

QUICK REFERENCE INDEX

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**NISSAN
 SENTRA**
 MODEL B15 SERIES

A GENERAL INFORMATION	GI General Information
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	CO Engine Cooling System
	EC Engine Control System
	FL Fuel System
	EX Exhaust System
	ACC Accelerator Control System
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	FSU Front Suspension
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FOREWORD

This manual contains maintenance and repair procedures for the 2003 NISSAN SENTRA.

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.*

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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?

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QUICK REFERENCE CHART: SENTRA (EQUIPPED WITH 1.8L, QG ENGINE)

2003

QUICK REFERENCE CHART: SENTRA (EQUIPPED WITH 1.8L, QG ENGINE) Engine Tune-Up Data

Engine	QG18DE	
Classification	Gasoline	
Cylinder arrangement	4, in-line	
Displacement cm ³ (cu in)	1,769 (107.94)	
Bore × stroke mm (in)	80.0 x 88.0 (3.150 x 3.465)	
Valve arrangement	DOHC	
Firing order	1-3-4-2	
Number of piston rings	Compression	2
	Oil	1
Number of main bearings	5	
Compression ratio	9.5	

Drive Belt Deflection and Tension

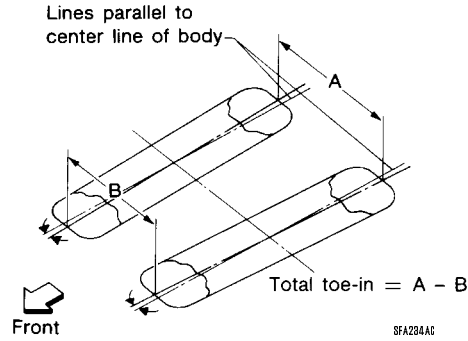
Component		Deflection Adjustment Unit: mm (in)			Tension Adjustment *1 Unit: N (kg, lb)		
		Used Belt		New Belt	Used Belt		New Belt
		Limit	After Adjustment		Limit	After Adjustment	
Generator	With air conditioner compressor	8.1 (0.319)	5.3 - 5.7 (0.209 - 0.244)	4.5 - 5.0 (0.177 - 0.197)	292 (30, 66)	652 - 740 (66.5 - 75.5, 146.6 - 166.4)	789 - 877 (80.5 - 89.5, 177.4 - 197.1)
	Without air conditioner compressor	10.2 (0.402)	6.5 - 7.0 (0.256 - 0.276)	5.5 - 6.1 (0.217 - 0.240)	292 (30, 60)	652 - 740 (66.5 - 75.5, 146.6 - 166.4)	789 - 877 (80.5 - 89.5, 177.4 - 197.1)
Power steering oil pump		7.1 (0.280)	4.4 - 4.9 (0.173 - 0.193)	3.9 - 4.4 (0.154 - 0.173)	196 (20, 44)	495 - 583 (50.5 - 59.5, 111.4 - 131.2)	603 - 691 (61.5 - 70.5, 135.6 - 155.5)
Applied pushing force		98 N (10 kg, 22 lb)			—		

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

Spark Plugs (Double Platinum - Tipped)

Type	Standard	PLFR5A-11
	Hot	PLFR4A-11
	Cold	PLFR6A-11
Plug gap		nominal 1.1 mm (0.043 in)

Front Wheel Alignment (Unladen*1)

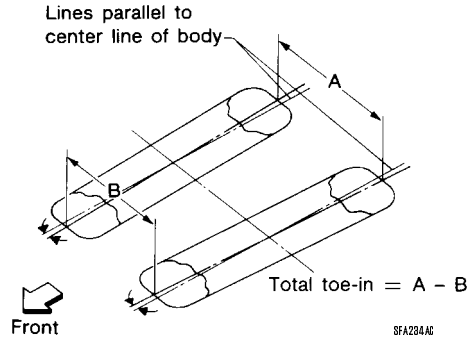


Camber Degree minute (decimal degree)	Minimum	-1°10' (-1.17°)	
	Nominal	-0°25' (-0.42°)	
	Maximum	0°20' (0.33°)	
	Left and right difference	45' (0.75°) or less	
Caster Degree minute (decimal degree)	Minimum	0°51' (0.85°)	
	Nominal	1°36' (1.60°)	
	Maximum	2°21' (2.35°)	
	Left and right difference	45' (0.75°) or less	
Kingpin inclination Degree minute (decimal degree)	Minimum	13°58' (13.97°)	
	Nominal	14°43' (14.72°)	
	Maximum	15°28' (15.47°)	
Total toe-in	Distance (A - B) mm (in)	Minimum	1 (0.039")
		Nominal	2 (0.079")
		Maximum	3 (0.118")
	Angle (left plus right) Degree minute (decimal degree)	Minimum	5.5' (0.08°)
		Nominal	11' (0.18°)
		Maximum	16' (0.27°)
Wheel turning angle Full turn*2	Inside Degree minute (decimal degree)	Minimum	34° (34.0°)
		Nominal	37° (37.0°)
		Maximum	38° (38.0°)
	Outside Degree minute (decimal degree)	Nominal	31° (31.0°)

*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 15 kg, 22 to 33 lb) with engine idle.

Rear Wheel Alignment (Unladen*)



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

Unit: mm (in)

Front brake	Brake model	CL25VA
	Cylinder bore diameter	57.2 (2.252)
	Pad length × width × thickness	125.6 × 46.0 × 11.0 (4.94 × 1.811 × 0.433)
	Rotor outer diameter × thickness	257 × 22 (10.12 × 0.87)
Rear brake	Brake model	LT20G
	Cylinder bore diameter/caliper bore diameter	15.87 (5/8) type a 17.45 (11/16) type b
	Lining length × width × thickness	219.4 × 35 × 4.5 (8.64 × 1.38 × 0.177)
	Drum inner diameter/Disc diameter × thickness	203.2 (8)
Master cylinder	Cylinder bore diameter	23.81 (15/16)
Control valve	Valve model	Dual proportioning valve
	Split point [kPa (kg/cm ² , psi)] × reducing ratio	1,961 (20,284) × 0.2
Brake booster	Booster model	M215T
	Diaphragm diameter	Primary: 230 (9.06) Secondary: 205 (8.07)
Brake fluid	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	CL25VA
Pad wear limit Minimum thickness	2.0 (0.079)
Rotor repair limit Minimum thickness	20 (0.79)

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Drum Brake - Repair Limits

Unit: mm (in)

Brake model		LT20G
Lining wear limit	Minimum thickness	1.5 (0.059)
Drum repair limit	Maximum inner diameter	204.5 (8.05)
	Maximum out-of round	0.03 (0.0012)

Refill Capacities

Engine Coolant Capacity (Approximate)

Unit: ℓ (US qt, Imp qt)

Drain and refill without reservoir	M/T (RS5F70A)	6.0 (6 3/8, 5 1/4)
	A/T (RE4F03B)	5.9 (6 1/4, 5 1/4)
Reservoir tank (at MAX level)		0.7 (3/4, 5/8)

Engine Oil Capacity (Approximate)

Unit: ℓ (US qt, Imp qt)

Drain and refill	With oil filter change	2.7 (2 7/8, 2 3/8)
	Without oil filter change	2.5 (2 5/8, 2 1/4)
Dry engine (engine overhaul)		3.1 (3 1/4, 2 3/4)

Miscellaneous Capacities (Approximate)

System description		Metric measurement	US measurement	Imp measurement
Fuel tank		50 ℓ	13 1/4 gal	11 gal
Power steering system		1.0 ℓ	2 1/8 pt	1 3/4 pt
Transaxle	M/T (RS5F70A)	3.0 ℓ	3 1/8 qt	2 5/8 qt
	A/T (RE4F03B)	7.0 ℓ	7 3/8 qt	6 1/8 qt
Air conditioning system	Refrigerant	0.45 - 0.55 kg	0.99 - 1.21 lb	0.99 - 1.21 lb
	Compressor oil	180 mℓ	6.1 fl oz	6.3 fl oz

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2003

QUICK REFERENCE CHART: SENTRA (EQUIPPED WITH 2.5L, QR ENGINE)

Engine Tune-Up Data

Engine		QR25DE
Cylinder arrangement		4 in-line
Displacement cm ³ (cu in)		2,488 (151.82)
Bore and stroke mm (in)		89.0 x 100 (3.50 - 3.94)
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	1,250 (12.8, 182)
	Minimum	1,060 (10.8, 154)
	Differential limit between cylinders	100 (1.0, 14)

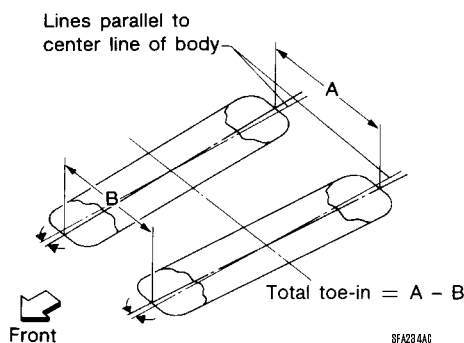
Drive Belt Deflection and Tension

Tension of drive belts	Auto adjustment by auto-tensioner
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Spark Plugs (Double Platinum Tipped)

Type	Standard	PLFR5A-11
	Hot	PLFR4A-11
	Cold	PLFR6A-11
Plug gap		nominal 1.1 mm (0.043 in)

Front Wheel Alignment (Unladen*1)



Camber Degree minute (decimal degree)	Minimum	-1°12' (-1.2°)
	Nominal	-0°27' (-0.45°)
	Maximum	0°18' (0.3°)
	Left and right difference	45' (0.75°) or less
Caster Degree minute (decimal degree)	Minimum	0°58' (0.97°)
	Nominal	1°43' (1.72°)
	Maximum	2°28' (2.47°)
	Left and right difference	45' (0.75°) or less
Kingpin inclination Degree minute (decimal degree)	Minimum	14°03' (14.05°)
	Nominal	14°46' (14.77°)
	Maximum	15°31' (15.52°)

QUICK REFERENCE CHART: SENTRA (EQUIPPED WITH 2.5L, QR ENGINE)

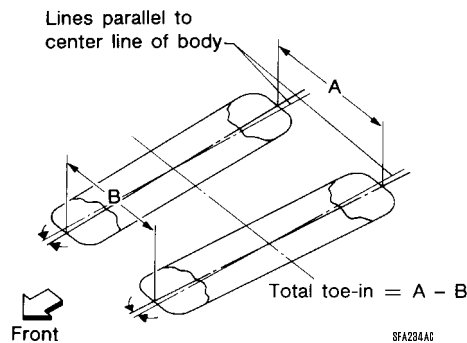
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Total toe-in	Distance (A - B) mm (in)	Minimum	1 (0.039")
		Nominal	2 (0.079")
		Maximum	3 (0.118")
	Angle (left plus right) Degree minute (decimal degree)	Minimum	5.5' (0.08°)
		Nominal	11' (0.18°)
		Maximum	16' (0.27°)
Wheel turning angle Full turn*2	Inside Degree minute (decimal degree)	Minimum	29° (29.0°)
		Nominal	32° (32.0°)
		Maximum	33° (33.0°)
	Outside Degree minute (decimal degree)	Nominal	27° (27.0°)

*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 15 kg, 22 to 33 lb) with engine idle.

Rear Wheel Alignment (Unladen*)



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

Unit: mm (in)

Front brake	Brake model	CL25VB
	Cylinder bore diameter	57.2 (2.252)
	Pad length × width × thickness	125.6 × 46.0 × 11.0 (4.94 × 1.811 × 0.433)
	Rotor outer diameter × thickness	280 × 22 (11.02 × 0.87)
Rear brake	Brake model	CL9HC
	Cylinder bore diameter/caliper bore diameter	33.96 (1 11/32)
	Lining length × width × thickness	89.1 × 39.5 × 10 (3.508 × 1.555 × 0.39)
	Drum inner diameter/Disc diameter × thickness	258 × 9 (10.16 × 0.35)
Master cylinder	Cylinder bore diameter	23.81 (15/16)

QUICK REFERENCE CHART: SENTRA (EQUIPPED WITH 2.5L, QR ENGINE)

2003

Control valve	Valve model	Dual proportioning valve
	Split point [kPa (kg/cm ² , psi)] × reducing ratio	2,942 (30,427) × 0.2
Brake booster	Booster model	M215T
	Diaphragm diameter	Primary: 230 (9.06) Secondary: 205 (8.07)
Brake fluid	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	CL25VB (Front)	CL9HC (Rear)
Pad wear limit Minimum thickness	2.0 (0.079)	2.0 (0.079)
Rotor repair limit Minimum thickness	20 (0.79)	8 (0.31)

Refill Capacities

Engine Coolant Capacity (Approximate)

Unit: ℓ (US qt, Imp qt)

Drain and refill (without reservoir)	M/T (RS5F51A, RS6F51H)	6.1 (6 1/2, 5 3/8)
	A/T (RE4F04B)	6.0 (6 3/8, 5 1/4)
Reservoir tank (at MAX level)		0.7 (3/4, 5/8)

Engine Oil Capacity (Approximate)

Unit: ℓ (US qt, Imp qt)

Drain and refill	With oil filter change	3.9 (4 1/8, 3 3/8)
	Without oil filter change	3.7 (3 7/8, 3 1/4)
Dry engine (engine overhaul)		4.4 (4 5/8, 3 7/8)

Miscellaneous Capacity (Approximate)

System description	Metric measurement	US measurement	Imp measurement
Fuel tank	50 ℓ	13 1/4 gal	11 gal
Power steering system	1.0 ℓ	2 1/8 pt	1 3/4 pt
Transaxle	M/T (RS5F51A, RS6F51H)	2.3 ℓ	2 3/8 qt
	A/T (RE4F04B)	8.5 ℓ	9 qt
Air conditioning system	Refrigerant	0.45 - 0.55 kg	0.99 - 1.21 lb
	Compressor oil	180 m ℓ	6.1 fl oz