

NISSAN FRONTIER

MODEL D22 SERIES

QUICK REFERENCE INDEX

GENERAL INFORMATION _____	GI
MAINTENANCE _____	MA
ENGINE MECHANICAL _____	EM
ENGINE LUBRICATION & COOLING SYSTEMS _____	LC
ENGINE CONTROL SYSTEM _____	EC
ACCELERATOR CONTROL, FUEL & EXHAUST SYSTEMS _____	FE
CLUTCH _____	CL
MANUAL TRANSMISSION _____	MT
AUTOMATIC TRANSMISSION _____	AT
TRANSFER _____	TF
PROPELLER SHAFT & DIFFERENTIAL CARRIER _____	PD
FRONT AXLE & FRONT SUSPENSION _____	FA
REAR AXLE & REAR SUSPENSION _____	RA
BRAKE SYSTEM _____	BR
STEERING SYSTEM _____	ST
RESTRAINT SYSTEM _____	RS
BODY & TRIM _____	BT
HEATER & AIR CONDITIONER _____	HA
ELECTRICAL SYSTEM _____	EL
ALPHABETICAL INDEX _____	IDX

FOREWORD

This manual contains maintenance and repair procedures for the 1998 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.



NISSAN NORTH AMERICA, INC.

Technical Service Information Department
Torrance, California



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 photocopy this form and type or print 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. (Please photocopy back cover): _____

VEHICLE INFORMATION VIN: _____ **Production Date:** _____

Please describe any 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: FRONTIER 1998

ENGINE TUNE-UP DATA

Engine model	KA24DE		
Firing order	1-3-4-2		
Idle speed rpm	M/T	800 ± 50	
	A/T (in "N" position)	800 + 50	
Ignition timing (degree B.T.D.C. at idle speed)	20° ± 2°		
CO% at idle	Idle mixture screw is preset and sealed at factory		
Spark plug	Standard	ZFR6E-11	
	Cold	ZFR6E-11 ZFR7E-11	
Gap mm (in)	1.0 - 1.1 (0.039 - 0.043)		
Drive belt deflection (Cold) mm (in)	Used belt		
	Limit	Deflection after adjustment	Deflection of new belt
Generator	17 (0.67)	10 - 12 (0.39 - 0.47)	8 - 10 (0.31 - 0.39)
Air conditioner compressor	16 (0.63)	10 - 12 (0.39 - 0.47)	8 - 10 (0.31 - 0.39)
Power steering oil pump	17 (0.67)	10 - 13 (0.39 - 0.51)	8 - 10 (0.31 - 0.39)
Applied pressed force N (kg, lb)	80-100 (8.2-10.2, 18-22.5)		
Radiator cap relief pressure kPa (kg/cm ² , psi)	78 - 98 (0.8 - 1.0, 11 - 14)		
Cooling system leakage testing pressure kPa (kg/cm ² , psi)	157 (1.6, 23)		
Compression pressure kPa (kg/cm ² , psi)/rpm	Standard	1,226 (12.5, 178)/300	
	Minimum	1,030 (10.5, 149)/300	
Tightening torque N (kg, lb)	N-m	kg-m	ft-lb
	Spark plug	20 - 29	2.0 - 3.0
Oil pan drain plug	29 - 39	3.0 - 4.0	22 - 29

BRAKE

Unit: mm (in)

Disc brake	
Pad minimum thickness	2.0 (0.079)
Rotor repair limit	
Runout	0.07 (0.0028)
Minimum thickness	24.0 (0.945), CL28VD
Drum brake	
Lining minimum thickness	1.5 (0.059)
Drum repair limit	
Maximum inner diameter	261.5 (10.30), LT26B 296.5 (11.67), LT30A
Parking brake	
Number of notches*1	10 - 12

*1: At pulling force: 196 N (20 kg, 44 lb)

FRONT WHEEL BEARING

Item	Model		
	2WD	4WD	
Tightening torque N-m (kg-m, ft-lb)	34 - 39 (3.5 - 4.0, 25 - 29)	-	
Return angle degree	45° - 60°	-	
Preload (At hub bolt) N (kg, lb)	New seal	9.8 - 28.4 (1.0 - 2.9, 2.2 - 6.4)	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, ft-lb) 0.5 - 1.5 (0.05 - 0.15, 0.4 - 1.1)
	Used seal	9.8 - 23.5 (1.0 - 2.4, 2.2 - 5.3)	Axial end play mm (in) 0 (0)
			Start force at wheel hub bolt N (kg, lb) A
		Turning angle degree 15° - 30°	
		Starting force at wheel hub bolt N (kg, lb) B	
		Wheel bearing preload at wheel hub bolt B - A N (kg, lb) 7.06 - 20.99 (0.72 - 2.14, 1.59 - 4.72)	

FRONT WHEEL ALIGNMENT (Unladen*1)

		2WD	4WD	
		Minimum	0°05' (0.08°)	0°06' (0.10°)
Camber Degree minute (Decimal degree)	Nominal	0°25' (0.42°)	0°36' (0.60°)	
	Maximum	0°55' (0.92°)	1°06' (1.10°)	
	Left and right difference	45° (0.75°) or less	45° (0.75°) or less	
Caster Degree minute (Decimal degree)	Minimum	0°06' (0.10°)	1°40' (1.67°)	
	Nominal	0°36' (0.60°)	2°10' (2.17°)	
	Maximum	1°06' (1.10°)	2°40' (2.67°)	
	Left and right difference	45° (0.75°) or less	45° (0.75°) or less	
Kingpin inclination Degree minute (Decimal degree)	Minimum	8°35' (8.58°)	10°18' (10.30°)	
	Nominal	9°05' (9.08°)	10°48' (10.80°)	
	Maximum	9°35' (9.58°)	11°18' (11.30°)	
Total toe-in Distance (A - B) mm (in)	Minimum	2 (0.08)	3 (0.12)	
	Nominal	3 (0.12)	4 (0.16)	
	Maximum	4 (0.16)	5 (0.20)	
Angle (left plus right) Degree minute (Decimal degree)	Maximum	10' (0.17°)	15' (0.25°)	
	Nominal	15' (0.25°)	20' (0.33°)	
	Maximum	20' (0.33°)	25' (0.42°)	
Wheel turning angle Inside Degree minute (Decimal degree)	Except P215/65R15	P215/65R15	Except P235/70R15	
	Minimum	36°00' (36.00°)	35°00' (35.00°)	33°06' (33.10°)
Full turn *2 Outside Degree minute (Decimal degree)	Nominal	38°00' (38.00°)	37°00' (37.00°)	35°08' (35.10°)
	Maximum	38°00' (38.00°)	37°00' (37.00°)	35°06' (35.10°)
Full turn *2 Outside Degree minute (Decimal degree)	Minimum	32°36' (32.60°)	31°36' (31.60°)	31°12' (31.20°)
	Nominal	34°36' (34.60°)	33°36' (33.60°)	33°12' (33.20°)
Full turn *2 Outside Degree minute (Decimal degree)	Maximum	34°36' (34.60°)	33°36' (33.60°)	33°12' (33.20°)
	Maximum	34°36' (34.60°)	33°36' (33.60°)	33°12' (33.20°)

*1: Fuel, radiator coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.
*2: On power steering models, wheel turning force (at circumference of steering wheel) of 98 to 147 N (10 to 16kg, 22 to 33 lb) with engine idle.

REFILL CAPACITIES

	Unit	Metric measure	US measure
Fuel tank		60 l	15.9 gal
Coolant (with reservoir)	2WD	8.1 l	8-5/8 qt
	4WD	9.0 l	9-1/2 qt
Engine	2WD	With oil filter	3.5 l
		Without oil filter	3.3 l
	4WD	With oil filter	3.9 l
		Without oil filter	3.7 l
Transmission	M/T	2WD	2.0 l
	A/T	4WD	4.9 l
Transfer	4WD	-	7.9 l
	Rear	H190A	1.5 l
Final drive	Front	C200	1.3 l
	Front	R180A	1.3 l
Manual steering system		0.62 l	1-3/8 pt
Power steering system	PB48S	0.9-1.0 l	30.4-33.8 fl oz
	PB59K	1.0-1.1 l	33.8-37.2 fl oz
Air conditioner system	Lubricant	0.2 l	6.8 fl oz
	Refrigerant*	0.6-0.7 kg	1.32 - 1.54 lb

*R-134a

CLUTCH PEDAL

Unit: mm (in)

Pedal height	221 - 231 (8.70 - 9.09)
Pedal free play	9 - 16 (0.35 - 0.63)

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

The following is the information specified in Mode 6 of SAE J1979.

The test value is a parameter used to determine whether a system/circuit diagnostic test is “OK” or “NG” while being monitored by the ECM during self-diagnosis. The test limit is a reference value which is specified as the maximum or minimum value and is compared with the test value being monitored.

Items for which these data (test value and test limit) are displayed are the same as SRT code items.

These data (test value and test limit) are specified by Test ID (TID) and Component ID (CID) and can be displayed on the GST screen.

: Applicable : : Not applicable

SRT item	Self-diagnostic test item	DTC	Test value (GST display)		Test limit	Application	Unit
			TID	CID			
CATALYST	Three way catalyst function	P0420	01H	01H	Max.	X	-
EVAP SYSTEM	EVAP control system (Small leak)	P0440	05H	03H	Max.	X	-
		P1440	05H	03H	Max.	X	-
	EVAP control system purge flow monitoring	P1447	06H	83H	Min.	X	mV
H02S	Heated oxygen sensor 1	P0133	09H	04H	Max.	X	ms
		P0131	0AH	84H	Min.	X	mV
		P0130	0BH	04H	Max.	X	mV
		P0132	0CH	04H	Max.	X	mV
		P0134	0DH	04H	Max.	X	s
	Heated oxygen sensor 2	P0139	19H	86H	Min.	X	mV/500ms
		P0137	1AH	86H	Min.	X	mV
		P0140	1BH	06H	Max.	X	mV
		P0138	1CH	06H	Max.	X	mV
		H02S HTR	Heated oxygen sensor 1 heater	P0135	29H	08H	Max.
P0135	2AH			88H	Min.	X	mV
Heated oxygen sensor 2 heater	P0141		2DH	0AH	Max.	X	mV
	P0141		2EH	8AH	Min.	X	mV
	EGR SYSTEM		EGR function	P0400	31H	8CH	Min.
P0400		32H		8CH	Min.	X	°C
P0400		33H		8CH	Min.	X	°C
P0400		34H		8CH	Min.	X	°C
P1402		35H		0CH	Max.	X	°C
EGRC-BPT valve function		P0402	36H	0CH	Max.	X	-
		P0402	37H	8CH	Min.	X	-