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NISSAN FRONTIER

MODEL D40 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
	HBC Hybrid Control System
	HBB Hybrid Battery System
C HYBRID	CL Clutch
	TM Transaxle & Transmission
	DLN Driveline
	FAX Front Axle
	RAX Rear Axle
D TRANSMISSION & DRIVE-LINE	FSU Front Suspension
	RSU Rear Suspension
	SCS Suspension Control System
	WT Road Wheels & Tires
	BR Brake System
	PB Parking Brake System
E SUSPENSION	BRC Brake Control System
	ST Steering System
	STC Steering Control System
F BRAKES	SB Seat Belt
	SBC Seat Belt Control System
	SR SRS Airbag
	SRC SRS Airbag Control System
G STEERING	VTL Ventilation System
	HA Heater & Air Conditioning System
	HAC Heater & Air Conditioning Control System
H RESTRAINTS	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
I VENTILATION, HEATER & AIR CONDITIONER	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
J BODY INTERIOR	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
K BODY EXTERIOR, DOORS, ROOF & VEHICLE SECURITY	
L DRIVER CONTROLS	
M ELECTRICAL & POWER CONTROL	
N DRIVER INFORMATION & MULTIMEDIA	
O CRUISE CONTROL	
P MAINTENANCE	

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FOREWORD

This manual contains maintenance and repair procedure for the 2008 NISSAN FRONTIER.

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:** _____

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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DATE: _____ YOUR NAME: _____ POSITION: _____

DEALER: _____ DEALER NO.: _____ ADDRESS: _____

CITY: _____ STATE/PROV./COUNTRY: _____ ZIP/POSTAL CODE: _____

QUICK REFERENCE CHART: FRONTIER

Engine Tune-up Data: QR25DE

ne INFOID:000000003352350

GENERAL SPECIFICATIONS

Cylinder arrangement		In-line 4
Displacement	cm ³ (cu in)	2,488 (151.82)
Bore and stroke	mm (in)	89.0 x 100.0 (3.504 x 3.937)
Valve arrangement		DOHC
Firing order		1-3-4-2
Number of piston rings	Compression	2
	Oil	1
Compression ratio		9.5
Compression pressure kPa (kg/cm ² , psi) / 250 rpm	Standard	1,304 (13.3, 189)
	Minimum	1,108 (11.3, 161)
	Differential limit between cylinders	100 (1.0, 14)

SPARK PLUG

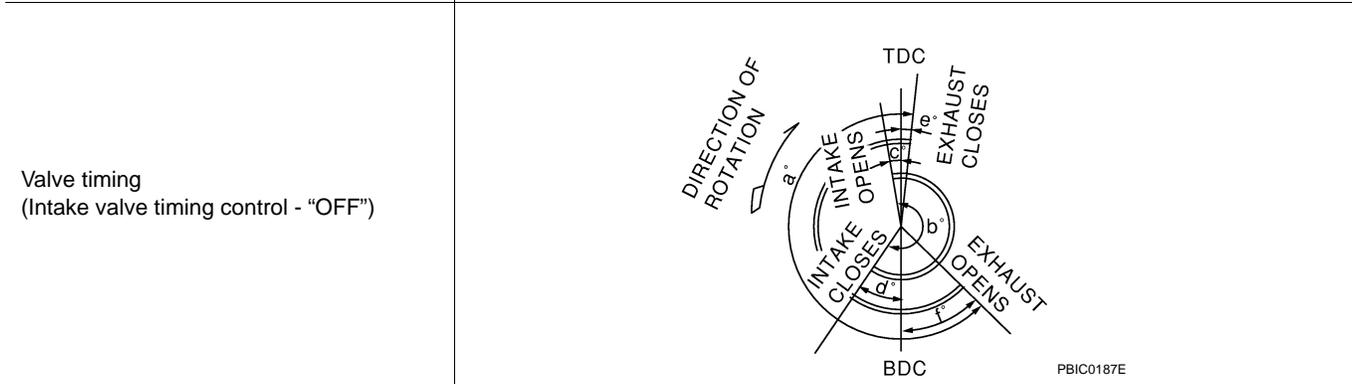
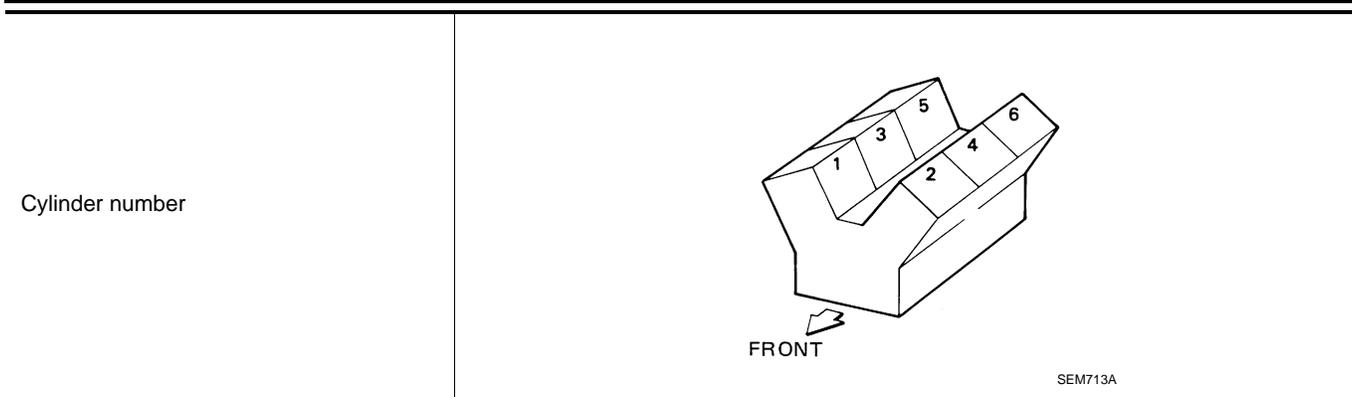
Make	NGK
Standard type	PLZKAR6A-11
Gap (nominal)	1.1 mm (0.043 in)

Engine Tune-up Data: VQ40DE

INFOID:000000003352349

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)



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)

Front Wheel Alignment (Unladen*1)*6

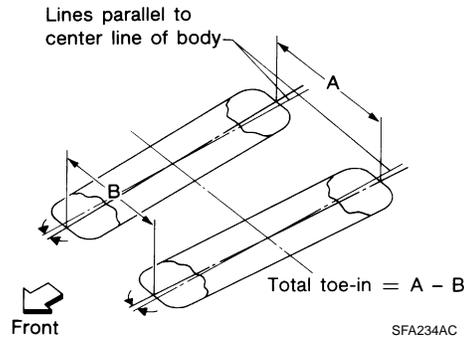
INFOID:000000003352348

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°)

QUICK REFERENCE CHART: FRONTIER

2008

Drive type	2WD	4WD
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Total toe-in	Distance (A - B)	2.1 mm (0.08 in)	2.1 mm (0.08 in)
		3.1 mm (0.12 in)	3.1 mm (0.12 in)
		4.1 mm (0.16 in)	4.1 mm (0.16 in)
	Angle (left wheel or right wheel) Degree minute (Decimal degree)	0° 5' (0.08°)	0° 5' (0.08°)
		0° 7' (0.12°)	0° 7' (0.12°)
		0° 9' (0.15°)	0° 9' (0.15°)
Wheel turning angle (full turn)	Inside Degree minute (Decimal degree)	33° 26' - 35° 26' *2 (33.43° - 35.43°)	33° 36' - 35° 36' *4 (33.60° - 35.60°)
	Outside Degree minute (Decimal degree)	29° 22' - 31° 22' *3 (29.37° - 31.37°)	29° 44' - 31° 44' *5 (29.73° - 31.73°)

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

*2: Target value 35° 26' (35.43°)

*3: Target value 31° 22' (31.37°)

*4: Target value 35° 36' (35.60°)

*5: Target value 31° 44' (31.73°)

*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 Specification

INFOID:000000003352346

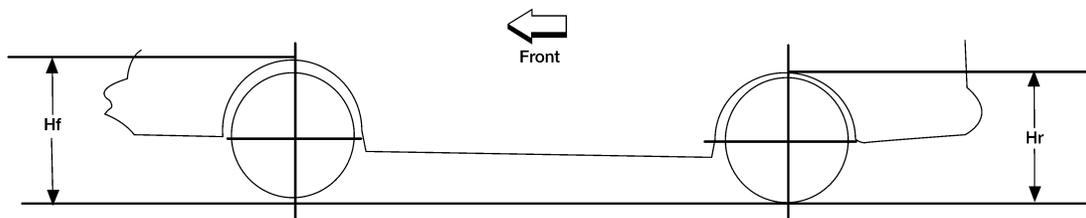
Suspension type	Rigid axle with semi-elliptic leaf springs
Shock absorber type	Double-acting hydraulic

Wheelarch Height (Unladen*1)

INFOID:000000003352347

King Cab

Unit: mm (in)



LEIA0085E

Engine type	QR25DE	VQ40DE					
Drive type	2WD	2WD			4WD		
Applied model	XE	SE	OR	LE	SE	OR	LE

QUICK REFERENCE CHART: FRONTIER

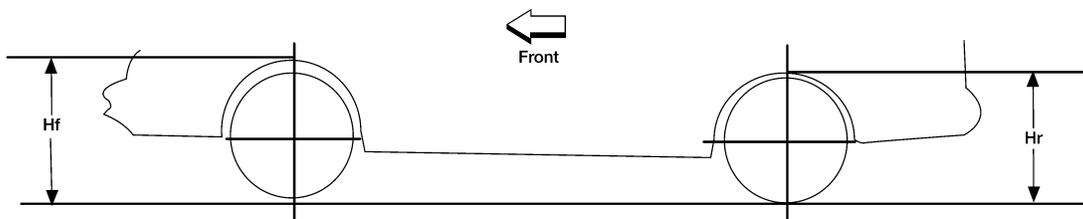
2008

Tire size	235/75R15	265/70R16	265/75R16	265/65R17	265/70R16	265/75R16	265/65R17
Front wheelarch height (Hf)	866 (34.09)	868 (34.17)	880 (34.65)	869 (34.21)	880 (34.65)	892 (35.12)	881 (34.68)
Rear wheelarch height (Hr)	886 (34.88)	894 (35.20)	905 (35.63)	895 (35.24)	903 (35.55)	915 (36.02)	904 (35.59)

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

Crew Cab

Unit: mm (in)



LEIA0085E

Engine type	VQ40DE					
Drive type	2WD			4WD		
Applied model	SE	OR	LE	SE	OR	LE
Tire size	265/70R16	265/75R16	265/65R17	265/70R16	265/75R16	265/65R17
Front wheelarch height (Hf)	868 (34.17)	880 (34.65)	869 (34.21)	880 (34.65)	892 (35.12)	881 (34.68)
Rear wheelarch height (Hr)	891 (35.08)	903 (35.55)	892 (35.12)	901 (35.47)	913 (35.94)	902 (35.51)

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

Brake Specification

INFOID:000000003352344

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 × 10.0 (4.73 × 2.894 × 0.394)
	Cylinder bore diameter (each)	46.4 (1.83)
Rear brake	Brake model	CLZ14VB
	Rotor outer diameter × thickness	308 × 18 (12.126 × 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)

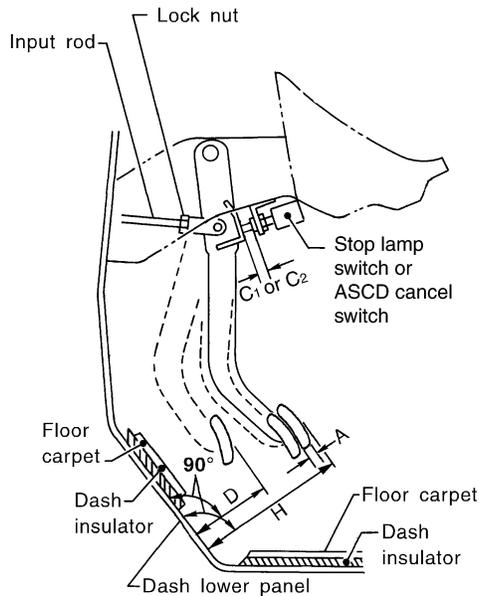
QUICK REFERENCE CHART: FRONTIER

2008

Brake Pedal

INFOID:000000003352345

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, 110 lb) 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:000000003352342

Unit: mm (in)

Brake model	CLZ33VB	
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:000000003352343

Unit: mm (in)

Brake model	CLZ14VB	
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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2008

Fluids and Lubricants

INFOID:000000003352341

QR25DE

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	4.9 ℓ	5 1/8 qt	4 3/8 qt
	Without oil filter change	4.6 ℓ	4 7/8 qt	4 qt
Dry engine (engine overhaul)		5.0 ℓ	5 1/4 qt	4 3/8 qt
Cooling system	With reservoir at MAX level	9.4 ℓ	2 1/2 gal	2 1/8 gal
Automatic transmission fluid (ATF)		10.3 ℓ	10 7/8 qt	9 1/8 qt
Manual transmission fluid (MTF) (5 M/T)		2.89 ℓ	6 1/8 pt	5 1/8 pt
Rear final drive oil	C200	1.6 ℓ	3 3/8 pt	2 7/8 pt
Power steering fluid (PSF)		1.0 ℓ	2 1/8 pt	1 3/4 pt
Brake and clutch fluids		—	—	—
Brake grease		—	—	—
Brake pad plate grease		—	—	—
Multi-purpose 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		180 m ℓ	6.1 fl oz	6.3 fl oz

VQ40DE

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) (6 M/T)	2WD	3.98 ℓ	8 3/8 pt	7 pt
	4WD	4.18 ℓ	8 7/8 pt	7 3/8 pt
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		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		—	—	—

QUICK REFERENCE CHART: FRONTIER

2008

Description	Capacity (Approximate)		
	Metric	US measure	Imp measure
Brake grease	—	—	—
Brake pad plate grease	—	—	—
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