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# NISSAN PATHFINDER

## MODEL R51 SERIES

### QUICK REFERENCE INDEX

|                                      |                                                           |
|--------------------------------------|-----------------------------------------------------------|
| <b>A GENERAL INFORMATION</b>         | <b>GI General Information</b>                             |
| <b>B ENGINE</b>                      | <b>EM Engine Mechanical</b>                               |
|                                      | <b>LU Engine Lubrication System</b>                       |
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|                                      | <b>EC Engine Control System</b>                           |
|                                      | <b>FL Fuel System</b>                                     |
|                                      | <b>EX Exhaust System</b>                                  |
|                                      | <b>ACC Accelerator Control System</b>                     |
| <b>C TRANSMISSION/<br/>TRANSAXLE</b> | <b>AT Automatic Transmission</b>                          |
| <b>D DRIVELINE/AXLE</b>              | <b>TF Transfer</b>                                        |
|                                      | <b>PR Propeller Shaft</b>                                 |
|                                      | <b>FFD Front Final Drive</b>                              |
|                                      | <b>RFD Rear Final Drive</b>                               |
|                                      | <b>FAX Front Axle</b>                                     |
|                                      | <b>RAX Rear Axle</b>                                      |
|                                      | <b>FSU Front Suspension</b>                               |
| <b>E SUSPENSION</b>                  | <b>RSU Rear Suspension</b>                                |
|                                      | <b>WT Road Wheels &amp; Tires</b>                         |
|                                      | <b>BR Brake System</b>                                    |
| <b>F BRAKES</b>                      | <b>PB Parking Brake System</b>                            |
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|                                      | <b>PS Power Steering System</b>                           |
| <b>G STEERING</b>                    | <b>SB Seat Belts</b>                                      |
| <b>H RESTRAINTS</b>                  | <b>SRS Supplemental Restraint System (SRS)</b>            |
|                                      | <b>BL Body, Lock &amp; Security System</b>                |
| <b>I BODY</b>                        | <b>GW Glasses, Window System &amp; Mirrors</b>            |
|                                      | <b>RF Roof</b>                                            |
|                                      | <b>EI Exterior &amp; Interior</b>                         |
|                                      | <b>IP Instrument Panel</b>                                |
|                                      | <b>SE Seat</b>                                            |
|                                      | <b>AP Adjustable Pedal</b>                                |
|                                      | <b>ATC Automatic Air Conditioner</b>                      |
|                                      | <b>MTC Manual Air Conditioner</b>                         |
| <b>J AIR CONDITIONER</b>             | <b>SC Starting &amp; Charging System</b>                  |
|                                      | <b>LT Lighting System</b>                                 |
|                                      | <b>DI Driver Information System</b>                       |
|                                      | <b>WW Wiper, Washer &amp; Horn</b>                        |
|                                      | <b>BCS Body Control System</b>                            |
|                                      | <b>LAN LAN System</b>                                     |
|                                      | <b>AV Audio Visual, Navigation &amp; Telephone System</b> |
|                                      | <b>ACS Auto Cruise Control System</b>                     |
|                                      | <b>PG Power Supply, Ground &amp; Circuit Elements</b>     |
|                                      | <b>MA Maintenance</b>                                     |
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**A**  
**B**  
**C**  
**D**  
**E**  
**F**  
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**I**  
**J**  
**K**  
**L**  
**M**

# FOREWORD

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This manual contains maintenance and repair procedures for the 2007 NISSAN PATHFINDER.

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.



**NISSAN NORTH AMERICA, INC.**  
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: \_\_\_\_\_

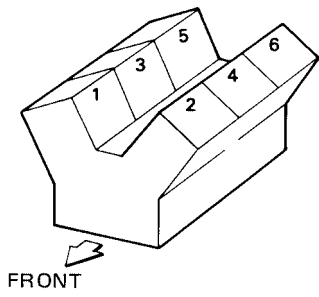
## QUICK REFERENCE CHART: PATHFINDER

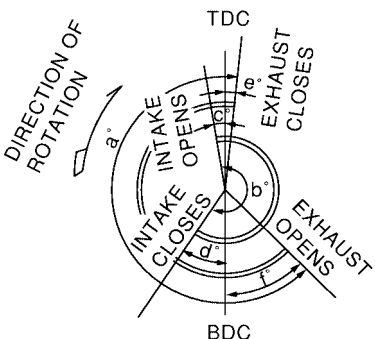
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### Engine Tune-Up Data

ELS0029I

|                         |                                      |                                                       |
|-------------------------|--------------------------------------|-------------------------------------------------------|
| Cylinder arrangement    |                                      | V-6                                                   |
| Displacement            |                                      | 3,954 cm <sup>3</sup> (241.30 in <sup>3</sup> )       |
| Bore and stroke         |                                      | 95.5 × 92.0 mm (3.76 × 3.622 in)                      |
| Valve arrangement       |                                      | DOHC                                                  |
| Firing order            |                                      | 1-2-3-4-5-6                                           |
| Number of piston rings  | Compression                          | 2                                                     |
|                         | Oil                                  | 1                                                     |
| Number of main bearings |                                      | 4                                                     |
| Compression ratio       |                                      | 9.7:1                                                 |
| Compression pressure    | Standard                             | 1,275 kPa (13.0 kg/cm <sup>2</sup> , 185 psi)/300 rpm |
|                         | Minimum                              | 981 kPa (10.0 kg/cm <sup>2</sup> , 142 psi)/300 rpm   |
|                         | Differential limit between cylinders | 98 kPa (1.0 kg/cm <sup>2</sup> , 14 psi)/300 rpm      |

|                 |                                                                                                                 |  |
|-----------------|-----------------------------------------------------------------------------------------------------------------|--|
| Cylinder number |  <p>FRONT</p> <p>SEM713A</p> |  |
|-----------------|-----------------------------------------------------------------------------------------------------------------|--|

|                                                       |                                                                                                       |  |
|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------|--|
| Valve timing<br>(Intake valve timing control - "OFF") |  <p>PBIC0187E</p> |  |
|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------|--|

Unit: degree

| a    | b    | c   | d   | e  | f   |
|------|------|-----|-----|----|-----|
| 244° | 240° | -4° | 64° | 6° | 58° |

## Drive Belt Deflection and Tension

|                        |                                   |
|------------------------|-----------------------------------|
| Tension of drive belts | Auto adjustment by auto tensioner |
|------------------------|-----------------------------------|

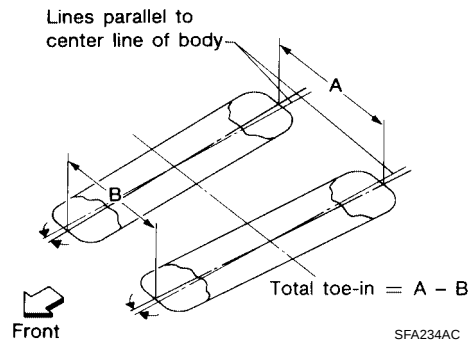
## Spark Plug

|               |                   |
|---------------|-------------------|
| Make          | NGK               |
| Standard type | PLFR5A-11         |
| Gap (nominal) | 1.1 mm (0.043 in) |

## Front Wheel Alignment (Unladen\*<sup>1</sup>)\*6

ELS0029J

| Drive type                                            |              | 2WD                    | 4WD                    |
|-------------------------------------------------------|--------------|------------------------|------------------------|
| Camber<br>Degree minute (decimal degree)              | Minimum      | -0° 30' (-0.50°)       | -0° 15' (-0.25°)       |
|                                                       | Nominal      | 0° 15' (0.25°)         | 0° 30' (0.50°)         |
|                                                       | Maximum      | 1° 00' (1.00°)         | 1° 15' (1.25°)         |
|                                                       | Cross camber | 0° 45' (0.75°) or less | 0° 45' (0.75°) or less |
| Caster<br>Degree minute (decimal degree)              | Minimum      | 2° 15' (2.25°)         | 2° 00' (2.00°)         |
|                                                       | Nominal      | 3° 0' (3.00°)          | 2° 45' (2.75°)         |
|                                                       | Maximum      | 3° 45' (3.75°)         | 3° 30' (3.50°)         |
|                                                       | Cross caster | 0° 45' (0.75°) or less | 0° 45' (0.75°) or less |
| Kingpin inclination<br>Degree minute (decimal degree) | Nominal      | 13° 0' (13.00°)        | 12° 45' (12.75°)       |



|                                 |                                                                     |                                           |                                           |                                           |                  |
|---------------------------------|---------------------------------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|------------------|
| Total toe-in                    | Distance (A – B)                                                    |                                           | Minimum                                   | 2.1 mm (0.08 in)                          | 2.1 mm (0.08 in) |
|                                 |                                                                     |                                           | Nominal                                   | 3.1 mm (0.12 in)                          | 3.1 mm (0.12 in) |
|                                 |                                                                     |                                           | Maximum                                   | 4.1 mm (0.16 in)                          | 4.1 mm (0.16 in) |
|                                 | Angle (left wheel or right wheel)<br>Degree minute (decimal degree) |                                           | Minimum                                   | 0° 5′ (0.08°)                             | 0° 5′ (0.08°)    |
|                                 |                                                                     |                                           | Nominal                                   | 0° 7′ (0.12°)                             | 0° 7′ (0.12°)    |
|                                 |                                                                     |                                           | Maximum                                   | 0° 9′ (0.15°)                             | 0° 9′ (0.15°)    |
| Wheel turning angle (full turn) |                                                                     | Inside<br>Degree minute (decimal degree)  | 33° 26′ – 35° 26′ *2<br>(33.43° – 35.43°) | 33° 33′ – 35° 33′ *4<br>(33.60° – 35.60°) |                  |
|                                 |                                                                     | Outside<br>Degree minute (decimal degree) | 29° 22′ – 31° 22′ *3<br>(29.37° – 31.37°) | 29° 38′ – 31° 38′ *5<br>(29.73° – 31.73°) |                  |

\*1: Fuel, radiator coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.

\*2: Target value 35° 26' (35.43°)

\*3: Target value 31° 22' (31.37°)

\*4: Target value 35° 33' (35.55°)

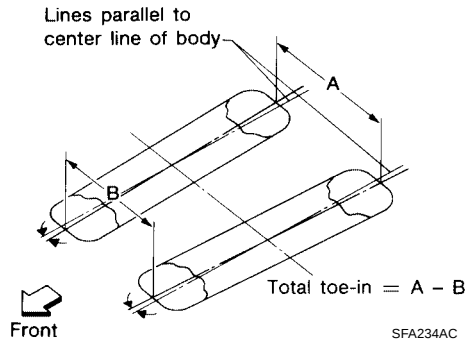
\*5: Target value 31° 38' (31.63°)

\*6: Some vehicles may be equipped with straight (non-adjustable) lower link bolts and washers. In order to adjust camber and caster on these vehicles, first replace the lower link bolts and washers with adjustable (cam) bolts and washers.

## Rear Wheel Alignment (Unladen\*<sup>1</sup>)

ELS0029K

|                                          |         |                    |
|------------------------------------------|---------|--------------------|
| Camber<br>Degree minute (decimal degree) | Minimum | - 0° 32' (- 0.53°) |
|                                          | Nominal | - 0° 2' (- 0.03°)  |
|                                          | Maximum | 0° 28' (0.47°)     |



|              |                                                       |           |                         |
|--------------|-------------------------------------------------------|-----------|-------------------------|
| Total toe-in | Distance (A - B)                                      | Minimum   | - 1.4 mm (- 0.055 in)   |
|              |                                                       | Nominal   | 1.9 mm (0.075 in)       |
|              |                                                       | Maximum   | 5.2 mm (0.205 in)       |
|              |                                                       | Cross toe | 0 ± 2 mm (0 ± 0.079 in) |
|              | Angle (left, right)<br>Degree minute (decimal degree) | Minimum   | - 0° 3' (-0.05°)        |
|              |                                                       | Nominal   | 0° 4' (0.07°)           |
|              |                                                       | Maximum   | 0° 11' (0.18°)          |

## Brake

ELS0029L

Unit: mm (in)

|                         |                                  |                                                                                       |
|-------------------------|----------------------------------|---------------------------------------------------------------------------------------|
| Front brake             | Brake model                      | CLZ33VB                                                                               |
|                         | Rotor outer diameter × thickness | 296 × 28 (11.654 × 1.102)                                                             |
|                         | Pad Length × width × thickness   | 111.0 × 73.5 × 10.0 (4.73 × 2.894 × 0.394)                                            |
|                         | Cylinder bore diameter           | 46.4 (1.83)                                                                           |
| Rear brake              | Brake model                      | CLZ14VB                                                                               |
|                         | Rotor outer diameter × thickness | 308 × 18 (12.126 × 0.709)                                                             |
|                         | Pad Length × width × thickness   | 83.0 × 33.0 × 11.0 (3.268 × 1.299 × 0.433)                                            |
|                         | Cylinder bore diameter           | 38.1 (1.50)                                                                           |
| Control valve           | Valve model                      | Electric brake force distribution                                                     |
| Brake booster           | Booster model                    | C215T                                                                                 |
|                         | Diaphragm diameter               | 215 (8.46)                                                                            |
| Recommended brake fluid |                                  | Genuine NISSAN Super Heavy Duty Brake Fluid or equivalent<br>DOT 3 (US FMVSS No. 116) |

## Disc Brake - Repair Limits FRONT DISC BRAKE

ELS0029M

Unit: mm (in)

|             |                                                |                |
|-------------|------------------------------------------------|----------------|
| Brake model |                                                | CLZ33VB        |
| Brake pad   | Standard thickness (new)                       | 10.0 (0.394)   |
|             | Repair limit thickness                         | 2.0 (0.079)    |
| Disc rotor  | Standard thickness (new)                       | 28.0 (1.102)   |
|             | Repair limit thickness                         | 26.0 (1.024)   |
|             | Maximum uneven wear (measured at 8 positions)  | 0.015 (0.0006) |
|             | Runout limit (with it attached to the vehicle) | 0.05 (0.0020)  |

## REAR DISC BRAKE

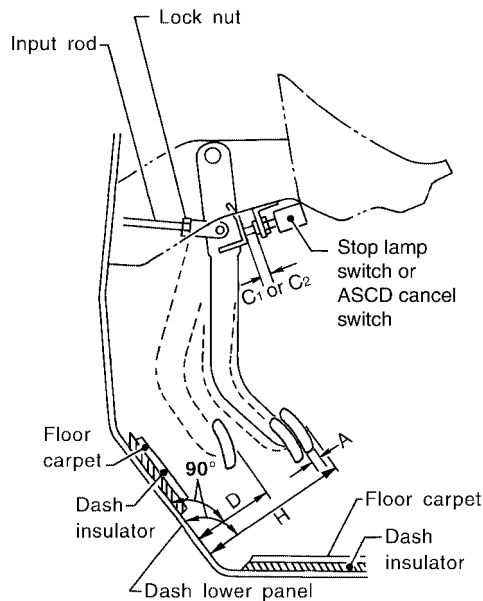
Unit: mm (in)

|             |                                                |                |
|-------------|------------------------------------------------|----------------|
| Brake model |                                                | CLZ14VB        |
| Brake pad   | Standard thickness (new)                       | 11.0 (0.433)   |
|             | Repair limit thickness                         | 2.0 (0.079)    |
| Disc rotor  | Standard thickness (new)                       | 18.0 (0.709)   |
|             | Repair limit thickness                         | 16.0 (0.630)   |
|             | Maximum uneven wear (measured at 8 positions)  | 0.015 (0.0006) |
|             | Runout limit (with it attached to the vehicle) | 0.05 (0.0020)  |

## Brake Pedal

ELS0029N

Unit: mm (in)



WFIA0160E

|                                                                                                     |                             |
|-----------------------------------------------------------------------------------------------------|-----------------------------|
| Free height "H"                                                                                     | 182.1 - 192.1 (7.17 - 7.56) |
| Depressed pedal height ("D" [under a force of 490 N (50 kg, 110 lb) with engine running])           | 105 - 115 (4.13 - 4.53)     |
| Clearance between pedal stopper and threaded end of stop lamp switch and ASCD switch "C1 " or "C2 " | 0.74 - 1.96 (0.029 - 0.077) |
| Pedal play "A"                                                                                      | 3 - 11 (0.12 - 0.43)        |

# QUICK REFERENCE CHART: PATHFINDER

2007

ELS00290

## Refill Capacities

| Description                                     |                           | Capacity (Approximate) |                |                |
|-------------------------------------------------|---------------------------|------------------------|----------------|----------------|
|                                                 |                           | Metric                 | US measure     | Imp measure    |
| Fuel                                            |                           | 80 ℓ                   | 21 1/8 gal     | 17 5/8 gal     |
| Engine oil<br>Drain and refill                  | With oil filter change    | 5.1 ℓ                  | 5 3/8 qt       | 4 1/2 qt       |
|                                                 | Without oil filter change | 4.8 ℓ                  | 5 1/8 qt       | 4 1/4 qt       |
| Dry engine (engine overhaul)                    |                           | 6.3 ℓ                  | 6 5/8 qt       | 5 1/2 qt       |
| Cooling system<br>(with reservoir at MAX level) | Without rear A/C          | 10.2 ℓ                 | 2 3/4 gal      | 2 1/4 gal      |
|                                                 | With rear A/C             | 13.4 ℓ                 | 3 1/2 gal      | 3 gal          |
| Automatic transmission fluid (ATF)              |                           | 10.3 ℓ                 | 10 7/8 qt      | 9 1/8 qt       |
| Rear final drive oil                            |                           | 1.4 ℓ                  | 3 pt           | 2 1/2 pt       |
| Transfer fluid                                  | ATX14B                    | 3.0 ℓ                  | 3 1/8 qt       | 2 5/8 qt       |
|                                                 | TX15B                     | 2.0 ℓ                  | 2 1/8 qt       | 1 3/4 qt       |
| Front final drive oil                           |                           | 0.85 ℓ                 | 1 3/4 pt       | 1 1/2 pt       |
| Power steering fluid (PSF)                      |                           | 1.0 ℓ                  | 2 1/8 pt       | 1 3/4 pt       |
| Windshield washer fluid                         |                           | 4.5 ℓ                  | 1 1/4 gal      | 1 gal          |
| A/C system refrigerant                          | Without rear A/C          | 0.70 ± 0.05 kg         | 1.54 ± 0.11 lb | 1.54 ± 0.11 lb |
|                                                 | With rear A/C             | 0.85 ± 0.05 kg         | 1.87 ± 0.11 lb | 1.87 ± 0.11 lb |
| A/C system oil                                  | Without rear A/C          | 180 m ℓ                | 6.1 fl oz      | 6.3 fl oz      |
|                                                 | With rear A/C             | 210 m ℓ                | 7.1 fl oz      | 7.4 fl oz      |