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NISSAN SENTRA

MODEL B15 SERIES

QUICK REFERENCE INDEX

FOREWORD

This manual contains maintenance and repair procedures for the 2002 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.

NISSAN NORTH AMERICA, INC.
Technical Publications Department
Gardena, California

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

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

Please describe any issues or problems in detail:

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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.*

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Is the organization of the manual clear and easy to follow? (circle your answer) YES NO

Please comment: _____

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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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_____

DATE: _____ YOUR NAME: _____ POSITION: _____

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

PFP:00027

Engine Tune-Up Data

ELS000L4

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)

ELS000L6

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 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*)

ELS000L7

Camber Degree minute (decimal degree)		Minimum	–1°45′ (–1.75°)
		Nominal	–1°00′ (–1.00°)
		Maximum	–0°15′ (–0.25°)
Total toe-in	Distance 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

ELS000L8

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	DOT 3

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)

Refill Capacities

ELS000LC

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	—
	compressor oil	180 ml	6.1 fl oz	6.3 fl oz

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

PFP:00027

Engine Tune-Up Data

ELS000LF

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

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)

ELS000LI

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°)
Total toe-in	Distance 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*)

ELS000LJ

Camber Degree minute (decimal degree)		Minimum	–1°45′ (–1.75°)
		Nominal	–1°00′ (–1.00°)
		Maximum	–0°15′ (–0.25°)
Total toe-in	Distance 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

ELS000LK

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)
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	DOT 3

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)

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

2002

Refill Capacities

ELS000LN

Engine Coolant Capacity (Approximate)

Unit: ℓ (US qt, Imp qt)

Drain and refill (without reservoir)	M/T (RS5F51A, RS6F51H)	6.0 (6 3/8, 5 1/4)
	A/T (RE4F04B)	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	4.2 (4 1/2, 3 3/4)
	Without oil filter change	4.0 (4 1/4, 3 1/2)
Dry engine (engine overhaul)		4.6 (4 7/8, 4)

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	2 qt
	A/T (RE4F04B)	8.5 ℓ	9 qt	7 1/2 qt
Air conditioning system	refrigerant	0.45 - 0.55 kg	0.99 - 1.21 lb	—
	compressor oil	180 ml	6.1 fl oz	6.3 fl oz

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)		Te s t limit	Application	Unit
			TID	CID			
CATALYST	Three way catalyst function (Bank 1)	P0420	01H	01H	Max.	X	−
		P0420	02H	81H	Min.	X	−
	Three way catalyst function (Bank 2)	P0430	03H	02H	Max.	X	−
		P0430	04H	82H	Min.	X	−
EVAP SYSTEM	EVAP control system (Small leak)	P0442	05H	03H	Max.	X	−
		P1442	05H	03H	Max.	X	−
	EVAP control system purge flow monitoring	P0441	06H	83H	Min.	X	mV
	EVAP control system (Very small leak)	P0456	07H	03H	Max.	X	−
		P1456	07H	03H	Max.	X	−
HO2S	Heated oxygen sensor 1(Bank 1)	P0133	09H	04H	Max.	X	ms
		P1143	0AH	84H	Min.	X	mV
		P1144	0BH	04H	Max.	X	mV
		P0132	0CH	04H	Max.	X	mV
		P0134	0DH	04H	Max.	X	s
	Heated oxygen sensor 1(Bank 2)	P0153	11H	05H	Max.	X	ms
		P1163	12H	85H	Min.	X	mV
		P1164	13H	05H	Max.	X	mV
		P0152	14H	05H	Max.	X	mV
		P0154	15H	05H	Max.	X	s
	Heated oxygen sensor 2(Bank 1)	P0139	19H	86H	Min.	X	mV/500ms
		P1147	1AH	86H	Min.	X	mV
		P1146	1BH	06H	Max.	X	mV
		P0138	1CH	06H	Max.	X	mV
	Heated oxygen sensor 2(Bank 2)	P0159	21H	87H	Min.	X	mV/500ms
		P1167	22H	87H	Min.	X	mV
		P1166	23H	07H	Max.	X	mV
		P0158	24H	07H	Max.	X	mV
HO2S HTR	Heated oxygen sensor 1 heater(Bank 1)	P0032	29H	08H	Max.	X	mV
		P0031	2AH	88H	Min.	X	mV
	Heated oxygen sensor 2 heater(Bank 2)	P0052	2BH	09H	Max.	X	mV
		P0051	2CH	89H	Min.	X	mV
	Heated oxygen sensor 2 heater(Bank 1)	P0038	2DH	0AH	Max.	X	mV
		P0037	2EH	8AH	Min.	X	mV
	Heated oxygen sensor 2 heater(Bank 2)	P0058	2FH	0BH	Max.	X	mV
		P0057	30H	8BH	Min.	X	mV
EGR SYSTEM	EGR function	P0400	31H	8CH	Min.	X	℃
		P0400	32H	8CH	Min.	X	℃
		P0400	33H	8CH	Min.	X	℃
		P0400	34H	8CH	Min.	X	℃
		P1402	35H	0CH	Max.	X	℃

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: Applicable ·: Not applicable

SRT item	Self-diagnostic test item	DTC	Test value (GST display)		Te s t limit	Application	Unit
			TID	CID			
CATALYST	Three way catalyst function	P0420	01H	01H	Max.	X	−
		P0420	02H	81H	Max.	X	−
EVAP SYSTEM	EVAP control system (Small leak)	P0442	05H	03H	Max.	X	−
		P1442	05H	03H	Max.	X	−
	EVAP control system purge flow monitoring	P0441	06H	83H	Min.	X	0mV
HO2S	A/F sensor 1	P1273	43H	0EH	Max.	X	0.002
		P1274	44H	8EH	Min.	X	0.002
		P1275	45H	8EH	Min.	X	0.004/250ms
	Heated oxygen sensor 2	P0139	19H	86H	Min.	X	mV/500ms
		P1147	1AH	86H	Min.	X	mV
		P1146	1BH	06H	Max.	X	mV
		P0138	1CH	06H	Max.	X	mV
	Heated oxygen sensor 3	P0145	61H	92H	Min.	X	mV/500ms
		P0144	62H	92H	Min.	X	mV
		P0143	63H	12H	Max.	X	mV
HO2S HTR	A/F sensor 1 heater	P1277	57H	04H	Max.	X	mV
		P1277	58H	04H	Min.	X	mV
	Heated oxygen sensor 2 heater	P0141	2DH	0AH	Max.	X	mV
		P0141	2EH	8AH	Min.	X	mV
	Heated oxygen sensor 3 heater	P0147	71H	14H	Max.	X	mV
		P0147	72H	94H	Min.	X	mV
EGR SYSTEM	EGR function	P0400	31H	8CH	Min.	X	℃
		P0400	32H	8CH	Min.	X	℃
		P0400	33H	8CH	Min.	X	℃
		P0400	34H	8CH	Min.	X	℃
		P1402	35H	0CH	Max.	X	℃

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)		Te s t limit	Application	Unit
			TID	CID			
CATALYST	Three way catalyst function	P0420	01H	01H	Max.	X	−
		P0420	02H	81H	Min.	X	−
EVAP SYSTEM	EVAP control system (Small leak)	P0442	05H	03H	Max.	X	−
	EVAP control system purge flow monitoring	P0441	06H	83H	Min.	X	mV
	EVAP control system (Very small leak)	P0456	07H	03H	Max.	X	−
		P1456	07H	03H	Max.	X	−
HO2S	Heated oxygen sensor 1	P0133	09H	04H	Max.	X	ms
		P1143	0AH	84H	Min.	X	mV
		P1144	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
		P1147	1AH	86H	Min.	X	mV
		P1146	1BH	06H	Max.	X	mV
		P0138	1CH	06H	Max.	X	mV
HO2S HTR	Heated oxygen sensor 1 heater	P0032	29H	08H	Max.	X	mV
		P0031	2AH	88H	Min.	X	mV
	Heated oxygen sensor 2 heater	P0038	2DH	0AH	Max.	X	mV
		P0037	2EH	8AH	Min.	X	mV
EGR SYSTEM★1	EGR function	P0400	31H	8CH	Min.	X	℃
		P0400	32H	8CH	Min.	X	℃
		P0400	33H	8CH	Min.	X	℃
		P0400	34H	8CH	Min.	X	℃
		P1402	35H	0CH	Max.	X	℃
	EGRC-BPT valve function	P0402	36H	0CH	Max.	X	−
		P0402	37H	8CH	Min.	X	−

*1 : Except models B15 QR25DE 2002MY and B15 QR25DE engine 2003MY.