladen*1)

INFOID:000000001711126

Unit: mm (in)



LEIA0085E

Drive type		2WD				4WD*2				4WD*3			
Wheel base		Short		Long		Short		Long		Short		Long	
Body		King Cab	Crew Cab	King Cab	Crew Cab	King Cab*2	Crew Cab*2	King Cab*2	Crew Cab*2	King Cab*2	Crew Cab*2	King Cab*2	Crew Cab*2
Front wheel arch height (Hf)	P265/70R18	912 (35.91)	914 (35.98)	912 (35.91)	914 (35.98)	949 (37.36)	951 (37.44)	949 (37.36)	951 (37.44)	949 (37.36)	951 (37.44)	949 (37.36)	951 (37.44)
	P275/70R18	922 (36.30)	925 (36.42)	922 (36.30)	925 (36.42)	960 (37.80)	962 (37.87)	959 (37.76)	962 (37.87)	960 (37.80)	962 (37.87)	959 (37.76)	962 (37.87)
	P275/60R20	917 (36.10)	919 (36.18)	917 (36.10)	920 (36.22)	955 (37.60)	957 (37.68)	954 (37.56)	957 (37.68)	955 (37.60)	957 (37.68)	954 (37.56)	957 (37.68)
Rear wheel arch height (Hr)	P265/70R18	952 (37.48)	954 (37.56)	950 (37.40)	951 (37.44)	991 (39.02)	994 (39.13)	989 (38.94)	991 (39.02)	991 (39.02)	993 (39.09)	989 (38.94)	991 (39.02)
	P275/70R18	962 (37.87)	965 (37.99)	960 (37.80)	962 (37.87)	1002 (39.45)	1004 (39.53)	1000 (39.37)	1002 (39.45)	1001 (39.41)	1004 (39.53)	1000 (39.37)	1002 (39.45)
	P275/60R20	957 (37.68)	959 (37.76)	955 (37.60)	956 (37.64)	996 (39.21)	999 (39.33)	995 (39.17)	996 (39.21)	996 (39.21)	998 (39.29)	995 (39.17)	996 (39.21)

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

*2: Without tow package.

*3: With tow package.

Brake Specification

INFOID:000000001711128

Unit: mm (in)

Front brake	Brake model	CLZ31VC
	Rotor outer diameter × thickness	350 × 30 (13.8 × 1.2)
	Pad Length × width × thickness	111.0 × 73.5 × 11.88 (4.73 × 2.894 × 0.374)
	Cylinder bore diameter (each)	51 (2.01)
Rear brake	Brake model	AD14VE
	Rotor outer diameter × thickness	320 × 14 (12.6 × 0.6)
	Pad Length × width × thickness	83.0 × 33.0 × 8.5 (3.268 × 1.299 × 0.335)
	Cylinder bore diameter	48 (1.89)
Control valve	Valve model	Electric brake force distribution
Brake booster	Booster model	C215T
	Diaphragm diameter	215 (8.46)

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Brake Pedal

INFOID:000000001711129

Brake pedal height (from dash panel top surface)	182.3 – 192.3 mm (7.18 – 7.57 in)
Depressed pedal height [under a force of 490 N (50 kg-f, 110 lb-f) with engine running]	More than 90.3 mm (3.55 in)
Clearance between stopper rubber and the threaded end of stop lamp switch and ASCD cancel switch	0.74 – 1.96 mm (0.029 – 0.077 in)
Pedal play	3 – 11 mm (0.12 – 0.43 in)

When equipped with adjustable pedal, the pedal must be in the forward most (closest to the floor) position for pedal height measurement.

Front Disc Brake

INFOID:000000001711130

Brake model	CLZ31VC	
Brake pad	Standard thickness (new)	11.88 mm (0.468 in)
	Repair limit thickness	1.0 mm (0.039 in)
Disc rotor	Standard thickness (new)	26.0 mm (1.024 in)
	Repair limit thickness	24.5 mm (0.965 in)
	Maximum uneven wear (measured at 8 positions)	0.015mm (0.0006 in)
	Runout limit (with it attached to the vehicle)	0.03 mm (0.001 in)

Rear Disc Brake

INFOID:000000001711131

Brake model	AD14VE	
Brake pad	Standard thickness (new)	12.13 mm (0.478 in)
	Repair limit thickness	1.0 mm (0.039 in)
Disc rotor	Standard thickness (new)	14.0 mm (0.551 in)
	Repair limit thickness	12.0 mm (0.472 in)
	Maximum uneven wear (measured at 8 positions)	0.015 mm (0.0006 in)
	Runout limit (with it attached to the vehicle)	0.07 mm (0.003 in)

Fluids and Lubricants

INFOID:000000001711132

Description		Capacity (Approximate)		
		Metric	US measure	Imp measure
Fuel	Short wheelbase	105.8 ℓ	28 gal	23 1/4 gal
	Long wheelbase	140 ℓ	37 gal	30 gal
Engine oil Drain and refill	With oil filter change	6.2 ℓ	6 1/2 qt	5 1/2 qt
	Without oil filter change	5.9 ℓ	6 1/4 qt	5 1/4 qt
Dry engine (engine overhaul)		7.6 ℓ	8 qt	6 3/4 qt
Cooling system	With reservoir at MAX level	12.2 ℓ	3 1/4 gal	2 5/8 gal
Automatic transmission fluid (ATF)		10.6 ℓ	11 1/4 qt	9 3/8 qt
Rear final drive oil		2.01 ℓ	4 1/4 pt	3 1/2 pt
Transfer fluid		2.0 ℓ	2 1/8 qt	1 3/4 qt
Front final drive oil		1.6 ℓ	3 3/8 pt	2 7/8 pt

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2009

Description	Capacity (Approximate)		
	Metric	US measure	Imp measure
Power steering fluid (PSF)	1.0 ℓ	2 1/8 pt	1 3/4 pt
Brake fluid	—	—	—
Multi-purpose grease	—	—	—
Brake grease	—	—	—
Windshield washer fluid	4.5 ℓ	1 1/4 gal	1 gal
Air conditioning system refrigerant	0.70 ± 0.05 kg	1.54 ± 0.11 lb	1.54 ± 0.11 lb
Air conditioning system oil	200 m ℓ	6.8 fl oz	7.0 fl oz