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K BODY EXTERIOR, DOORS, ROOF & VEHICLE SECURITY    Record   First   Fi			ADP Autodrive Positioner System
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BRM Body Repair Manual  L DRIVER CONTROLS  MIR Mirrors  EXL Exterior Lighting System  INL Interior Lighting System  WW Wiper & Washer  DEF Defogger  HRN Horn  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.  BRM Mirrors  EXL Exterior Lighting System  WW Wiper & Washer  DEF Defogger  HRN Horn  PWO Power Outlet  BCS Body Control System  LAN LAN System  PCS Power Control 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			
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EXL Exterior Lighting System  INL Interior Lighting System  WW Wiper & Washer  DEF Defogger  HRN Horn  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.  EXL Exterior Lighting System  INL Interior Lighting System  PWO Power Outlet  CONTROL  BCS Body Control 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  O CRUISE CONTROL  CCS Cruise Control System			
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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.





#### 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) 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: \_\_\_ \_\_\_\_\_ STATE/PROV./COUNTRY: \_\_\_\_\_ ZIP/POSTAL CODE: \_\_\_\_

## QUICK REFERENCE CHART: FRONTIER

Engine Tune-up Data: QR25DE

#### ne INFOID:0000000003352350

#### **GENERAL SPECIFICATIONS**

Cylinder arrangement		In-line 4
Displacement	cm <sup>3</sup> (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 pieton rings	Compression	2
Number of piston rings	Oil	1
Compression ratio		9.5
Standard		1,304 (13.3, 189)
Compression pressure kPa (kg/cm <sup>2</sup> , psi) / 250 rpm	Minimum	1,108 (11.3, 161)
κι α (κg/οιπ , ροι) / 200 ιριπ	Differential limit between cylinders	100 (1.0, 14)

#### SPARK PLUG

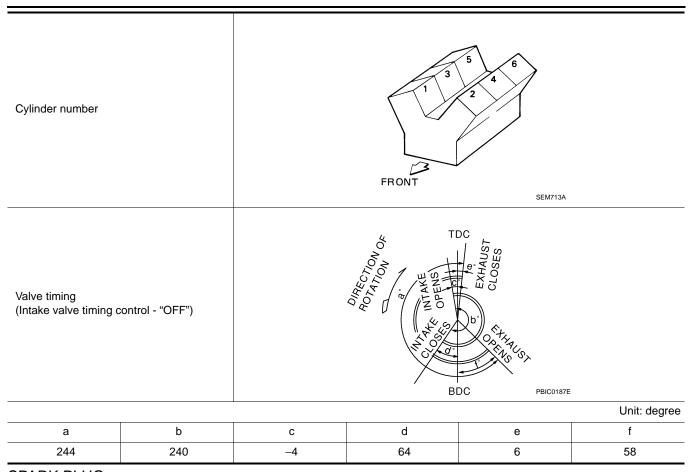
Make	NGK
Standard type	PLZKAR6A-11
Gap (nominal)	1.1 mm (0.043 in)

## Engine Tune-up Data: VQ40DE

INFOID:0000000003352349

#### **GENERAL SPECIFICATIONS**

Cylinder arrangement	V-6	
Displacement cm <sup>3</sup> (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 pieton rings	Compression	2
Number of piston rings	Oil	1
Number of main bearings	,	4
Compression ratio		9.7
	Standard	1,275 (13.0, 185)
Compression pressure (kg/cm <sup>2</sup> , psi)/300 rpm	kPa Minimum	981 (10.0, 142)
(kg/oiii , poi//ood ipiii	Differential limit	between cylinders 98 (1.0, 14)



#### SPARK PLUG

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

# Front Wheel Alignment (Unladen\*1)\*6

INFOID:0000000003352348

Drive type	2WD	4WD		
	Minimum	-0° 30′ (-0.50°)	-0° 15′ (-0.25°)	
Camber	Nominal	0° 15′ (0.25°)	0° 30′ (0.50°)	
Degree minute (decimal degree)	Maximum	1° 0′ (1.00°)	1° 15′ (1.25°)	
	Cross camber	0° 45′ (0.75°) or less	0° 45′ (0.75°) or less	
	Minimum	2° 15′ (2.25°)	2° 0′ (2.00°)	
Caster	Nominal	3° 0′ (3.00°)	2° 45′ (2.75°)	
Degree minute (decimal degree)	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°)	

				200	
Drive type			2WD	4WD	
		Lines parallel t center line of l			
		B			
		Front	Total toe-in = A - B  SFA234AC		
			2.1 mm (0.08 in)	2.1 mm (0.08 in)	
	Distance (A – I	В)	3.1 mm (0.12 in)	3.1 mm (0.12 in)	
Total too in			4.1 mm (0.16 in)	4.1 mm (0.16 in)	
Total toe-in			0° 5′ (0.08°)	0° 5′ (0.08°)	
		eel or right wheel) • (Decimal degree)	0° 7′ (0.12°)	0° 7′ (0.12°)	
	Degree minute	(Decimal degree)	0° 9′ (0.15°)	0° 9′ (0.15°)	
Mb a al 4 mas	and (full turn)	Inside Degree minute (Decimal degree)	33° 26′ – 35° 26′ * <sup>2</sup> (33.43° – 35.43°)	33° 36′ – 35° 36′ * <sup>4</sup> (33.60° – 35.60°)	
Wheel turning angle (full turn)		Outside Degree minute (Decimal degree)	29° 22′ – 31° 22′ * <sup>3</sup> (29.37° – 31.37°)	29° 44′ – 31° 44′ * <sup>5</sup> (29.73° – 31.73°)	

<sup>\*1:</sup> 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°)

## Rear Suspension Specification

INFOID:0000000003352346

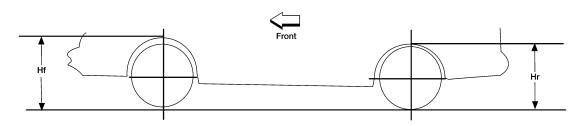
Suspension type	Rigid axle with semi-elliptic leaf springs
Shock absorber type	Double-acting hydraulic

# Wheelarch Height (Unladen\*1)

INFOID:0000000003352347

King Cab

Unit: mm (in)



LEIA0085E

Engine type	QR25DE			VQ4	0DE		
Drive type	2WD		2WD			4WD	
Applied model	XE	SE	OR	LE	SE	OR	LE

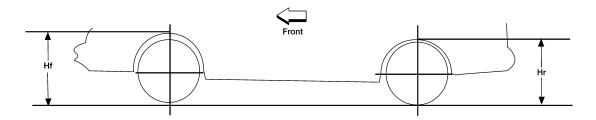
<sup>\*6:</sup> Some vehicles may be equipped with straight (non-adjustable) lower link bolts and washers. In order to adjust camber and caster on these vehicles, first replace the lower link bolts and washers with adjustable (cam) bolts and washers.

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

<sup>\*1:</sup> 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)

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

## **Brake Specification**

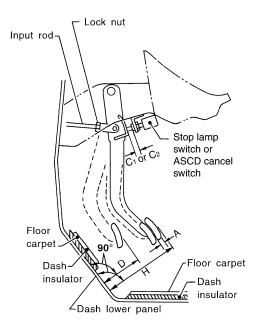
INFOID:0000000003352344

Unit: mm (in)

Front brake	Brake model	CLZ33VB
	Rotor outer diameter × thickness	296 × 28 (11.654 × 1.102)
	Pad Length $\times$ width $\times$ 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)

Brake Pedal

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

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

Unit: mm (in)

		Orne min (iii)
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)
DISC TOTOI	Maximum uneven wear (measured at 8 positions)	0.015 (0.0006)
	Runout limit (with it attached to the vehicle)	0.05 (0.0020)

#### Fluids and Lubricants

#### INFOID:0000000003352341

#### QR25DE

Description		Capacity (Approximate)		
		Metric	US measure	Imp measure
Fuel		80 <i>l</i>	21 1/8 gal	17 5/8 gal
Engine oil	With oil filter change	4.9 ℓ	5 1/8 qt	4 3/8 qt
Drain and refill	Without oil filter change	4.6 <i>l</i>	4 7/8 qt	4 qt
Dry engine (engine ove	erhaul)	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 flo (5 M/T)	uid (MTF)	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 (P	SF)	1.0 ℓ	2 1/8 pt	1 3/4 pt
Brake and clutch fluids		_	_	_
Brake grease		_	_	_
Brake pad plate grease	)	_	_	_
Multi-purpose grease		<u> </u>	_	_
Windshield washer fluid	d	4.5 ℓ	1 1/4 gal	1 gal
Air conditioning system	refrigerant	$0.70 \pm 0.05 \text{ kg}$	1.54 ± 0.11 lb	1.54 ± 0.11 lb
Air conditioning system	n oil	180 m ℓ	6.1 fl oz	6.3 fl oz

#### VQ40DE

Description Fuel		Capacity (Approximate)		
		Metric	US measure	Imp measure
		80 <i>l</i>	21 1/8 gal	17 5/8 gal
Engine oil	With oil filter change	5.1 ℓ	5 3/8 qt	4 1/2 qt
Engine oil Drain and refill	Without oil filter change	4.8 ℓ	5 1/8 qt	4 1/4 qt
Dry engine (engine overhaul)		6.3 <i>l</i>	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	2WD	3.98 ℓ	8 3/8 pt	7 pt
(MTF) (6 M/T)	4WD	4.18 <i>l</i>	8 7/8 pt	7 3/8 pt
Door final drive all	C200	1.6 ℓ	3 3/8 pt	2 7/8 pt
Rear final drive oil	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		_	_	_

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