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NISSAN SENTRA

MODEL B16 SERIES

QUICK REFERENCE INDEX

A GENERAL INFORMATION	GI General Information
B ENGINE	EM Engine Mechanical
	LU Engine Lubrication System
	CO Engine Cooling System
	EC Engine Control System
	FL Fuel System
	EX Exhaust System
	ACC Accelerator Control System
C TRANSMISSION/ TRANSAXLE	CL Clutch
	MT Manual Transaxle
	CVT CVT
D DRIVELINE/AXLE	FAX Front Axle
	RAX Rear Axle
E SUSPENSION	FSU Front Suspension
	RSU Rear Suspension
	WT Road Wheels & Tires
F BRAKES	BR Brake System
	PB Parking Brake System
	BRC Brake Control System
G STEERING	PS Power Steering System
	STC Steering Control System
H RESTRAINTS	SB Seat Belts
	SRS Supplemental Restraint System (SRS)
I BODY	BL Body, Lock & Security System
	GW Glasses, Window System & Mirrors
	RF Roof
	EI Exterior & Interior
	IP Instrument Panel
	SE Seat
J AIR CONDITIONER	MTC Manual Air Conditioner
K ELECTRICAL	SC Starting & Charging System
	LT Lighting System
	DI Driver Information System
	WW Wiper, Washer & Horn
	BCS Body Control System
	LAN LAN System
	AV Audio Visual, Navigation & Telephone System
	ACS Auto Cruise Control System
L MAINTENANCE	PG Power Supply, Ground & Circuit Elements
	MA Maintenance

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FOREWORD

This manual contains maintenance and repair procedures for the 2009 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



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SERVICE MANUAL: Model: _____ Year: _____

PUBLICATION NO. (Refer to Quick Reference Index): _____

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

Please comment: _____

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DATE: _____ YOUR NAME: _____ POSITION: _____

DEALER: _____ DEALER NO.: _____ ADDRESS: _____

CITY: _____ STATE/PROV./COUNTRY: _____ ZIP/POSTAL CODE: _____

QUICK REFERENCE CHART: SENTRA

Engine Tune-up Data: MR20DE

INFOID:000000003297051

GENERAL SPECIFICATIONS

Engine type		MR20DE
Cylinder arrangement		In-line 4
Displacement	cm ³ (cu in)	1,997 (121.86)
Bore and stroke	mm (in)	84.0 x 90.1 (3.307 x 3.547)
Valve arrangement		DOHC
Firing order		1-3-4-2
Number of piston rings	Compression	2
	Oil	1
Compression ratio		10.2
Compression pressure kPa (bar, kg/cm ² , psi) / 250 rpm	Standard	1,390 (13.9, 14.2, 202)
	Minimum	1,140 (11.4, 11.6, 165)
	Differential limit between cylinders	100 (1.0, 1.0, 15)

SPARK PLUG

Unit: mm (in)

Plug type	Platinum-tipped TYPE
Make	NGK
Standard type	PLZKAR6A-11
Spark plug gap	Nominal: 1.1 (0.043)

Unit: mm (in)

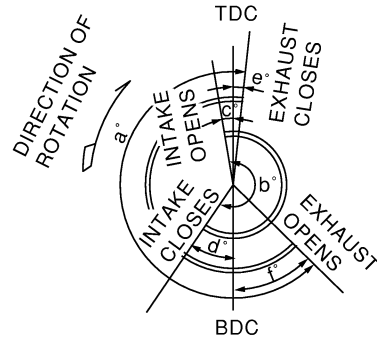
Engine Tune-up Data: QT25DE

INFOID:000000003297052

GENERAL SPECIFICATIONS

Model		SE-R	SE-R Spec V
Cylinder arrangement		In-line 4	
Displacement	cm ³ (in ³)	2,488 (151.82)	
Bore and stroke	mm (in)	89.0 x 100 (3.50 x 3.94)	
Valve arrangement		DOHC	
Firing order		1-3-4-2	
Number of piston rings	Compression	2	
	Oil	1	
Compression ratio		9.5:1	10.5:1
Compression pressure (kg/cm ² , psi) / 250 rpm	Standard	1,250 (12.8, 181.3)	
	Minimum	1,060 (10.8, 153.7)	
	Differential limit between cylinders	100 (1.0, 14)	

Valve timing



PBIC0187E

Unit: degree

a	b	c	d	e	f
224°	244°	0°	64°	3°	41°

SPARK PLUG

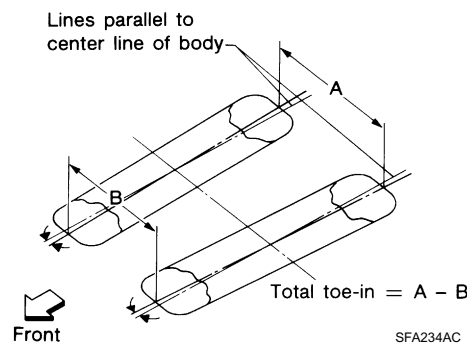
Unit: mm (in)

Make	NGK	
Type	Standard	DILKAR6A-11
Gap (nominal)	1.1 (0.043)	

Front Wheel Alignment (Unladen*)

INFOID:000000003297053

Engine		MR20DE	QR25DE	
Model		2.0, 2.0 S, 2.0 SL	SE-R	SPEC-V
Camber Degree minute (Decimal degree)	Minimum	-0° 55' (-0.92°)	-0° 55' (-0.92°)	-1° 00' (-1.00°)
	Nominal	-0° 10' (-0.17°)	-0° 10' (-0.17°)	-0° 15' (-0.25°)
	Maximum	0° 35' (0.58°)	0° 35' (0.58°)	0° 30' (0.50°)
	Left and right difference (RH - LH)	0° 45' (0.75°) or less	0° 45' (0.75°) or less	0° 45' (0.75°) or less
Caster Degree minute (Decimal degree)	Minimum	4° 10' (4.17°)	4° 15' (4.25°)	4° 25' (4.42°)
	Nominal	4° 55' (4.92°)	5° 00' (5.00°)	5° 10' (4.17°)
	Maximum	5° 40' (5.67°)	5° 45' (5.75°)	5° 55' (5.92°)
	Left and right difference (RH - LH)	0° 45' (0.75°) or less	0° 45' (0.75°) or less	0° 45' (0.75°) or less
Kingpin inclination Degree minute (Decimal degree)		11° 05' (11.08°)	11° 05' (11.08°)	11° 20' (11.33°)



SFA234AC

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2009

Total toe-in	Distance (A - B)	Minimum	-1 mm (-0.04 in)	-1 mm (-0.04 in)	-1 mm (-0.04 in)
		Nominal	0 mm (0.00 in)	0 mm (0.00 in)	0 mm (0.00 in)
		Maximum	1 mm (0.04 in)	1 mm (0.04 in)	1 mm (0.04 in)
	Angle (left or right, each side) Degree minute (Degree)	Minimum	-0° 02' (-0.03°)	-0° 02' (-0.03°)	-0° 02' (-0.03°)
		Nominal	0° 00' (0.00°)	0° 00' (0.00°)	0° 00' (0.00°)
		Maximum	0° 02' (0.03°)	0° 02' (0.03°)	0° 02' (0.03°)

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

Rear Wheel Alignment (Unladen*)

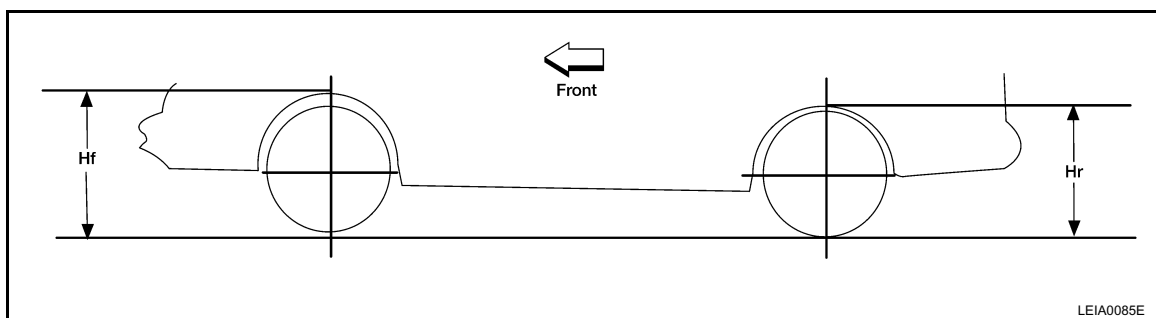
INFOID:000000003297055

Model		2.0, 2.0 S, 2.0 SL	SE-R	SPEC-V
Camber Degree minute (Decimal degree)	Minimum	− 2° 00′ (− 2.00°)	− 2° 00′ (− 2.00°)	− 2° 00′ (− 2.00°)
	Nominal	− 1° 30′ (− 1.50°)	− 1° 30′ (− 1.50°)	− 1° 30′ (− 1.50°)
	Maximum	− 1° 00′ (− 1.00°)	− 1° 00′ (− 1.00°)	− 1° 00′ (− 1.00°)
Total toe-in	Distance (A - B)	Minimum	− 3.0 mm (− 0.118 in)	− 2.0 mm (− 0.079 in)
		Nominal	1.0 mm (0.039 in)	2.0 mm (0.079 in)
		Maximum	5.0 mm (0.197 in)	6.0 mm (0.236 in)
				7.0 mm (0.276 in)

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

Wheelarch Height (Unladen*)

INFOID:000000003297054



Engine	MR20DE		QR25DE	
Model	2.0	2.0 S, 2.0 SL	SE-R	SPEC-V
Tire Size	P205/60HR15	P205/55HR16	P225/45VR17	P225/45WR17
Front (Hf) mm (in)	691 (27.20)	694 (27.32)	690 (27.17)	679 (26.73)
Rear (Hr) mm (in)	693 (27.28)	696 (27.40)	690 (27.17)	677 (26.65)

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

Brake General Specification

INFOID:000000003297056

Applied model		MR20DE	QR25DE	
		Base	SE-R	SE-R Spec-V
Front disc brake	Brake model	CLZ25VF	CLZ25VJ	AD25V
	Cylinder bore diameter	57.2 mm (2.252 in)	57.2 mm (2.252 in)	57.15 mm (2.250 in)
	Pad thickness	11 mm (0.433 in)	11 mm (0.433 in)	11 mm (0.433 in)
	Rotor outer diameter × thickness	280 mm × 24.0 mm (11.02 in × 0.945 in)	296 mm × 26.0 mm (11.65 in × 1.024 in)	320 mm × 28.0 mm (12.60 in × 1.102 in)

QUICK REFERENCE CHART: SENTRA

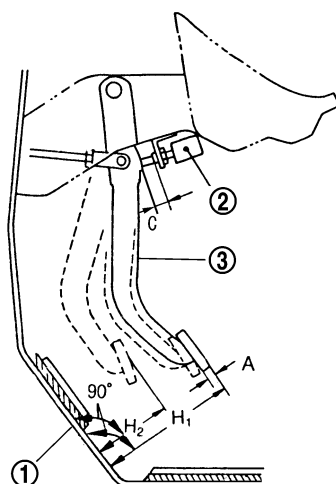
2009

Rear disc brake	Cylinder bore diameter	—	34.93 mm (1.375 in)	
	Pad thickness	—	8.5 mm (0.335 in)	
	Rotor outer diameter × thickness	—	292 mm × 9.0 mm (11.50 in × 0.354 in)	
Rear drum brake	Brake model	LT20D	—	—
	Cylinder bore diameter	15.87 mm (0.625 in)	—	—
	Lining Length × width × thickness	194.1 mm × 30.0 mm × 4.0 mm (7.642 in × 1.181 in × 0.157 in)	—	—
	Drum inner diameter	228.6 mm (9.000 in)	—	—
Master cylinder	Cylinder bore diameter	22.22 mm (0.875 in)		
Control valve	Valve model	Electric brake force distribution		
Brake booster	Booster model	C255		
	Diaphragm diameter	255 mm (10.04 in)		

Brake Pedal

INFOID:000000003297057

Unit: mm (in)



WFIA0511E

H1	Brake pedal initial height (from dash panel top surface)	164.0 - 174.0 mm (6.45 - 6.85 in)
H2	Brake pedal depressed height (under a force of 490 N (50 kg-f, 110 lb-f) with the engine running)	—
C	Clearance between the threaded end of stop lamp switch or ASCD switch, if equipped (2) and brake pedal lever (3).	0.74 - 1.96 mm (0.0291 - 0.0772 in)
A	Pedal play	3 - 11 mm (0.12 - 0.43 in)

Front Disc Brake

INFOID:000000003297058

CLZ25VF

Unit: mm (in)

Brake pad	Standard thickness (new)	11 (0.433)
	Repair limit thickness	2.0 (0.079)

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Disc rotor	Standard thickness (new)	24.0 (0.945)
	Repair limit thickness	22.0 (0.866)
	Runout limit	0.035 (0.0014)
	Maximum uneven wear (measured at 8 positions)	0.02 mm (0.0008 in) or less

CLZ25VJ

Unit: mm (in)

Brake pad	Standard thickness (new)	11 (0.433)
	Repair limit thickness	2.0 (0.079)
Disc rotor	Standard thickness (new)	26.0 (1.024)
	Repair limit thickness	24.0 (0.945)
	Runout limit	0.035 (0.0014)
	Maximum uneven wear (measured at 8 positions)	0.02 mm (0.0008 in) or less

AD25V

Unit: mm (in)

Brake pad	Standard thickness (new)	11 (0.433)
	Repair limit thickness	2.0 (0.079)
Disc rotor	Standard thickness (new)	28.0 (1.102)
	Repair limit thickness	26.0 (1.024)
	Runout limit	0.035 (0.0014)
	Maximum uneven wear (measured at 8 positions)	0.02 mm (0.0008 in) or less

Rear Disc Brake

INFOID:000000003297059

Unit: mm (in)

Brake pad	Standard thickness (new)	8.5 (0.335)
	Repair limit thickness	2.0 (0.079)
Disc rotor	Standard thickness (new)	9.0 (0.354)
	Repair limit thickness	8.0 (0.315)
	Runout limit	0.07 (0.0028)
	Maximum uneven wear (measured at 8 positions)	0.015 mm (0.0006 in) or less

Rear Drum Brake

INFOID:000000003297060

Unit: mm (in)

Brake model		LT20D
Brake lining	Standard thickness (new)	4.0 (0.157)
	Repair limit thickness	1.5 (0.059)
Drum	Standard inner diameter (new)	228.6 (9.000)
	Repair limit inner diameter	230.0 (9.055)

QUICK REFERENCE CHART: SENTRA

2009

Fluids and Lubricants: MR20DE

INFOID:000000003297061

Description		Capacity (Approximate)		
		Liter	US measure	Imp measure
Fuel		55.0	14 1/2 gal	12 1/8 gal
Engine oil Drain and refill	With oil filter change	3.8	4 qt	3 3/8 qt
	Without oil filter change	3.6	3 7/8 qt	3 1/8 qt
Dry engine (engine overhaul)		4.4	4 5/8 qt	3 7/8 qt
Cooling system (with reservoir at max level)		7.0	1 7/8 gal	1 1/2 gal
Manual transaxle fluid (MTF)		2.0	4 1/4 pt	3 1/2 pt
CVT fluid		8.3	8 3/4 qt	7 1/4 qt
Brake and clutch fluid		—	—	—
Multi-purpose grease		—	—	—
Windshield washer fluid		3.5	3 3/4 qt	3 1/8 qt
Air conditioning system refrigerant		0.50 ± 0.05 kg	1.10 ± 0.11 lb	1.10 ± 0.11 lb
Air conditioning system oil		120 mℓ	5.03 fl oz	5.3 fl oz

Fluids and Lubricants: QR25DE

INFOID:000000003297062

Description		Capacity (Approximate)		
		Liter	US measure	Imp measure
Fuel		55.0	14 1/2 gal	12 1/8 gal
Engine oil Drain and refill	With oil filter change	4.9	5 1/8 qt	4 3/8 qt
	Without oil filter change	4.6	4 7/8 qt	4 qt
Dry engine (engine overhaul)		5.0	5 1/4 qt	4 3/8 qt
Cooling system (with reservoir at max level)		7.6	2 gal	1 5/8 gal
Manual transaxle fluid (MTF)		1.7	3 5/8 pt	3 pt
CVT fluid		8.3	8 3/4 qt	7 1/4 qt
Brake and clutch fluids		—	—	—
Multi-purpose grease		—	—	—
Windshield washer fluid		3.5	3 3/4 qt	3 1/8 qt
Air conditioning system refrigerant		0.50 ± 0.05 kg	1.10 ± 0.11 lb	1.10 ± 0.11 lb
Air conditioning system oil		120 mℓ	5.03 fl oz	5.3 fl oz