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# NISSAN SENTRA

MODEL B16 SERIES

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**A**

**B**

**C**

**D**

**E**

**F**

**G**

**H**

**I**

**J**

**K**

**L**

**M**

# FOREWORD

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This manual contains maintenance and repair procedures for the 2008 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.

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## 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



## 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 print this form and type or write 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. (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.*

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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.*

Please describe the issue or problem in detail: \_\_\_\_\_

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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: \_\_\_\_\_

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 <sup>3</sup> (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<br>kPa (bar, kg/cm <sup>2</sup> , 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)

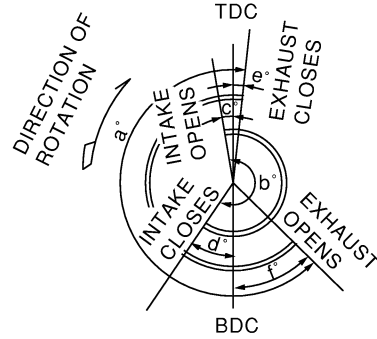
## Engine Tune-up Data: QT25DE

INFOID:000000003297052

### GENERAL SPECIFICATIONS

|                                                              |                                      |                          |             |
|--------------------------------------------------------------|--------------------------------------|--------------------------|-------------|
| Model                                                        |                                      | SE-R                     | SE-R Spec V |
| Cylinder arrangement                                         |                                      | In-line 4                |             |
| Displacement                                                 | cm <sup>3</sup> (in <sup>3</sup> )   | 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<br>(kg/cm <sup>2</sup> , 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

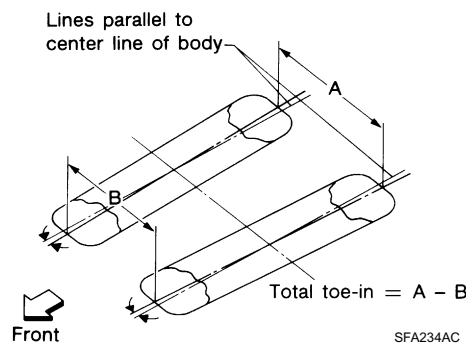
Unit: mm (in)

|               |             |             |
|---------------|-------------|-------------|
| 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<br>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<br>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<br>Degree minute (Decimal degree) |                                     | 11° 05' (11.08°)       | 11° 05' (11.08°)       | 11° 20' (11.33°)       |



SFA234AC

# QUICK REFERENCE CHART: SENTRA

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|              |                                                            |         |                  |                  |                  |
|--------------|------------------------------------------------------------|---------|------------------|------------------|------------------|
| 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)<br>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\*)

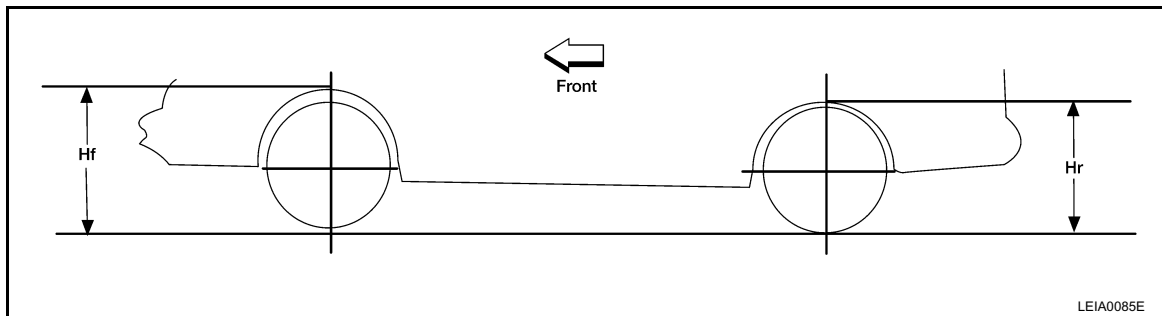
INFOID:000000003297055

| Model                                    |                  | 2.0, 2.0 S, 2.0 SL | SE-R                   | SPEC-V                 |                       |
|------------------------------------------|------------------|--------------------|------------------------|------------------------|-----------------------|
| Camber<br>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) | − 1.0 mm (− 0.039 in) |
|                                          |                  | Nominal            | 1.0 mm (0.039 in)      | 2.0 mm (0.079 in)      | 3.0 mm (0.118 in)     |
|                                          |                  | Maximum            | 5.0 mm (0.197 in)      | 4.0 mm (0.157 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

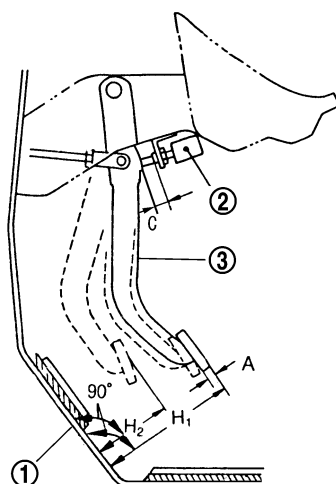
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|                 |                                   |                                                                 |                                       |   |
|-----------------|-----------------------------------|-----------------------------------------------------------------|---------------------------------------|---|
| 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<br>(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) |

# QUICK REFERENCE CHART: SENTRA

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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:0000000003297059

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:0000000003297060

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

2008

## 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<br>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<br>(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<br>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<br>(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      |