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NISSAN SENTRA

MODEL B15 SERIES

QUICK REFERENCE INDEX

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	EC Engine Control System
	FL Fuel System
	EX Exhaust System
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	AT Automatic Transaxle
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	PB Parking Brake System
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FOREWORD

This manual contains maintenance and repair procedures for the 2005 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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**QUICK REFERENCE CHART: SENTRA (EQUIPPED WITH
1.8L, QG ENGINE)**

2005

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

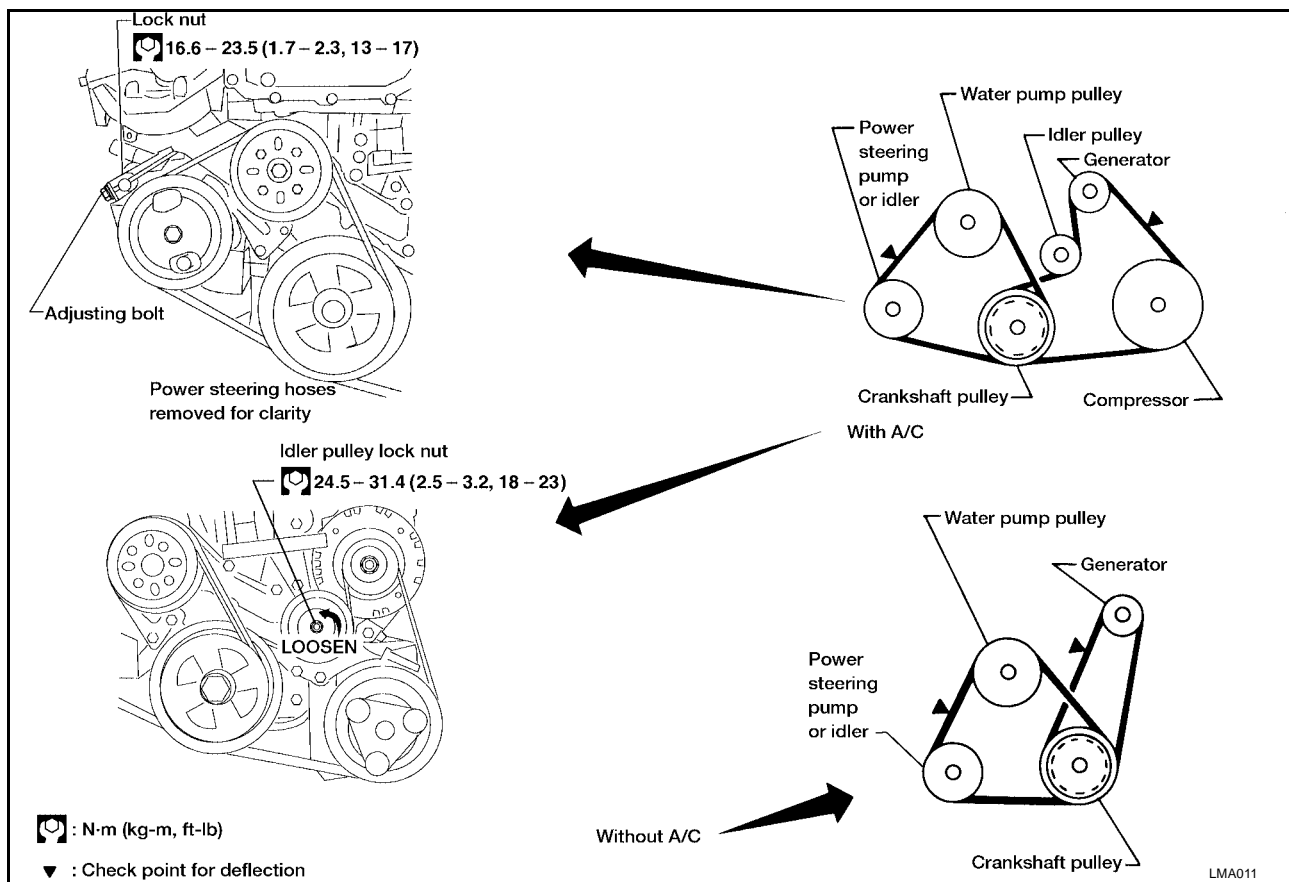
PFP:00027

Engine Tune-Up Data

ELS001CL

Engine		QG18DE
Classification		Gasoline
Cylinder arrangement		4 in-line
Displacement		1,769 cm ³ (107.94 cu in)
Bore × stroke		80.0 × 88.0 mm (3.150 × 3.465 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		9.5: 1

Drive Belt Deflection and Tension



LMA011

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.

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

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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)

ELS001CX

Camber Degree minute (Decimal degree)	Minimum	-1°05' (-1.08°)	
	Nominal	-0°20' (-0.33°)	
	Maximum	0°25' (0.42°)	
	Left and right difference	45' (0.75°) or less	
Caster Degree minute (Decimal degree)	Minimum	0°50' (0.83°)	
	Nominal	1°35' (1.58°)	
	Maximum	2°20' (2.33°)	
	Left and right difference	45' (0.75°) or less	
Kingpin inclination Degree minute (Decimal degree)	Minimum	13°52' (13.87°)	
	Nominal	14°37' (14.62°)	
	Maximum	15°22' (15.37°)	
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*)

ELS001CN

Unit: degree minute (decimal degree)

Camber	Minimum	-1°45' (-1.75°)	
	Nominal	-1°00' (-1.00°)	
	Maximum	-0°15' (-0.25°)	
Total toe-in	Distance	Minimum	-3 mm (-0.12 in)
		Nominal	1 mm (0.04 in)
		Maximum	5 mm (0.20 in)
	Angle (left plus right)	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.

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

2005

Brake

ELS001CO

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	1,961 kPa (20 kg/cm ² , 284 psi) × 0.2 reducing ratio
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)

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)

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

2005

Refill Capacities

ELS001CP

Description		Capacity (Approximate)		
		US measure	Imp measure	Liter
Fuel		13 1/4 gal	11 gal	50
Engine oil Drain and refill	With oil filter change	2 7/8 qt	2 3/8 qt	2.7
	Without oil filter change	2 5/8 qt	2 1/4 qt	2.5
Dry engine (engine overhaul)		3 1/4 qt	2 3/4 qt	3.1
Cooling system (with reservoir)	M/T	1 3/4 gal	1 1/2 gal	6.7
	A/T	1 3/4 gal	1 1/2 gal	6.6
Manual transaxle fluid (MTF)	RS5F70A	3 1/8 qt	2 5/8 qt	3.0
Automatic transaxle fluid (ATF)	RE4F03B	7 3/8 qt	6 1/8 qt	7.0
Power steering fluid (PSF)		1 1/8 qt	7/8 qt	1.0
Air conditioning system refrigerant		1.10 ± 0.11 lb	1.10 ± 0.11 lb	0.50 ± 0.05 kg
Air conditioning system lubricant		6.1 fl oz	6.3 fl oz	180 mℓ

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

2005

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

PFP:00027

Engine Tune-Up Data

ELS001CR

Engine		QR25DE
Cylinder arrangement		4 in-line
Displacement		2,488 cm ³ (151.82 cu in)
Bore and stroke		89.0 x 100 mm (3.50 - 3.94 in)
Valve arrangement		DOHC
Firing order		1-3-4-2
Number of piston rings	Compression	2
	Oil	1
Compression ratio		9.5
Compression pressure	Standard	1,250 kPa (12.8 kg/cm ² , 181.3 psi) / 250 rpm
	Minimum	1,060 kPa (10.8 kg/cm ² , 153.7 psi) / 250 rpm
	Differential limit between cylinders	100 kPa (1.0 kg/cm ² , 14 psi) / 250 rpm

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)

ELS001CS

Unit: degree minute (decimal degree)

Camber	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	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	Minimum	14°03' (14.05°)	
	Nominal	14°46' (14.77°)	
	Maximum	15°31' (15.52°)	
Total toe-in	Distance	Minimum	1 mm (0.039 in)
		Nominal	2 mm (0.079 in)
		Maximum	3 mm (0.118 in)
	Angle (left plus right)	Minimum	5.5' (0.08°)
		Nominal	11' (0.18°)
		Maximum	16' (0.27°)

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

2005

Wheel turning angle Full turn*2	Inside	Minimum	29° (29.0°)
		Nominal	32° (32.0°)
		Maximum	33° (33.0°)
	Outside	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*)

ELS001CT

Unit: degree minute (decimal degree)

Camber		Minimum	-1°45' (-1.75°)
		Nominal	-1°00' (-1.00°)
		Maximum	-0°15' (-0.25°)
Total toe-in	Distance	Minimum	-3 mm (-0.12 in)
		Nominal	1 mm (0.04 in)
		Maximum	5 mm (0.20 in)
	Angle (left plus right)	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

ELS001CU

Unit: mm (in)

Front brake	Brake model	CL25VB	OPB27VA
	Cylinder bore diameter	57.2 (2.252)	38 (1.50) x 2 + 44 (1.73) x 2
	Pad length x width x thickness	125.6 x 46.0 x 11.0 (4.94 x 1.811 x 0.433)	117.1 x 53.3 x 9.3 (4.61 x 2.098 x 0.366)
	Rotor outer diameter x thickness	280 x 22 (11.02 x 0.87)	324 x 30.0 (12.76 x 1.181)
Rear brake	Brake model	CL9HC	
	Cylinder bore diameter/caliper bore diameter	33.96 (1 11/32)	
	Lining length x width x thickness	89.1 x 39.5 x 10 (3.508 x 1.555 x 0.39)	
	Drum inner diameter/Disc diameter x thickness	232 x 7 (9.13 x 0.28)	232 x 7 (9.13 x 0.28) or 278 x 9 (10.94 x 0.35)*
Master cylinder	Cylinder bore diameter	23.81 (15/16)	
Control valve	Valve model	Dual proportioning valve	
	Split point	2,942 kPa (30 kg/cm ² , 427 psi)] x 0.2 reducing ratio	
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)	

*: With Spec V brake package.

Disc Brake - Repair Limits

Unit: mm (in)

Brake model	CL25VB (Front)	OPB27VA (Front)	CL9HC (Rear)
Pad wear limit Minimum thickness	2.0 (0.079)	2.0 (0.079)	2.0 (0.079)
Rotor repair limit Minimum thickness	20 (0.79)	20 (0.79)	8.0 (0.31) or 6.0 (0.24)*

*: With Spec V brake package.

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

2005

Refill Capacities

ELS001CV

Description		Capacity (Approximate)		
		US measure	Imp measure	Liter
Fuel		13 1/4 gal	11 gal	50
Engine oil Drain and refill	With oil filter change	4 1/4 qt	3 1/2 qt	4.0
	Without oil filter change	4 qt	3 3/8 qt	3.8
Dry engine (engine overhaul)		4 3/4 qt	4 qt	4.5
Cooling system (with reservoir)	M/T	1 3/4 gal	1 1/2 gal	6.8
	A/T	1 3/4 gal	1 1/2 gal	6.7
Manual transaxle fluid (MTF)	RS6F51H	2 3/8 qt	2 qt	2.2
Automatic transaxle fluid (ATF)	RE4F04B	9.0 qt	7.5 qt	8.5
Power steering fluid (PSF)		1 1/8 qt	7/8 qt	1.0
Air conditioning system refrigerant		1.10 ± 0.11 lb	1.10 ± 0.11 lb	0.50 ± 0.05 kg
Air conditioning system lubricant		6.1 fl oz	6.3 fl oz	180 mℓ