

# NISSAN TRUCK & PATHFINDER

MODEL D21 SERIES

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# FOREWORD

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This manual contains maintenance and repair procedures for the 1994 Nissan TRUCK and 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 completely satisfy himself that neither his safety nor the vehicle's safety will be jeopardized by the service method selected.



**NISSAN MOTOR CO., LTD.**

Overseas Service Department

Tokyo, Japan

## INCH TO METRIC CONVERSION TABLE

(Rounded-off for automotive use)

| inches | mm    | inches | mm     |
|--------|-------|--------|--------|
| .100   | 2.54  | .610   | 15.49  |
| .110   | 2.79  | .620   | 15.75  |
| .120   | 3.05  | .630   | 16.00  |
| .130   | 3.30  | .640   | 16.26  |
| .140   | 3.56  | .650   | 16.51  |
| .150   | 3.81  | .660   | 16.76  |
| .160   | 4.06  | .670   | 17.02  |
| .170   | 4.32  | .680   | 17.27  |
| .180   | 4.57  | .690   | 17.53  |
| .190   | 4.83  | .700   | 17.78  |
| .200   | 5.08  | .710   | 18.03  |
| .210   | 5.33  | .720   | 18.29  |
| .220   | 5.59  | .730   | 18.54  |
| .230   | 5.84  | .740   | 18.80  |
| .240   | 6.10  | .750   | 19.05  |
| .250   | 6.35  | .760   | 19.30  |
| .260   | 6.60  | .770   | 19.56  |
| .270   | 6.86  | .780   | 19.81  |
| .280   | 7.11  | .790   | 20.07  |
| .290   | 7.37  | .800   | 20.32  |
| .300   | 7.62  | .810   | 20.57  |
| .310   | 7.87  | .820   | 20.83  |
| .320   | 8.13  | .830   | 21.08  |
| .330   | 8.38  | .840   | 21.34  |
| .340   | 8.64  | .850   | 21.59  |
| .350   | 8.89  | .860   | 21.84  |
| .360   | 9.14  | .870   | 22.10  |
| .370   | 9.40  | .880   | 22.35  |
| .380   | 9.65  | .890   | 22.61  |
| .390   | 9.91  | .900   | 22.86  |
| .400   | 10.16 | .910   | 23.11  |
| .410   | 10.41 | .920   | 23.37  |
| .420   | 10.67 | .930   | 23.62  |
| .430   | 10.92 | .940   | 23.88  |
| .440   | 11.18 | .950   | 24.11  |
| .450   | 11.43 | .960   | 24.38  |
| .460   | 11.68 | .970   | 24.64  |
| .470   | 11.94 | .980   | 24.89  |
| .480   | 12.19 | .990   | 25.15  |
| .490   | 12.45 | 1.000  | 25.40  |
| .500   | 12.70 | 2.000  | 50.80  |
| .510   | 12.95 | 3.000  | 76.20  |
| .520   | 13.21 | 4.000  | 101.60 |
| .530   | 13.46 | 5.000  | 127.00 |
| .540   | 13.72 | 6.000  | 152.40 |
| .550   | 13.97 | 7.000  | 177.80 |
| .560   | 14.22 | 8.000  | 203.20 |
| .570   | 14.48 | 9.000  | 228.60 |
| .580   | 14.73 | 10.000 | 254.00 |
| .590   | 14.99 | 20.000 | 508.00 |
| .600   | 15.24 |        |        |

## METRIC TO INCH CONVERSION TABLE

(Rounded-off for automotive use)

| mm | inches | mm  | inches |
|----|--------|-----|--------|
| 1  | .0394  | 51  | 2.008  |
| 2  | .079   | 52  | 2.047  |
| 3  | .118   | 53  | 2.087  |
| 4  | .157   | 54  | 2.126  |
| 5  | .197   | 55  | 2.165  |
| 6  | .236   | 56  | 2.205  |
| 7  | .276   | 57  | 2.244  |
| 8  | .315   | 58  | 2.283  |
| 9  | .354   | 59  | 2.323  |
| 10 | .394   | 60  | 2.362  |
| 11 | .433   | 61  | 2.402  |
| 12 | .472   | 62  | 2.441  |
| 13 | .512   | 63  | 2.480  |
| 14 | .551   | 64  | 2.520  |
| 15 | .591   | 65  | 2.559  |
| 16 | .630   | 66  | 2.598  |
| 17 | .669   | 67  | 2.638  |
| 18 | .709   | 68  | 2.677  |
| 19 | .748   | 69  | 2.717  |
| 20 | .787   | 70  | 2.756  |
| 21 | .827   | 71  | 2.795  |
| 22 | .866   | 72  | 2.835  |
| 23 | .906   | 73  | 2.874  |
| 24 | .945   | 74  | 2.913  |
| 25 | .984   | 75  | 2.953  |
| 26 | 1.024  | 76  | 2.992  |
| 27 | 1.063  | 77  | 3.031  |
| 28 | 1.102  | 78  | 3.071  |
| 29 | 1.142  | 79  | 3.110  |
| 30 | 1.181  | 80  | 3.150  |
| 31 | 1.220  | 81  | 3.189  |
| 32 | 1.260  | 82  | 3.228  |
| 33 | 1.299  | 83  | 3.268  |
| 34 | 1.339  | 84  | 3.307  |
| 35 | 1.378  | 85  | 3.346  |
| 36 | 1.417  | 86  | 3.386  |
| 37 | 1.457  | 87  | 3.425  |
| 38 | 1.496  | 88  | 3.465  |
| 39 | 1.535  | 89  | 3.504  |
| 40 | 1.575  | 90  | 3.543  |
| 41 | 1.614  | 91  | 3.583  |
| 42 | 1.654  | 92  | 3.622  |
| 43 | 1.693  | 93  | 3.661  |
| 44 | 1.732  | 94  | 3.701  |
| 45 | 1.772  | 95  | 3.740  |
| 46 | 1.811  | 96  | 3.780  |
| 47 | 1.850  | 97  | 3.819  |
| 48 | 1.890  | 98  | 3.858  |
| 49 | 1.929  | 99  | 3.898  |
| 50 | 1.969  | 100 | 3.937  |

# QUICK REFERENCE CHART : TRUCK & PATHFINDER 1994

## ENGINE TUNE-UP DATA

VG30E

|                                             |                       |                          |
|---------------------------------------------|-----------------------|--------------------------|
| Idle speed rpm                              | M/T                   | 750±50                   |
|                                             | A/T (in "N" position) | 750±50                   |
| Ignition timing<br>(B.T.D.C. at idle speed) |                       | 15°±2°                   |
| Spark plug (Standard type)                  |                       | BKR6EY                   |
| Drive belt deflection (Cold) mm (in)        | Used belt             |                          |
|                                             | Limit                 | After adjustment         |
| Alternator                                  | 12 (0.47)             | 6 - 8<br>(0.24 0.31)     |
| Air conditioner compressor                  | 16 (0.63)             | 9 - 11<br>(0.35 - 0.43)  |
| Power steering oil pump                     | 17 (0.67)             | 11 - 13<br>(0.43 - 0.51) |
| Applied pushing force N (kg, lb)            |                       | 98 (10, 22)              |

## ENGINE TUNE-UP DATA

KA24E

|                                             |                       |           |                          |                         |
|---------------------------------------------|-----------------------|-----------|--------------------------|-------------------------|
| Idle speed                                  | M/T                   | 800±50    |                          |                         |
| rpm                                         | A/T (in "N" position) | 800±50    |                          |                         |
| Ignition timing<br>(B.T.D.C. at idle speed) |                       | 10°±2°    |                          |                         |
| Spark plug (Standard type)                  |                       | ZFR5E-11  |                          |                         |
| Drive belt deflection (Cold)                | mm (in)               | Used belt | New belt                 |                         |
|                                             |                       | Limit     | After adjustment         |                         |
| Alternator                                  |                       | 17 (0.67) | 10 - 12<br>(0.39 - 0.47) | 8 - 10<br>(0.31 - 0.39) |
| Air conditioner compressor                  |                       | 16 (0.63) | 10 - 12<br>(0.39 - 0.47) | 8 - 10<br>(0.31 - 0.39) |
| Power steering oil pump                     |                       | 15 (0.59) | 9 - 11<br>(0.35 - 0.43)  | 7 - 9<br>(0.28 - 0.35)  |
| Applied pushing force                       | N (kg, lb)            |           | 98 (10, 22)              |                         |

## WHEEL ALIGNMENT (Unladen\*1)

| Applied model       |         | ALLOWABLE LIMIT        |                        | ADJUSTING RANGE        |                        |
|---------------------|---------|------------------------|------------------------|------------------------|------------------------|
|                     |         | 2WD Truck              | Except 2WD Truck       | 2WD Truck              | Except 2WD Truck       |
| Camber              | degree  | -0°20' to 1°10'        | -0°05' to 1°25'        | -0°05' to 0°55'        | 0°10' - 1°10'          |
| Caster              | degree  | -0°23' to 1°07'        | 0°33' - 2°03'          | -0°08' to 0°52'        | 0°48' - 1°48'          |
| Kingpin inclination | degree  | 8°20' - 9°50'          | 7°21' - 8°51'          | 8°35' - 9°35'          | 7°36' - 8°36'          |
| Toe-in              |         |                        |                        |                        |                        |
| Radial tire         |         |                        |                        |                        |                        |
| A B                 | mm (in) | 1 - 5<br>(0.04 - 0.20) | 2 - 6<br>(0.08 - 0.24) | 2 - 4<br>(0.08 - 0.16) | 3 - 5<br>(0.12 - 0.20) |
| Total angle 2θ      | degree  | 5° - 25°               | 9° - 29°               | 10° - 20°              | 14° - 24°              |

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

## CLUTCH PEDAL

Unit: mm (in)

|           |                                                                  |
|-----------|------------------------------------------------------------------|
| Height    | VG30E: 227 - 237 (8.94 - 9.33)<br>KA24E: 236 - 246 (9.29 - 9.69) |
| Free play | 1.0 - 1.5 (0.039 - 0.059)                                        |

## BRAKE

Unit: mm (in)

|                          |                                                                      |
|--------------------------|----------------------------------------------------------------------|
| Disc brake               |                                                                      |
| Pad minimum thickness    | 2.0 (0.079)                                                          |
| Rotor repair limit       |                                                                      |
| Runout                   | 0.07 (0.0028) or less                                                |
| Minimum thickness        | 20.0 (0.787), CL28VA<br>24.0 (0.945), CL28VD<br>16.0 (0.630), AD14VB |
| Drum brake               |                                                                      |
| Lining minimum thickness | 1.5 (0.059)                                                          |
| Drum repair limit        |                                                                      |
| Maximum inner diameter   | 261.5 (10.30), LT26B<br>296.5 (11.67), LT30A<br>191.0 (7.52), DS19HB |
| Pedal free height        |                                                                      |
| M/T model                | 209 - 219 (8.23 - 8.62)                                              |
| A/T model                | 212 - 222 (8.35 - 8.74)                                              |
| Pedal depressed height*1 | 120 (4.72) or more                                                   |

\*1: Under force of 490 N (50 kg, 110 lb) with engine running

## FRONT WHEEL BEARING

| Item                  |                   | Model                        |                                                                                                                    |
|-----------------------|-------------------|------------------------------|--------------------------------------------------------------------------------------------------------------------|
|                       |                   | 2WD Truck                    | Except 2WD Truck                                                                                                   |
| Tightening torque     | N·m (kg-m, ft-lb) | 34 - 39 (3.5 - 4.0, 25 - 29) | —                                                                                                                  |
| Return angle          | degree            | 45° - 60°                    |                                                                                                                    |
|                       |                   |                              | Wheel bearing lock nut 78 - 98<br>Tightening torque (8 - 10,<br>N·m (kg-m, ft-lb) 58 - 72)                         |
|                       |                   |                              | Retightening torque after loosening wheel bearing lock nut 0.5 - 1.5<br>(0.05 - 0.15, N·m (kg-m, ft-lb) 0.4 - 1.1) |
|                       |                   |                              | Axial end play mm (in) 0 (0)                                                                                       |
| Preload (At hub bolt) | N (kg, lb)        |                              | Starting force at wheel hub bolt A<br>N (kg, lb)                                                                   |
|                       |                   |                              | Turning angle degree 15° - 30°                                                                                     |
|                       |                   |                              | Starting force at wheel hub bolt B<br>N (kg, lb)                                                                   |
|                       |                   |                              | Wheel bearing preload at wheel hub bolt 7.06 - 20.99<br>(0.72 - 2.14, N (kg, lb) 1.59 - 4.72)                      |



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Overseas Service Department

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