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QUICK REFERENCE INDEX

**NISSAN
FRONTIER**
MODEL D22 SERIES

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	EC Engine Control System
	FL Fuel System
	EX Exhaust System
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FOREWORD

This manual contains maintenance and repair procedures for the 2003 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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Technical Publications Department
• Gardena, California



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SERVICE MANUAL: Model: _____ **Year:** _____

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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

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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: FRONTIER EQUIPPED WITH KA24DE ENGINE

2003

QUICK REFERENCE CHART: FRONTIER EQUIPPED WITH KA24DE ENGINE

PFP:00027

Engine Tune-Up Data

ELS0000U

Engine		KA24DE
Classification		Gasoline
Cylinder arrangement		In-line 4
Displacement		2,389 cm ³ (145.78 cu in)
Bore and stroke		89 x 96 mm (3.50 x 3.78 in)
Valve arrangement		DOHC
Firing order		1-3-4-2
Number of piston rings	Compression	2
	Oil	1
Number of main bearings		5
Compression ratio		9.2
Cap relief pressure	Standard kPa (kg/cm ² , psi)	78 - 98 (0.8 - 1.0, 11 - 14)
	Limit kPa (kg/cm ² , psi)	59 (0.6, 9)
Leakage test pressure kPa (kg/cm ² , psi)		157 (1.6, 23)
Oil drain plug tightening specification		29.4 - 39.2 N·m (3.0 - 4.0 kg·m, 21.69 - 28.91 lb-ft)

Idle Speed and Ignition Timing

Base idle speed*1 rpm	No-load*3 (in "P" or "N" position)	750±50
Target idle speed*2 rpm	No-load*3 (in "P" or "N" position)	800±50
Air conditioner: ON rpm	In "P" or "N" position	875 or more
Ignition timing*1	In "P" or "N" position	20°±2° BTDC

*1: Throttle position sensor harness connector disconnected or using CONSULT-II "WORK SUPPORT" mode

*2: Throttle position sensor harness connector connected

*3: Under the following conditions:

- Air conditioner switch: OFF
- Electrical load: OFF (Lights, heater fan & rear window defogger)
- Steering wheel: Kept in straight-ahead position

Drive Belt Deflection and Tension

	Deflection adjustment Unit: mm (in)			Tension adjustment *1 Unit: N (kg, lb)		
	Used belt		New belt	Used belt		New belt
	Limit	After adjustment		Limit	After adjustment	
Generator	17 (0.67)	10 - 12 (0.39 - 0.47)	8 - 10 (0.31 - 0.39)	222.4 (22.7, 50)	355.8 - 444.8 (36.3 - 45.4, 80 - 100)	489.3 - 578.2 (49.9 - 59.0, 110 - 130)
Air conditioner compressor	16 (0.63)	10 - 12 (0.39 - 0.47)	8 - 10 (0.31 - 0.39)	200.2 (20.4, 45)	355.8 - 444.8 (36.3 - 45.4, 80 - 100)	489.3 - 578.2 (49.9 - 59.0, 110 - 130)
Power steering oil pump	17 (0.67)	10 - 13 (0.39 - 0.51)	8 - 10 (0.31 - 0.39)	222.4 (22.7, 50)	355.8 - 444.8 (36.3 - 45.4, 80 - 100)	489.3 - 578.2 (49.9 - 59.0, 110 - 130)
Applied pushing force	98 N (10 kg, 22 lb)			—		

*1: If belt tension gauge cannot be installed at check point shown, check belt tension at a different location on the belt.

QUICK REFERENCE CHART: FRONTIER EQUIPPED WITH KA24DE ENGINE

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Spark Plugs (Double Platinum Tipped)

Make	NGK
Standard type	PFR5G-11
Cold type	PFR6G-11
Plug gap	Nominal 1.1 mm (0.043 in)
Spark plug tightening specification	20 - 29 N·m (2.0 - 3.0 kg·m, 14 - 22 ft·lb)

Wheel Bearing (Front)

ELS000QB

Wheel bearing axial end play	mm (in)	0 (0)
Wheel bearing lock nut	Tightening torque	N·m (kg·m, ft·lb)
	Return angle	degree
Wheel bearing starting torque	At wheel hub bolt	
	With new grease seal	N (kg, lb)
	With used grease seal	N (kg, lb)
		34 - 39 (3.5 - 4.0, 25 - 29)
		45° - 60°
		9.8 - 28.4 (1.0 - 2.9, 2.2 - 6.4)
		9.8 - 23.5 (1.0 - 2.4, 2.2 - 5.3)

Clutch Pedal

ELS000QC

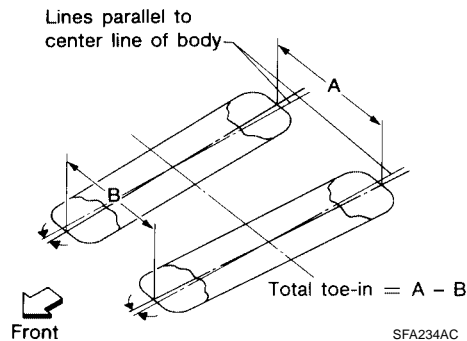
Unit: mm (in)

Clearance between pedal stopper bracket and clutch interlock switch (with clutch pedal fully depressed.)	0.1 - 1.0 (0.004 - 0.039)
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*: Measured from surface of dash lower panel to pedal pad.

Front Wheel Alignment (Unladen*1)

ELS000Q7



Camber Degree minute (Decimal degree)	Minimum	-0°05' (-0.08°)
	Nominal	0°25' (0.42°)
	Maximum	0°55' (0.92°)
	Left and right difference	45' (0.75°) or less
Caster Degree minute (Decimal degree)	Minimum	0°06' (0.10°)
	Nominal	0°36' (0.60°)
	Maximum	1°06' (1.10°)
	Left and right difference	45' (0.75°) or less
Kingpin inclination Degree minute (Decimal degree)	Minimum	8°35' (8.58°)
	Nominal	9°05' (9.08°)
	Maximum	9°35' (9.58°)

QUICK REFERENCE CHART: FRONTIER EQUIPPED WITH KA24DE ENGINE

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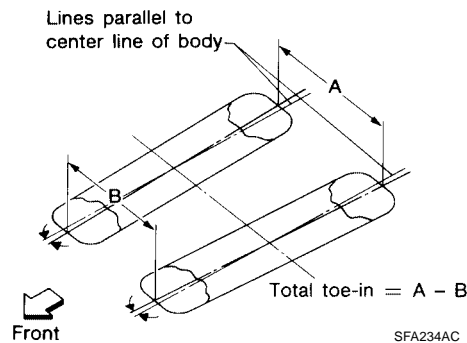
Total toe-in	Distance (A - B) mm (in)		Radial tire	Minimum	2 (0.08)
				Nominal	3 (0.12)
				Maximum	4 (0.16)
	Angle (left plus right) Degree minute (Decimal degree)		Radial tire	Minimum	11' (0.18°)
				Nominal	16' (0.27°)
				Maximum	20' (0.33°)
Wheel turning angle	Full turn*2	Inside Degree minute (Decimal degree)	P225/70R15		
			Minimum	31°48' (31.80°)	
			Nominal	33°48' (33.80°)	
		Outside Degree minute (Decimal degree)	Maximum	33°48' (33.80°)	
			Minimum	28°36' (28.60°)	
			Nominal	30°36' (30.60°)	
		Maximum	30°36' (30.60°)		
Vehicle posture	Lower arm pivot height mm (in)			115 - 119 (4.53 - 4.69)	

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

*2: Wheel turning force (at circumference of steering wheel) of 98 to 147 N (10 to 15 kg, 22 to 33 lb) with engine idle.

Rear Wheel Alignment (Unladen*)

ELS000Q8



Camber Degree minute (decimal degree)	Minimum		-1°45' (-1.75°)	
	Nominal		-1°00' (-1.00°)	
	Maximum		-0°15' (-0.25°)	
Total toe-in	Distance (A - B) mm (in)		Minimum	-3 (-0.12)
			Nominal	1 (0.04)
			Maximum	5 (0.20)
	Angle (left plus right) Degree minute (decimal degree)		Minimum	-16' (-0.27°)
			Nominal	5'30" (0.09°)
			Maximum	26' (0.43°)

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

Brake

ELS000P4

Unit: mm (in)

Front brake	Brake model	CL28VD
	Cylinder bore diameter × number of pistons	42.8 (1.685) x 2
	Pad Length × width × thickness	146.6 x 48.5 x 10 (5.77 x 1.909 x 0.39)
	Rotor outer diameter × thickness	260 x 26 (10.2 x 1.02)

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Rear brake	Brake model	LT26B
	Cylinder bore diameter	22.22 (7/8)
	Lining length × width × thickness	249.6 x 40 x 5.5 (9.83 x 1.57 x 0.217)
	Drum inner diameter	260.0 (10.23)
Master cylinder	Bore diameter	25.40 (1)
Brake booster	Booster model	M195T
	Diaphragm diameter	Pri: 205 (8.07) Sec: 180 (7.09)
Recommended brake fluid		Genuine NISSAN Super Heavy Duty Brake Fluid or equivalent DOT 3 (US FMVSS No. 116)

Disc Brake - Repair Limits

Unit: mm (in)

Brake model			CL28VD
Pad	Wear limit minimum thickness	2.0 (0.079)	
	Standard pad thickness	10 (0.39)	
Rotor repair limit	Minimum thickness	24.0 (0.945)	
Rotor runout	Maximum	0.07 (0.0028)	
Rotor thickness variation	Maximum	0.02 (0.0008)	

Drum Brake - Repair Limits

Unit: mm (in)

Brake model			LT26B
Lining wear limit	Minimum thickness	1.5 (0.059)	
	Standard thickness	5.5 (0.217)	
Drum repair limit	Maximum inner diameter	261.5 (10.30)	
	Out-of-round limit	0.03 (0.0012)	

Refill Capacities

ELS000PA

Description			Capacity (Approximate)		
			US measure	Imp measure	Liter
Engine oil	Drain and Refill	With oil filter	3 3/4 qt	3 1/8 qt	3.5
		Without oil filter	3 1/2 qt	2 7/8 qt	3.3
	Dry engine (Engine overhaul)		4 1/2 qt	3 3/4 qt	4.1
Cooling system (without reservoir)		M/T	6 7/8 qt	5 3/4 qt	6.5
		A/T	6 5/8 qt	5 1/2 qt	6.3
Cooling system reservoir		7/8 qt	3/4 qt	0.8	
Manual transmission gear oil (FS5W71C)		2 1/8 qt	1 3/4 qt	2.0	
Differential carrier gear oil		C200	1 3/8 qt	1 1/8 qt	1.3
Automatic transmission fluid		8 3/8 qt	7 qt	7.9	
Power steering fluid		30.4-33.8 fl oz	31.7-35.2 fl oz	0.9-1.0	
Air conditioning system refrigerant HFC 134a (R-134a)		1.32 - 1.54 lb	1.32 - 1.54 lb	60 - 70 kg	
Air conditioning system compressor oil Genuine NISSAN A/C System Lubricant Type R or equivalent		6.8 fl oz	7.0 fl oz	200 ml	

QUICK REFERENCE CHART: FRONTIER EQUIPPED WITH VG33E/ VG33ER ENGINES

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QUICK REFERENCE CHART: FRONTIER EQUIPPED WITH VG33E/VG33ER ENGINES

PFP:00027

Engine Tune-Up Data

ELS0000P

Engine		VG33E/VG33ER
Classification		Gasoline
Cylinder arrangement		V-6
Displacement		3,275 cm ³ (199.84 cu in)
Bore and stroke		91.5 x 83 mm (3.602 x 3.27 in)
Valve arrangement		OHC
Firing order		1-2-3-4-5-6
Number of piston rings	Compression	2
	Oil	1
Number of main bearings		4
Compression ratio	VG33E	8.9:1
	VG33ER	8.3:1
Cap relief pressure	Standard kPa (kg/cm ² , psi)	78 - 98 (0.8 - 1.0, 11 - 14)
	Limit kPa (kg/cm ² , psi)	59 (0.6, 9)
Leakage test pressure kPa (kg/cm ² , psi)		157 (1.6, 23)
Oil drain plug tightening specification		29 - 39 N·m (3.0 - 4.0 kg-m, 22 - 29 lb-ft)

Idle Speed and Ignition Timing - VG33E

Base idle speed*1	No-load*4 (in "P" or N" position)	700±50 rpm
Target idle speed*2	No-load*4 (in "P" or N" position)	750±50 rpm
Air conditioner: ON	In "P" or N" position	850 rpm or more
Ignition timing*3	In "P" or N" position	10°±2° BTDC
Throttle position sensor idle position		0.15 - 0.85V

*1: Throttle position sensor harness connector disconnected or using CONSULT-II "WORK SUPPORT" mode

*2: Throttle position sensor harness connector connected

*3: Throttle position sensor harness connector disconnected

*4: Under the following conditions:

- Air conditioner switch: OFF
- Electric load: OFF (Lights, heater fan & rear window defogger)
- Steering wheel: Kept in straight-ahead position

Idle Speed and Ignition Timing - VG33ER

Base idle speed*1	No-load*4 (in "P" or N" position)	700±50 rpm
Target idle speed*2	No-load*4 (in "P" or N" position)	750±50 rpm
Air conditioner: ON	In "P" or N" position	850 rpm or more
Ignition timing*3	In "P" or N" position	10°±2° BTDC
Throttle position sensor idle position		0.15 - 0.85V

*1: Throttle position sensor harness connector disconnected or using CONSULT-II "WORK SUPPORT" mode

*2: Throttle position sensor harness connector connected

*3: Throttle position sensor harness connector disconnected

*4: Under the following conditions:

- Air conditioner switch: OFF
- Electric load: OFF (Lights, heater fan & rear window defogger)
- Steering wheel: Kept in straight-ahead position

QUICK REFERENCE CHART: FRONTIER EQUIPPED WITH VG33E/ VG33ER ENGINES

2003

Drive Belt Deflection and Tension

	Deflection adjustment Unit: mm (in)			Tension adjustment *1 Unit: N (kg, lb)		
	Used belt		New belt	Used belt		New belt
	Limit	After adjustment		Limit	After adjustment	
Generator	11 (0.43)	7 - 8 (0.24 - 0.31)	6 - 7 (0.24 - 0.28)	226 (23, 51)	554.1 - 642.4 (56.5 - 65.5, 124.6 - 144.4)	671.8 - 760.0 (68.5 - 77.5, 151.0 - 170.9)
Air conditioner compressor - VG33E	18 (0.71)	12 - 13 (0.47 - 0.51)	10.5 - 11.5 (0.413 - 0.453)	196 (20, 44)	495.3 - 583.5 (50.5 - 59.5, 111.4 - 131.2)	603.1 - 691.4 (61.5 - 70.5, 135.6 - 155.5)
Air conditioner compressor and supercharger - VG33ER	16.5 (0.65)	9.5 - 10.5 (0.374 - 0.413)	8.5-9.5 (0.33 - 0.37)	294 (30, 66)	730 - 818 (75.5 - 83.5, 166.5 - 184.1)	838 - 926 (85.5 - 94.5, 188.5 - 208.4)
Power steering oil pump	15 (0.59)	9.5 - 10.5 (0.374 - 0.413)	8 - 9 (0.31 - 0.35)	275 (28, 62)	554.1 - 642.4 (56.5 - 65.5, 124.6 - 144.4)	671.8 - 760.0 (68.5 - 77.5, 151.0 - 170.9)
Applied pushing force	98 N (10 kg, 22 lb)			—		

*1: If belt tension gauge cannot be installed at check point shown, check belt tension at a different location on the belt.

Spark plug (VG33E):

Description	NGK (Double Platinum Tipped)
Hot type	PFR4G-11
Standard type	PFR5G-11
Cold type	PFR6G-11
Plug gap	Nominal 1.1 mm (0.043 in)
Spark plug tightening specification	20 - 29 N-m (2.0 - 3.0 kg-m, 14 - 22 ft-lb)

Spark plug (VG33ER):

Description	NGK (Double Platinum Tipped)
Hot type	PFR5G-11
Standard type	PFR6G-11
Cold type	PFR7G-11
Plug gap	Nominal 1.1 mm (0.043 in)
Spark plug tightening specification	20 - 29 N-m (2.0 - 3.0 kg-m, 14 - 22 ft-lb)

Wheel Bearing (Front) 2WD MODELS

ELS000QD

Wheel bearing axial end play mm (in)		0 (0)
Wheel bearing lock nut	Tightening torque N-m (kg-m, ft-lb)	34 - 39 (3.5 - 4.0, 25 - 29)
	Return angle degree	45° - 60°
Wheel bearing starting torque	At wheel hub bolt With new grease seal N (kg, lb)	9.8 - 28.4 (1.0 - 2.9, 2.2 - 6.4)
	With used grease seal N (kg, lb)	9.8 - 23.5 (1.0 - 2.4, 2.2 - 5.3)

QUICK REFERENCE CHART: FRONTIER EQUIPPED WITH VG33E/ VG33ER ENGINES

2003

4WD MODELS

Wheel bearing lock nut	Tightening torque	N-m (kg-m, ft-lb)	78 - 98 (8 - 10, 58 - 72)
	Retightening torque after loosening wheel bearing lock nut	N-m (kg-m, in-lb)	0.5 - 1.5 (0.05 - 0.15, 4.3 - 13)
	Axial end play	mm (in)	0 (0)
	Turning angle	degree	15° - 30°
Wheel bearing preload at wheel hub bolt	N (kg, lb)		7.06 - 20.99 (0.72 - 2.14, 1.59 - 4.72)

Clutch Pedal

ELS000QE

Unit: mm (in)

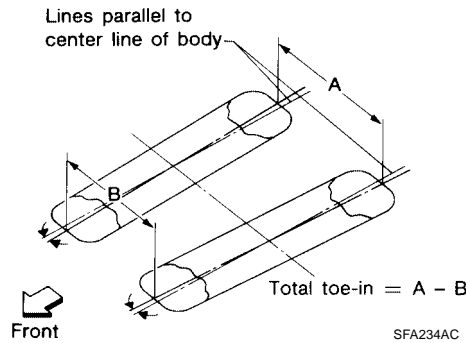
Clearance between pedal stopper bracket and clutch interlock switch (with clutch pedal fully depressed.)	0.1 - 1.0 (0.004 - 0.039)
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*: Measured from surface of dash lower panel to pedal pad.

Front Wheel Alignment (Unladen*1)

ELS000PR

2WD MODELS



Camber Degree minute (Decimal degree)	Minimum		0°03' (0.05°)	
	Nominal		0°33' (0.55°)	
	Maximum		1°03' (1.05°)	
	Left and right difference		45' (0.75°) or less	
Caster Degree minute (Decimal degree)	Minimum		2°04' (2.07°)	
	Nominal		2°34' (2.57°)	
	Maximum		3°04' (3.07°)	
	Left and right difference		45' (0.75°) or less	
Kingpin inclination Degree minute (Decimal degree)	Minimum		10°23' (10.38°)	
	Nominal		10°53' (10.88°)	
	Maximum		11°23' (11.38°)	
Total toe-in	Distance (A - B) mm (in)	Radial tire	Minimum	3 (0.12)
			Nominal	4 (0.16)
			Maximum	5 (0.20)
	Angle (left plus right) Degree minute (Decimal degree)	Radial tire	Minimum	15' (0.25°)
			Nominal	20' (0.33°)
			Maximum	25' (0.42°)

QUICK REFERENCE CHART: FRONTIER EQUIPPED WITH VG33E/ VG33ER ENGINES

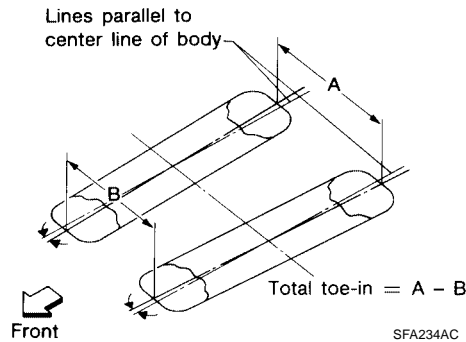
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Wheel turning angle	Full turn*2	Inside Degree minute (Decimal degree)		VG33E	VG33ER
			Minimum	31°00' (31.00°)	30°48' (30.80°)
			Nominal	33°00' (33.00°)	32°48' (32.80°)
		Maximum	33°00' (33.00°)	32°48' (32.80°)	
		Outside Degree minute (Decimal degree)	Minimum	29°00' (29.00°)	28°42' (28.70°)
			Nominal	31°00' (31.00°)	30°42' (30.70°)
Maximum	31°00' (31.00°)		30°42' (30.70°)		
Vehicle posture	Lower arm pivot height (H) mm (in)			37.7 - 41.7 (1.484 - 1.642)	

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

*2: Wheel turning force (at circumference of steering wheel) of 98 to 147 N (10 to 15 kg, 22 to 33 lb) with engine idle.

4WD MODEL



		VG33E	VG33ER	
Camber Degree minute (Decimal degree)	Minimum	0°06' (0.10°)	0°03' (0.05°)	
	Nominal	0°36' (0.60°)	0°33' (0.55°)	
	Maximum	1°06' (1.10°)	1°03' (1.05°)	
	Left and right difference	45' (0.75°) or less		
Caster Degree minute (Decimal degree)	Minimum	1°40' (1.67°)	2°04' (2.07°)	
	Nominal	2°10' (2.17°)	2°34' (2.57°)	
	Maximum	2°40' (2.67°)	3°04' (3.07°)	
	Left and right difference	45' (0.75°) or less		
Kingpin inclination Degree minute (Decimal degree)	Minimum	10°18' (10.30°)		
	Nominal	10°48' (10.80°)		
	Maximum	11°18' (11.30°)		
Total toe-in	Distance (A - B) mm (in)	Radial tire	Minimum	3 (0.12)
			Nominal	4 (0.16)
			Maximum	5 (0.20)
	Angle (left plus right) Degree minute (Decimal degree)	Radial tire	Minimum	15' (0.25°)
			Nominal	20' (0.33°)
			Maximum	25' (0.42°)

QUICK REFERENCE CHART: FRONTIER EQUIPPED WITH VG33E/ VG33ER ENGINES

2003

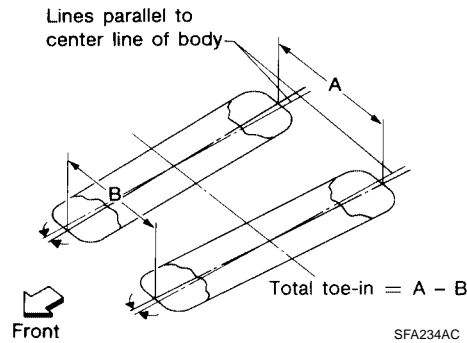
Wheel turning angle	Full turn*2	Inside Degree minute (Decimal degree)	Minimum	31°00' (31.00°)	30°48' (30.80°)
			Nominal	33°00' (33.00°)	32°48' (32.80°)
			Maximum	33°00' (33.00°)	32°48' (32.80°)
		Outside Degree minute (Decimal degree)	Minimum	29°00' (29.00°)	28°42' (28.70°)
			Nominal	31°00' (31.00°)	30°42' (30.70°)
			Maximum	31°00' (31.00°)	30°42' (30.70°)
Vehicle posture	Lower arm pivot height (H) mm (in)		45.5 - 49.5 (1.791 - 1.949)	37.7 - 41.7 (1.484 - 1.642)	

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

*2: Wheel turning force (at circumference of steering wheel) of 98 to 147 N (10 to 15 kg, 22 to 33 lb) with engine idle.

Rear Wheel Alignment (Unladen*)

ELS0000R



Camber Degree minute (decimal degree)	Minimum	-1°45' (-1.75°)	
	Nominal	-1°00' (-1.00°)	
	Maximum	-0°15' (-0.25°)	
Total toe-in	Distance (A - B) mm (in)	Minimum	-3 (-0.12)
		Nominal	1 (0.04)
		Maximum	5 (0.20)
	Angle (left plus right) Degree minute (decimal degree)	Minimum	-16' (-0.27°)
		Nominal	5'30" (0.09°)
		Maximum	26' (0.43°)

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

Brake

ELS00009

Unit: mm (in)

Front brake	Brake model	CL33VD
	Cylinder bore diameter × number of pistons	46.4 (1.827) × 2
	Pad Length × width × thickness	132.0 × 52.5 × 11 (5.20 × 2.067 × 0.43)
	Rotor outer diameter × thickness	283 × 28 (11.4 × 1.10)
Rear brake	Brake model	LT30A
	Cylinder bore diameter	22.22 (7/8)
	Lining length × width × thickness	296 × 50 × 6.1 (11.65 × 1.97 × 0.240)
	Drum inner diameter	295.0 (11.61)
Master cylinder	Bore diameter	25.40 (1)

QUICK REFERENCE CHART: FRONTIER EQUIPPED WITH VG33E/ VG33ER ENGINES

2003

Brake booster	Booster model	M230t
	Diaphragm diameter	Pri: 230 (9.06) Sec: 230 (9.06)
Recommended brake fluid		Genuine NISSAN Super Heavy Duty Brake Fluid or equivalent DOT 3 (US FMVSS No. 116)

Disc Brake - Repair Limits

Unit: mm (in)

Brake model	CL33VD	
Pad	Wear limit minimum thickness	2.0 (0.079)
	Standard pad thickness	10 (0.39)
Rotor repair limit	Minimum thickness	26.0 (1.024)
Rotor runout	Maximum	0.07 (0.0028)
Rotor thickness variation	Maximum	0.02 (0.0008)

Drum Brake - Repair Limits

Unit: mm (in)

Brake model	LT30A	
Lining wear limit	Minimum thickness	1.5 (0.059)
	Standard thickness	5.8 (0.228)
Drum repair limit	Maximum inner diameter	296.5 (11.67)
	Out-of-round limit	0.03 (0.0012)

Refill Capacities

ELS000QA

			Capacity (Approximate)		
			US measure	Imp measure	Liter
Engine oil	Drain and refill	With oil filter	3 1/2 qt	2 7/8 qt	3.3
		Without oil filter	3 1/8 qt	2 5/8 qt	3.0
	Dry engine (Engine overhaul)		4 qt	3 3/8 qt	3.8
Cooling system (without reservoir)			10 3/4 qt	8 7/8 qt	10.15
Cooling system reservoir			7/8 qt	3/4 qt	0.8
Manual transmission gear oil (FS5R30A)	2WD		3 qt	2 1/2 qt	2.8
	4WD		5 3/8 qt	4 1/2 qt	5.1
Transfer fluid (TX10A)			2 3/8 qt	2 qt	2.2
Differential carrier gear oil	Front (4WD) R200A		1 7/8 qt	1 1/2 qt	1.75
	Rear H233B		3 qt	2 1/2 qt	2.8
Automatic transmission fluid	2WD		8 3/4 qt	7 1/4 qt	8.3
	4WD		9 qt	7 1/2 qt	8.5
Power steering fluid			33.8-37.2 fl oz	35.2-38.7 fl oz	1.0-1.1
Air conditioning system refrigerant HFC 134a (R-134a)			1.32 - 1.54 lb	1.32 - 1.54 lb	0.60 - 0.70 kg
Air conditioning system compressor oil Genuine NISSAN A/C System Lubricant Type R or equivalent			6.8 fl oz	7.0 fl oz	200 mℓ

TEST VALUE AND TEST LIMIT (GST ONLY — NOT APPLICABLE TO CONSULT-II)

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SRT item	Self-diagnostic test item	DTC	Test value (GST display)		Test limit	Conversion
			TID	CID		
CATALYST	Three way catalyst function	P0420	01H	01H	Max.	1/128
		P0420	02H	81H	Min.	1
EVAP SYSTEM	EVAP control system (Small leak)	P0442	05H	03H	Max.	1/128mm ²
		P1442	05H	03H	Max.	1/128mm ²
	EVAP control system purge flow monitoring	P0441	06H	83H	Min.	20mV
	EVAP control system (Very small leak)	P0456	07H	03H	Max.	1/128mm ²
		P1456	07H	03H	Max.	1/128mm ²
HO2S	Heated oxygen sensor 1	P0133	09H	04H	Max.	16ms
		P1143	0AH	84H	Min.	10mV
		P1144	0BH	04H	Max.	10mV
		P0132	0CH	04H	Max.	10mV
		P0134	0DH	04H	Max.	1s
	Heated oxygen sensor 2	P0139	19H	86H	Min.	10mV/500ms
		P1147	1AH	86H	Min.	10mV
		P1146	1BH	06H	Max.	10mV
		P0138	1CH	06H	Max.	10mV
		HO2S HTR	Heated oxygen sensor 1 heater	P0032	29H	08H
P0031	2AH			88H	Min.	20mV
Heated oxygen sensor 2 heater	P0038		2DH	0AH	Max.	20mV
	P0037		2EH	8AH	Min.	20mV
	EGR SYSTEM		EGR function	P0400	31H	8CH
P0400		32H		8CH	Min.	1°C
P0400		33H		8CH	Min.	1°C
P0400		34H		8CH	Min.	1°C
P1402		35H		0CH	Max.	1°C
EGRC-BPT valve function		P0402	36H	0CH	Max.	1count
		P0402	37H	8CH	Min.	1count

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SRT item	Self-diagnostic test item	DTC	Test value (GST display)		Test limit	Conversion
			TID	CID		
CATALYST	Three way catalyst function (Bank 1)	P0420	01H	01H	Max.	1/128
		P0420	02H	81H	Min.	1
	Three way catalyst function (Bank 2)	P0430	03H	02H	Max.	1/128
		P0430	04H	82H	Min.	1
EVAP SYSTEM	EVAP control system (Small leak)	P0442	05H	03H	Max.	1/128mm ²
		P1442	05H	03H	Max.	1/128mm ²
	EVAP control system purge flow monitoring	P0441	06H	83H	Min.	20mV
	EVAP control system (Very small leak)	P0456	07H	03H	Max.	1/128mm ²
P1456		07H	03H	Max.	1/128mm ²	
HO2S	Heated oxygen sensor 1 (Bank 1)	P0133	09H	04H	Max.	16ms
		P1143	0AH	84H	Min.	10mV
		P1144	0BH	04H	Max.	10mV
		P0132	0CH	04H	Max.	10mV
	Heated oxygen sensor 1 (Bank 2)	P0134	0DH	04H	Max.	1s
		P0153	11H	05H	Max.	16ms
		P1163	12H	85H	Min.	10mV
		P1164	13H	05H	Max.	10mV
	Heated oxygen sensor 2 (Bank 1)	P0152	14H	05H	Max.	10mV
		P0154	15H	05H	Max.	1s
		P0139	19H	86H	Min.	10mV/500ms
		P1147	1AH	86H	Min.	10mV
	Heated oxygen sensor 2 (Bank 2)	P1146	1BH	06H	Max.	10mV
		P0138	1CH	06H	Max.	10mV
		P0159	21H	87H	Min.	10mV/500ms
		P1167	22H	87H	Min.	10mV
HO2S HTR	Heated oxygen sensor 1 heater (Bank 1)	P0032	29H	08H	Max.	20mV
		P0031	2AH	88H	Min.	20mV
	Heated oxygen sensor 1 heater (Bank 2)	P0052	2BH	09H	Max.	20mV
		P0051	2CH	89H	Min.	20mV
	Heated oxygen sensor 2 heater (Bank 1)	P0038	2DH	0AH	Max.	20mV
		P0037	2EH	8AH	Min.	20mV
	Heated oxygen sensor 2 heater (Bank 2)	P0058	2FH	0BH	Max.	20mV
		P0057	30H	8BH	Min.	20mV
EGR SYSTEM	EGR function	P0400	31H	8CH	Min.	1°C
		P0400	32H	8CH	Min.	1°C
		P0400	33H	8CH	Min.	1°C
		P0400	34H	8CH	Min.	1°C
		P1402	35H	0CH	Max.	1°C
	EGRC-BPT valve function	P0402	36H	0CH	Max.	1count
		P0402	37H	8CH	Min.	1count

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		P0420	02H	81H	Min.	1
	Three way catalyst function (Bank 2)	P0430	03H	02H	Max.	1/128
		P0430	04H	82H	Min.	1
EVAP SYSTEM	EVAP control system (Small leak)	P0442	05H	03H	Max.	1/128mm ²
		P1442	05H	03H	Max.	1/128mm ²
	EVAP control system purge flow monitoring	P0441	06H	83H	Min.	20mV
	EVAP control system (Very small leak)	P0456	07H	03H	Max.	1/128mm ²
P1456		07H	03H	Max.	1/128mm ²	
HO2S	Heated oxygen sensor 1 (Bank 1)	P0133	09H	04H	Max.	16ms
		P1143	0AH	84H	Min.	10mV
		P1144	0BH	04H	Max.	10mV
		P0132	0CH	04H	Max.	10mV
	Heated oxygen sensor 1 (Bank 2)	P0134	0DH	04H	Max.	1s
		P0153	11H	05H	Max.	16ms
		P1163	12H	85H	Min.	10mV
		P1164	13H	05H	Max.	10mV
	Heated oxygen sensor 2 (Bank 1)	P0152	14H	05H	Max.	10mV
		P0154	15H	05H	Max.	1s
		P0139	19H	86H	Min.	10mV/500ms
		P1147	1AH	86H	Min.	10mV
	Heated oxygen sensor 2 (Bank 2)	P1146	1BH	06H	Max.	10mV
		P0138	1CH	06H	Max.	10mV
		P0159	21H	87H	Min.	10mV/500ms
		P1167	22H	87H	Min.	10mV
HO2S HTR	Heated oxygen sensor 1 heater (Bank 1)	P1166	23H	07H	Max.	10mV
		P0158	24H	07H	Max.	10mV
	Heated oxygen sensor 1 heater (Bank 2)	P0032	29H	08H	Max.	20mV
		P0031	2AH	88H	Min.	20mV
	Heated oxygen sensor 2 heater (Bank 1)	P0052	2BH	09H	Max.	20mV
		P0051	2CH	89H	Min.	20mV
	Heated oxygen sensor 2 heater (Bank 2)	P0038	2DH	0AH	Max.	20mV
		P0037	2EH	8AH	Min.	20mV
		P0058	2FH	0BH	Max.	20mV
		P0057	30H	8BH	Min.	20mV