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NISSAN

PATHFINDER

MODEL R52 SERIES

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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 |
| | STR Starting System |
| | ACC Accelerator Control System |
| C HYBRID | HBC Hybrid Control System |
| | HBR Hybrid Brake System |
| D TRANSMISSION & DRIVE-LINE | TM Transaxle & Transmission |
| | DLN Driveline |
| | 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 | ST Steering System |
| | STC Steering Control System |
| H RESTRAINTS | SB Seat Belt |
| | SBC Seat Belt Control System |
| | SR SRS Airbag |
| | SRC SRS Airbag Control System |
| I VENTILATION, HEATER & AIR CONDITIONER | VTL Ventilation System |
| | HA Heater & Air Conditioning System |
| | HAC Heater & Air Conditioning Control System |
| J BODY INTERIOR | INT Interior |
| | IP Instrument Panel |
| | SE Seat |
| | ADP Automatic Drive Postioner |
| | AP Adjustable Pedals |
| K BODY EXTERIOR, DOORS, ROOF & VEHICLE SECURITY | DLK Door & Lock |
| | SEC Security Control System |
| | GW Glass & Window System |
| | PWC Power Window Control System |
| | RF Roof |
| | EXT Exterior |
| | BRM Body Repair Manual |
| L DRIVER CONTROLS | MIR Mirrors |
| | EXL Exterior Lighting System |
| | INL Interior Lighting System |
| | WW Wiper & Washer |
| | DEF Defogger |
| | HRN Horn |
| M ELECTRICAL & POWER CONTROL | PWO Power Outlet |
| | BCS Body Control System |
| | LAN LAN System |
| | PCS Power Control System |
| | CHG Charging System |
| | PG Power Supply, Ground & Circuit Elements |
| N DRIVER INFORMATION & MULTIMEDIA | MWI Meter, Warning Lamp & Indicator |
| | WCS Warning Chime System |
| | SN Sonar System |
| | AV Audio, Visual & Navigation System |
| O CRUISE CONTROL | CCS Cruise Control System |
| | DAS Driver Assistance System |
| P MAINTENANCE | MA Maintenance |
| Q INDEX | IDX Alphabetic Index |

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FOREWORD

This manual contains maintenance and repair procedures for the 2016 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.

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.*

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

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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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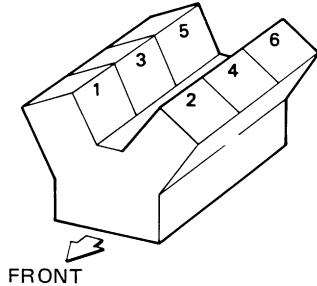
QUICK REFERENCE CHART: PATHFINDER

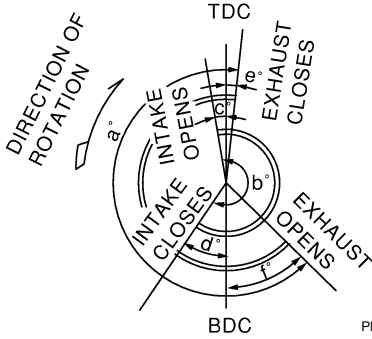
Engine Tune-up Data

INFOID:0000000013498174

GENERAL SPECIFICATIONS

| | | |
|---|--------------------------------------|-----------------------------|
| Cylinder arrangement | | V-6 |
| Displacement cm^3 (cu in) | | 3,498 (213.45) |
| Bore and stroke mm (in) | | 95.5 x 81.4 (3.760 x 3.205) |
| 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 | | 10.6:1 |
| Compression pressure kPa (kg/cm^2 , psi)/300 rpm | Standard | 1,275 (13.0, 185) |
| | Minimum | 981 (10.0, 142) |
| | Differential limit between cylinders | 98 (1.0, 14) |

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

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

Unit: degree

| a | b | c | d | e | f |
|-----|-----|-----|----|----|----|
| 240 | 240 | -10 | 70 | 10 | 50 |

Drive Belt

INFOID:0000000013498171

| | |
|-----------------------|--|
| Tension of drive belt | Belt tension is not necessary, as it is automatically adjusted by drive belt auto-tensioner. |
|-----------------------|--|

QUICK REFERENCE CHART: PATHFINDER

2016

Spark Plug

INFOID:0000000013498169

Unit: mm (in)

| | | |
|----------------|-----------|-------------|
| Make | DENSO | |
| Standard type* | FXE22HR11 | |
| Gap | Standard | 1.1 (0.043) |

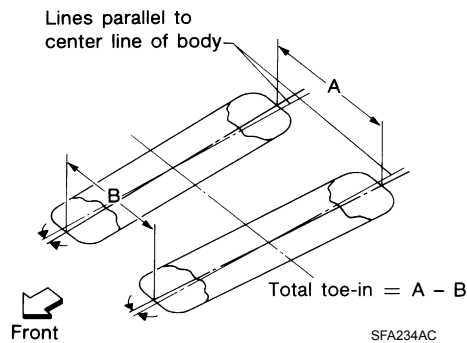
*: Always check with the Parts Department for the latest parts information.

Front Wheel Alignment

INFOID:0000000013498139

UNITED STATES and MEXICO

| Item | | Standard | |
|---|---|----------------------------------|------------------|
| Measurement wheel | | (LH) side | (RH) side |
| Camber Degree minute (Decimal degree) | Minimum | -1° 00' (-1.00°) | -1° 15' (-1.25°) |
| | Nominal | -0° 15' (-0.25°) | -0° 30' (-0.50°) |
| | Maximum | 0° 30' (0.50°) | 0° 15' (0.25°) |
| | Left and right difference* ¹ | -0° 15' ± 0° 33' (0.25° ± 0.55°) | |
| Caster Degree minute (Decimal degree) | Minimum | 3° 55' (3.92°) | |
| | Nominal | 4° 40' (4.67°) | |
| | Maximum | 5° 25' (5.42°) | |
| | Left and right difference* ¹ | 0.30' (0.50°) Maximum | |
| Kingpin inclination Degree minute (Decimal degree) | Minimum | 11° 55' (11.92°) | 12° 10' (12.17°) |
| | Nominal | 12° 40' (12.67°) | 12° 55' (12.92°) |
| | Maximum | 13° 25' (13.42°) | 13° 40' (13.67°) |



| | | | |
|--------------|---|---------|---------------------------|
| Total toe-in | Distance (A - B) | Minimum | Out 0.4 mm (Out 0.016 in) |
| | | Nominal | In 1.4 mm (In 0.055 in) |
| | | Maximum | In 2.4 mm (In 0.094 in) |
| | Angle (left and right) Degree minute (Decimal degree) | Minimum | Out 0° 1' (Out 0.02°) |
| | | Nominal | In 0° 3' (In 0.05°) |
| | | Maximum | In 0° 5' (In 0.08°) |

Measure value under unladen conditions (Fuel, engine coolant and lubricant are full. Spare tire, jack, hand tools and mats are in designated positions).

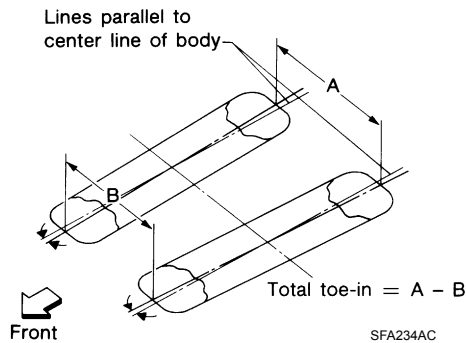
*1: The (RH) camber angle shall be -0° 15' ± 0° 33' (0.25° ± 0.55°) with respect to the (LH) camber angle.

CANADA

QUICK REFERENCE CHART: PATHFINDER

2016

| Item | | Standard | |
|---|---|--|----------------------------------|
| Measurement wheel | | (LH) side | (RH) side |
| Camber Degree minute (Decimal degree) | Minimum | $-1^{\circ} 00' (-1.00^{\circ})$ | $-1^{\circ} 15' (-1.25^{\circ})$ |
| | Nominal | $-0^{\circ} 15' (-0.25^{\circ})$ | $-0^{\circ} 30' (-0.50^{\circ})$ |
| | Maximum | $0^{\circ} 30' (0.50^{\circ})$ | $0^{\circ} 15' (0.25^{\circ})$ |
| | Left and right difference* ¹ | $-0^{\circ} 15' \pm 0^{\circ} 33' (0.25^{\circ} \pm 0.55^{\circ})$ | |
| Caster Degree minute (Decimal degree) | Minimum | $4^{\circ} 00' (4.00^{\circ})$ | |
| | Nominal | $4^{\circ} 45' (4.75^{\circ})$ | |
| | Maximum | $5^{\circ} 30' (5.50^{\circ})$ | |
| | Left and right difference* ¹ | $0.30' (0.50^{\circ})$ Maximum | |
| Kingpin inclination Degree minute (Decimal degree) | Minimum | $11^{\circ} 55' (11.92^{\circ})$ | $12^{\circ} 10' (12.17^{\circ})$ |
| | Nominal | $12^{\circ} 40' (12.67^{\circ})$ | $12^{\circ} 55' (12.92^{\circ})$ |
| | Maximum | $13^{\circ} 25' (13.42^{\circ})$ | $13^{\circ} 40' (13.67^{\circ})$ |



| | | | |
|--------------|---|---------|--|
| Total toe-in | Distance (A - B) | Minimum | Out 0.5 mm (Out 0.020 in) |
| | | Nominal | In 1.5 mm (In 0.059 in) |
| | | Maximum | In 2.5 mm (In 0.098 in) |
| | Angle (left and right) Degree minute (Decimal degree) | Minimum | Out $0^{\circ} 1'$ (Out 0.02°) |
| | | Nominal | In $0^{\circ} 3'$ (In 0.05°) |
| | | Maximum | In $0^{\circ} 5'$ (In 0.08°) |

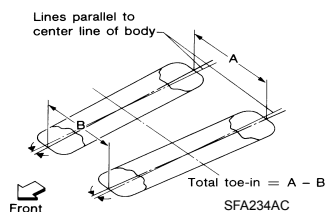
Measure value under unladen conditions. (Fuel, engine coolant and lubricant are full. Spare tire, jack, hand tools and mats are in designated positions).

*1: The (RH) camber angle shall be $-0^{\circ} 15' \pm 0^{\circ} 33' (0.25^{\circ} \pm 0.55^{\circ})$ with respect to the (LH) camber angle.

Rear Wheel Alignment (Unladen*)

INFOID:0000000013498137

| Item | | Standard |
|--|---------|----------------------------------|
| Camber Degree minute (Decimal degree) | Minimum | $-1^{\circ} 05' (-1.08^{\circ})$ |
| | Nominal | $-0^{\circ} 35' (-0.58^{\circ})$ |
| | Maximum | $-0^{\circ} 05' (-0.08^{\circ})$ |



QUICK REFERENCE CHART: PATHFINDER

2016

| Item | | | Standard |
|--------------|--|---------|---------------------------|
| Total toe-in | Distance (A - B) | Minimum | Out 0.2 mm (Out 0.008 in) |
| | | Nominal | In 2.2 mm (In 0.087 in) |
| | | Maximum | In 4.2 mm (In 0.165 in) |
| | Angle (LH and RH) Degree minute (Decimal degree) | Minimum | Out 0° 1' (Out 0.02°) |
| | | Nominal | In 0° 5' (In 0.08°) |
| | | Maximum | In 0° 9' (In 0.15°) |

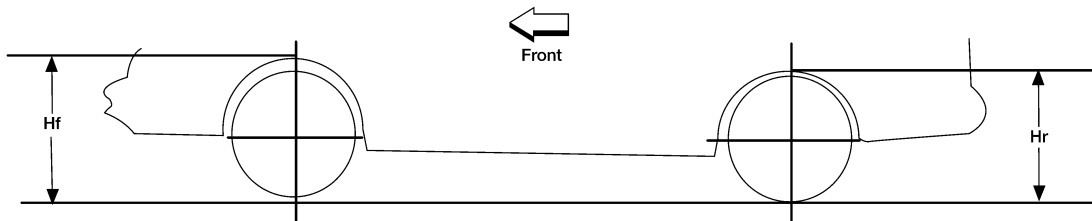
*: Fuel, engine coolant, and lubricants are full. Spare tire, jack, hand tools, and mats are in designated positions.

Wheelarch Height

INFOID:000000013498136

UNITED STATES

Unit: mm (in)



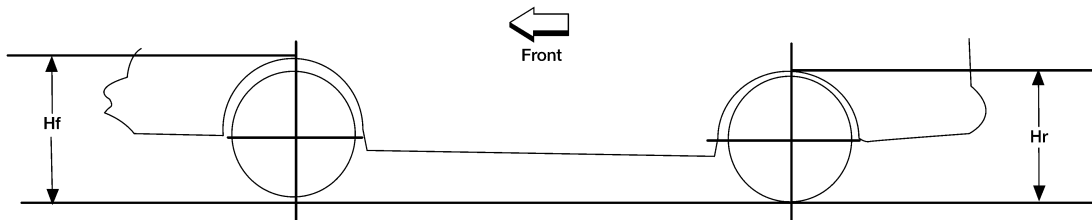
LEIA0085E

| Axle type | 2WD | | | 4WD | |
|------------|-------------|-------------|-------------|-------------|--------------|
| Wheel size | 235/65R18 | | 235/55R20 | 235/65R18 | 235/55R20 |
| Grade | S, SV | SL | Platinum | S, SV | SL, Platinum |
| Front (Hf) | 823 (32.40) | 823 (32.40) | 821 (32.32) | 822 (32.36) | 822 (32.36) |
| Rear (Hr) | 828 (32.60) | 827 (32.56) | 825 (32.48) | 827 (32.56) | 826 (32.52) |

Measure value under unladen conditions. (Fuel, engine coolant and lubricant are full. Spare tire, jack, hand tools and mats are in designated positions).

CANADA

Unit: mm (in)



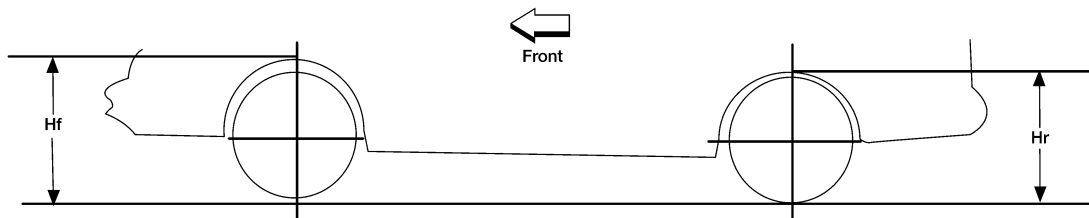
LEIA0085E

| Axle type | 2WD | | 4WD | | | |
|------------|-------------|-------------|-----|----|-------------|----------|
| Wheel size | 235/65R18 | | | | 235/55R20 | |
| Grade | S | SL | S | SV | SL | Platinum |
| Front (Hf) | 823 (32.40) | | | | 822 (32.36) | |
| Rear (Hr) | 829 (32.64) | 828 (32.60) | | | 827 (32.56) | |

Measure value under unladen* conditions. (Fuel, engine coolant and lubricant are full. Spare tire, jack, hand tools and mats are in designated positions).

MEXICO

Unit: mm (in)



LEIA0085E

| Axle type | 2WD | | 4WD | |
|------------|-------------|---------|-------------|---------------|
| Wheel size | 235/65R18 | | 235/55R20 | |
| Grade | Sense | Advance | Exclusive | Exclusive 4WD |
| Front (Hf) | 823 (32.40) | | 821 (32.32) | |
| Rear (Hr) | 828 (32.60) | | 826 (32.52) | 825 (32.48) |

Measure value under unladen* conditions. (Fuel, engine coolant and lubricant are full. Spare tire, jack, hand tools and mats are in designated positions).

Brake Specifications

INFOID:0000000013498135

Unit: mm (in)

| | | |
|-----------------|---------------------------------------|---|
| Front brake | Cylinder bore diameter | 45.0 (1.772) × 2 |
| | Pad length × width × thickness | 131.4 (5.173) × 53.0 (2.087) × 10.0 (0.394) |
| | Disc rotor outer diameter × thickness | 320.0 (12.598) × 28.0 (1.102) |
| Rear brake | Cylinder bore diameter | 42.86 (1.6874) |
| | Pad length × width × thickness | 83.0 (3.268) × 33.0 (1.299) × 8.5 (0.335) |
| | Disc rotor outer diameter × thickness | 308 (12.126) × 16.0 (0.630) |
| Master cylinder | Cylinder bore diameter | 26.99 (1.063) |
| Control valve | Valve type | Electric brake force distribution |

Brake Pedal

INFOID:0000000013498134

Unit: mm (in)

| Item | Standard |
|--|-------------------------------|
| Brake pedal height (H1) | 214.2 – 224.2 (8.43 – 8.82) |
| Clearance (A) between brake pedal bracket, stop lamp switch and brake pedal position switch contact ends | 0.74 – 1.96 (0.0291 – 0.0772) |
| Brake pedal full stroke (H2) | 139.1 (5.476) |
| Depressed brake pedal height (H3) [Depressing 490 N (50 kg, 110 lb) while turning the engine ON] | 75.1 (2.96) |

Front Disc Brake

INFOID:0000000013498133

Unit: mm (in)

| Item | Limit |
|------------------|--|
| Brake pad | Wear thickness |
| | 2.0 (0.079) |
| Disc brake rotor | Wear thickness |
| | 26.0 (1.024) |
| | Thickness variation (measured at 8 positions)* |
| | 0.008 (0.0003) |
| | Runout (with disc brake rotor attached to the vehicle) |
| | 0.040 (0.0016) or less |

*To check if rotor imbalance, rotor runout or rotor deformation exists.

Rear Disc Brake

INFOID:0000000013498132

Unit: mm (in)

| Item | | Limit |
|------------------|--|------------------------|
| Brake pad | Wear thickness | 2.0 (0.079) |
| | Wear thickness | 14.0 (0.551) |
| Disc brake rotor | Thickness variation (measured at 8 positions)* | 0.020 (0.0008) |
| | Runout (with disc brake rotor attached to the vehicle) | 0.050 (0.0020) or less |

*To check if rotor imbalance, rotor runout or rotor deformation exists.

FOR USA AND CANADA : Fluids and Lubricants

INFOID:0000000013498108

The following are approximate capacities. The actual capacities may be slightly different. When refilling, follow the procedures described elsewhere in this manual.

| Fluid types | | Capacity (Approximate) | | |
|---|---------------------------|------------------------|----------------|----------------|
| | | Metric | US measure | Imp measure |
| Fuel | | 74.0 ℓ | 19-1/2 gal | 16-1/4 gal |
| Engine oil Drain and refill | With oil filter change | 4.8 ℓ | 5-1/8 qt | 4-1/4 qt |
| | Without oil filter change | 4.5 ℓ | 4-3/4 qt | 4 qt |
| | Dry engine (Overhaul) | 5.1 ℓ | 5-3/8 qt | 4-1/2 qt |
| Engine coolant (with reservoir at MAX level) | | 9.8 ℓ | 10-3/8 qt | 8-5/8 qt |
| CVT fluid | | 8.8 ℓ | 9-1/4 qt | 7-3/4 qt |
| Differential gear oil | | 0.5 ℓ | 1 pt | 7/8 pt |
| Transfer fluid | | 0.31 ℓ | 5/8 pt | 1/2 pt |
| Power steering fluid (PSF) | | 1.0 ℓ | 1-1/8 qt | 7/8 qt |
| Brake fluid | | — | — | — |
| Multi-purpose grease | | — | — | — |
| Windshield washer fluid | | 5 ℓ | 5-1/4 qt | 4-3/8 qt |
| Air conditioning system refrigerant | | 0.80 ± 0.03 kg | 1.80 ± 0.07 lb | 1.80 ± 0.07 lb |
| Air conditioning system oil | | 230 m ℓ | 7.8 fl oz | 8.1 fl oz |

FOR MEXICO : Fluids and Lubricants

INFOID:0000000013498116

The following are approximate capacities. The actual capacities may be slightly different. When refilling, follow the procedures described elsewhere in this manual.

| Fluid types | | Capacity (Approximate) | | |
|--------------------------------|-------------------------------|------------------------|------------|-------------|
| | | Liter | US measure | Imp measure |
| Fuel | | 74.0 ℓ | 19-1/2 gal | 16-1/4 gal |
| Engine oil Drain and refill | With oil filter change | 4.8 | 5-1/8 qt | 4-1/4 qt |
| | Without oil filter change | 4.5 | 4-3/4 qt | 4 qt |
| | Dry engine (engine over-haul) | 5.1 | 5-3/8 qt | 4-1/2 qt |

QUICK REFERENCE CHART: PATHFINDER

2016

| Fluid types | Capacity (Approximate) | | |
|---|------------------------|----------------|----------------|
| | Liter | US measure | Imp measure |
| Engine coolant (with reservoir at MAX level) | 9.8 | 10-3/8 qt | 8-5/8 qt |
| CVT fluid | 8.8 | 9-1/4 qt | 7-3/4 qt |
| Differential gear oil | 0.5 | 1 pt | 7/8 pt |
| Transfer oil | 0.31 | 5/8 pt | 1/2 pt |
| Power steering fluid (PSF) | 1.0 ℓ | 1-1/8 qt | 7/8 qt |
| Brake fluid | — | — | — |
| Multi-purpose grease | — | — | — |
| Windshield washer fluid | 5 ℓ | 5-1/4 qt | 4-3/8 qt |
| Air conditioning system refrigerant | 0.80 ± 0.03 kg | 1.80 ± 0.07 lb | 1.80 ± 0.07 lb |
| Air conditioning system oil | 230 m ℓ | 7.8 fl oz | 8.1 fl oz |