

GENERAL INFORMATION

SECTION **GI**

GI

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PRECAUTIONS

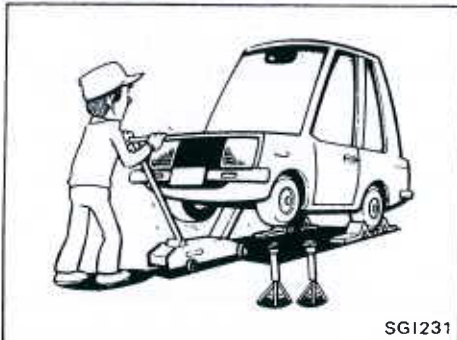
The following precautions should be observed to ensure safe and proper service operations. These precautions are not described in each individual section.



1. Do not operate the engine for an extended period of time without proper exhaust ventilation.

Keep the work area well ventilated and free of any inflammable materials. Special care should be taken when handling any inflammable or poisonous materials, such as diesel fuel, refrigerant gas, etc. When working in a pit or other enclosed area, be sure to properly ventilate the area before working with hazardous materials.

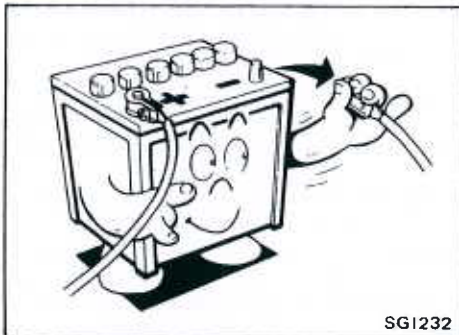
Do not smoke while working on the vehicle.



2. Before jacking up the vehicle, apply wheel chocks or other tire blocks to the wheels to prevent the vehicle from moving. After jacking up the vehicle, support the vehicle weight with safety stands at the points designated for proper lifting and towing before working on the vehicle.

These operations should be done on a level surface.

3. When removing a heavy component such as the engine or transaxle/transmission, take care not to lose your balance and drop it. Also, do not allow it to hit against adjacent parts, especially brake tube and brake master cylinder.

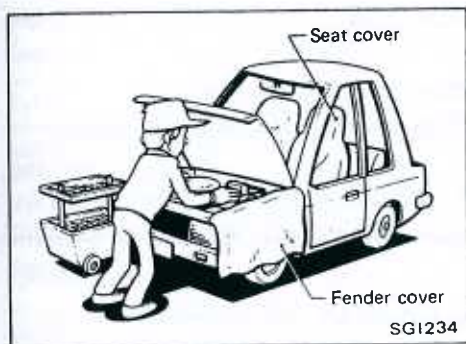


4. Before starting repairs which do not require battery power, always turn off the ignition switch, then disconnect the ground cable from the battery to prevent accidental short circuit.



5. To prevent serious burns, avoid contact with hot metal parts such as the radiator, exhaust manifold, tail pipe and muffler. Do not remove the radiator cap when the engine is hot.

PRECAUTIONS



6. To prevent scratches and soiling, protect fenders, upholstery and carpeting with appropriate covers before starting servicing.
Take caution that keys, buckles or buttons on your person do not scratch the paint.
7. Clean all disassembled parts in the designated liquid or solvent prior to inspection or assembly.
8. Replace oil seals, gaskets, packings, O-rings, locking washers, cotter pins, self-locking nuts, etc. as instructed and discard used ones.
9. Arrange the disassembled parts in accordance with their assembled locations and sequence.
10. Do not touch the terminals of electrical components which utilize microcomputers such as electronic control units. Static electrical charges stored in your body may damage internal electronic components.
11. After disconnecting vacuum hose or air hose, attach tag which indicates the proper connection to prevent incorrect connection.
12. Use only the lubricants specified in the applicable section or those indicated under "Recommended Fuel and Lubricants".
13. Use approved bonding agent, sealants or their equivalents when required.
14. The use of the proper tools and recommended essential tools should be used where specified for proper, safe and efficient service repairs.
15. When effecting repairs on the fuel, oil, water, vacuum or exhaust systems, make certain to check all affected lines for leaks.
16. Dispose of drained oil or the solvent used for cleaning parts in an appropriate manner.

Asbestos Safety Instructions (Based on regulations of United Kingdom)

This vehicle uses parts containing asbestos, most are not hazardous but Brake and Clutch linings can be. Consult the manufacturer or his agent for further details. When working with these please observe the "Garage Workers' Asbestos Code" available through your Nissan Dealer, Local Authority or Health and Safety Executive. In particular, work in a well ventilated place using where possible appropriate dust extraction equipment and avoid creating dust. Dampen all asbestos/dust where possible prior to machining, cutting, cleaning, etc. Use only hand or low speed tools.

Dispose of all asbestos waste, wet rags, etc., in a closed container as directed by your local waste disposal authority.

HOW TO USE THIS MANUAL

1. **A QUICK REFERENCE INDEX**, a black tab e.g. **EM** is provided on the first page. You can quickly find the first page of each section by matching it to the section's black tab.
2. **THE CONTENTS** are listed on the first page of each section.
3. **THE TITLE** is indicated on the upper portion of each page and shows the part or system.
4. **THE PAGE NUMBER** of each section consists of two letters, which designate the particular section, and a number (e.g. "EM-5").
5. **THE LARGE ILLUSTRATION** contains tightening torques and other information necessary to perform repairs. The illustration should be used in reference to the service matters only. When ordering parts, refer to the appropriate **PARTS CATALOG**.
6. **THE SMALL ILLUSTRATION** shows the important steps such as inspection, use of special tools, knacks of work and hidden or tricky steps which are not shown in the previous large illustration. Assembly, inspection and adjustment procedures for the complicated units such as injection pump, etc. are presented in a step-by-step format where necessary.
7. The followings **SYMBOLS AND ABBREVIATIONS** are used:



: Tightening Torque

S.D S.: Service Data and Specifications



: Should be lubricated with grease.
Unless otherwise indicated, use
recommended multi-purpose grease.

L.H., R.H.: Left-Hand, Right-Hand

M/T: Manual Transaxle/Transmission

A/T: Automatic Transaxle/Transmission

Tool: Special Service Tools



: Should be lubricated with oil.



: Sealing point



: Checking point



: Always replace when disassembled.

8. The **UNIT** given in this manual are primarily expressed with the SI UNIT (International System of Unit), and alternately expressed in the metric system and in the yard/pound system.

"Example"

Tightening torque

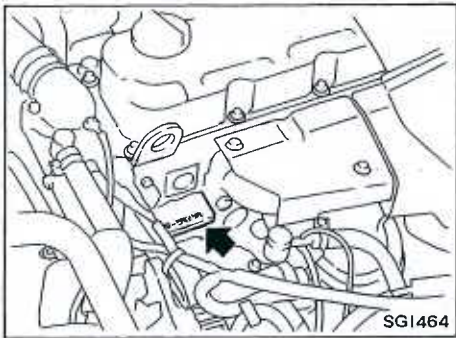
59 - 78 N·m (6.0 - 8.0 kg-m, 43 - 58 ft-lb)

9. **TROUBLE DIAGNOSES AND CORRECTIONS** are included in sections dealing with complicated units.
10. **SERVICE DATA AND SPECIFICATIONS** is contained at the end of each section for quick reference of data.
11. The captions **WARNING** and **CAUTION** warn you of steps that must be followed to prevent personal injury and/or damage to some part of the engine.

SPECIFICATIONS

Engine model		TD23	TD25	TD27	TD27T
Cylinder arrangement		In-line			
Number of cylinders		4			
Valve arrangement		O.H.V.			
Bore x stroke	mm (in)	89 x 92 (3.50 x 3.62)	92.9 x 92 (3.657 x 3.62)	96 x 92 (3.78 x 3.62)	
Displacement	cm ³ (cu in)	2,289 (139.67)	2,494 (152.18)	2,663 (162.50)	
Firing order		1-3-4-2			
Number of piston rings	Compression	2			
	Oil	1			
Number of main bearings		5			
Compression ratio		21.9	22.2	21.8	21.9

ENGINE SERIAL NUMBER



The engine serial number is stamped on the left-front side of cylinder block.

TDXX – XXXXXX

Serial No.

Engine model

RECOMMENDED FUEL AND LUBRICANTS

Fuel

Europe and Hong Kong ... Diesel fuel of above 51 cetane
 Except Europe and Hong Kong ... Diesel fuel of above 45 cetane

- ★ If two types of diesel fuel are available, use summer or winter fuel properly according to the following temperature conditions.

Summer type diesel fuel: Above -7°C (20°F)

Winter type diesel fuel: Below -7°C (20°F)

CAUTION:

- Do not use home heating oil, gasoline, or other alternate fuels in your diesel engine. The use of those can cause engine damage.
- Do not use summer fuel at temperatures below -7°C (20°F). The cold temperatures will cause wax to form in the fuel. As a result, it may prevent the engine from running smoothly.
- Do not add gasoline or other alternate fuels to diesel fuel. Only under the following conditions may you use diesel fuel by mixing kerosene or regular gasoline (not premium gasoline) to prevent the fuel from thickening due to wax separation:

If the summer type diesel fuel is used at an ambient temperature below 0°C (32°F), add kerosene or regular gasoline but not more than 30% by volume. If the winter type diesel fuel is used at an ambient temperature below -15°C (5°F), add kerosene or regular gasoline but not more than 30% by volume.

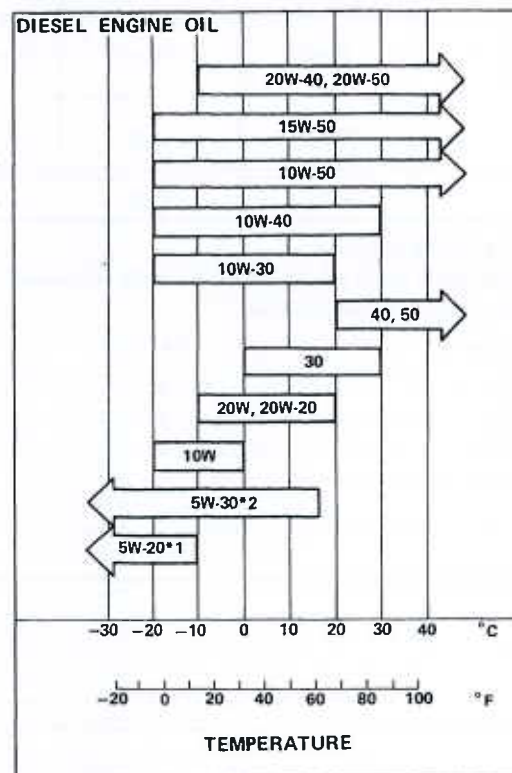
However, keep in mind that there may be less engine output performance due to the proportion of added fuel.

Lubricants

Lubricant	Specifications	Remarks
Diesel engine oil	Non-turbo model	API CC or CD
	Turbo model	API CD
Anti-freeze	—	Ethylene glycol base

For further details, refer to the recommended SAE viscosity chart.

SAE Viscosity Number



*1: Not recommended for sustained high speed driving.

*2: Use only below 0°C (32°F) for turbo models.

*3: On models equipped with a turbocharger, use 10W-30, 10W-40, 10W-50, 15W-50, 20W-20, 20W-40 or 20W-50 except under extremely cold conditions. Use 5W-30 only under extremely cold conditions.

TIGHTENING TORQUE OF STANDARD BOLT

Grade	Bolt or nut size	Bolt or nut diameter* mm	Pitch mm	Tightening torque		
				N·m	kg·m	ft·lb
4T	M6	6.0	1.0	3 - 4	0.3 - 0.4	2.2 - 2.9
	M8	8.0	1.25	8 - 11	0.8 - 1.1	5.8 - 8.0
			1.0	8 - 11	0.8 - 1.1	5.8 - 8.0
	M10	10.0	1.5	16 - 22	1.6 - 2.2	12 - 16
			1.25	16 - 22	1.6 - 2.2	12 - 16
	M12	12.0	1.75	26 - 36	2.7 - 3.7	20 - 27
1.25			30 - 40	3.1 - 4.1	22 - 30	
M14	14.0	1.5	46 - 62	4.7 - 6.3	34 - 46	
7T	M6	6.0	1.0	6 - 7	0.6 - 0.7	4.3 - 5.1
	M8	8.0	1.25	14 - 18	1.4 - 1.8	10 - 13
			1.0	14 - 18	1.4 - 1.8	10 - 13
	M10	10.0	1.5	25 - 35	2.6 - 3.6	19 - 26
			1.25	26 - 36	2.7 - 3.7	20 - 27
	M12	12.0	1.75	45 - 61	4.6 - 6.2	33 - 45
1.25			50 - 68	5.1 - 6.9	37 - 50	
M14	14.0	1.5	76 - 103	7.7 - 10.5	56 - 76	
9T	M6	6.0	1.0	8 - 11	0.8 - 1.1	5.8 - 8.0
	M8	8.0	1.25	19 - 25	1.9 - 2.5	14 - 18
			1.0	20 - 27	2.0 - 2.8	14 - 20
	M10	10.0	1.5	36 - 50	3.7 - 5.1	27 - 37
			1.25	39 - 51	4.0 - 5.2	29 - 38
	M12	12.0	1.75	65 - 88	6.6 - 9.0	48 - 65
1.25			72 - 97	7.3 - 9.9	53 - 72	
M14	14.0	1.5	109 - 147	11.1 - 15.0	80 - 108	

1. Special parts are excluded.
2. This standard is applicable to bolts having the following marks embossed on the bolt head.

*: Nominal diameter

Grade	Mark
4T	4
7T	7
9T	9

