DATSUN PICK-UP

SERVICE MANUAL

1977

11·80

DATSUN PICK-UP

SERVICE MANUAL

MODEL 620 SERIES

NISSAN MOTOR CO., LTD.
TOKYO, JAPAN

QUICK REFERENCE INDEX

FOREWORD

This service manual has been prepared for the purpose of assisting service personnel of authorized NISSAN/DATSUN dealers in providing effective service and maintenance of the 1977 Datsun Pick-up.

Since proper maintenance and service are absolutely essential in satisfying the Datsun owners, this manual should be kept in a handy place for ready reference and should be carefully studied.

This manual includes procedures for maintenance adjustments, minor service operations, removal and installation, and for disassembly and assembly of components.

Some of these service operations require the use of Special Tools especially designed for effective performance of service operations.
The special tools are presented in the "SE" section.

As you read through the maintenance procedures in this service manual, you will occasionally come across paragraphs headed NOTE or CAUTION. A NOTE is supplemental information that is important to a particular procedure. CAUTION warns of steps that must be followed to prevent personal injury and/or damage to some part of your DATSUN.

The Quick Reference Index on the first page enables the user to quickly locate the desired section. At the beginning of each individual section is a table of contents, which gives the page number on which each major subject begins. An index is placed at the beginning of each major subject within the section.

All information, illustrations and specifications contained in this manual are based on the latest product information available at the time of publication approval. If your DATSUN model differs from the specifications contained in this manual, consult your NISSAN/ DATSUN dealer for information.

Rights for alteration at any time of specifications and methods are reserved.

Liability for any personal injury or property damage occasioned by the use of this service manual in effecting maintenance or repair of your Datsun is in no way assumed by Nissan Motor Co., Ltd.

Accordingly, anyone using a service procedure or tool which is 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.
TOKYO, JAPAN

 Printed in Japan

SERVICE MANUAL

DATSUN PICK-UP
MODEL 620 SERIES

NISSAN

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TOKYO, JAPAN

SECTION GI GI

GENERAL INFORMATION

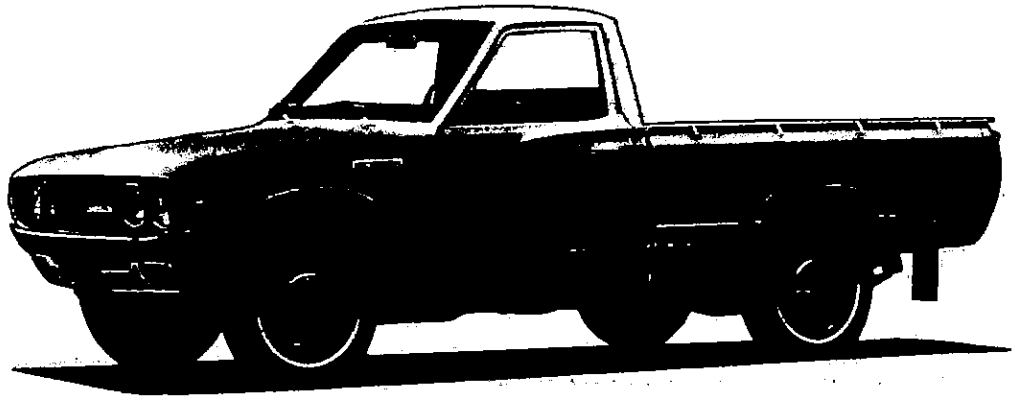


Fig. GI-1 Standard wheelbase model

Fig. GI-2 Deluxe Cab

GENERAL INFORMATION

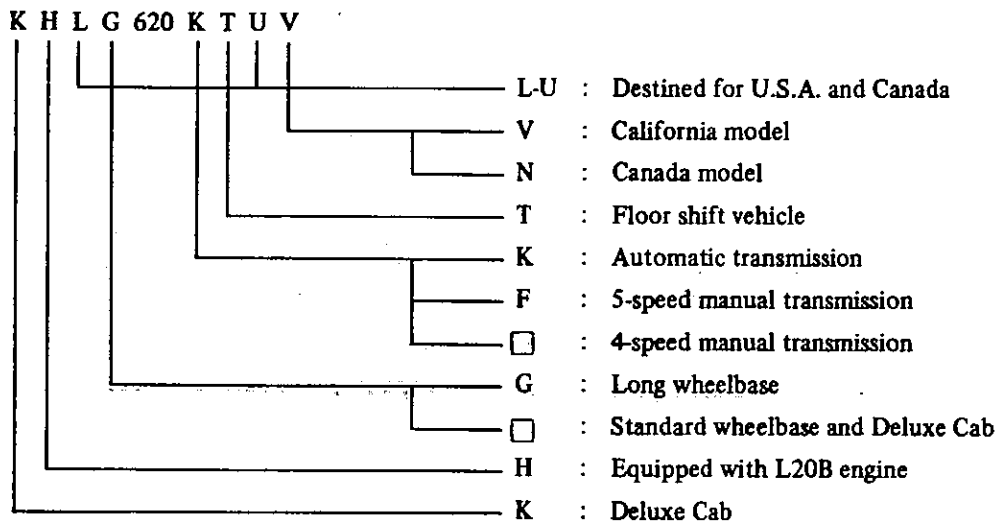
CONTENTS

MODEL VARIATION

Destination		Class		Model	Engine	Transmission	Differential carrier model and gear ratio	Pay load kg (lb)
U.S.A.	California and high altitude locations outside California	Standard wheelbase	California models	HL620TUV	L20B	F4W71B	H190 4.375	500 (1.100)
				HL620FTUV		FS5W71B		
				HL620KTUV		3N71B		
		Long wheelbase		HLG620TUV		F4W71B		
				HLG620FTUV		FS5W71B		
				HLG620KTUV		3N71B		
		Deluxe Cab		KHL620TUV		F4W71B		
				KHL620FTUV		FS5W71B		
				KHL620KTUV		3N71B		
	All low altitude locations outside California	Standard wheelbase	Non California models	HL620TU		F4W71B		
				HL620FTU		FS5W71B		
				HL620KTU		3N71B		
		Long wheelbase		HLG620TU		F4W71B		
				HLG620FTU		FS5W71B		
				HLG620KTU		3N71B		
		Deluxe Cab		KHL620TU		F4W71B		
				KHL620FTU		FS5W71B		
				KHL620KTU		3N71B		

Destination	Class		Model	Engine	Transmission	Differential carrier model and gear ratio	Pay load kg (lb)
Canada	Standard wheelbase	Non-California models	HL620TUN	L20B	F4W71B	H190 4.375	500 (1.100)
			HL620KTUN		3N71B		
	Long wheelbase		HLG620TUN		F4W71B		
			HLG620KTUN		3N71B		
	Deluxe Cab		KHL620TUN		F4W71B		
			KHL620FTUN		FS5W71B		
			KHL620KTUN		3N71B		

Model identification



Note: □ means no identification.

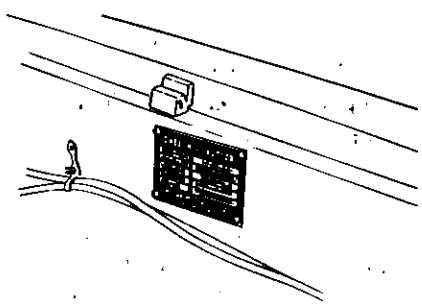
IDENTIFICATION NUMBERS

The unit and vehicle numbers are stamped and registered at the factory.

The engine and vehicle identification numbers are used on legal documents. These numbers are used for factory communications such as Technical Reports, Warranty Claims, Service Journals and other information.

Vehicle identification plate

The vehicle identification plate is located at the hood ledge in the engine compartment.



SP029

Fig. GI-3 Vehicle identification plate location

Vehicle serial number

The vehicle serial number is stamped on the upper face of the right side member. The number is identified by the following figures as a serial number.

HL620-XXXXXX

Serial number

Vehicle model

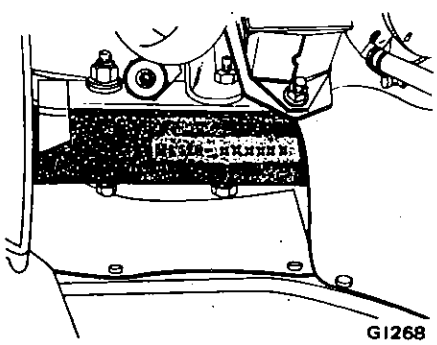


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Fig. GI-4 Vehicle serial number location

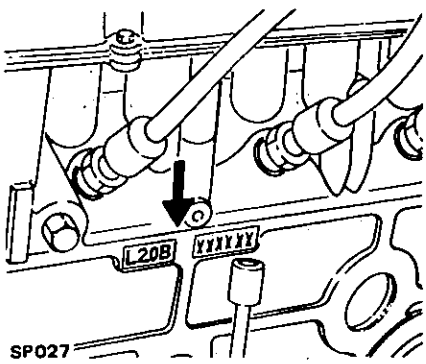
Engine serial number

The engine serial number is stamped on the right-hand side of the cylinder block.

L20B-XXXXXX

Serial number

Engine model



SP027

Fig. GI-5 Engine serial number location

Color code number

The color code number label is stuck on the radiator support.

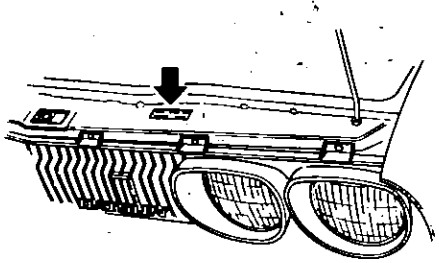


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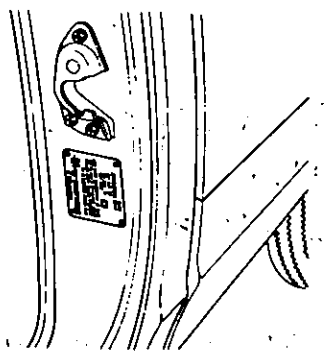
Fig. GI-6 Color code number label location

M.V.S.S. certification label

The M.V.S.S. certification label is located at the driver side lock pillar.

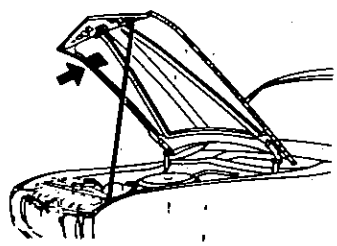


SP031

Fig. GI-7 M.V.S.S. certification label location

Vehicle emission control information label

The vehicle emission control information label is stuck on the inside of the hood panel.



SP076

Fig. GI-8 Vehicle emission control information label location

Manual transmission number

The transmission serial number is stamped on the front upper face of transmission case.

(Number system)

X X XXXXX

Serial number (monthly)

Month of manufacture (1, 2, ... 9, X, Y, Z)

Line code of manufacture

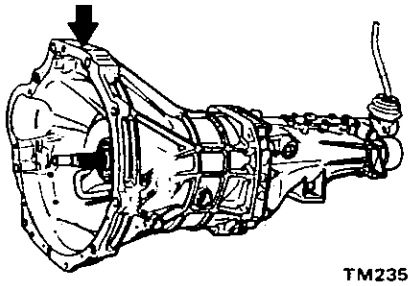


Fig. GI-9 Manual transmission number location

Automatic transmission number

The transmission serial number is attached to the right-hand side of transmission case.

(Numbering system)

X X XXXXX

- Serial number (monthly)
- Month of manufacture (1, 2, ... 9, X, Y, Z)
- Last figure of year of manufacture

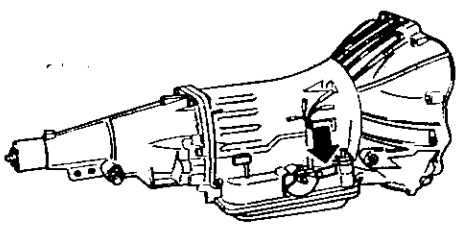


Fig. GI-10 Automatic transmission number location

LIFTING POINTS AND TOWING

LIFTING POINTS

Screw jack

Before using the jack, proceed as follows:

Apply parking brake firmly and block rear wheels if the front of the vehicle is to be raised.

Notes:

a. **Never get under the vehicle while it is supported only by the jack. Always use safety stands to support frame or rear axle case when you have to get beneath the vehicle.**
b. **In no event should the jack be applied to any points except the following specified portions.**

When jacking up the front side, place a screw jack under side frame [about 520 mm (20.5 in) at rear of front axle center].

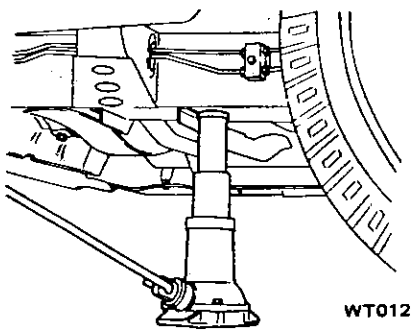


Fig. GI-11 Front lifting point

When jacking up the rear side, place a screw jack under rear axle case close to the side of rear spring.

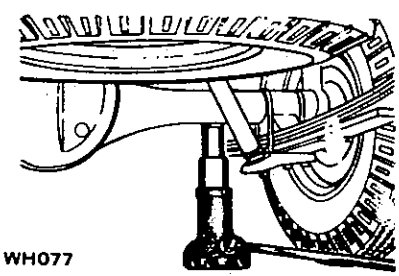


Fig. GI-12 Rear lifting point

Notes:

a. **When the yellow mark appears on the screw jack, it indicates the maximum permissible height. Do not jack up further.**
b. **When the jack is at lower limit, do not add large force downward.**

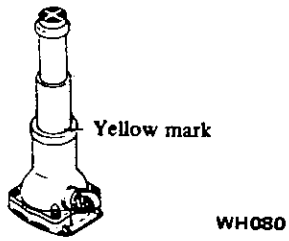


Fig. GI-13 Warning against over-stroke

Garage jack

Note: When carrying out operations with a garage jack, be sure to support the vehicle with stands in a safe manner.

When jacking up the front end, apply garage jack to front cross-member or center portion of suspension member.

When jacking up the rear end, apply the jack to rear axle case.

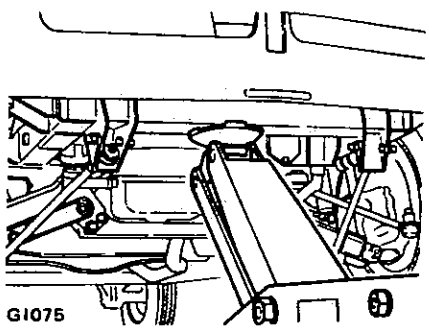


Fig. GI-14 Front lifting point

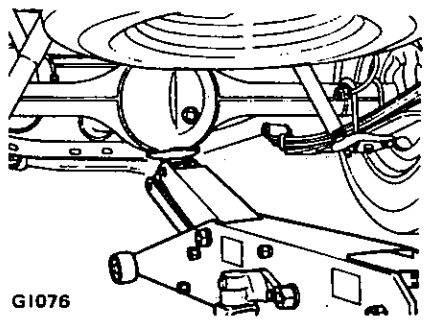


Fig. GI-15 Rear lifting point

SUPPORTABLE POINTS

The front supportable points are under frame side member.

The rear supportable points are under rear axle case.

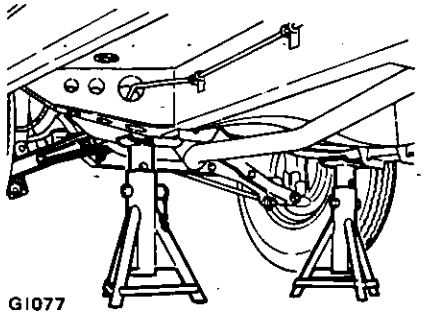


Fig. GI-16 Front supportable points

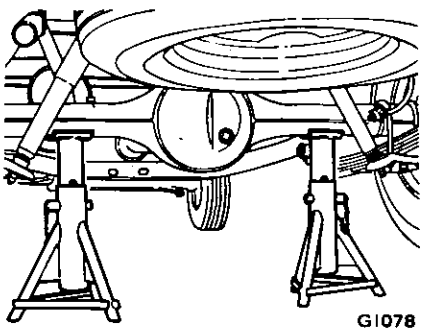


Fig. GI-17 Rear supportable points

TOWING

When the vehicle is to be towed forward, connect a rope securely to the hook under the 1st crossmember. Before towing, make sure the parking brake is released.

To tow another car, connect the rope to rear leaf spring shackle.

Notes:

a. **A towing rope should not be connected to any position other than as described above.**

b. **Avoid applying load suddenly to a towing rope, as it may cause damage.**

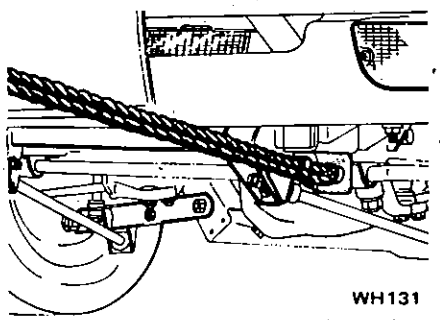


Fig. GI-18 Front towing point

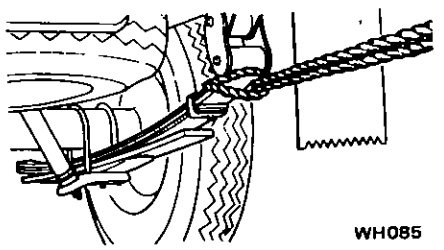


Fig. GI-19 Rear towing point

Manual transmission

Before towing, make sure the transmission is in neutral gear.

If the rear axle or transmission is inoperative, the vehicle should be towed with its rear wheels off the ground, or the propeller shaft must be removed.

Automatic transmission

When the vehicle is towed on its rear wheels, make sure the transmission is in "N" (Neutral) position. Don't exceed 30 km/h (20 MPH) and a distance of 10 km (6 miles). If the rear axle or transmission is inoperative, or if the speed exceeds the above conditions, the vehicle must be towed with its rear wheels off the ground, or the propeller shaft must be removed.

Note: **When the vehicle is towed with its front wheels on the ground, the steering wheel should be secured to maintain a straight ahead position.**

TIE-DOWN

The front two tie-down hooks are located under the 1st crossmember.

The hook is available as a towing hook. For rear tie-down, the rear leaf spring shackle be used. This point is also used as a towing point.

APPROXIMATE REFILL CAPACITIES

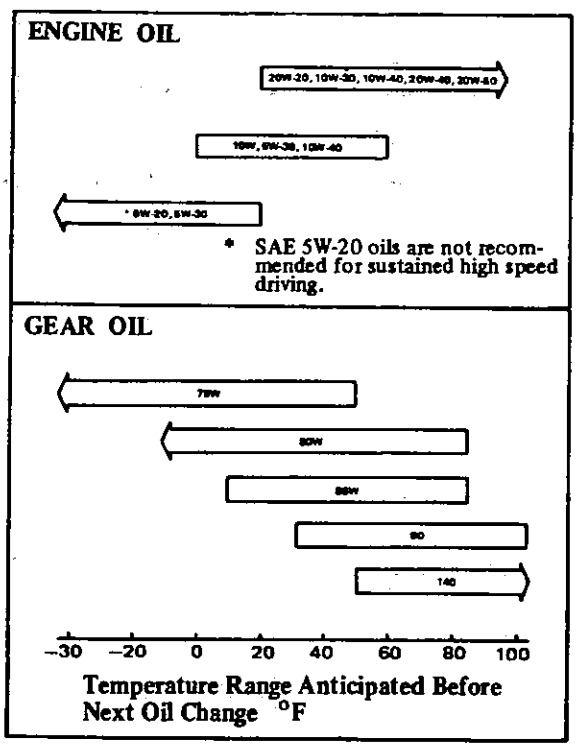
		Liter	U.S. measure	Imper. measure
Fuel tank		45 ℓ	11 ⅞ gal.	9 ⅞ gal.
Cooling system (with heater)	Manual transmission	8.0 ℓ	8 ½ qt.	7 qt.
	Automatic transmission	7.8 ℓ	8 ¼ qt.	6 ⅞ qt.
Engine lubrication system	with oil filter	4.3 ℓ	4 ½ qt.	3 ¾ qt.
	without oil filter	3.8 ℓ	4 qt.	3 ⅓ qt.
Manual transmission	4-speed transmission	1.7 ℓ	3 ⅝ pt.	3 pt.
	5-speed transmission	2.0 ℓ	4 ¼ pt.	3 ½ pt.
Automatic transmission		5.5 ℓ	5 ⅞ qt.	4 ⅞ qt.
Steering gear box		0.33 ℓ	⅝ pt.	⅝ pt.
Differential carrier		1.0 ℓ	2 ⅛ pt.	1 ¾ pt.

RECOMMENDED FUEL

Use an unleaded or low-lead gasoline with a minimum octane rating of 91 RON (Research Octane Number). For California models, use only unleaded gasoline to protect the catalytic converter from contamination.

RECOMMENDED LUBRICANTS

RECOMMENDED SAE VISCOSITY NUMBER



LUBRICANT SPECIFICATIONS

Item		Specifications	Remarks
Gasoline engine oil		SAE Classification SD or SE	Furthermore refer to SAE recommended viscosity table. See Page GI-8.
Gear oil	Transmission and steering	API GL-4	
	Differential	API GL-5	
Automatic T/M fluid		Type DEXRON	
Multipurpose grease		NLGI 2	Lithium soap base
Brake and clutch fluid		DOT 3	
Antifreeze		——	Permanent anti-freeze (Ethylene glycol base)

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SECTION ET

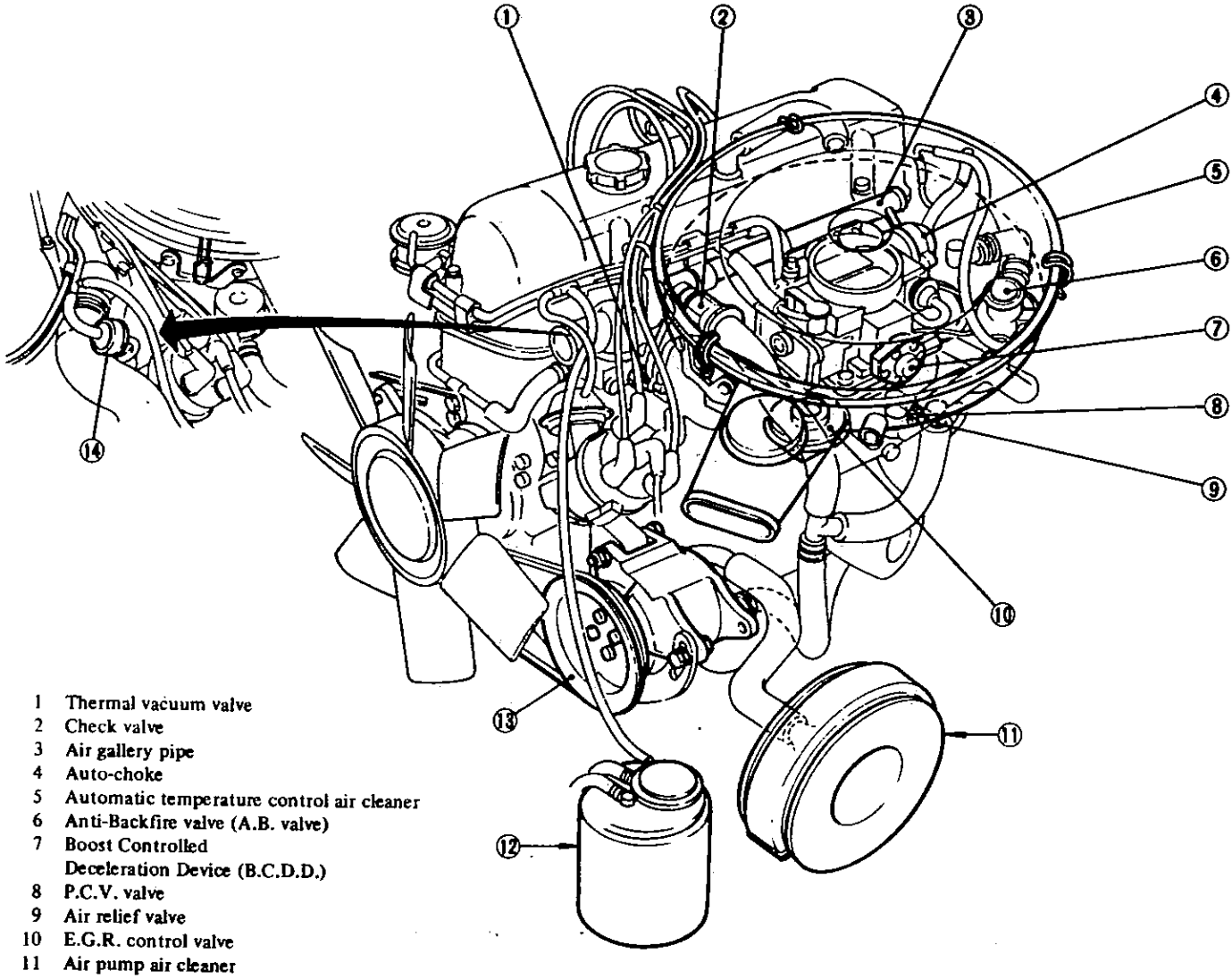
ET

ENGINE TUNE-UP

ENGINE TUNE-UP

CONTENTS

LOCATION OF EMISSION CONTROL SYSTEM COMPONENTS (Non-California models)



1 Thermal vacuum valve
2 Check valve
3 Air gallery pipe
4 Auto-choke
5 Automatic temperature control air cleaner
6 Anti-Backfire valve (A.B. valve)
7 Boost Controlled Deceleration Device (B.C.D.D.)
8 P.C.V. valve
9 Air relief valve
10 E.G.R. control valve
11 Air pump air cleaner
12 Carbon canister
13 Air pump
14 Spark delay valve (A/T models)

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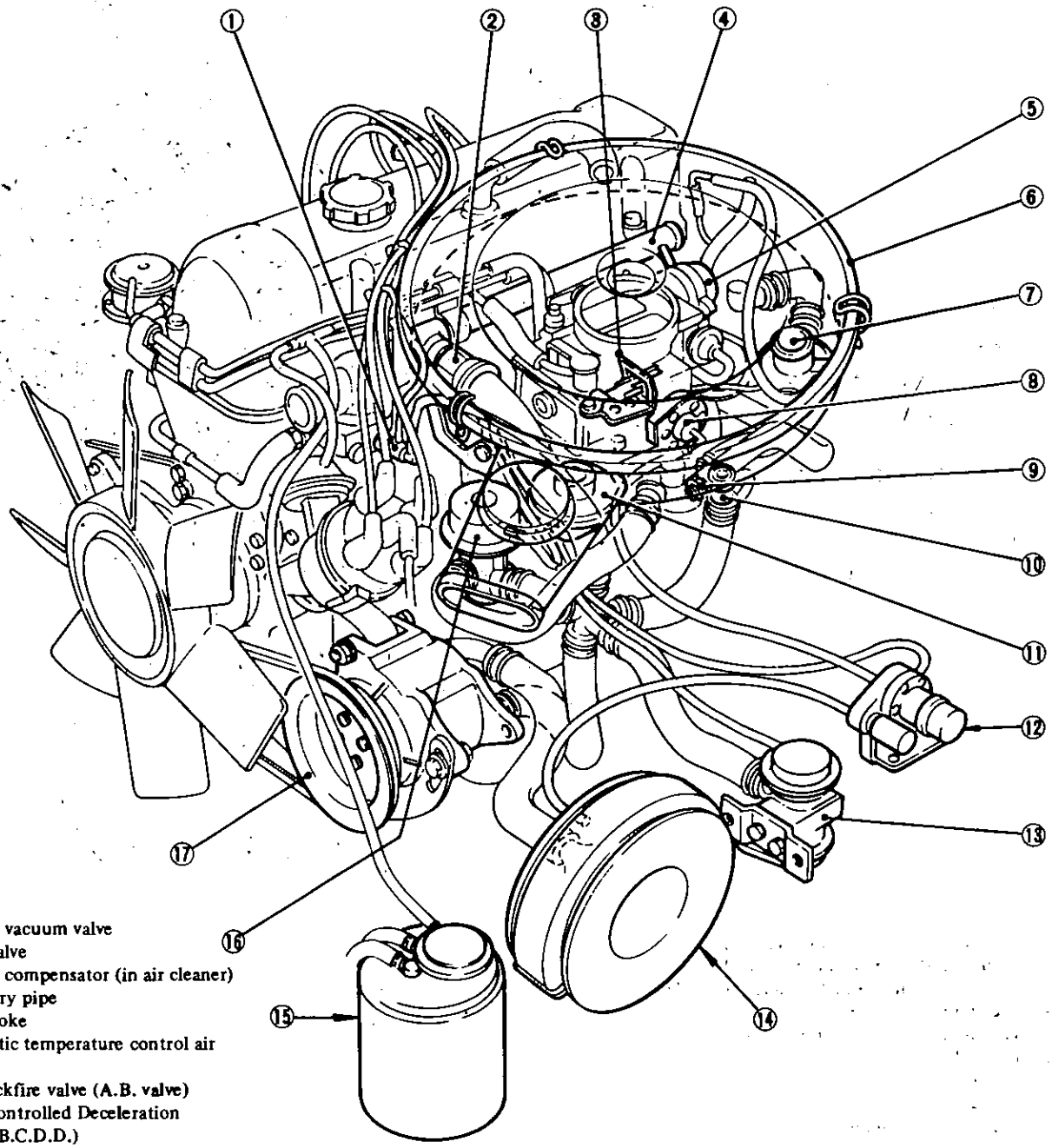
Fig. ET-1 Location of emission control system components (Non-California models)

LOCATION OF EMISSION CONTROL SYSTEM COMPONENTS (California models)



1 Thermal vacuum valve
2 Check valve
3 Altitude compensator (in air cleaner)
4 Air gallery pipe
5 Auto-choke
6 Automatic temperature control air cleaner
7 Anti-Backfire valve (A.B. valve)
8 Boost Controlled Deceleration Device (B.C.D.D.)
9 P.C.V. valve
10 Air relief valve
11 E.G.R. control valve
12 B.C.D.D. control valve and solenoid valve
13 Emergency air relief valve
14 Air pump air cleaner
15 Carbon canister
16 Air control valve
17 Air pump

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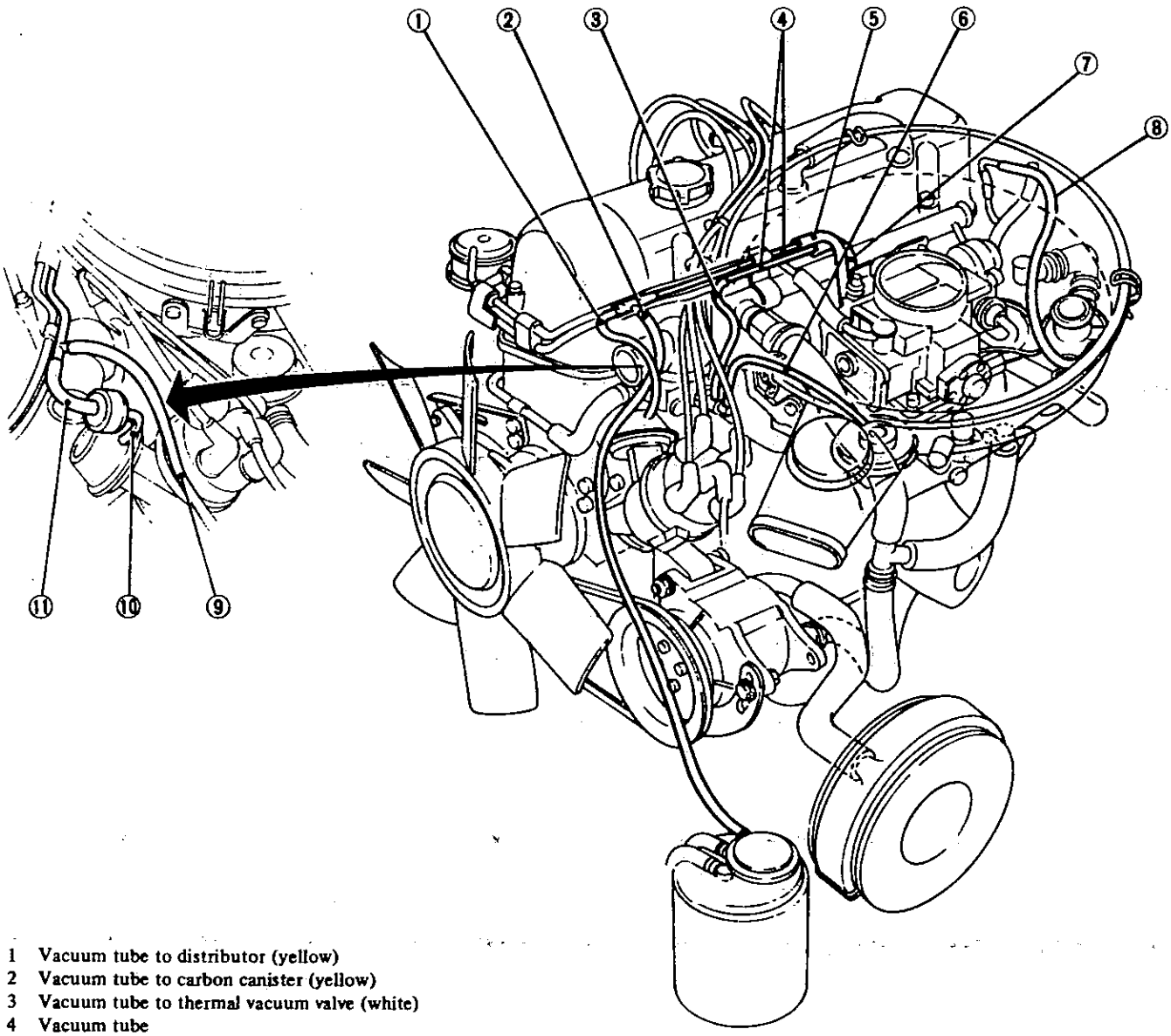
Fig. ET-2 Location of emission control system components (California models)

EMISSION CONTROL SYSTEM PIPING (Non-California models)



1 Vacuum tube to distributor (yellow)
2 Vacuum tube to carbon canister (yellow)
3 Vacuum tube to thermal vacuum valve (white)
4 Vacuum tube
5 Vacuum tube to carburetor (yellow)
6 Thermal vacuum valve to E.G.R. control valve (white)
7 Vacuum tube to carburetor (white)
8 A.B. valve to vacuum connector (green)
9 Vacuum tube to carbon canister (yellow)
10 S.D.V. to distributor (yellow)
11 Vacuum tube to S.D.V. (yellow)

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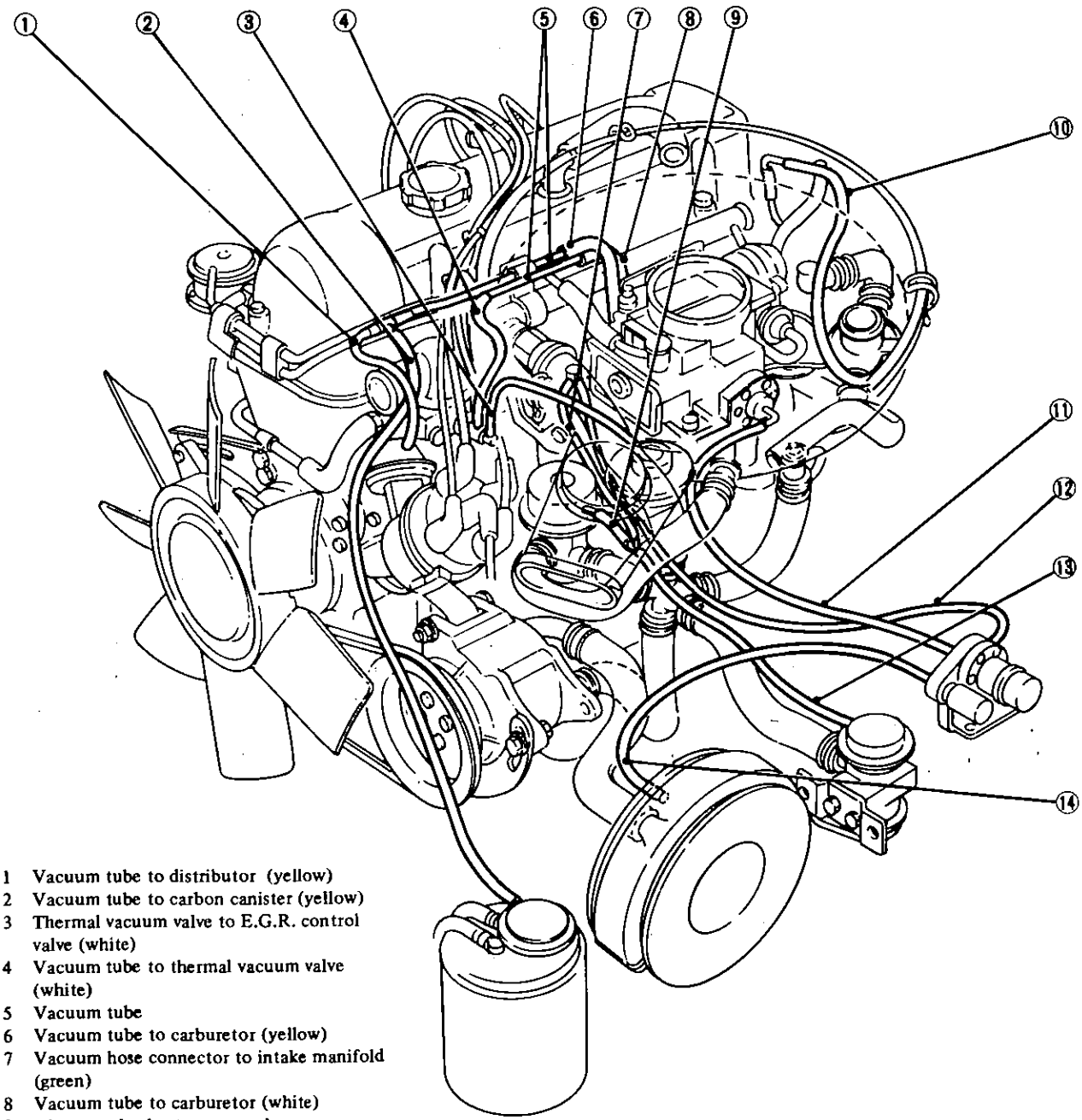
Fig. ET-3 Emission control system piping (Non-California models)

EMISSION CONTROL SYSTEM PIPING (California models)



1 Vacuum tube to distributor (yellow)
2 Vacuum tube to carbon canister (yellow)
3 Thermal vacuum valve to E.G.R. control valve (white)
4 Vacuum tube to thermal vacuum valve (white)
5 Vacuum tube
6 Vacuum tube to carburetor (yellow)
7 Vacuum hose connector to intake manifold (green)
8 Vacuum tube to carburetor (white)
9 Air control valve to vacuum hose connector (green)
10 A.B. valve to vacuum connector (green)
11 B.C.D.D. to control valve (white)
12 B.C.D.D. control valve to intake manifold (green)
13 Vacuum hose connector to E.A.R. control valve (green)
14 B.C.D.D. control valve to air pump air cleaner

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Fig. ET-4 Emission control system piping (California models)

EMISSION CONTROL DEVICES

Part name	Engine model	A14									L20B			
	Car model	B210						F10			620			
		California models		Non-California models (Except for Canada)		Canada		California models	Non-California models (Except for Canada)	Canada	California models		Non-California models	
	Transmission	M/T	A/T	M/T	A/T	M/T	A/T	M/T			M/T	A/T	M/T	A/T
AIR CLEANER	A.T.C. air cleaner (with air pump relief valve)	–	–	X	X	X	X	–	X	X	–		X	X
	A.T.C. air cleaner (without air pump relief valve, with altitude compensator valve)	X	X	–	–	–	–	X	–	–	–	–	–	–
	A.T.C. air cleaner (with air pump relief valve, with altitude compensator valve)	–	–	–	–	–	–	–	–	–	X	X	–	–
	Idle compensator (dual type)	X	X	X	X	X	X	X	X	X	X	X	X	X
	Fresh air duct (for introducing outside air)	X	X	X	X	X	X	X	X	X	X	X	**X	** X
ENGINE PROPER	Early fuel evaporative system (exhaust heating)	X	X	X	X	X	X	X	X	X	X	X	X	X
CARBURETOR	P.T.C. auto choke	X	X	X	X	X	X	X	X	X	X	X	X	X
	B.C.D.D. (with control valve)	–	–	–	–	–	–		–	–	–	–	X	X
	B.C.D.D. (without control valve, control valve attached to body)	–	–	–	–	–	–	–	–	–	X	X	–	
	Throttle opener (with control valve)	X	X	X	X	X	X	X	X	X	–	–	–	–
	Dash pot	X	X	X	X	X	X	X	X	X	X	X	X	X
	*Altitude compensator (with pipe for use in air bleed)	X	X	–	–	–	–	X	–	–	X	X	–	–
IGNITION SYSTEM	Ignition transistor unit, Distributor (1 pick-up)	X	X	–	–	–	–	X	–	–	X	X	–	–
	T.C.S. (Switching valve for decompression except Top)	X	X	X	–	X	–	X	X	X	–	–	–	–
	S.D.V. (Spark delay valve)	–	–	–	X	–	X	–	–	–	–	–	–	X
	T.V.V. (Thermal vacuum valve-T.C.S.)	X	X	X	X	X	X	X	X	X	–	–	–	–
A.I.S.	Air pump, A/P air cleaner, Check valve, A.B. valve	X	X	X	X	X	X	X	X	X	X	X	X	X
	*C.A.C. valve (Air control valve + E.A.R. valve + Relief valve)	X	X	–	–	–	–	X	–	–	–	–	–	–
	Air control valve	–	–	–	–	–	–	–	–	–	X	X	–	–
	E.A.R. valve	–	–	–	–	–	–	–	–	–	X	X	–	
	Relief valve	–	–	X	X	X	X	–	X	X	X	X	X	X
E.G.R. SYSTEM	*E.G.R. valve (B.P.T. system)	X	X	X	X	–	–	X	X	–	–	–	–	–
	E.G.R. valve (VC system)	–	–	–	–	X	X	–	–	X	X	X	X	X
	T.V.V. (Thermal vacuum valve-E.G.R.)	X	X	X	X	X	X	X	X	X	X	X	X	X
	T.C.E. (Top cut E.G.R.)	–	–	–	–	X	–	–	–	X	–	–	–	
	Warning device (every 12,500 mile maintenance)	–	–	–	–	–	–	–	–	–	–	–	X	X
CATALYZER	Catalytic converter	X	X	–	–	–	–	X	–	–	X	X	–	–
	Floor temperature warning system (with floor sensor)	X	X	–	–	–	–	X	–	–	X	X	–	

*: Newly equipped unit on 1977 models

**: Except for Canada

Remarks: X ... Available
– ... Not available

M/T: Manual transmission
A/T: Automatic transmission
A.T.C.: Automatic temperature control
P.T.C.: Positive temperature coefficient
T.V.V.: Thermal vacuum valve
C.A.C.: Combined air control
B.C.D.D.: Boost controlled deceleration device
T.C.S.: Transmission controlled vacuum advance system
S.D.V.: Spark delay valve
T.C.E.: Transmission controlled exhaust gas recirculation system
B.P.T.: Back pressure transducer
V.C.: Vacuum
A.I.S.: Air injection system
A.B. valve: Anti-backfire valve
E.A.R. valve: Emergency air relief valve
E.G.R.: Exhaust gas recirculation
V.D.V.: Vacuum delay valve
T.C.E.: Top cut E.G.R.

BASIC MECHANICAL SYSTEM

CONTENTS

ADJUSTING INTAKE AND EXHAUST VALVE CLEARANCE

Note: After tightening cylinder head bolts, adjust intake and exhaust valve clearances.

Valve clearance adjustment is impossible when the engine is in operation:

1. Loosen pivot locking nut and turn pivot screw until the specified clearance is obtained while cold.

Using service tool, tighten pivot locking nut securely after adjustment, and recheck the clearance.

2. Warm up engine for at least several minutes and stop it. Measure valve clearance while hot. If out of specifications, adjust.

Unit: mm (in)

Cold	Intake	0.20 (0.008)
	Exhaust	0.25 (0.010)
Warm	Intake	0.25 (0.010)
	Exhaust	0.30 (0.012)

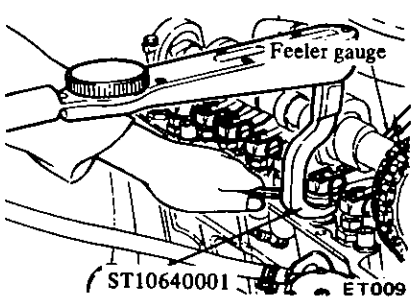

Fig. ET-5 Adjusting valve clearance

CHECKING AND ADJUSTING DRIVE BELT

1. Check for cracks or damage. Replace if necessary.
2. Normal drive belt deflection is 8 to 12 mm (0.315 to 0.472 in), when moderate thumb pressure is applied midway between pulleys.

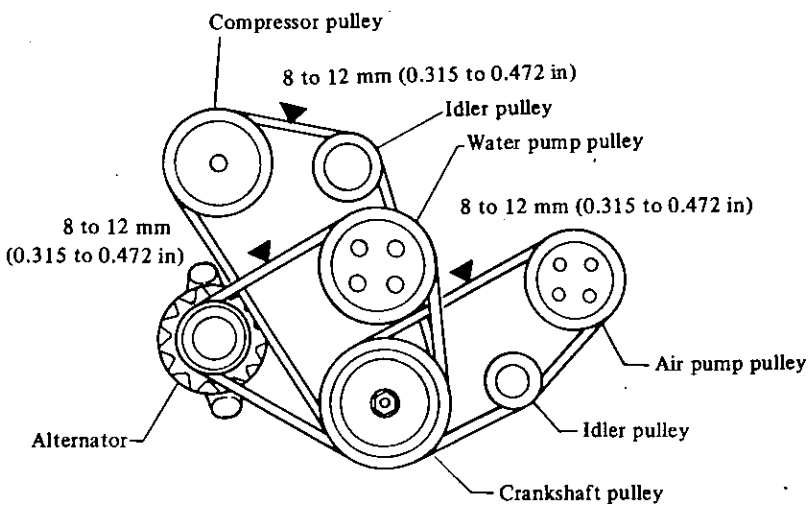

Fig. ET-6 Drive belt tension

RETIGHTENING CYLINDER HEAD BOLTS, MANIFOLD NUTS AND CARBURETOR SECURING NUTS

Refer to the following tightening torque specifications.

Tightening torque:
Cylinder head bolts
1st turn
4.0 kg-m (29 ft-lb)
2nd turn
6.0 kg-m (43 ft-lb)
3rd turn
6.5 to 8.5 kg-m
(47 to 61 ft-lb)

Manifold nuts
1.2 to 1.6 kg-m
(8.7 to 11.6 ft-lb)
Carburetor nuts
0.5 to 1.0 kg-m
(3.6 to 7.2 ft-lb)

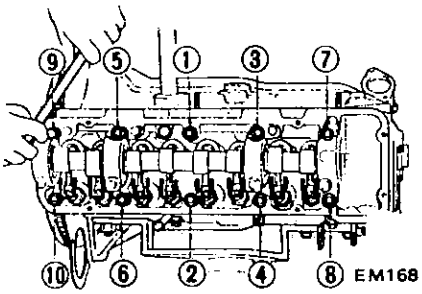

Fig. ET-7 Tightening sequence

CHECKING ENGINE OIL

1. Check if oil is diluted with water or gasoline. Drain and refill oil if necessary.

Notes:
a. **A milky oil indicates the presence of cooling water. Isolate the cause and take corrective measure.**
b. **An oil with extremely low viscosity indicates dilution with gasoline.**

2. Check oil level. If below the specified level, raise it up to the H level.

Engine oil capacity
(including oil filter)
Maximum (H level)
4.3 liters
(4 ½ US qt, 3 ¾ Imp qt)
Minimum (L level)
3.3 liters
(3 ½ US qt, 2 ⅞ Imp qt)

REPLACING OIL FILTER

The oil filter is a cartridge type and can be removed using Oil Filter Wrench ST19320000.

1. Check for oil leaks past gasketed flange. If leakage is found, retighten just enough to stop leakage. If retightening is no longer effective, replace filter as an assembly.
2. When installing oil filter, tighten by hand.

Note: **Do not overtighten oil filter, lest leakage should occur.**

CHANGING ENGINE COOLANT

PERMANENT ANTI-FREEZE COOLANT

Permanent anti-freeze coolant is an ethylene glycol base product containing chemical inhibitors to protect the cooling system against corrosion.

The anti-freeze does not contain any glycerine, ethyl or methyl alcohol. It will not evaporate or boil away and can be used with either high or low temperature thermostat.

It flows freely, transfers heat efficiently, and will not clog passages in the cooling system.

The anti-freeze must not be mixed with other products.

This coolant can be used throughout the seasons of the year.

Whenever coolant is changed, the cooling system should be flushed and refilled with a new coolant.

Check the level. See the instructions furnished by the manufacturer for the mixture ratio of anti-freeze to water.

CHECKING COOLING SYSTEM HOSES AND CONNECTIONS

Check hoses and fittings for loose connections or deterioration. Retighten or replace if necessary.

INSPECTION OF RADIATOR CAP

Apply reference pressure [0.9 kg/cm² (13 psi)] to radiator cap by means of a cap tester to see if it is satisfactory. Replace cap assembly if necessary.

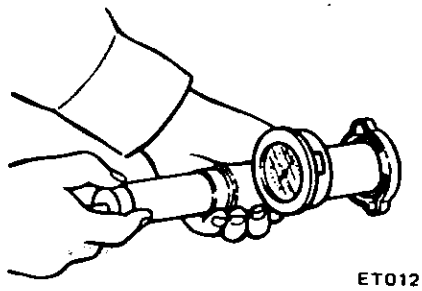

Fig. ET-8 Testing radiator cap

COOLNG SYSTEM PRESSURE TEST

With radiator cap removed, apply reference pressure [1.6 kg/cm^2 (23 psi)] to the cooling system by means of a tester to detect any leakage.

Water capacity

Without heater:
7.4 liters
(7 ⅜ US qt, 6 ½ Imp qt)
With heater:
8.0 liters
(8 ½ US qt, 7 Imp qt)

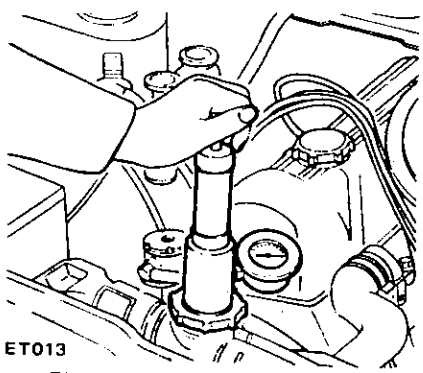

Fig. ET-9 Cooling system pressure test

CHECKING VACUUM FITTINGS, HOSES, AND CONNECTIONS

Check the condition of fittings and hoses. Retighten or replace if necessary.

All vacuum hoses can be identified by colors.

White line

- Vacuum tube to carburetor (E.G.R. Tube)
- Vacuum tube to thermal vacuum valve
- Thermal vacuum valve to E.G.R. control valve