1973 240Z
1974 260Z
FUEL SYSTEM

MODIFICATION PLUS

NISSAN MOTOR CORPORATION IN U.S.A.

AUGUST 1975

INTRODUCTION

"**Modification Plus**" updates the 1973 240-Z and 1974 260-Z fuel system modification information. The modifications that have been recommended to date, plus careful tune-up, will correct most vehicles.

To find out whether the vehicle has had all the modifications, the first section of the book, **Modifications,** tells you how to identify them, and, if they have not been installed, the action to take.

Once all the modifications have been performed, it's time to tune-up the engine. You'll find instructions and specifications in Section 2, **Performance** Section.

If the car still has fuel mixture problems (once it has been properly tuned), turn to Section 3, **Related** Section, for further instructions.

Finally, if all these steps have failed to correct the operating difficulty, turn to **Troubleshooting,** Section 4. There you will find other procedures for correcting starting and operating difficulties.

Follow the sequence of these sections as given. Do not skip a section.

Nearly all the difficulties will be cleared up once the modifications in the first section have been performed and the engine tuned.

DEFINITION OF TERMS

To end confusion, the terms "vapor lock", "percolation", and "vacuum break", are defined here.

VAPOR LOCK. Vapor lock causes a leaner than normal air-fuel mixture. It affects the suction side of the fuel pump. The gasoline vapor-liquid ratio in the fuel line becomes greater than the fuel pump is able to handle. The fuel pump sends less fuel to the carburetor, causing a lean fuel-air mixture.

PERCOLATION. Percolation causes a richer than normal air-fuel mixture. It affects the carburetor float bowl and the high pressure fuel line (the outlet side of the fuel pump), and may cause hot start problems. Percolation can come about in several ways:

1. Heat soak-back into the fuel pump and high pressure fuel line can raise the line pressure enough to unseat the float bowl needle valve. This condition is known as "after-fill".

2. Float bowl evaporation may lower the float level while there is residual pressure in the fuel line. This pressure then forces an excess amount of fuel into the float bowl.

3. Fuel evaporates in the float bowl, and the resulting vapor pressure may not vent out quickly enough. The high pressure developed in the float bowl forces liquid fuel into the intake manifold.

VACUUM BREAK. When the choke is closed (except for a small air gap) and the engine starts, the vacuum created by the engine starting will try to completely shut the choke valve. This vacuum is broken by the vacuum break diaphragm, which holds the choke open a small amount. The vacuum break diaphragm operates by manifold vacuum and is connected to the choke valve by linkage.

Section One
MODIFICATIONS

INTRODUCTION Before proceeding with any adjustments to the 1973 240-Z or 1974 260-Z fuel systems, their system components must be identified to determine which modification kits should be installed. Then the modification kit components and installation procedures are detailed. Generally, the items in this section are divided as follows, although not all items have all the divisions.

COMPARISON: Describes the differences between the components, along with other pertinent information.

IDENTIFICATION: Describes where to look and what to do to identify the components. Lists the differences between the items to verify identification.

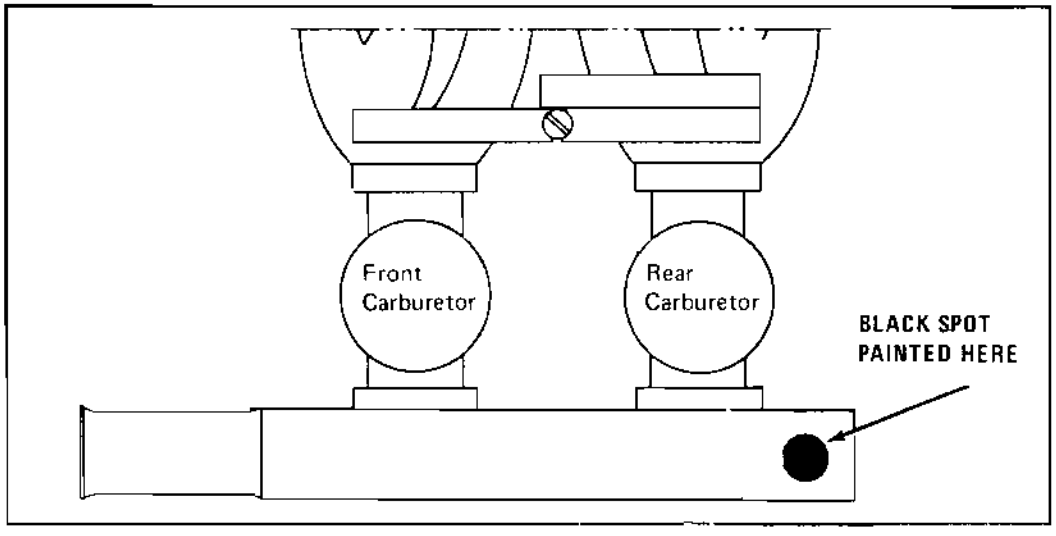
RESULTS: If the modification is not installed, outlines the necessary kit(s) or unit(s) to install.

COMPONENTS: Lists the components (parts or kits) needed to perform the modification(s).

INSTALLATION: Instructions for installing the modification(s).

IMPORTANT

1973 240-Z ONLY: A black spot painted on the air cleaner cover shows that the vehicle has been modified through "Float Assemblies", page 6.



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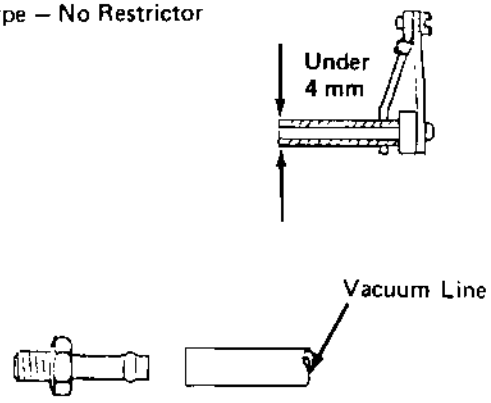
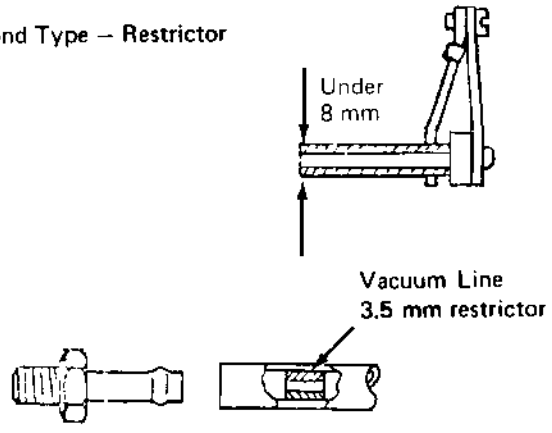
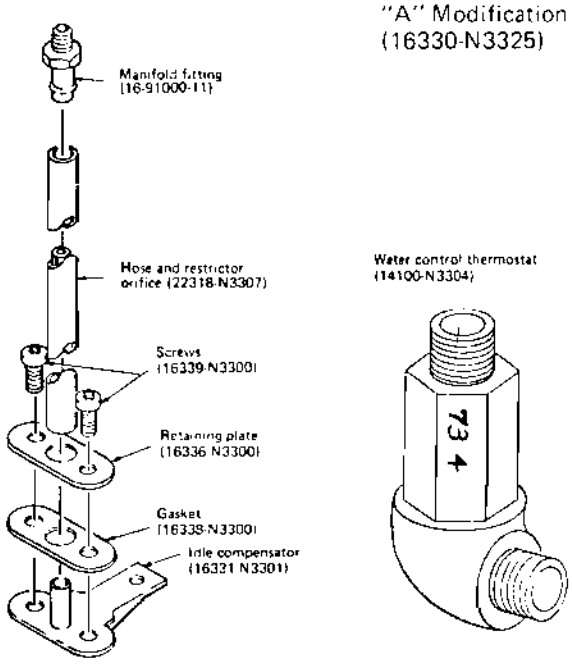
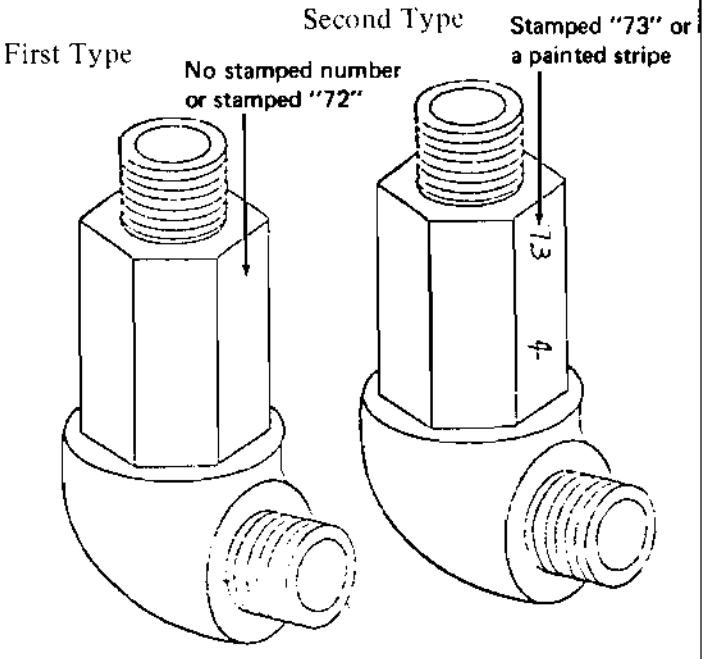
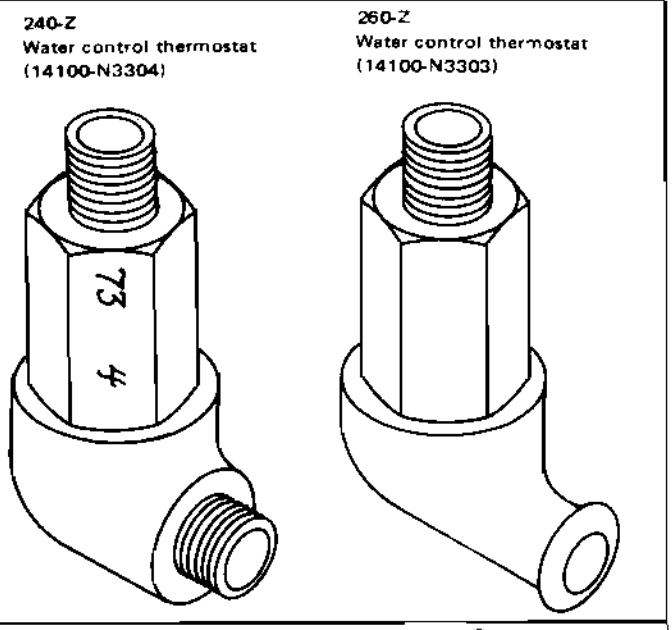
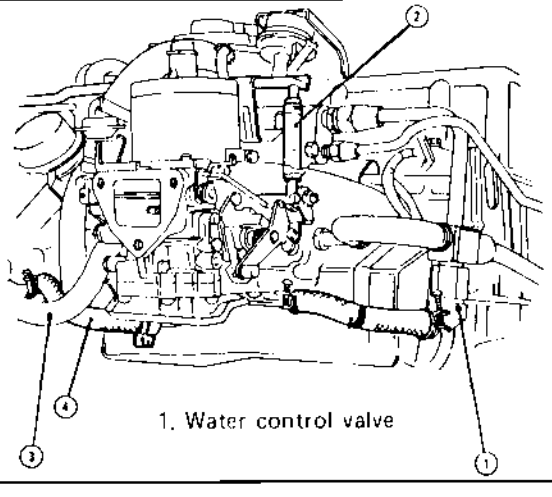
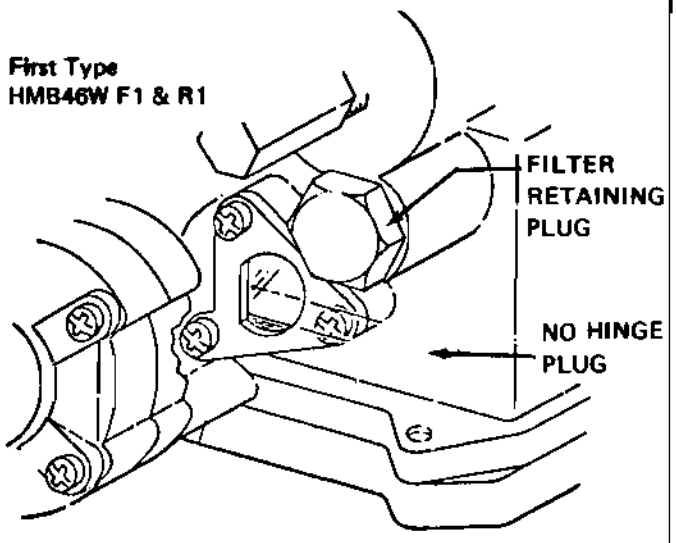
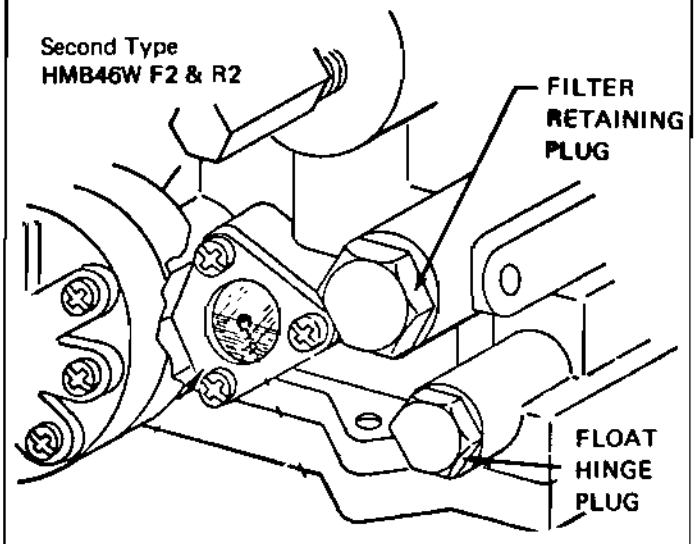
IDLE COMPENSATOR ASSEMBLY
(FIRST AND SECOND TYPES)

Action	Illustration
Comparison. All 1973 240-Zs were equipped with one of two types of idle compensator assemblies.	First Type – No Restrictor 
	Second Type – Restrictor 
Results. If the second type (under 8 mm O.D.) Idle Compensator Assembly is not installed, install an "A" Modification Kit. · Remove air cleaner, compensator vacuum line, manifold fitting and compensator assembly. · Install new fitting and vacuum line (with restrictor). · Enlarge air cleaner compensator tube hole to 5/16 inches (max.). · Install new (5mm) compensator, gasket, retaining plate and screws. · Reinstall air cleaner base and re-connect all lines and hoses. · Water control thermostat: see next page.	"A" Modification Kit (16330-N3325)  Manifold fitting (16-91000-11) Hose and restrictor orifice (22318-N3307) Screws (16339-N3300) Retaining plate (16336-N3300) Gasket (16338-N3300) Idle compensator (16321-N3301) Water control thermostat (14100-N3304) 73 +

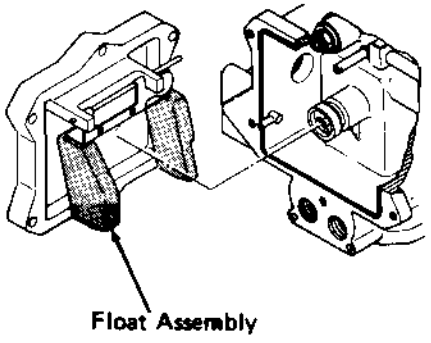
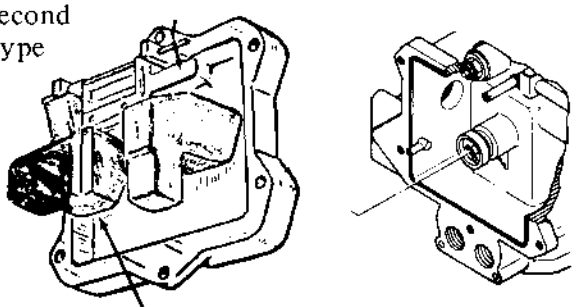
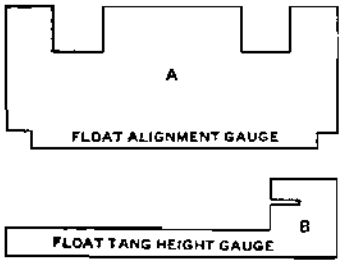
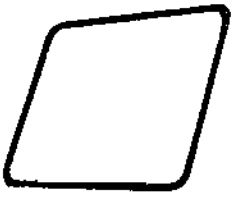
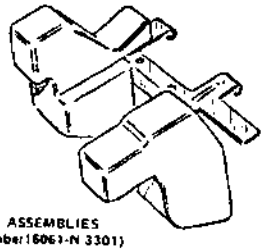
CARBURETOR WATER CONTROL THERMOSTAT (FIRST AND SECOND TYPE)

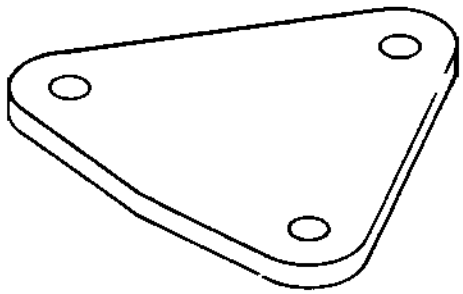
Action	Illustration
Comparison. All 1973 240-Z's were equipped with one of two types of carburetor water control thermostats.	
Note: 260-Z models had a later type with a different lower connecter.	
Results. If the second type thermostat is not installed, install it unless you use the "A" modification. **Components and Installation.** Carburetor Water Control Thermostat 240-Z – 14100-N3304 260-Z - 14100-N3303 Remove water line and thermostat. Install new thermostat and reconnect water line.	

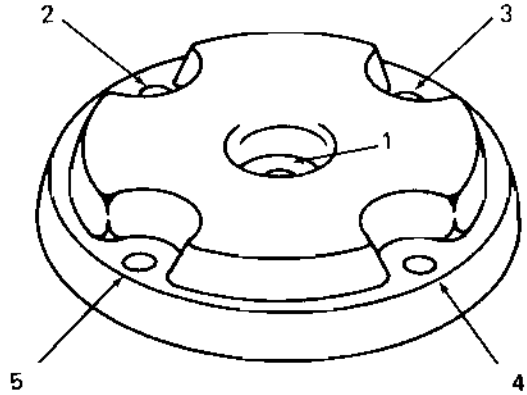
CARBURETOR ASSEMBLIES (FIRST AND SECOND TYPES)

Action	Illustration
Comparison. All 1973 240-Zs were equipped with one of two types of carburetor assemblies.	
	
Results. If the vehicle is equipped with the first type (F-1/R-1) carburetor assemblies, inspect the floats according to "Float Assemblies (First and Second Types) (next page).	

FLOAT ASSEMBLIES (FIRST AND SECOND TYPES)

Action	Illustration
Comparison. All F-1/R-1 carburetors have one of two types of float assemblies. · First type: floats were narrow and almost rectangular. · Second (B-Series): much wider and resemble a "steplike" rectangle. **Identification:** Remove the float bowl cover of each carburetor. Check the float design against the illustrations.	First Type  Float Assembly Second Type  Float Assembly
Results. If the second type float assemblies are not installed, install a "B" Modification Kit. "B" Modification Kit (Number 16330-N3325). Float Assemblies 16061-N3301 · Seal Rings 16064-N3300 Measurement Gauges: (A)—J-24728-KMUSA (B)—J-24727-KMUSA · Remove air cleaner assembly, heat shield, and if possible, the float chamber covers. Otherwise, remove carburetor assemblies. · Remove float chamber covers (if not performed), float assemblies, and seal rings. · Install new floats using the original hinge pin. · Adjust floats using gauges A & B. Refer to "Float Height", F-1/R-1, page · Install new seal rings and float chamber covers or carburetors. · Start engine and check fuel float level. · Reinstall air cleaner, hoses and lines.	"B" Modification Kit  2 FLOAT MEASUREMENT GAUGES (A & B)  2 SEAL RINGS (Part Number 16064-N 3300)  2 FLOAT ASSEMBLIES (Part Number 16061-N 3301)

Action	Illustration
Comparison. All 1973 240-Zs were originally equipped with a mechanical fuel pump. However, some units were removed and replaced by a block-off plate. Check the right front side of the engine.	 **Block-off Plate**
Results. If the mechanical fuel pump is not installed, install a new fuel pump with attachments. **Components and Installation.** Mechanical Pump (17010-E4101). Gaskets (2) 17099-E3011 Spacer 16420-E3011 Stud (3) 08223-84210 · Remove block off plate and bolts. · Install studs, gasket, spacer and 2nd gasket with new pump.	

Action	Illustration
MECHANICAL FUEL PUMP 260-Z **Comparison.** The mechanical fuel pump has one of two types of covers. · Zinc cover ZDC-2 — first type · Aluminum cover — second type **Identification.** Look at the fuel pump cover to see the type. If it is marked ZDC-2, replace it with an aluminum cover. Important: Cars with zinc fuel pump covers were involved in a recall campaign. Be sure a zinc cover is replaced with an aluminum cover and new gasket. Tell your Service Manager what you have found. He will provide recall forms. Refer to Recall Campaign Bulletin Identification No. 74-0117.	
Components and Installation Fuel Pump Cover 17016-N3300 Gasket 17076-21016 · Remove the mechanical fuel pump cover and gasket. Tag cover for identification and retain for delivery to District Service Manager. · Install aluminum cover and new gasket. Using torque screwdriver, tighten screws to 30-35 in.-lb. (35-40 kg-cm). Tighten screws in sequential order starting with screw No. 1 (see illustration) in the following steps: **First, tighten all screws to 20 in.-lb.** **Second, tighten all screws to 30 in.-lb.** **Third, tighten all screws to 35 in.-lb.** · Start engine and check fuel pump and fuel supply system for leaks. Correct as necessary. · Mark the newly installed cover with a dab of red paint, if unpainted.	

IMPORTANT

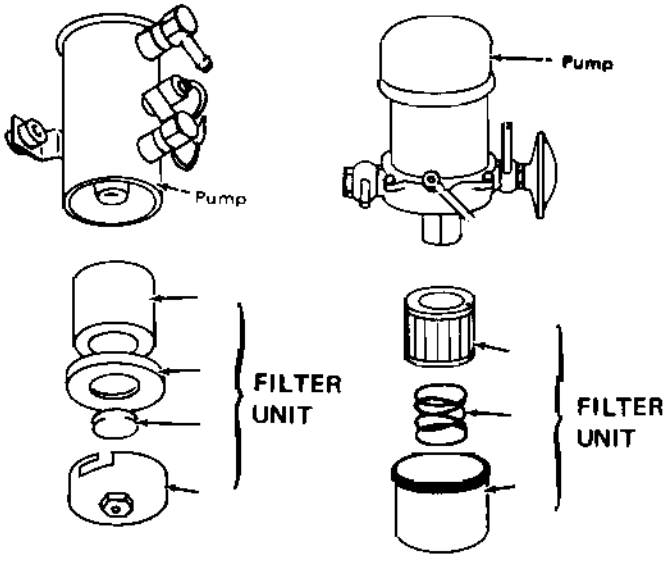
The majority of V-3 Sub Kits not installed. (These are outlined on the next pages).

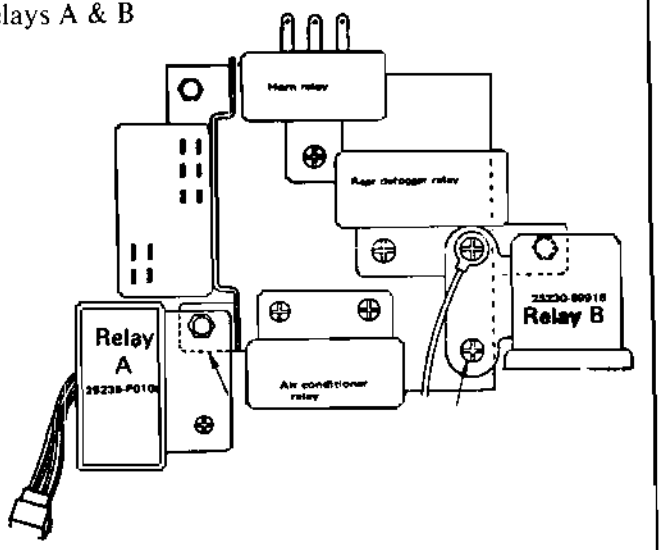
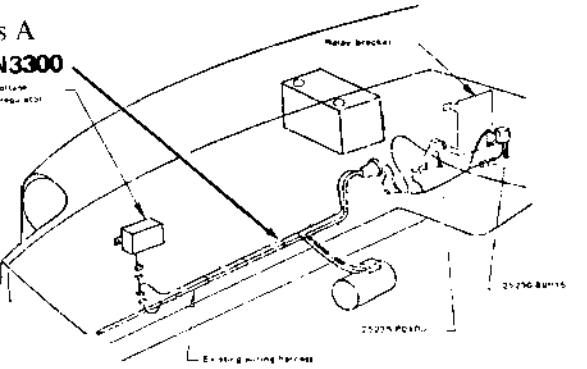
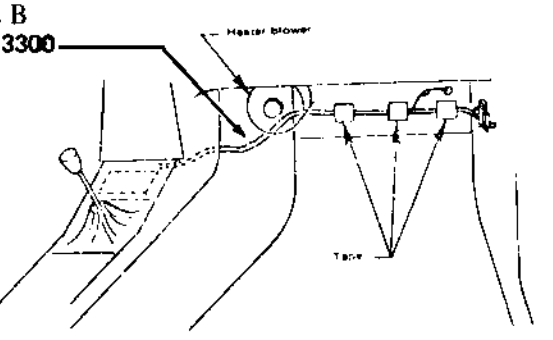
Results: Install complete V-3 Modification Kit, which includes major sub-kits.

Components and Installation.

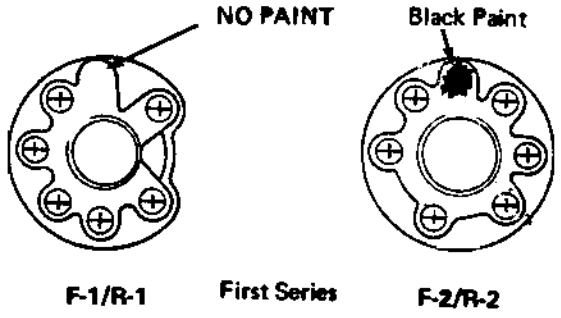
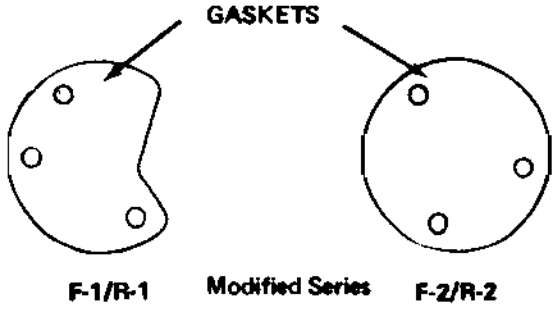
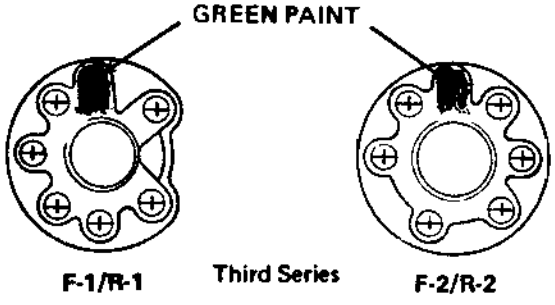
Electric Fuel Pump (Jidoosha Kiki)	17020-N3325
Electric Fuel Pump (Mitsuba)	17020-N3326
Relay "A"	25235-P0100
Relay "B"	25230-89915
Harness "A"	24032-N3300
Harness "B"	24034-N3300
Power Valve (F-1/R-1)	16059-N3314
Power Valve (F-2/R-2)	16059-N3313
Air Filter Element	16546-N3310
Heat Insulation	17560-N3325
Restrictor Orifice	16335-N3303
Seal Kit	62810-N3026
Fan	21060-N3310

ELECTRIC FUEL PUMP ASSEMBLIES (FIRST AND SECOND TYPES)

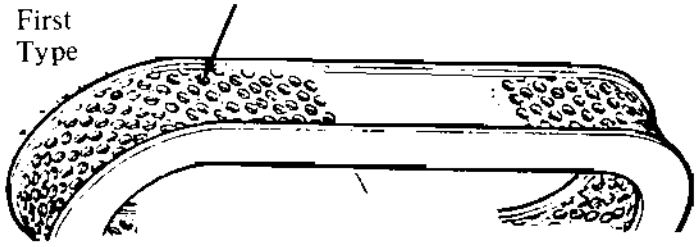
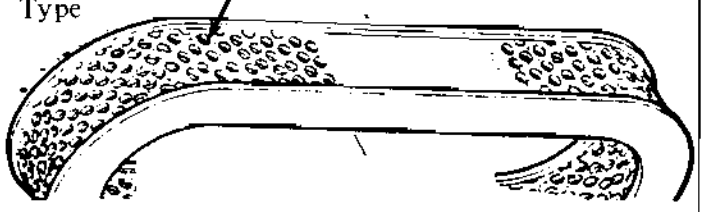
Action	Illustration
Comparison. One of two types of electric fuel pump kits may have been installed on the 1973 240-Z	First Type  17020-N3325 17020-N3326
Results. If electric pump has not been installed, install one. **Components and Installation.** V-3 Sub Kit 17020-N3325 (First type) 17020-N3326 (Second type) 17020-N3325 (Jidoosha Kiki Brand) Pump 17020-N3310 Bolts 08360-63010 Harness 24021-E8200 Fuse 25-405-89900 Clips 99604-H1400* Hose - 220 08740-22030 Hose - 300 08740-30030 Clamps 08723-11600* Bracket 17033-E4200 Screws 08363-61214* 17020-N3326 (Mitsuba Brand) Pump 17020-N3315 Bracket 17160-N3315 Hose 08740-44030 Hose 17556-N3315 Harness 24021-E8200 Clips 99604-H1400* Clamps 08723-11600* Screws 08363-61214* *Included in both kits.	

Action	Illustration
RELAY ASSEMBLIES (A and B) **Comparison.** Two relays (including harness) may have been installed on the 1973 240-Z as part of the V-3 Modification Program. · Relay A (25235-P0100): rectangular in shape and supplies current to Relay B. · Relay B (25230-89915) has a square appearance and supplies current to the electric fuel pump. **Identification.** Look at the right side kick panel to see if the units are installed.	Relays A & B 
Results. If the relay assemblies are not installed, install relays "A" and "B" with harness. **Components and Installation.** Relay "A" (25253-P0100) Relay "B" (25230-89915) Harness "A" (24032-N3300) Harness "B" (24034-N3300) The harness assemblies are normally not available as individual units and must be installed as part of a V-3 Modification Kit.	Harness A **24032-N3300** 
	Harness B **24034-N3300** 

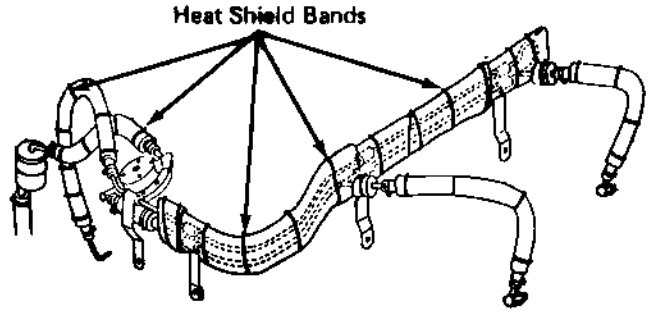
POWER VALVE ASSEMBLIES (FIRST, MODIFIED & THIRD SERIES)

Action	Illustration
Comparison. All first (F-1/R-1) and second (F-2/R-2) type carburetors are equipped with one of three series power valves. If the first series valves are installed, they may or may not have been modified. To determine if the first series are modified, remove the valves and check for the blanking gasket. · No green paint mark – First series (disregard black paint) · Blanking gasket installed – modified series · Green paint mark – Third series	  
Results. If the third series power valves are not installed, install new third series valves. **Components and Installation.** Valve assemblies. · F-1/R-1 16059-N3314 · F-2/R-2 16059-N3313 · Remove the air cleaner assembly and the existing power valves. · Install the new power valves and check "Air Cleaner Element" following, before reinstalling the air cleaner.	

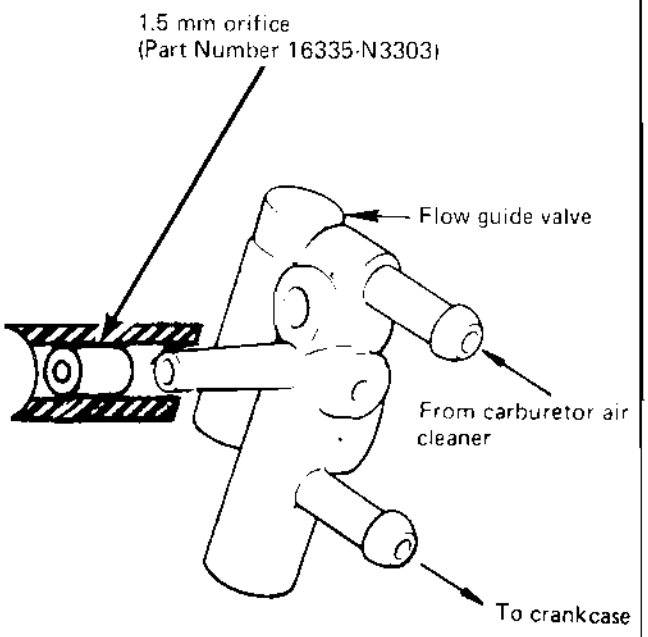
AIR CLEANER ELEMENT (FIRST AND SECOND TYPES)

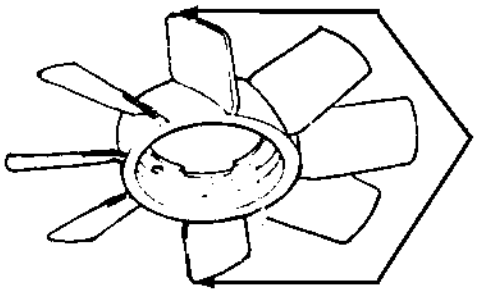
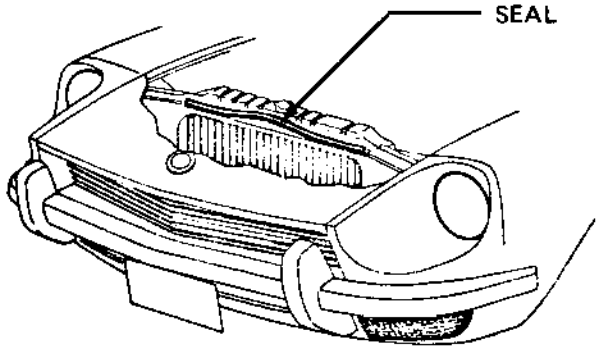
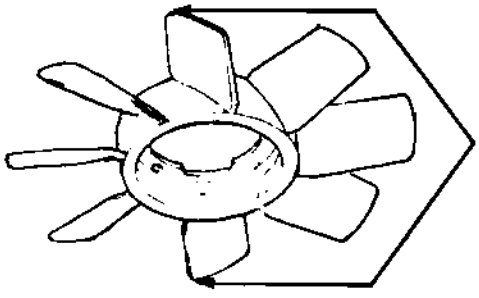
Action	Illustration
Comparison. Two types of air cleaner elements were produced for the 1973 240-Z. · First type: tan colored, non-serviceable unit. · Second type: red colored element, serviceable unit. **Results.** If the second type air cleaner element is not installed, install a second type, red element (16546-N3310).	First Type TAN COLORED ELEMENT  Second Type RED COLORED ELEMENT 

FUEL LINE INSULATION
(FIRST AND SECOND TYPES)

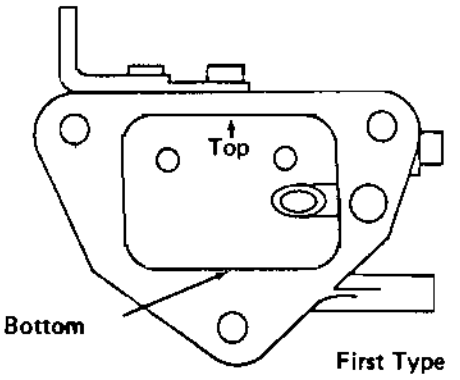
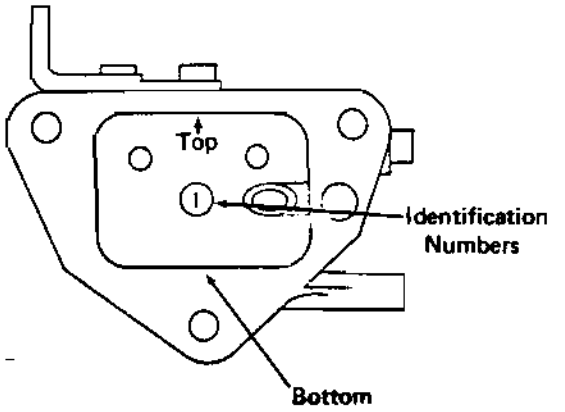
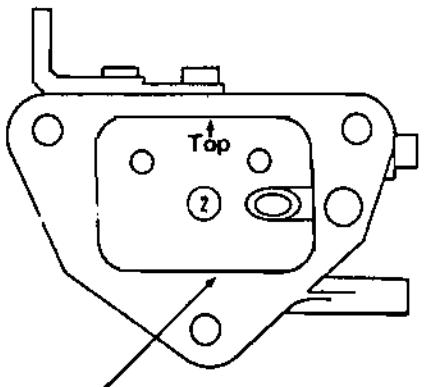
Action	Illustration
Comparison. Two types of fuel line insulation kits may have been installed on the 1973 240-Z fuel system. · First type insulation: consisted of an inner wrapping of black,"tar-like" tape covered by bright adhesive foil tape. · Second type insulation: an aluminum coated asbestos outer material and a glass-asbestos inner material.	
Results. If the second type insulation is not installed, install a second type insulation kit. **Components and Installation.** Insulation Kit – 17560-N3325 Heat Shield 17564-N3300 " 17654-N3301 " 17564-N3302 " 17564-N3303 " 16563-N3300 " 16563-N3301 " 16563-N3302 " 16563-N3303 " 16563-N3305 Bands 17570-N3300 · Remove the choke brackets and cables, plug wires, EGR solenoid, and valve cover-to-air cleaner hose. · Install insulation and secure with bands. · Reinstall crankcase hose, EGR solenoid, plug cables, and choke bracket and cables.	 **Insulation (Second type)**

RESTRICTOR ORIFICE
(FLOW GUIDE VALVE)

Action	Illustration
Comparison. A 1.5mm orifice may have been added to the 1973 240-Z flow guide valve. The new orifice is installed in the fuel tank-to-flow guide valve line. (The previous system did not incorporate a restrictor.)	
Results. If the restrictor orifice is not installed, install one (16335-N3303). **Installation.** · Remove the fuel tank-to-flow guide valve vacuum line at the valve · Insert the 1.5mm restrictor into the line and reconnect line to the flow guide valve.	

Action	Illustration
Comparison. Early production 1973 240-Zs were originally equipped with a 15 inch diameter fan and did not incorporate an air seal. The air seal was added to most late production vehicles, and a second type, 15-3/8 inch diameter fan with an air seal may have been installed as part of the V-3 Modification Kit. **Identification.** Look at the upper radiator support for the air seal and check the diameter of the fan. · 15 inch diameter fan – Standard · Air seal only – Late production · Air seal and 15-3/8 inch diameter fan – Modified unit	 15 INCH DIAMETER BETWEEN ARROWS Fan – Standard Type  SEAL Air Seal  15 3/8 INCH DIAMETER BETWEEN ARROWS Modified Type Fan
Results. If the air seal or fan is not installed, install seal and fan. **Components and Installation.** Air Seal Kit (62810-N3026) includes: · Rubber Seal 62811-N3001 · Insulator Bracket 62812-N3001 · Screws 83-60616-26 Fan 21060-N3310 · Remove existing fan and replace with the new 15-3/8" unit. Note: Notched side of hub is mounted towards the engine. · Install air seal kit.	

CHOKE VALVES

Action	Illustration
Comparison. Three types of choke valves were installed. · First type (factory equipped): not stamped with a number. · Second type: stamped with a ① and installed in HMB46W F1 and R1 carburetors. · Third type: stamped with a ② and installed in HMB46W F2 and R2 carburetors. Note: HMB46W-5 and -9 carburetors have the improved choke valves (no stamped number). **Identification.** Check the choke valves for a stamped number. · No number — First type · Number 1 — Second type (16188-N3300) · Number 2 — Third type (16188-N3310)	 First Type  Second Type F1 and R1  F2 and R2—4 Third Type
Results. If the second or third type choke valves are not installed, install a Cold Start Performance Kit. (continued next page)	

Action	Illustration

Components and Installation. Use the chart to match the kits to the carburetor type. The kits are available through the Regional Service Manager's office.

			Kit Contents		
Kit Number	Vehicle and Carburetor Type	Kit Part Number	Choke Valve Type Number	Spring	Orifice 16268-N3310
Kit No. 1	HLS30 1973 HMB46W-1 (early)	16188-N3300 (16268-N3310)	1	X	X
Kit No. 2	HLS30 1973 HMB46W-2 (late)	16188-N3310 (16268-N3310)	2	X	X
Kit No. 3	RLS30 1974 HMB46-4	16188-N3310	2	NA	NA

Note: HMB46W-5 and -9 carburetors have the improved choke valves (no stamped number).

- Remove air cleaner and put choke lever in fully choked position.
- Remove screws securing choke valve to choke shaft.

  Note: Two men should work together, one holding the choke shaft securely closed while the second man removes the screws.

- Apply 3-Bond Screw Lock Super 103G or Locktite Sealant to new screws.
- Install choke valves with identification stamp positioned upright.

IMPORTANT

a. Check choke valve alignment—if choke valve is not air tight with carburetor throat inlet, loosen screws and readjust.

b. If the choke valve fails to close completely when the choke control lever is moved, readjust choke cable.

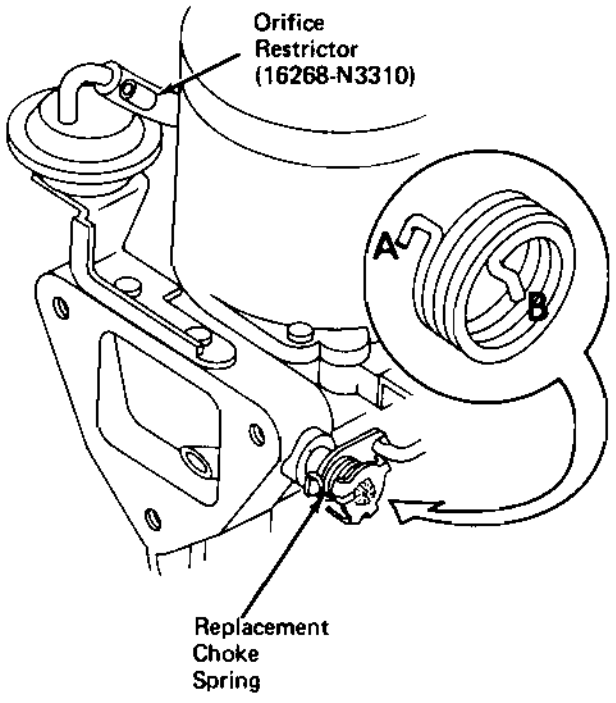
CHOKE SPRINGS AND ORIFICES (1973 240-Z)

Action	Illustration

Comparison. Orifice restrictors may have been added to the 1973 240-Z vacuum hoses at the choke servo diaphragm chambers.

- If installed, this probably indicates that new choke springs were also installed.

Note: 260-Z HMB46W-4 and -5 carburetors have the orifice restrictor built into their fitting.



Results. If the orifice is not installed, install a Cold Start Performance kit.

Components. Use the chart to match the kits to the carburetor type. The kits are available through the Regional Service Manager's office.

Installation.

Choke Spring

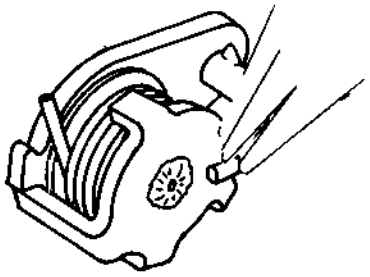
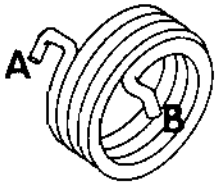
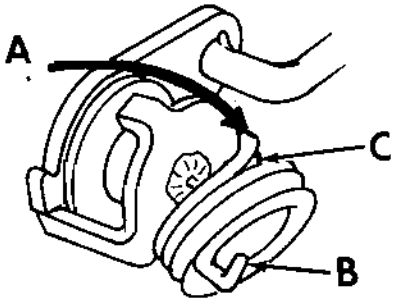
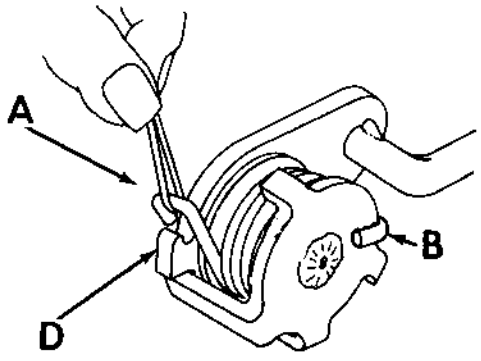
- Place the choke control lever at full choke position.
- Note position of choke spring. Install new choke spring in the same position.

Kit Chart

			Kit Contents		
Kit Number	Vehicle and Carburetor Type	Kit Part Number	Choke Valve Type Number	Spring	Orifice 16268-N3310
Kit No. 1	HLS30 1973 HMB46W-1 (early)	16188-N3300 (16268-N3310)	1	X	X
Kit No. 2	HLS30 1973 HMB46W-2 (late)	16188-N3310 16268-N3310	2	X	X

(Continued)

CHOKE SPRINGS AND ORIFICES
(Continued)

Action	Illustration
· Straighten out one old choke spring end with a pair of pliers, then grip the other end and pull the spring off. Discard it.	
· Remove a piece of string from a claim tag and keep it on hand. Note: The free shape of the new spring is shown in illustration. Note how the ends are shaped.	
· Roll the new spring end "A" in clockwise from point "C".	
· Line up new spring until the end "B" rests against the stopper hook "C". Pass the string (previously noted) through the end of spring end "A". Pull the spring around the post and hook the "A" spring end to lever "D". Note: Check that both spring ends are properly located. Be sure there are 5 turns of the spring on the shaft. Check that the choke valve operates smoothly. · Replace the other choke spring as previously described. · Recheck that both choke valves operate smoothly by moving the choke lever inside the car. If either choke valve fails to close completely when the choke control lever is moved, readjust that choke cable. Servo Diaphragm Orifice · Disconnect the vacuum hose at the choke servo diaphragm chamber. · Insert orifice into the hose with a round punch, then replace the vacuum hose over the diaphragm chamber connector. · Install the other orifice as described.	

Section Two
PERFORMANCE

INTRODUCTION

Before performing any ignition or fuel system adjustments, use the System Specification Chart to determine what operations will have to be performed to bring the vehicle up to factory specifications.

DESCRIPTION

This section consists of information on testing and adjustment procedures only. Each reference contains the following information.

Important	This block describes the **importance** of the adjustment.
Preparation	This block lists the **pre-adjustment** operations.
Procedures	This block lists the **actual procedures** to follow when performing the check or adjustment.

CAUTION

Related Adjustments

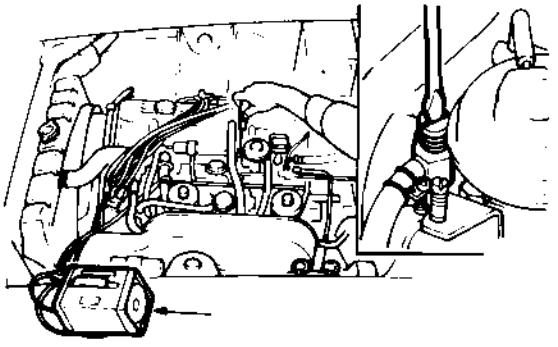
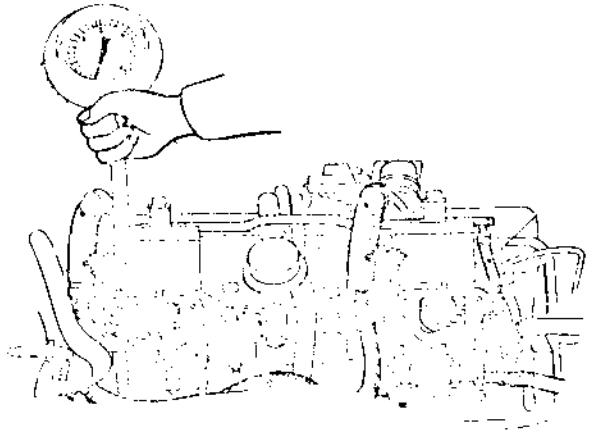
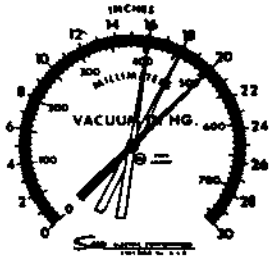
- **Only perform the nozzle or needle adjustment if all other ignition and fuel system adjustments are within specifications and a fuel mixture problem still exists.**

TABLE OF CONTENTS

VALVE CLEARANCE

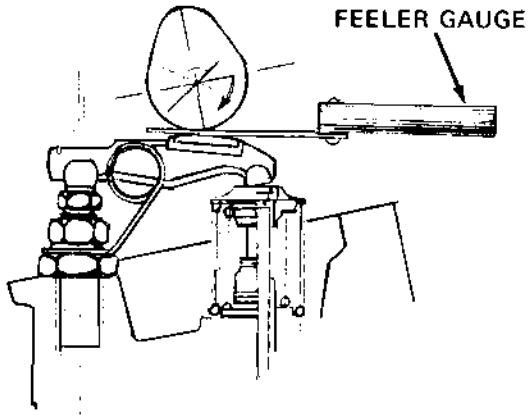
IMPORTANT	The combustion process cannot properly occur unless the individual cylinder re-receives, compresses, burns and exhausts the fuel/air mixture at the right time. The valve clearance is an important part of this timing process, and therefore must be correctly adjusted.
PREPARATION	**Connect an accurate vacuum gauge to the intake manifold. Start the engine and perform the procedures below when normal operating temperature is reached.**

Procedures

Step Number	Action	Illustration
1	**Testing** Adjust engine idle RPM to: • Manual Transmission – 750 RPM in Neutral. • Automatic Transmission – 600 RPM in Drive.	
2	The vacuum gauge should indicate a steady vacuum reading of 15 to 18 inches.	
[A]	If the vacuum reading is exceptionally low or erratic, check compression and/or adjust the valves.	Regular needle pulses compression loss in one or more cylinders. 

(Continued)

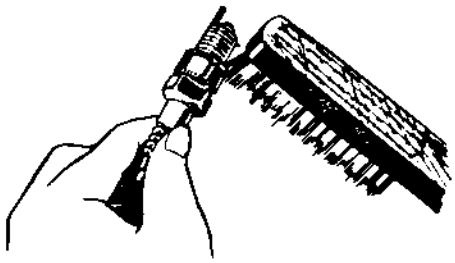
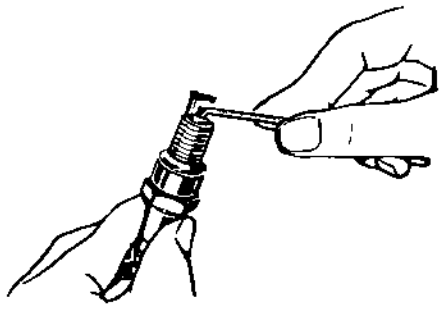
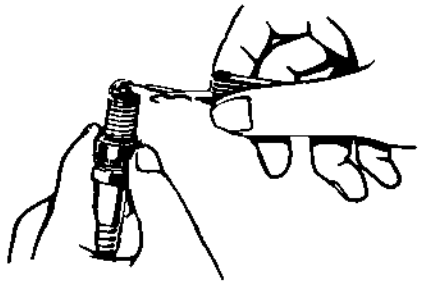
VALVE CLEARANCE

Step Number	Action	Illustration
3	**Adjustment** Adjust valve clearance with the cam toe up [vertical to engine line]. Note: Adjust engine cold. Engine stabilizes after 2 hours minimum cool down (in extremely hot areas, 2½ hours minimum). Intake .008 Exhaust .010	 Adjust engine cold

SPARK PLUG GAP

IMPORTANT	The spark plug gap has a direct effect on the performance of the engine. Thus a correct spark gap is very important. If the gap is too large, a higher voltage is required to jump the gap, resulting in poor engine starting and misfiring during acceleration and at high speeds. If the gap is too small, the firing voltage will be reduced and will not ignite the mixture, thus causing misfire.
PREPARATION	Remove all spark plugs and thoroughly clean until the recessed part of the firing end of the insulator is completely white. Then blast the firing end with compressed air to remove the remaining compound.

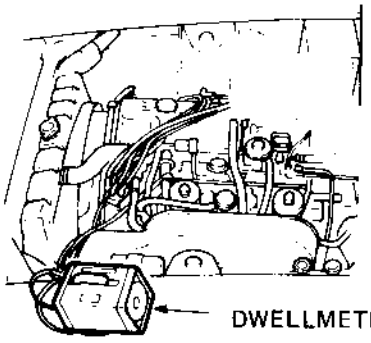
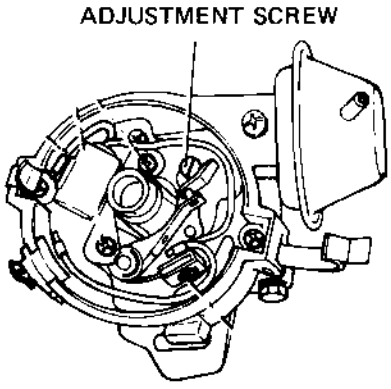
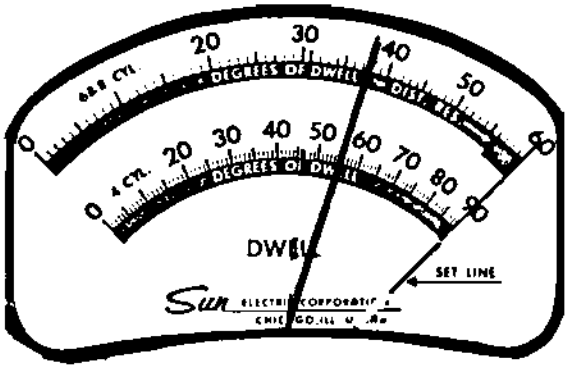
Procedures

Step Number	Action	Illustration
1	Clean the threads and metal part of the plug with a wire brush, and wipe the insulator top with a rag.	
2	The center electrode should be filed until the end is flat and smooth. Be careful not to shave excessively. Completely remove shavings after correction.	
3	Adjust the gap using a suitable gauge to .031 to .035.	
4	Install spark plugs.	

POINT DWELL
[EACH SET]

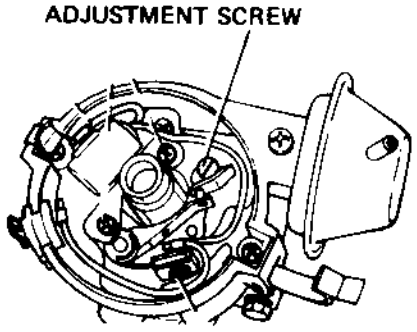
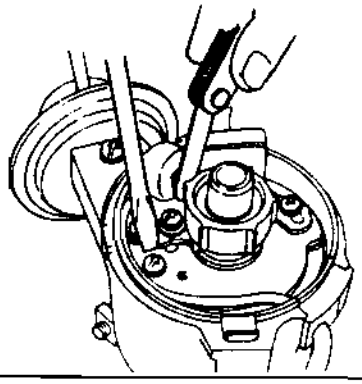
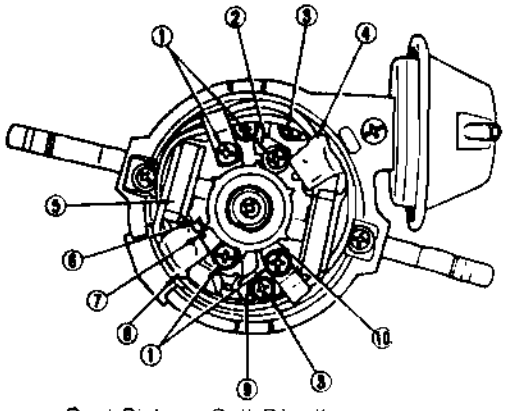
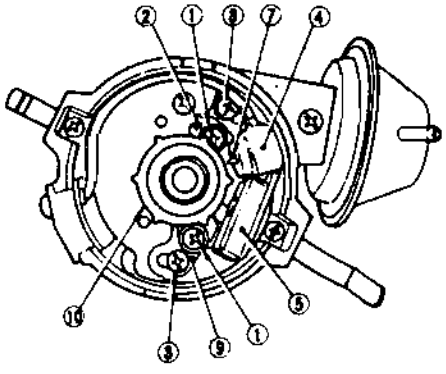
IMPORTANT	The point dwell [length of time in degrees in which the points are closed], controls the strength of the coil's secondary output by controlling the time of winding electrical saturation.
PREPARATION	**Connect a dwellmeter or remove the distributor and place the unit in a distributor machine. Next, follow the procedures listed below.**

Procedures

Step Number	Action	Illustration
1	**Dwellmeter** Start the engine and with the engine idling, check the dwell. The dwell should be 35 to 41 degrees.	
[A]	If adjustment is necessary, remove the distributor cap, and coil wire. Next, ground the coil lead, then crank the engine while adjusting the point set until the desired results are obtained.	
2	**Distributor Machine** **240-Z** Turn on the machine and select the appropriate rotation and check the dwell at 600 RPM. The dwell should be 35 to 41 degrees. **260-Z** 42° non-adjustable. Use only as guideline.	

(Continued)

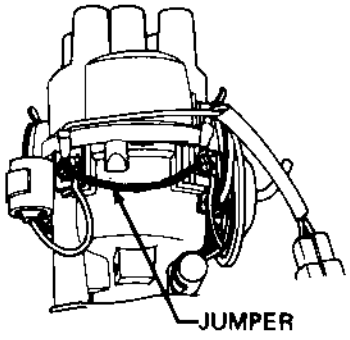
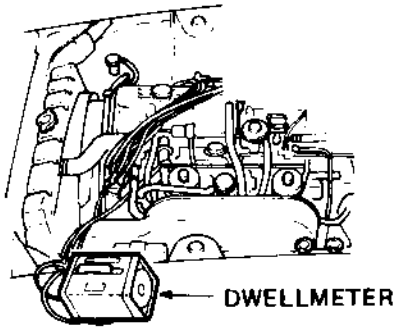
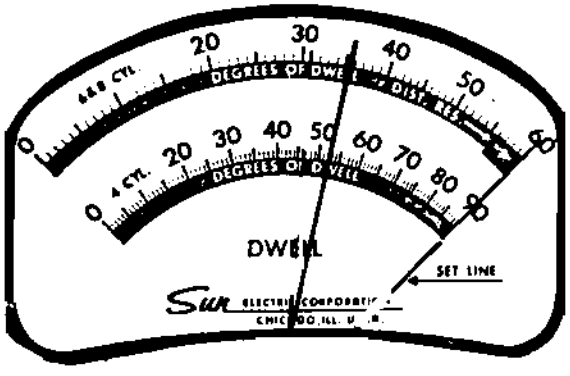
POINT DWELL
[EACH SET]

Step Number	Action	Illustration
[A]	**240-Z** If adjusment is necessary, use a screwdriver and adjust the point set until the desired results are obtained.	
	260-Z Air gap: 0.012 in. (.3 mm). If adjustment is necessary, loosen adjuster plate set screws and twist screwdriver as shown while measuring with a 0.012 in.non-magnetic gap gauge.	
	 Dual Pick-up Coil Distributor (Automatic Transmission) 1 Adjuster plate set screws (air gap) 2 Adjuster plate (air gap) 3 Adjuster plate set screws (phase difference) 4 Pick-up coil (retarded side) 5 Permanent magnet	 Single Pick-up Coil Distributor (Manual Transmission) 6 Air gap 7 Pole piece 8 Pick-up coil (advanced side) 9 Adjuster plate (phase difference) 10 Reluctor
3	Depending upon the method used, either reinstall distributor or replace cap and coil lead.	

POINT DWELL
[BOTH SETS]

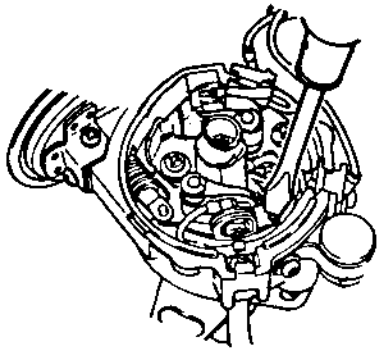
IMPORTANT	In addition to controlling the coil's secondary saturation time, the second or retarded point set provides a timing change when passenger compartment temperatures rise above 55 degrees.
PREPARATION	**Connect a dwellmeter or mount the distributor in a distributor machine and follow the procedures listed below.**

Procedures

Step Number	Action	Illustration
1	**Dwellmeter** Attach a jumper lead between the advance and retarded point terminals.	
2	Start the engine and at idle speed check the meter. The dwell should be 33 to 39 degrees.	
3	**Distributor Machine** Remove the distributor and mount the unit in the machine. Attach a jumper lead between the advance and retarded point terminals. Set the rotation switch and at 600 RPM check the point dwell. The dwell should be 33 to 39 degrees.	

(Continued)

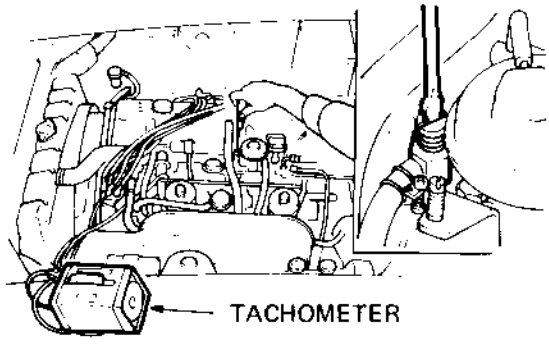
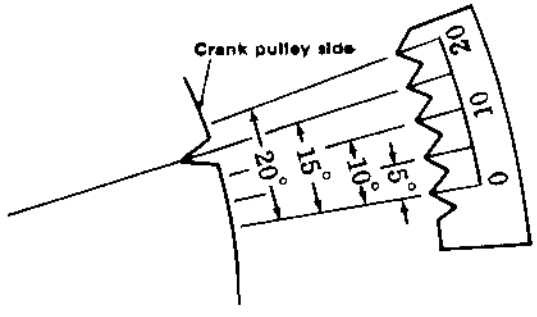
POINT DWELL
[BOTH SETS]

Step Number	Action	Illustration
4	**240-Z** If adjustment is necessary, block off one set and adjust each point set as an individual unit. Follow the procedures on page 26.	
	260-Z If adjustment is necessary, follow the procedures on page 26.	

IGNITION TIMING
[A/T BELOW 55° ROOM TEMPERATURE]

IMPORTANT	Ignition timing affects combustion of mixture in cylinder, changes power output, regulates temperatures and acts as an emission control device.
PREPARATION	**Connect a tachometer and a timing light, then check the passenger compartment temperature [temperature must be below 50 degrees or use jumper wire, see page 28], then use the following procedures.**

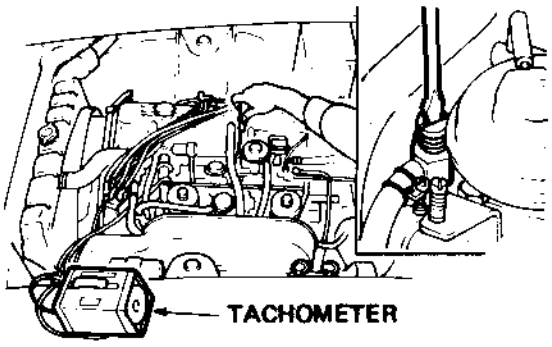
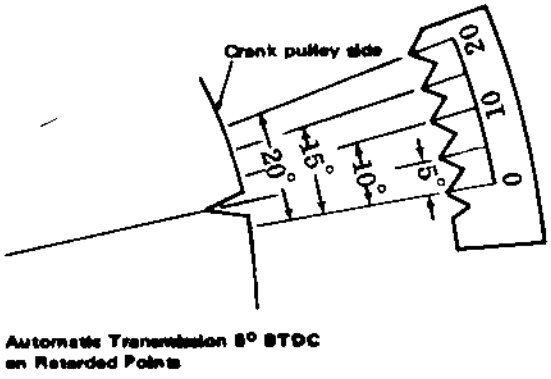
Procedures

Step Number	Action	Illustration
1	Check and/or adjust idle speed. The correct RPM should be 600 in Drive.	
2	Check and/or adjust ignition timing. The timing should be 15 degrees before top dead center **when passenger compartment temperatures are below 50 degrees [+ - 5°].**	 **Automatic Transmission 15° BTDC on Advanced Points**
3	Upon completion of this operation, perform the phase difference adjustment check.	

IGNITION TIMING
[A/T ABOVE 55° ROOM TEMPERATURE]

IMPORTANT	Ignition timing affects combustion of mixture in cylinder, changes power output, regulates temperatures and acts as an emission control device.
PREPARATION	**Connect a tachometer and a timing light, then check the passenger compartment temperature [temperature must be above 55 degrees], and follow the procedures listed below.**

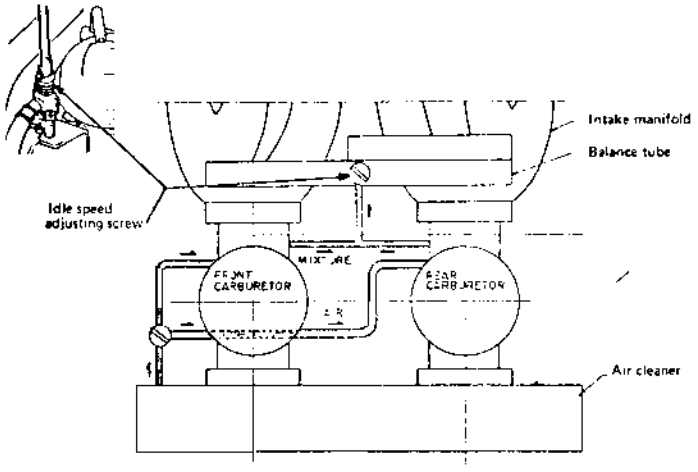
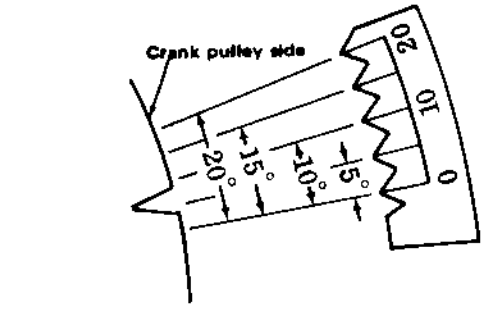
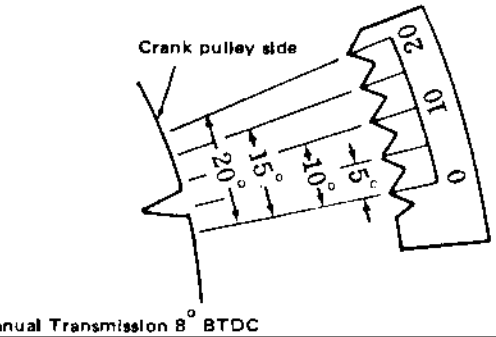
Procedures

Step Number	Action	Illustration
1	Check and/or adjust idle speed. The correct RPM should be 600 in Drive.	
2	Check and/or adjust ignition timing. The timing should be 5 degrees before top dead center **when passenger compartment temperatures are above 55 degrees.**	
3	Upon completion of this operation, perform the phase difference adjustment check.	

IGNITION TIMING
[M/T]

IMPORTANT	The ignition timing not only controls some HC/CO output, but can add or detract from gas mileage and driveability.
PREPARATION	**Connect a tachometer and a timing light, then follow the procedures listed below.**

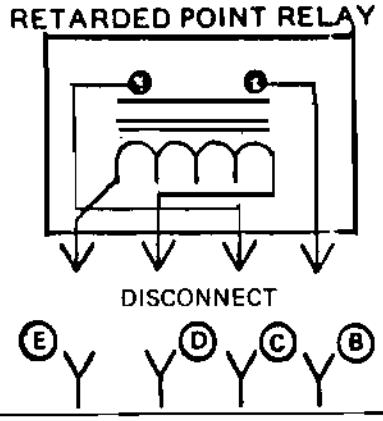
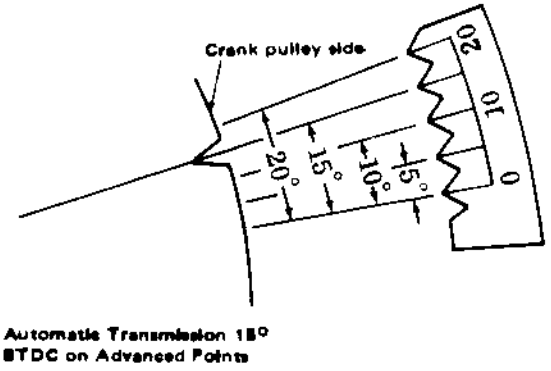
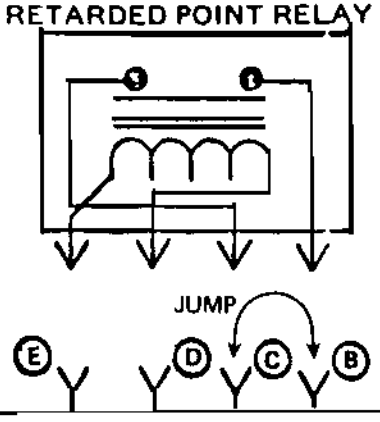
Procedures

Step Number	Action	Illustration
1	Adjust the idle speed for the manual transmission to 750 RPM in Neutral.	
2	**240-Z** Check and/or adjust ignition timing. The timing should be 7 degrees before top dead center.	 **Manual Transmission 7° BTDC**
	260-Z Check and adjust ignition timing. The timing should be 8 degrees before top dead center.	 Manual Transmission 8° BTDC

PHASE DIFFERENCE 240-Z
[A/T ONLY]

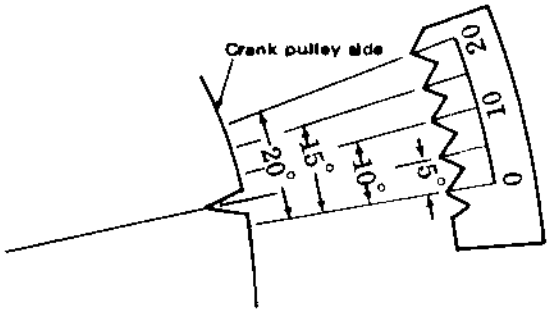
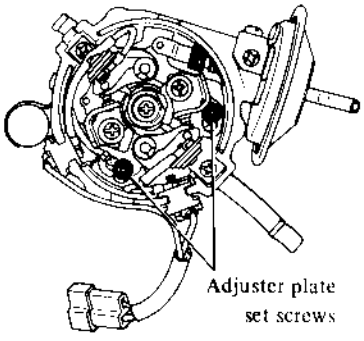
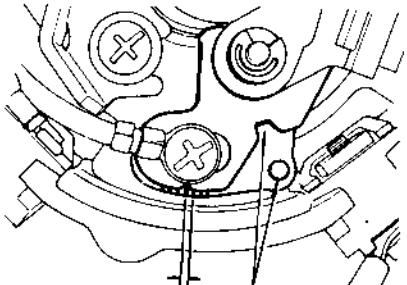
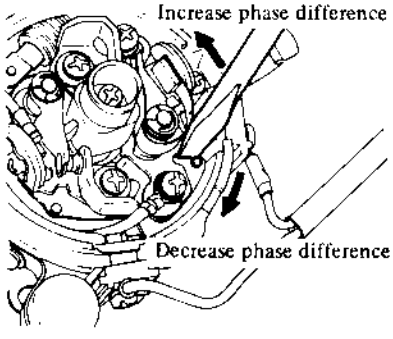
IMPORTANT	The phase difference is actually the number of degrees between the advance and retarded point openings.
PREPARATION	**Connect a timing light or mount the distributor unit in a distributor machine and follow the procedures listed below.**

Procedures

Step Number	Action	Illustration
1	**Distributor in Vehicle** Disconnect the retarded point relay connector at the distributor pigtail and start the engine.	
[A]	Check the ignition timing. **The timing should be 15 degrees BTDC.**	
[B]	Use a lead wire and "jump" the connector as indicated in the illustration.	

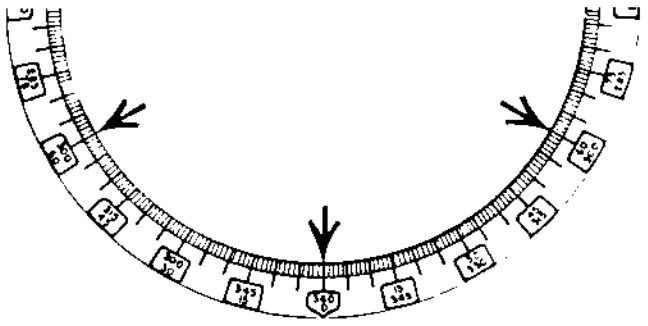
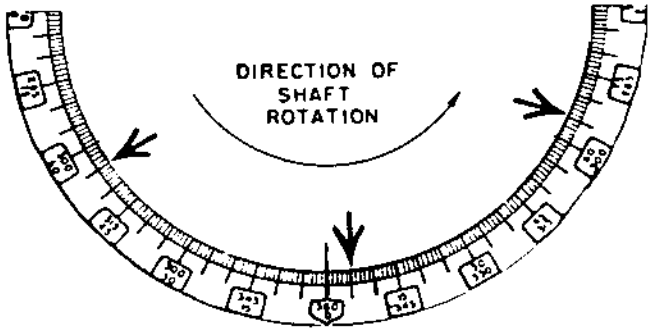
(Continued)

PHASE DIFFERENCE FOR 240-Z
[A/T ONLY]

Step Number	Action	Illustration
[C]	Recheck the timing. With the jumper installed, **the timing should be 5 degrees BTDC.**	 Automatic Transmission 5° BTDC on Retarded Points
2	If adjustment is necessary, remove the distributor cap and loosen the two retarded plate retaining screws.	
3	Determine the amount of phase difference needed. Remember! Each notch represents a 4 degree change at the crankshaft.	
4	Adjust the plate as required and **recheck timing, following steps 1 thru 1 C.**	

(Continued)

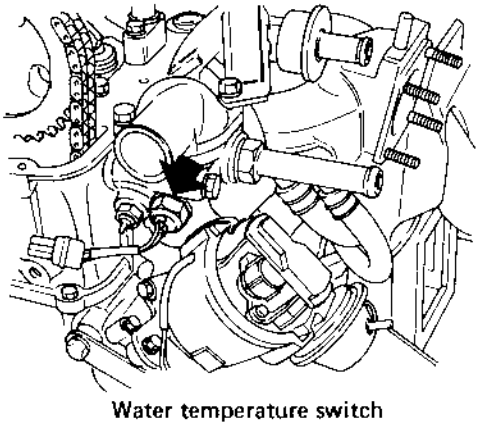
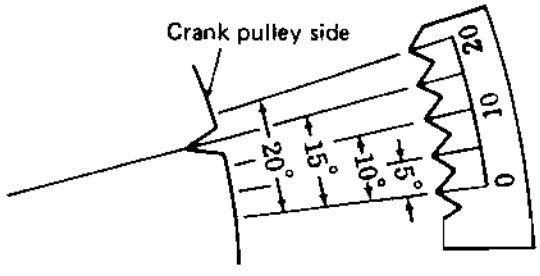
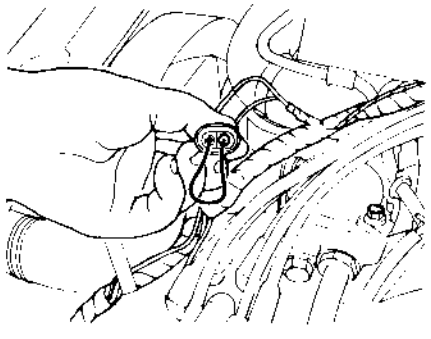
PHASE DIFFERENCE FOR 240-Z [A/T ONLY]

Step Number	Action	Illustration
5	**Distributor Machine** Set the distributor RPM at 300 and attach the hot lead to the advance point set. Align the arrows with the 0 on the degree ring.	
6	Move the hot lead to the retarded point terminal and note the amount of change in degrees. The correct change is 5 distributor degrees.	
[A]	If adjustment is necessary, follow the procedures outlined in steps 2, 3 and 4.	

PHASE DIFFERENCE FOR 260-Z [A/T ONLY]

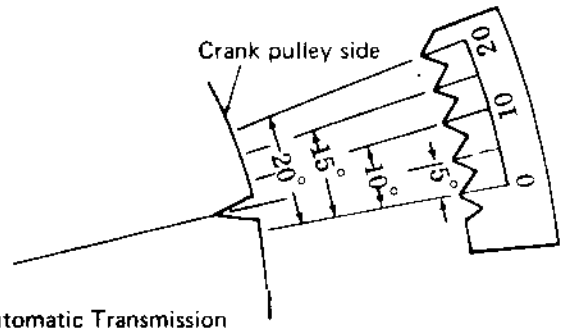
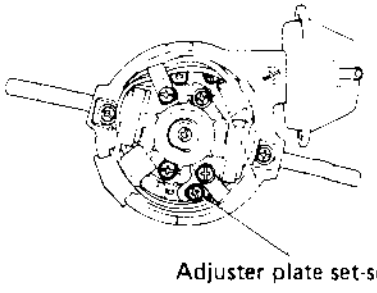
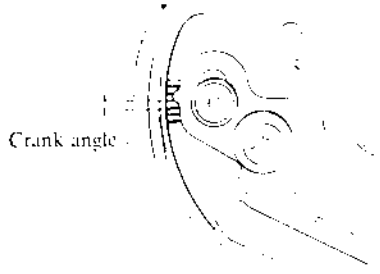
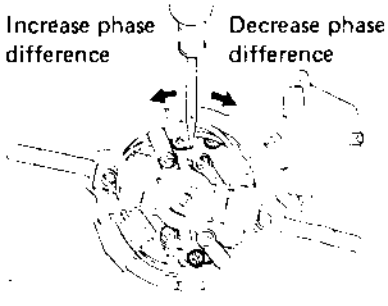
IMPORTANT	The phase difference is actually the number of degrees between the advance and retarded point openings.
PREPARATION	Connect a timing light or mount the distributor unit in a distributor machine and follow the procedures listed below.

Procedures

Step Number	Action	Illustration
1	**Distributor in Vehicle** Disconnect the connector of engine harness from water temperature switch (advanced side). Start the engine.	 Water temperature switch
[A]	Check the ignition timing. The timing should be 15 degrees BTDC.	 Automatic Transmission 15° BTDC on Advanced Points
[B]	Connect harness terminal for temperature switch circuit with a suitable lead wire (retarded side).	 Short-circuit of advance control relay

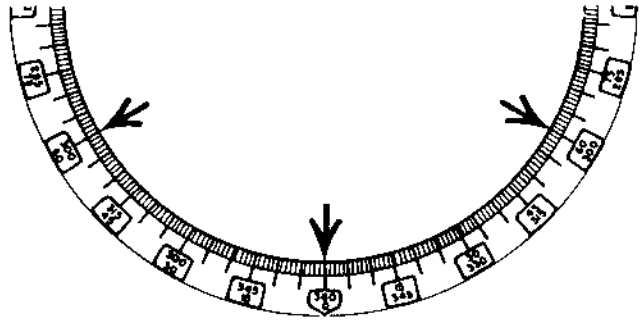
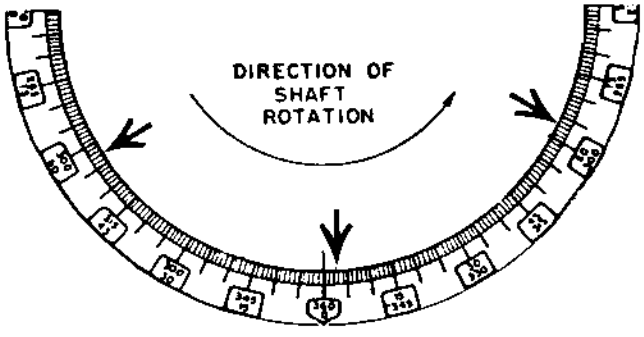
(Continued)

PHASE DIFFERENCE FOR 260-Z
[A/T ONLY]

Step Number	Action	Illustration
[C]	Recheck the timing. With the jumper installed, the timing should be 8 degrees BTDC.	 Automatic Transmission 8° BTDC on Retarded Points
2	If adjustment is necessary, remove the distributor cap and loosen the adjuster plate set-screws ½ to 2 turns. The screws are located at pick up coil assembly on retarded side.	
3	Determine the amount of phase difference needed. Remember, each notch represents a 4 degree change at the crankshaft. Ignition timing is retarded when plate is turned counterclockwise.	
4	Adjust the plate as required and recheck timing, following steps 1 through 1C. Tighten adjuster plate set-screws and reconnect temperature switch harness.	

(Continued)

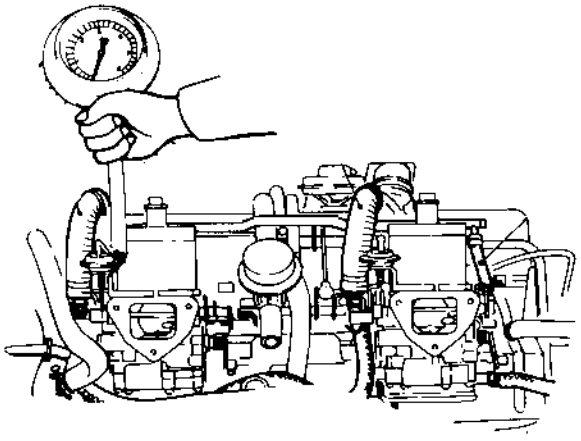
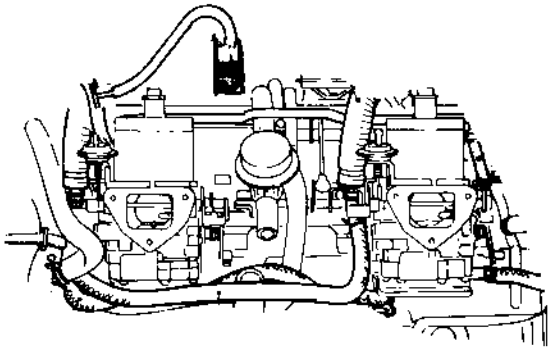
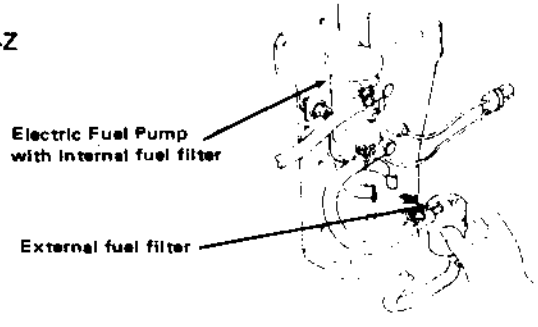
PHASE DIFFERENCE FOR 260-Z
[A/T ONLY]

Step Number	Action	Illustration
5	**Distributor Machine** Set the distributor RPM at 300 and attach the hot lead to the advance point set. Align the arrows with the 0 on the degree ring.	
6	Move the hot lead to the retarded point terminal and note the amount of change in degrees. The correct change is 3½ distributor degrees.	
[A]	If adjustment is necessary, follow the procedures outlined in steps 2, 3 and 4.	

FUEL PUMP OUTPUT
[AT 1,000 RPM]

IMPORTANT	The importance of testing the fuel supply system for both pressures and volume is often overlooked. However, remember that pressure will indicate the condition of the components and volume indicates how well the units are doing the job.
PREPARATION	**"Tee in" a pressure gauge to the carburetor fuel inlet line and follow the procedures listed below.**

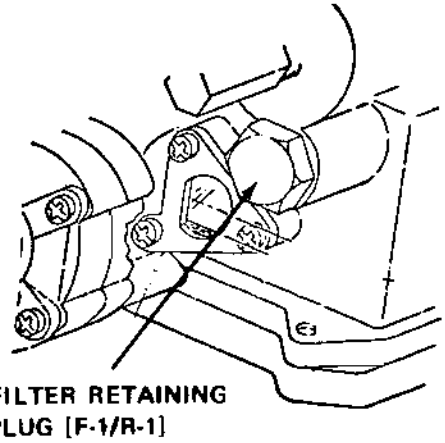
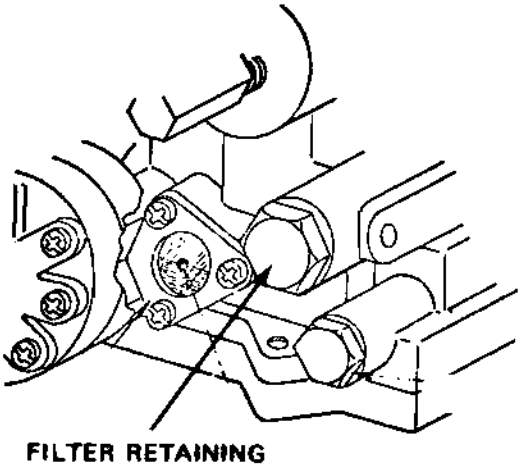
Procedures

Step Number	Action	Illustration
1	Start the engine and hold engine RPM at 1000. At this speed, check the pressure reading. The reading should indicate 3.4 to 4.2 psi.	
[A]	If the pressure is not within specifications, isolate and test both the mechanical and electrical fuel pumps.	
2	Stop the engine and remove the pressure gauge. Next "tee in" a length of fuel line, then place the line in an appropriate container and start the engine. **At 1000 RPM the fuel volume should be:** • **3 pints per minute** **1½ pints per 30 seconds**	
[A]	If the volume is not within specifications; check the fuel filters and fuel lines for a restriction. **240-Z**: (a) In-line fuel filter in engine compartment. (b) Fuel filter in electrical fuel pump. Refer to page 10. **260-Z**: (a) In-line fuel filter on electric fuel pump bracket. (b) (b) Fuel filter in electric fuel pump. Refer to page 10.	**260-Z** 

CARBURETOR FILTER

IMPORTANT	Both the F-1/R-1 and F-2/R-2 incorporate an internal carburetor fuel filter. The filter prevents foreign matter from entering the float bowl, however, these filters, if clogged, can restrict fuel flow to the bowl.
PREPARATION	Remove the air cleaner and with the engine off, perform the procedure below.

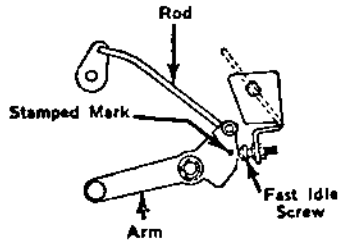
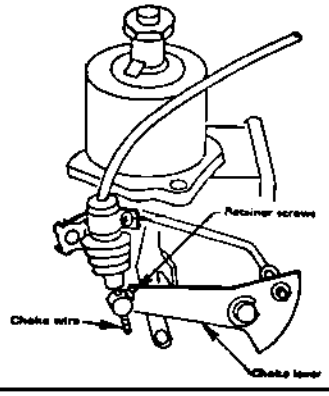
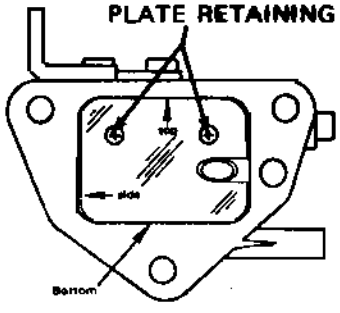
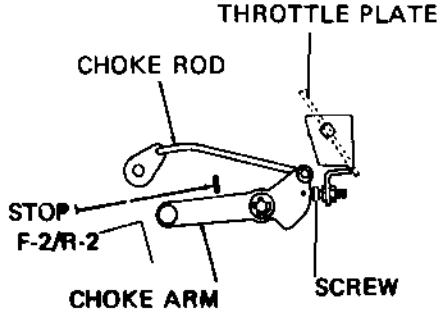
Procedures

Step Number	Action	Illustration
1	Remove the filter retaining plugs and filters.	F-1/R-1  **FILTER RETAINING PLUG [F-1/R-1]** F-2/R-2  **FILTER RETAINING PLUG [F-2/R-2]**
[A]	Inspect and/or clean filters and reinstall retaining plug.	

CHOKE PLATE ADJUSTMENT

IMPORTANT	In order to obtain a correct fuel mixture during a cold start, the choke plate must be completely closed to insure an adequate vacuum in the venturi.
PREPARATION	**With the engine off and the air cleaner assembly removed, place the choke lever in the full choke position and follow the steps listed below.**

Procedures

Step Number	Action	Illustration
1	Check the fast idle screw. It should be centered with the stamp mark on the choke lever.	
[A]	If it is not centered, adjust the cable (lever and clamp ends) until the correct adjustment is obtained. On F-2/R-2 units, the choke lever stop may have been repositioned. **Note: On the 260-Z, be sure that there is at least a 0.2 in. gap between the end of the choke wire and the rear carburetor water hose. Clip off the end of the wire if necessary, but leave 0.2 to 0.4 in. of wire beyond the choke lever. Be careful not to bend the wire in the boot.**	
2	Check the choke plate. The plate should be fully closed and centered within the venturi.	
[A]	If the choke plate is not fully closed, bend the connecting rod. To center the plate, loosen the retaining screws until the desired results are obtained.	

VACUUM BREAK CLEARANCE (240-Z & 260-Z)

IMPORTANT

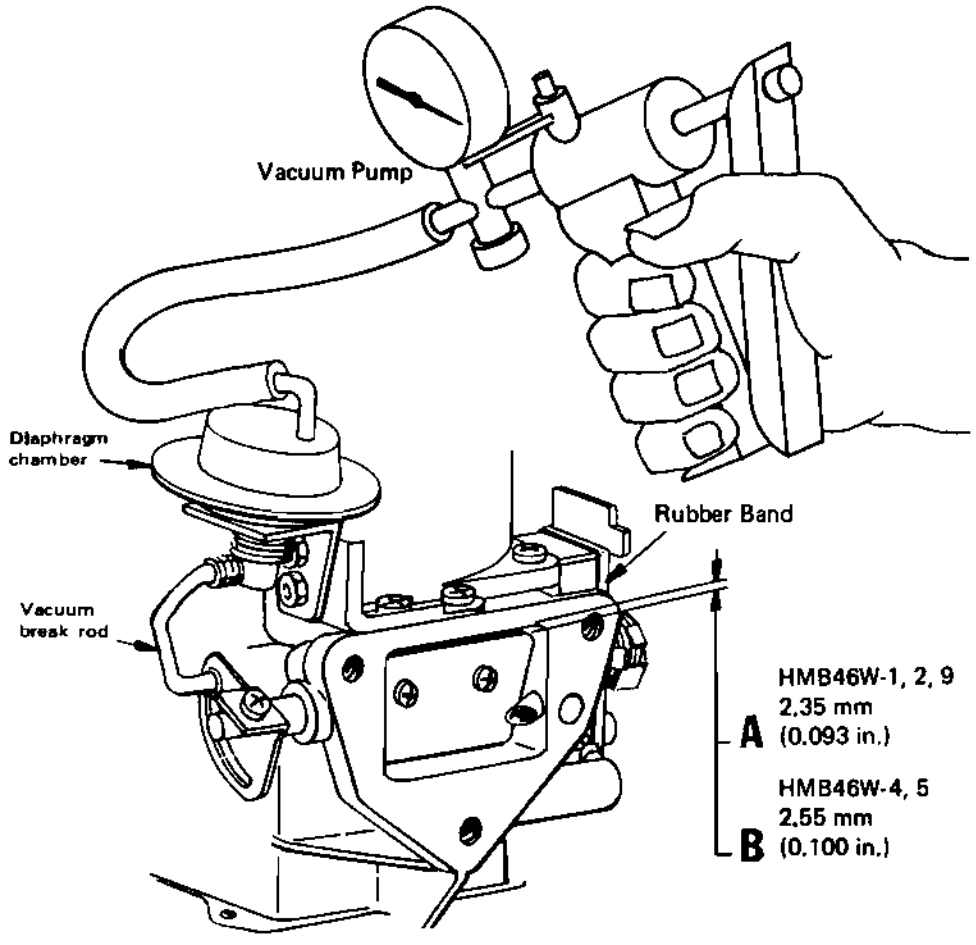
If the choke plate were to remain closed after the engine was started, the engine would quickly stall due to air starvation. The vacuum break eliminates this problem by opening the choke plate a small amount immediately after starting.

PREPARATION

Note: **If either vacuum break rod (linkage) is very loose, missing, or broken, see the procedure on page 66.**
With the engine off and the air cleaner removed, place the choke lever in the full choke position and follow the steps listed below.

PROCEDURES

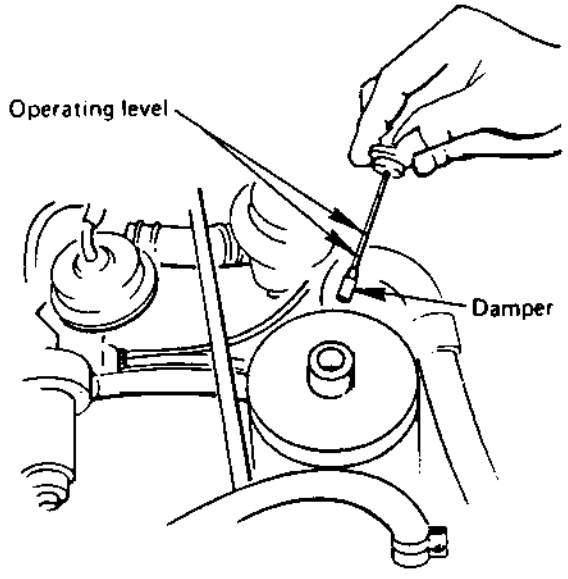
Step Number	Action
1	Hold choke closed by stretching a rubber band between the choke shaft lever and a stationary part of the carburetor body.
2	Disconnect the vacuum hose. Using a vacuum pump, lift the vacuum break rod until movement stops.
3	Check the clearance between the choke plate and the carburetor body.
[A]	If an adjustment is necessary, bend the break rod until a clearance of 'A' or 'B' is obtained. Note: Clearance has been increased on early type carburetors.



DAMPER FLUID LEVEL

IMPORTANT	The fluid in the damper tube helps prevent erratic suction piston movement during cranking and engine running conditions.
PREPARATION	With the engine off, remove each damper cap and check the operating level.

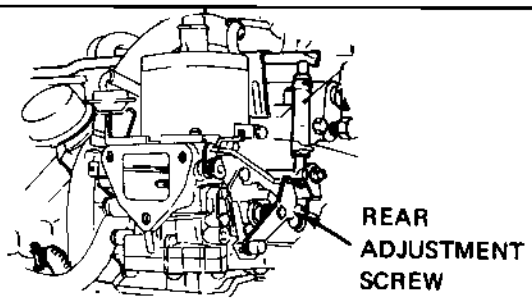
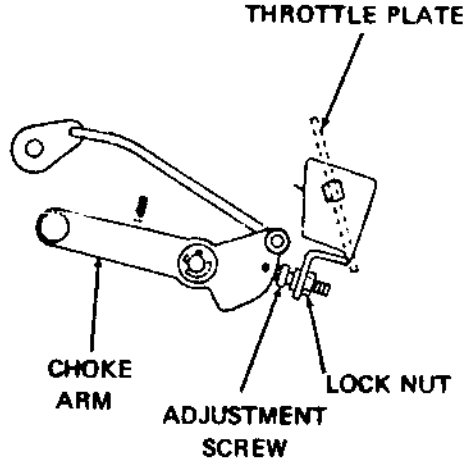
Procedures

Step Number	Action	Illustration
1	If fluid is needed, pour it into the tube. Insert damper and screw down. Then remove damper to check fluid level on damper level gauge. Fill or empty as necessary. Use MS#20 or 10W-30. Note: **1974 carburetors have one line on rod. Fill to line.**	
[A]	Reinstall damper caps.	

FAST IDLE [RPM]

IMPORTANT	The engine RPM and throttle plate opening must be increased during choke operation to prevent engine stalling and increase driveability performance during engine warm-up.
PREPARATION	**With the engine off and the air cleaner assembly removed, place the choke lever in almost the fully-on position.**

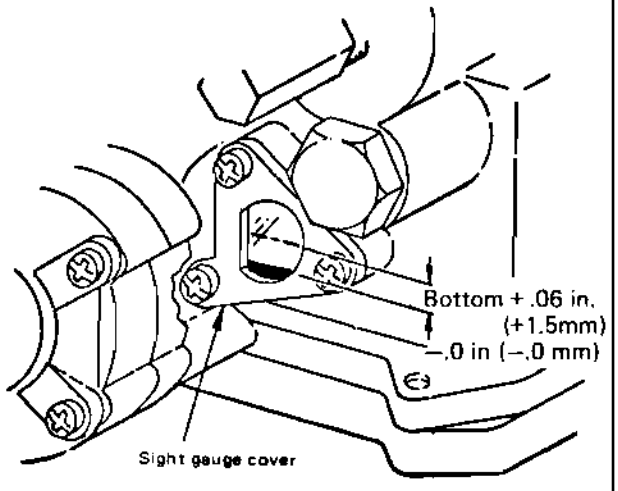
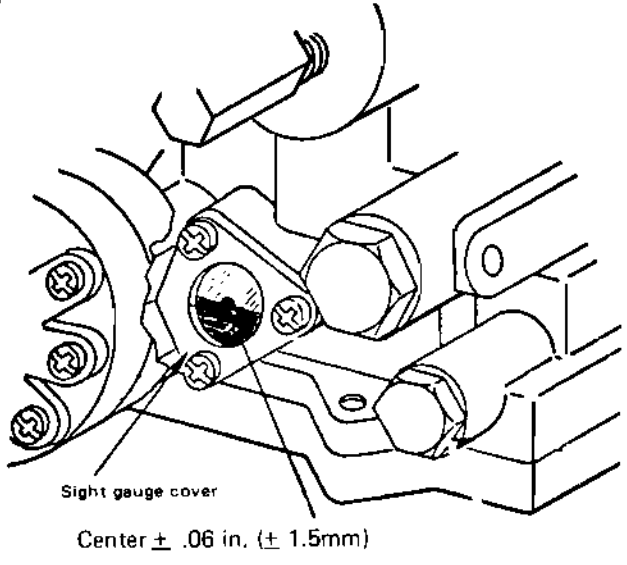
Procedures

Step Number	Action	Illustration
1	Start the engine and check the RPM [within the first three minutes]. The correct range is 1800 to 2600.	
[A]	If re-adjustment is necessary, move the choke lever to the halfway position and use the fast idle screws and flowmeter as follows:	
	• Using the front carburetor fast idle screw, raise or lower engine RPM the desired amount.	
	• Check the flow reading on front carburetor and move to the rear one.	
	• Adjust the rear carburetor fast idle screws until the rear flow matches the front.	
2	Upon completion of this adjustment, check the float levels at 1500 RPM.	

FUEL FLOAT LEVEL
[AT 1500 RPM]

IMPORTANT	The float level determines the amount of fuel that is available to the carburetor circuits. Too high a fuel level will create not only a rich condition, but also adds to fuel perculation and hard starting after hot soak. On the other hand, a low fuel level will create a starvation condition at all speeds.
PREPARATION	**With the air cleaner assembly removed and vacuum lines plugged, use the throttle opener servo or the auxiliary screw to increase engine RPM to 1500.**

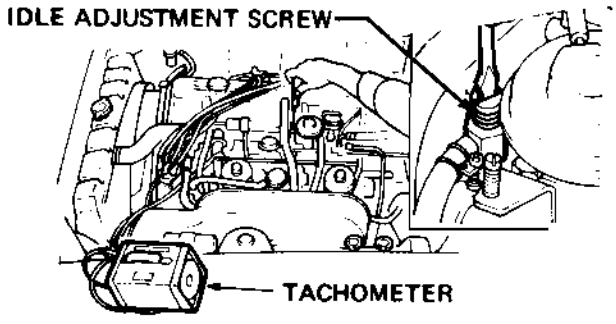
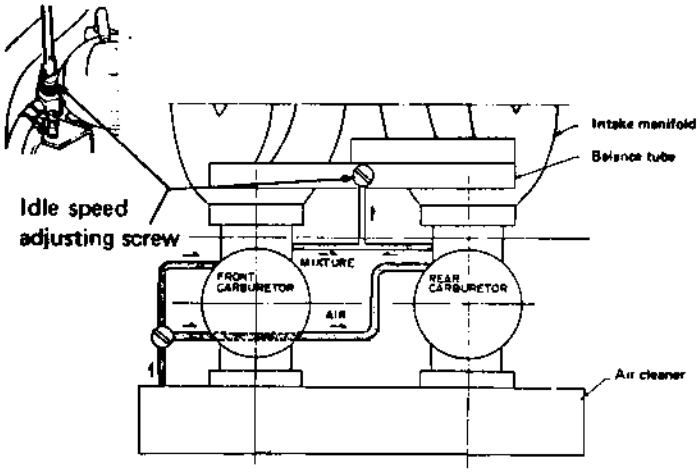
Procedures

Step Number	Action	Illustration
1	**[F-1/R-1]** Check the float level. It should be at the bottom of the sight glass plus .06 inch maximum.	
	[F-2/R-2] Check the float level. It should be in the center of the sight glass plus or minus .06 inch.	
2	**If adjustment is necessary, refer to Reference page 56.**	

IDLE RPM

IMPORTANT	The idle RPM setting not only affects CO/HC but other components such as: clutch engagement, engine temperatures, transmission gears, brakes, etc.
PREPARATION	**With the air cleaner cover removed and the engine at normal operating temperature, plug the vacuum motor line and connect at the tachometer.**

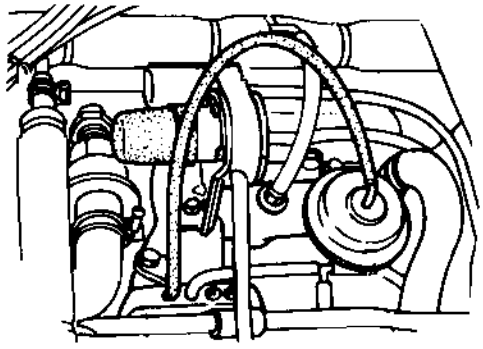
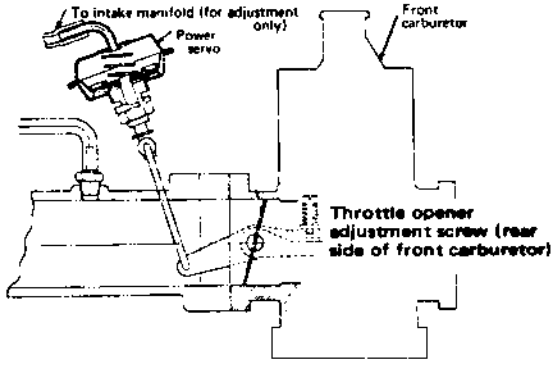
Procedures

Step Number	Action	Illustration
1	**Automatic Transmission.** Set the emergency brake and place the selector into Drive. Then check the idle RPM. The vehicle should idle at 600 in Drive. **Manual Transmission.** Set the emergency brake and place the gear selector into Neutral. Then check the idle RPM. The vehicle should idle at 750 in Neutral.	
[A]	If adjustment is necessary, use the idle screw to obtain the desired RPM.	

THROTTLE OPENER
[SERVO]

IMPORTANT	The throttle opener servo lowers the HC/CO output during deceleration by opening the throttle plates.
PREPARATION	With the air cleaner removed, and the engine operating, disconnect the servo to control vacuum line and follow the procedures listed below.

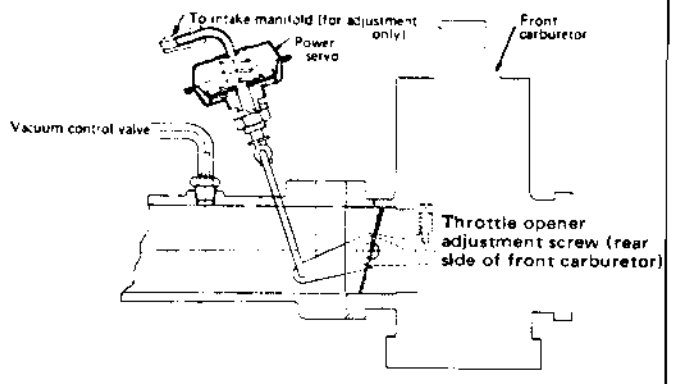
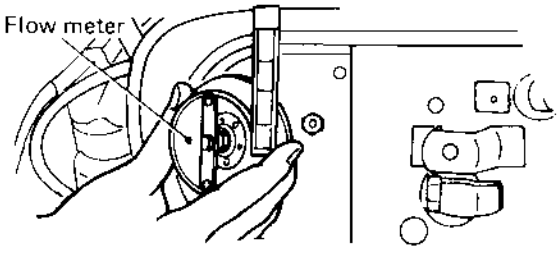
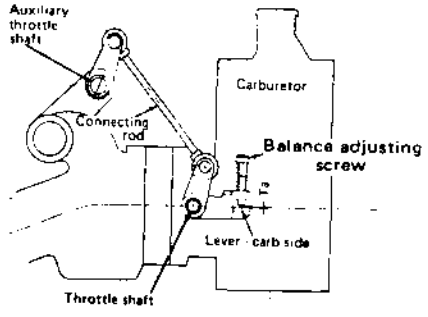
Procedures

Step Number	Action	Illustration
1	Connect the servo to intake manifold vacuum and check the engine RPM. The servo should raise engine RPM to 1400.	
2	If the RPM is not 1400, use the throttle opener screw to obtain the correct RPM.	
3	Upon completion of this adjustment, perform the balance adjustment.	

CARBURETOR BALANCE

IMPORTANT	In order to obtain the maximum benefit from a two carburetor system, the balance must be within specifications or several driveability problems could occur.
PREPARATION	**With the throttle opener servo set at 1400 RPM and the engine at operating temperature, follow the adjustment procedure below.**

Procedures

Step Number	Action	Illustration
1	Connect a vacuum line from the intake manifold to the throttle opener servo. Use the throttle opener screw to adjust engine RPM to 1400.	
2	Apply a Unisyn gauge or flowmeter to the front carburetor air intake and align the float to a mark on the glass tube scale. **Note: Only use the flowmeter a few seconds at a time to avoid hindering the intake air.**	
3	Move the flowmeter to the rear carburetor. Adjust the balance adjustment screw until the rear carburetor matches the front carburetor. **Note: This operation may take several checks, but it must be correct. If necessary, use the throttle opener adjustment screw to maintain the 1400 RPM while adjusting the carburetor balance.**	
4	Upon completion of this adjustment, perform the C/O percentage.	

C/O PERCENTAGE
[AT IDLE]

IMPORTANT	All automotive manufacturers must submit the idle C/O percentage specification to the E.P.A. This setting is the basis for local vehicle inspection standards.
PREPARATION	After completion of the throttle opener control valve adjustment, recheck the idle RPM and adjust to specifications, if necessary. Then follow the procedures listed below with air pump connected.

Procedures

Step Number	Action
1	Insert the CO/HC Analyzer pick up into the exhaust pipe. The C/O should be less than 2.7% with air pump connected.
[A]	If the percentage is not correct, check the mixture at 1400 RPM.

CARBURETOR ADJUSTMENT SPECIFICATIONS

HLS30

Item	Note	1973 240-Z Setting	1974 260-Z Setting
Choke	Use Cable Adjustment	Closed	←
Vacuum Breaks	Vacuum Applied		HMB46W-1-2-9 .093 in. HMB46W-4-5 .100 in.
Damper	Fluid Level	Between Operating Range Marks	Fill to line
Fast Idle	Choke Applied	1800 - 2400 rpm	←
Idle Speed	M/T (rpm)	750 in Neutral	←
	A/T (rpm)	600 in Drive	←
Balance	Identical Flow Rates	1400 rpm	←
Power Servo	Apply Vacuum	1400 rpm	←
Final Mixture (Air Pump Disconnected)	M/T (N) @ 1400 rpm	CO 1-1.6%	←
	A/T (N) @ 1400 rpm	CO .6-1.2%	←
Final Mixture (Air Pump Connected)	M/T (N) @ idle	CO 2.7% or less	←
		HC 300 PPM or less	←
	A/T (D) @ idle	CO 2.7% or less	
		HC 300 PPM or less	←
Throttle Opener Valve (Solenoid wire disconnected)	3000 to 1000 rpm	Vacuum: A/T 17½ - 18 in. Hg	←
		M/T 18 - 18½ in. Hg	←

TIMING CHART

Vehicle Model		240-Z		260-Z
Plug Type		NGK BP6ES		—
Plug Gap (in.)		.031 to .035		—
Timing	Std. Trans.	7° BTDC/750		8°/750
Retarded Points	Auto Trans.	5° BTDC/600		8°/600(D)
Advanced Points		15° BTDC(D)		—
Point Gap (Air Gap) in.		.018 to .022		(.012 to .016)
Dwell	Retarded	Standard Transmission N/A	Automatic Transmission 33° to 39°	Std. & Auto. Trans. 42° Non-adjustable
	Advanced	35° to 41°		
Advance	Mechanical (Distributor rpm)	10 to 13° @ 1400 rpm	11 to 13° @ 1480 rpm	0°/500 13°/1,600
	Vacuum (Distributor Degrees)	5° @20 in. Hg to 7° @18 in. Hg	8° @ 20 in. Hg to 10° @ 18 in. Hg	0°/11.8 6°/18.7
Cranking Compression		171 to 185 psi @ 300 to 400 rpm		—
Valve Setting (in.)	Intake	.008 (cold) .010 (hot)		—
	Exhaust	.010 (cold) .012 (hot)		—

Section Three
RELATED

CAUTION

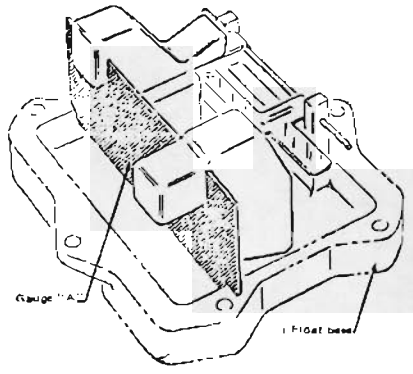
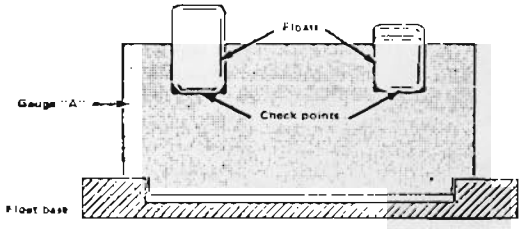
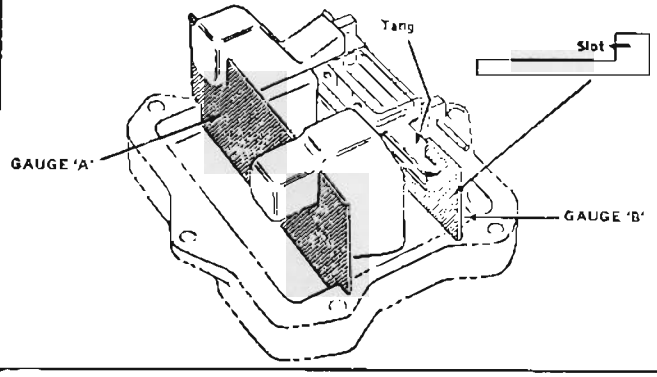
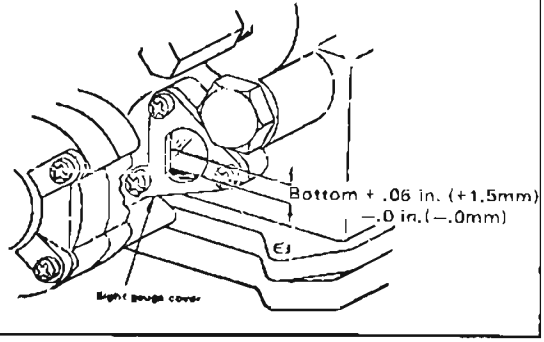
ONLY PERFORM THE FLOAT HEIGHT, NOZZLE OR NEEDLE ADJUSTMENTS IF ALL OTHER IGNITION AND FUEL SYSTEM ADJUSTMENTS ARE WITHIN SPECIFICATIONS, BUT A FUEL MIXTURE PROBLEM STILL EXISTS.

TABLE OF CONTENTS

FLOAT HEIGHT
[F-1/R-1]

IMPORTANT	The actual float height determines the available fuel to the carburetor circuits by controlling the fuel level.
PREPARATION	Remove the float bowl covers and follow the procedures listed below.

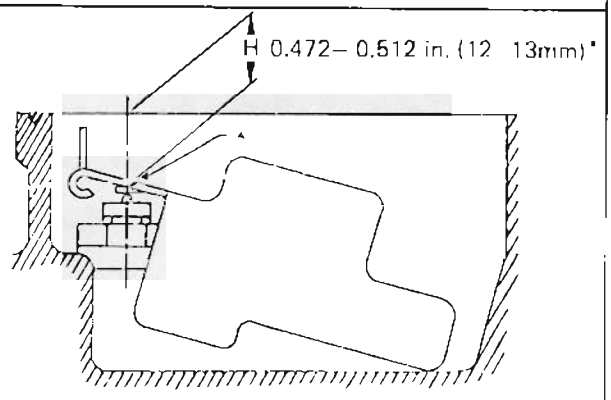
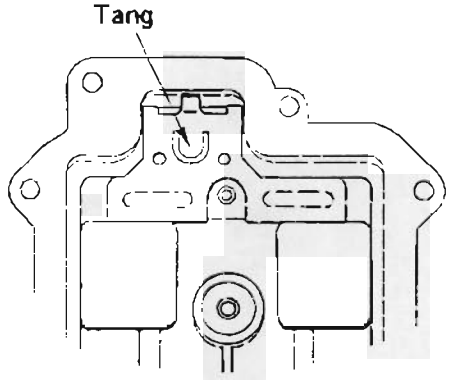
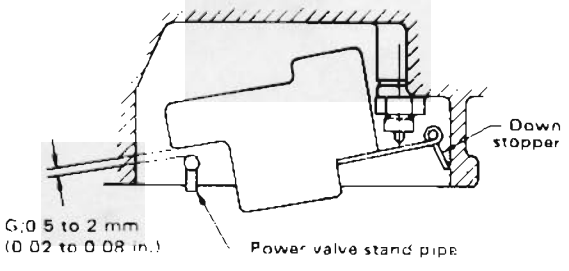
Procedures

Step Number	Action	Illustration
1	Note: a. Remove float assembly. Feel its weight and surface. If it feels heavy when compared to a known good float, and appears wet even after wiping with a rag, float is saturated with fuel and must be replaced with a new assembly. b. With carburetor upright, check float bowl needle for sticking. Sticking may cause momentary dead spots at high rpm. Replace needle and seat if necessary. Install gauge "A" as illustrated and check the float alignment.	
[A]	If alignment is incorrect, bend the floats to obtain the desired results.	
2	Install Gauge "B" as illustrated and adjust the tang to fit the slot.	
3	Reinstall the float chambers and re-check the fuel level at 1500 RPM.	

FLOAT HEIGHT
[F-2/R-2]

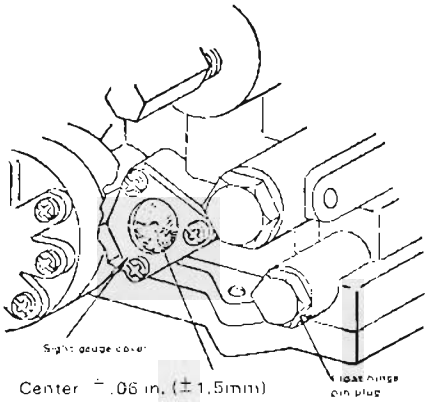
IMPORTANT	The actual float height determines the available fuel to the carburetor circuits by controlling the fuel level.
PREPARATION	Remove both carburetors from the vehicle. Next, remove the float chamber covers and follow the procedures listed below.

Procedures

Step Number	Action	Illustration
1	Note: a. Remove float assembly. Feel its weight and surface. If it feels heavy when compared to a known good float, and appears wet even after wiping with a rag, float is saturated with fuel and must be replaced with a new assembly. b. With carburetor upright, check float bowl needle for sticking. Sticking may cause momentary dead spots at high rpm. Replace needle and seat if necessary. Mount the carburetor level and in the chamber up position. With both floats touching the top of the chamber, check the tang height.	 *Float condition determines float height. May exceed 0.512.
[A]	If adjustment is necessary, bend the tang to obtain the desired results.	
2	Upon completion of the tang adjustment, turn the carburetor right side up. Check the drop, as illustrated, and adjust the drop tang as necessary to obtain the desired results.	

(Continued)

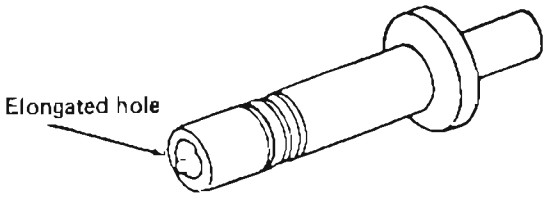
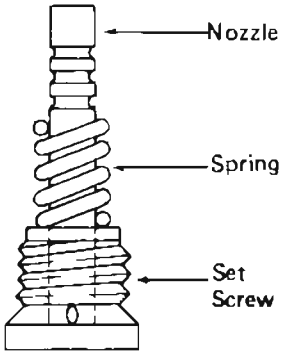
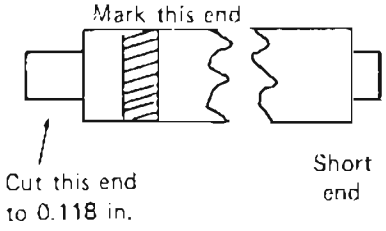
FLOAT HEIGHT
[F-2/R-2]

Step Number	Action	Illustration
3	Reinstall the float chambers and bench test or set carburetor on the manifold in its proper position and check carburetor level by either cranking the engine or using an auxiliary fuel source.	

NOZZLE

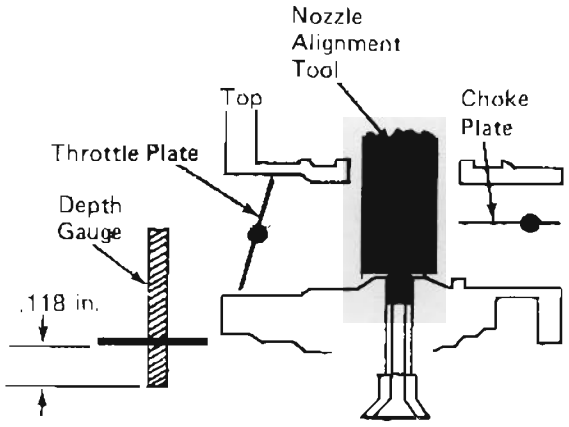
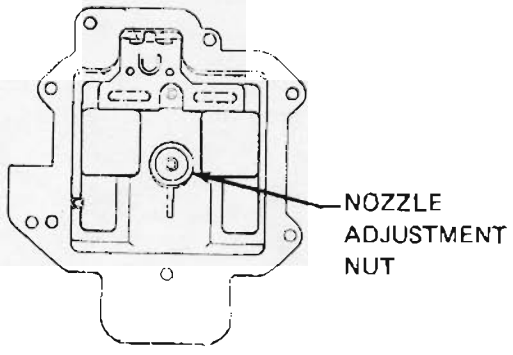
IMPORTANT	The nozzle drop works directly with the needle height to determine the amount of fuel available to the intake manifold during most engine operating conditions.
PREPARATION	Remove screws, then tap the side of the suction piston chamber to loosen the dowels. Try not to break the dowels. Carefully remove the chamber and piston. Then perform the following procedures.

Procedures

Step Number	Action	Illustration
1	Jet Nozzle Check If either jet nozzle orifice is elongated (caused by needle rub), replace nozzles as follows. If nozzles are good, check adjustment as shown on page 61. Jet Nozzle Kit (16496-N3300) consists of two nozzles and two nozzle set screws. Also replace needles with Jet Needle Kit (16354-N3310) as described on page 62.	 Jet Nozzle
2	Remove the float chamber cover, then remove the old nozzle and replace with a new nozzle. Note: a. Remove the float assembly on the F2/R2 before nozzle installation to prevent damaging floats. b. Replace both nozzles when one nozzle needs replacement. c. Discard the original nozzle set screws. They are bonded by adhesive and will be damaged during removal. Apply a "Loctite" type adhesive to the new set screws before installing them.	
3	Jet Nozzle Adjustment The preferred method of adjusting a new nozzle is to use the Nozzle Alignment Tool, P/N 99995-00024. Note: The alignment tool has a long and short tipped end. Before use, place the tool on a valve machine and cut the long tip to 0.118 in. Mark that end for future identification.	

(Continued)

Procedures

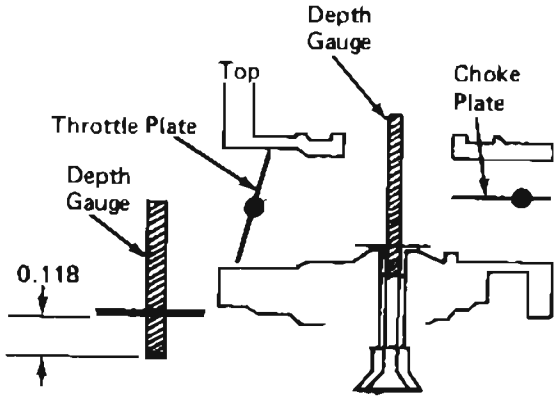
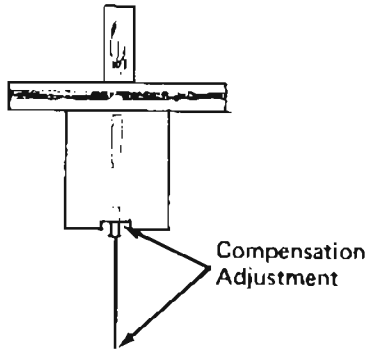
Step Number	Action	Illustration
4	Measure the nozzle drop from the venturi base to the nozzle surface. If the nozzle alignment tool is not available, use a depth gauge set to 0.118 inches.	
(A)	Adjust nozzle set screw until there is a gap between the carburetor body and the tool. Back off by adjusting the nozzle set screw until the tool is in contact with the carburetor body to obtain 0.118 inch nozzle drop.	
5	Check needle height as described on page 62.	

NOZZLE
(Adjustment Only)

IMPORTANT

The nozzle drop works directly with the needle to determine the amount of fuel available to the intake manifold during most engine operating conditions.

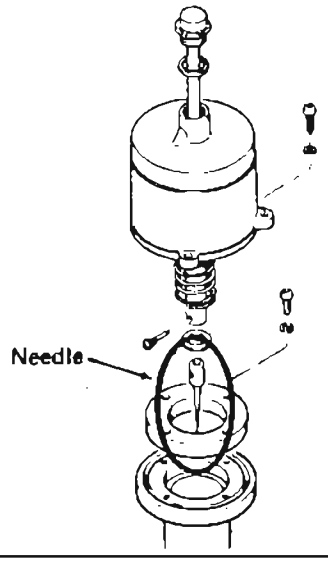
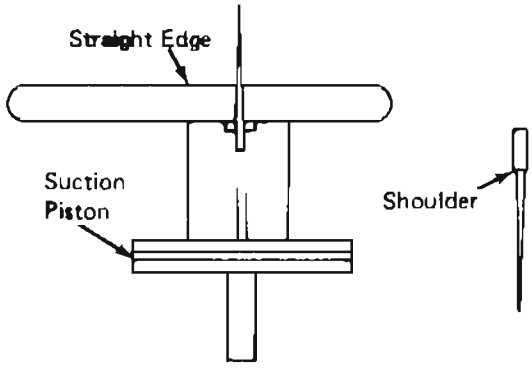
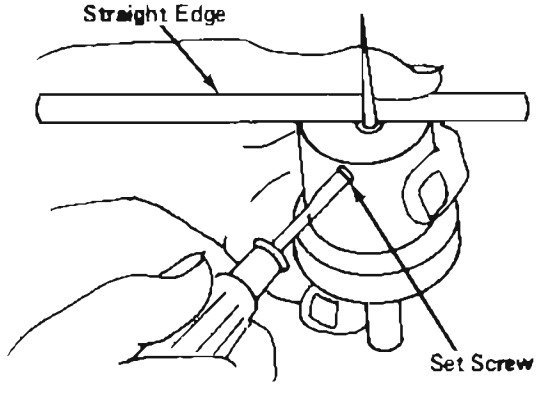
Procedures

Step Number	Action	Illustration
1	Use a depth gauge and measure the drop from the venturi base to the nozzle surface, then write it down.	
2	The nozzle drop should be 0.118 inches. If adjustment is necessary, use the needle to compensate for the drop as described on page 63.	

NEEDLE

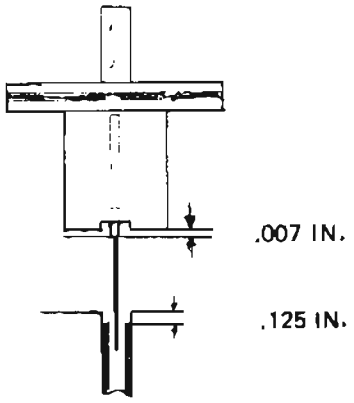
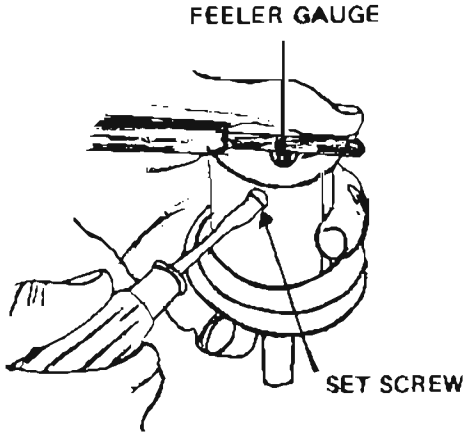
IMPORTANT | The height of the needle determines the amount of fuel supplied to the intake manifold under most operating conditions.

Procedure

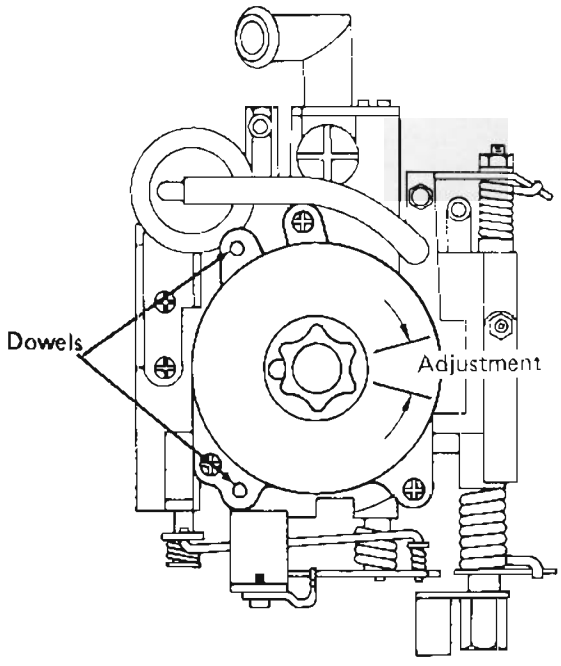
Step Number	Action	Illustration
1	**Needle Check** If either needle has shoulder rub areas or is bent, replace both needles with Jet Needle Kit (16354-N3310). It consists of two jet needles, one for the front carburetor and one for the rear. Also replace the nozzles as outlined on page 59.	
(A)	Loosen set screw, remove old needle, then lightly tighten set screw on new needle.	
2	**When the nozzle drop is 0.118 in.:** Lay a straight edge across the piston surface. The needle shoulder should just contact the straight edge.	
(A)	If adjustment is necessary, loosen the set screw and adjust the needle until the shoulder contacts the straight edge.	

(Continued)

NEEDLE

Step Number	Action	Illustration
3	If the nozzle drop is above or below 0.118 inches, the suction piston needle must compensate for the difference as shown. Example	
(A)	Loosen the needle set screw and adjust the needle to obtain the desired compensation.	
4	Reinstall the suction piston chambers and tighten screws. Then check damper fluid level. Note: a. Be sure piston works freely following needle and nozzle adjustments. If not, check for bent needle or binding suction piston. b. If a dowel is broken, the carburetor top must be adjusted to center the jet needle in the nozzle and obtain the lowest possible CO level. Use the alignment tool for the best alignment. Use one of the following procedures:	

(Continued)

	Procedure with Alignment Tool (1) Align cover with nozzle by inserting alignment tool through the carburetor top (without suction piston) and into the jet nozzle. (2) Mark outline of the carburetor cover on the body with a sharp pencil. (3) Remove cover and install piston. (4) Reinstall cover, using the scribed outling on the body as a guide. **Note:** Check suction piston to make sure it is not binding when the carburetor top is tightened. **Procedure Without Alignment Tool** Adjust by slightly moving the top while observing the CO meter deflection, until the CO level meets standards. Set the top in that position. **Note:** Check suction piston to make sure it is not binding when the carburetor top is tightened.  **Final Procedure** Clean out old dowel material, then pour in epoxy-type liquid to form new dowels after the alignment adjustment is completed.
5	Reinstall float assembly and float chamber cover. **Note:** a. Check for fuel leaks and remedy as necessary. b. Run engine at 1500 rpm and check float level as described on page 45.

Section Four

TROUBLESHOOTING

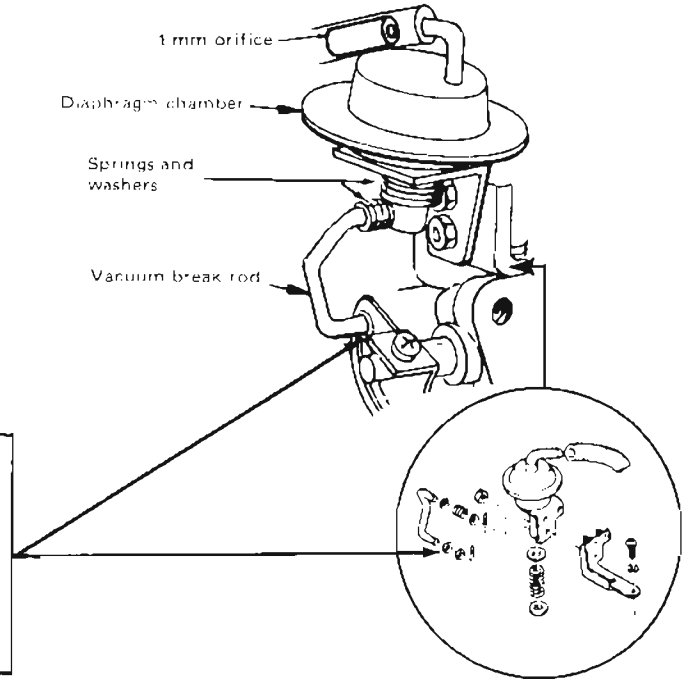
ONLY FOLLOW THESE PROCEDURES IF ALL KITS MENTIONED HAVE BEEN INSTALLED, AND ALL IGNITION AND FUEL SYSTEM ADJUSTMENTS ARE WITHIN SPECIFICATION, BUT A FUEL SYSTEM RELATED PROBLEM STILL EXISTS.

CARBURETOR CHART

Carburetor Type	240-Z	260-Z	Interchangeability	
			Front	Rear
HMB46W-1	X		No	No
HMB46W-2	X		Yes	240-Z Yes. 260-Z Yes, if coolant connector modified
HMB46W-4		X	Yes	240-Z Yes, if coolant connector modified. 260-Z Yes.
HMB46W-5		X	Yes	240-Z Yes, if coolant connector modified. 260-Z Yes.
HMB46W-9	X*		Yes	240-Z Yes. 260-Z Yes, if coolant connector modified.

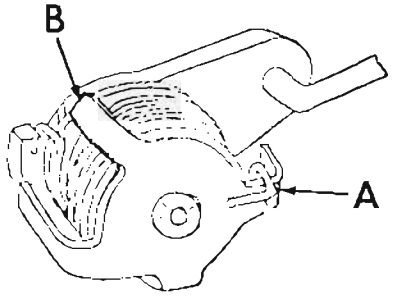
*This is an updated replacement parts carburetor which incorporates all the latest features of the HMB46W-5 carburetor.

CONDITION	If the vacuum break rod is loose or missing – or The engine starts hard when cold, with choke on or The engine starts with choke on, but will go only to 1000 rpm.
PROBABLE CAUSE	Worn vacuum break rod (linkage).
CORRECTIVE ACTION	1. Adjust or replace vacuum break rod. **Note:** a. Individual break rods are not available as service parts. Replace the vacuum break assembly when a break rod needs to be replaced. b. Install the 1 mm orifice in the vacuum hose (if it is not installed) to prevent more combustion hammering. 2. Check lower washer to make sure it is the proper size as illustrated. 3. If adjustment is necessary, refer to page 42.



Washer Size	
Thickness	0.020 to 0.030 in.
Inside Diameter	0.163 in.
Outside Diameter	0.227 to 0.240 in.

CONDITION	Engine starts with choke on, but stalls during warm up.
PROBABLE CAUSE	Weak choke spring tension.
CORRECTIVE ACTION	Increase the choke plate spring tension by moving the spring from A to B, or install a new spring as described on page 19.

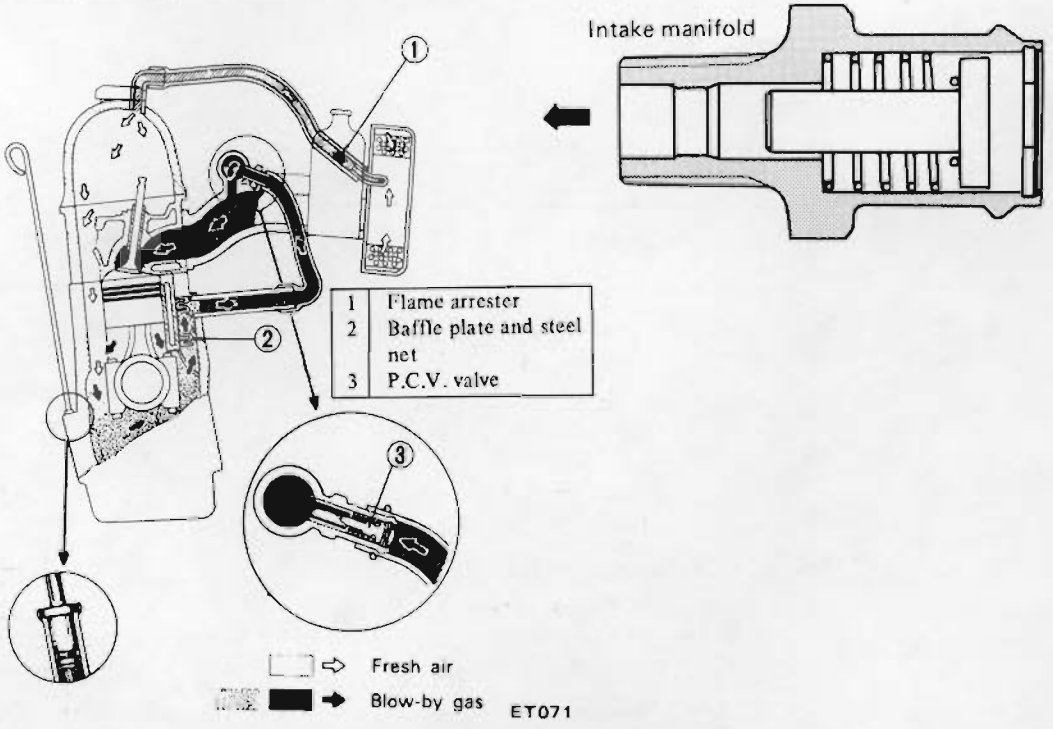


CONDITION	CO readings above normal
CORRECTIVE ACTION	Check the following, and replace or correct the items not meeting specifications.

Item	Reference Page No.
Water control valve	69
Needles bent or with shoulder rub areas	62
Jet nozzles with elongated hole	59
Power valve	12
High float level	56 to 57

CONDITION	Heavy surge, stumbling, hard starting, lack of power or stalling.
CORRECTIVE ACTION	Check fuel pump filter, line filter and both carburetor filters.

CONDITION	Engine is cutting out during idle or won't idle below 2000 rpm. (This incident has been preceded by backfire, or the engine has not been serviced for a very long time/mileage interval, i.e. in excess of the recommended maintenance interval).
PROBABLE CAUSE	A blown Positive Crankcase Ventilation (PCV) valve. The valve retainer spring and valve from vehicles with history of backfire or under-servicing, can get lodged in the engine block connector pipe. Note: Backfire may also cause throttle shaft to be bent and binding.
CORRECTIVE ACTION	Remove old PCV valve and replace with a new part. Remove any broken parts from the connector pipe.

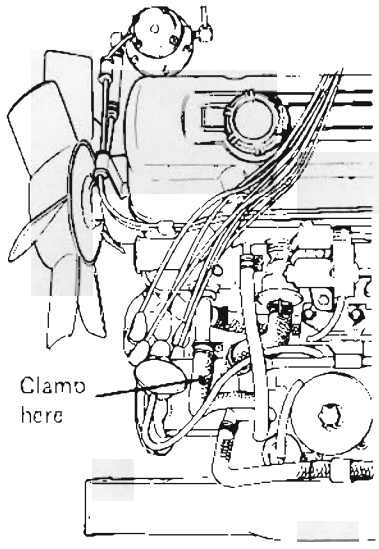


CONDITION

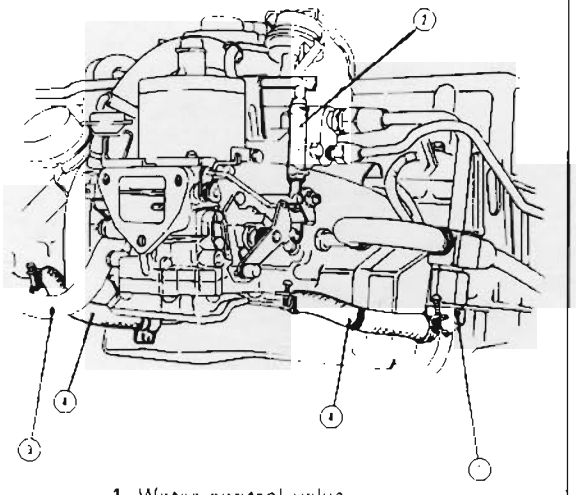
Stalling, surging, stumbling without hot soak. Vehicle driven under normal conditions with engine tuned to specification, but still has a high CO level (5-8% with or without air).

CORRECTIVE ACTION

1. Block off water passage to base of carburetors by clamping coolant hose with vise-grip pliers.



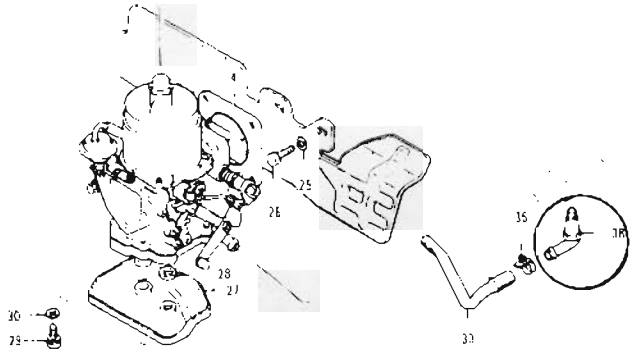
240-Z: Front of Engine



1. Water control valve
2. I.S.S. Hoses
3. Air by-pass hoses
4. Coolant hose (clamp here)

260-Z Rear of Engine

2. If CO is reduced to normal, then carburetor water control valve is probably malfunctioning.



Water Control Valve – Parts.

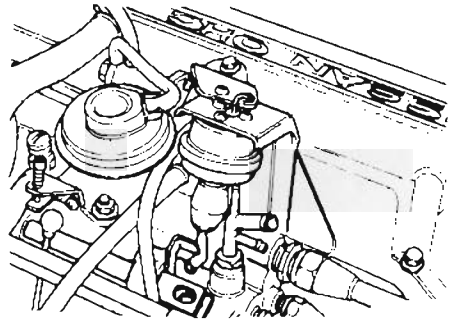
3. If valve is faulty, replace (item 38 in Parts illustration above). Only replace the upper part of the valve since the 1973 and 1974 lower parts are different.

CONDITION	260 Z with Factory (Hitachi) Air Conditioning — Engine stalls when running at idle with AC "ON".
PROBABLE CAUSE	Fast idle control device (F.I.C.D.) needs adjustment or repair
CORRECTIVE ACTION	Check and adjust or repair F.I.C.D. as necessary to attain following setting. See TS74-053, BE74-010, or Air Conditioning section of 1974 260-Z Service Manual.

1. Run the engine until it reaches operating temperature.
2. With air conditioner in OFF (when compressor is not operated), make sure that engine is at 750 rpm (A/T 600 rpm in D). Adjust if necessary.
3. With air conditioner ON (F.I.C.D. is actuated), set the engine speed to 800 rpm using the following procedures as a guide:
   (a) Adjust the fast idle actuator's stroke by varying the length of lever until engine speed is 800 rpm.
   Note: Automatic transmission equipped cars – adjustment with the shift control lever in the "N" position.
   (b) Depress and release the accelerator pedal several times to make sure that the engine speed returns to 800 rpm as the pedal is released.

If correct adjustment is not made, repeat steps (a) and (b) above until the engine speed is 800 rpm at idling.

Transmission	When A/C is OFF	When F.I.C.D. is Actuated
Manual	750 rpm	800 rpm
Automatic	600 rpm at "D" range	800 rpm at "N" range

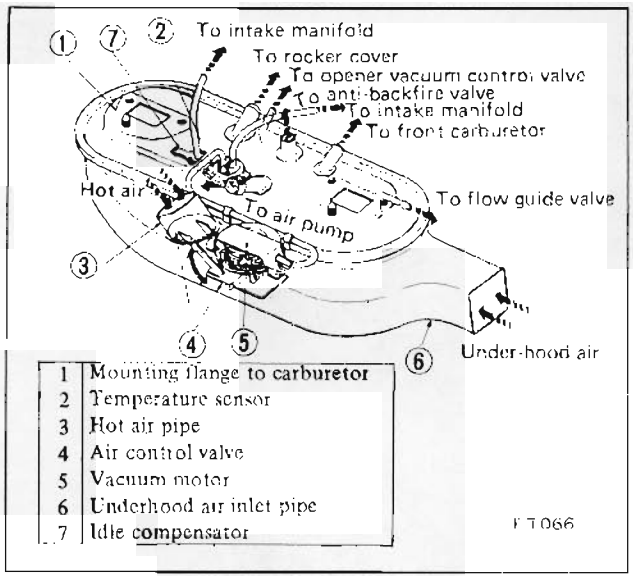


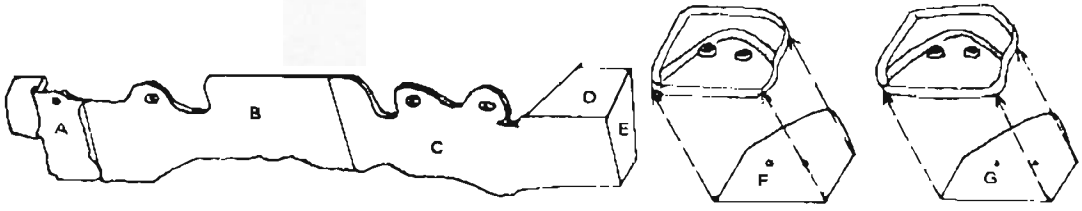
CONDITION	240-Z, with V-3 Kit already installed, operated in area of regular high ambient temperatures. Vehicle regularly driven in congested traffic. Result is repeated customer complaints of: 1. 1. Fuel system vapor lock. 2. 2. Momentary power loss or stumble, at wide-open throttle acceleration after after hot soak and restart.
PROBABLE CAUSE	High ambient underhood temperatures, especially after hot soak. Fuel vaporizes out of float bowl, into intake manifold.
CORRECTIVE ACTION	A. First, install a carburetor heat shield. Service Procedure. 1. Using the following illustration as a guide, and the patterns found on pages 73 through 75, add ¼ in. thick compressed asbestos insulating material to the upper surface of the heat shield between the carburetors and the exhaust manifold. The asbestos may be installed using either sheet metal screws or aluminum pop-rivets. The small heat shield on the base of each carburetor should also have the same asbestos material installed externally on the surface facing the manifold. Patterns provided are full size. The asbestos may be obtained from local heating/air conditioning or furnace repair supply houses. 2. Replace carburetor mounting insulator blocks with the type used in 1972 production, using the mounting studs listed in parts information.

(Continued)

CORRECTIVE ACTION (Contd.)

3. Cut ½ in. of metal off the hot air pipe end (3, Illustration) to provide clearance for installing the air cleaner cover assembly. On the second illustration, the lettering is keyed to the lettering on the attached templates.



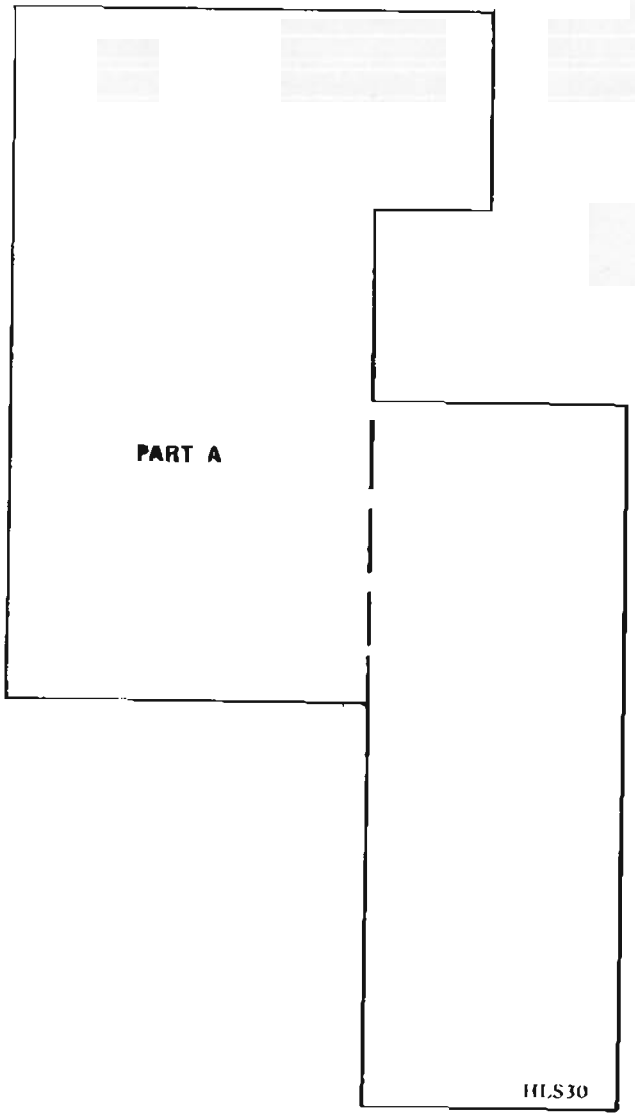


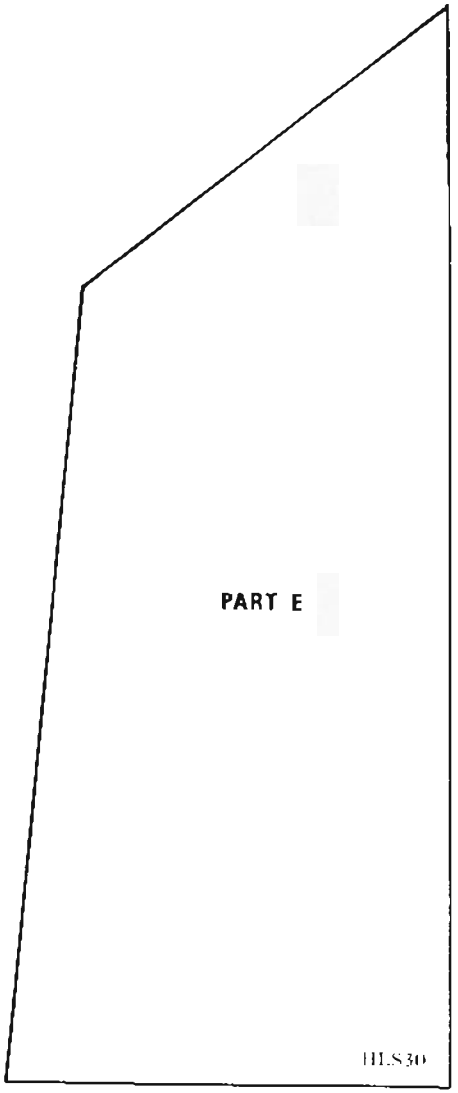
HEAT SHIELD CARBURETOR BASE SHIELD

PARTS INFORMATION

Part Name	Part Number
Insulator-Carburetor	16174-E8800
Stud	08213-84210
Asbestos Sheeting	Open Purchase

(Continued)





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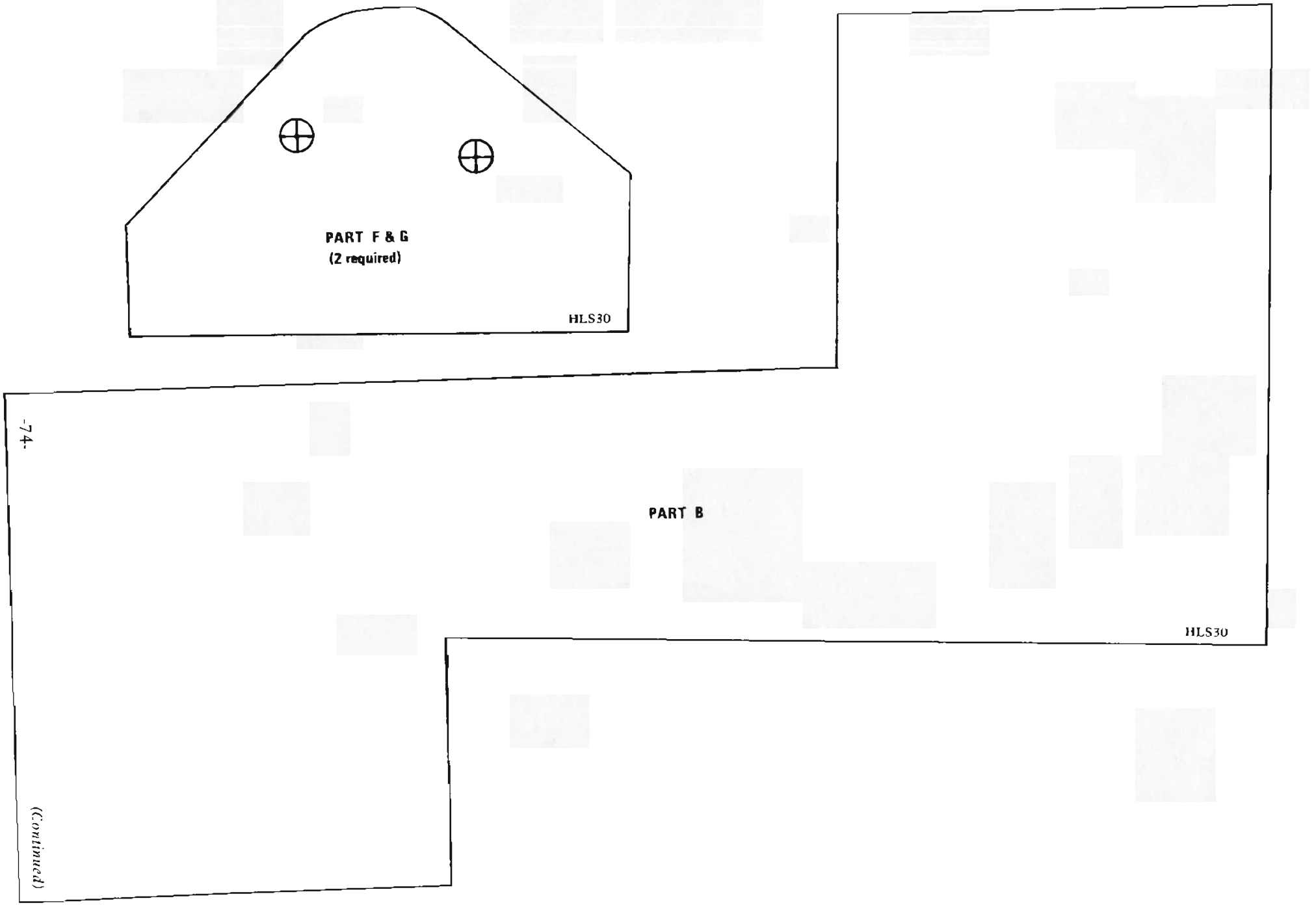

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PART D
HLS30
PART C
HLS30

CORRECTIVE ACTION (Contd.)

B. If heat-related situation persists on a 240-Z, install a "240-Z Competition Hood Vent" on a customer complaint basis.

SERVICE INFORMATION

The 240-Z Competition Hood Vent is a center-mounted, hand-layed fiberglass design. It has a flat black finish to match any 240-Z, but may be painted a matching color. Reference TS74-119, BF74-018.

The location of the competition vent on the hood was designed to consider, in addition to esthetic improvement, assurance of an adequately increased flow of air from the engine compartment during all phases of driving. Thus it is center-mounted, with side openings provided to maximize improvements in driveability.

As a result of esthetic as well as performance improvement gained from the competition hood vent, it is being sold as an accessory, but may also be used as a field fix for those vehicles with all the "V" kit installations which may still be experiencing high ambient temperature driveability problems. Installation instructions come with the kit.

PARTS INFORMATION

Item	Part Number
Competition Hood Vent	99990-00182

Guarantee Information. Guarantee claims will be accepted only for 1973 240-Z vehicles with all "V-3" and "Modification Plus" completed, and which will be experiencing driveability problems during high ambient temperatures. DSM prior approval is required.

Flat Rate Schedule. Installation - 1.0 hour

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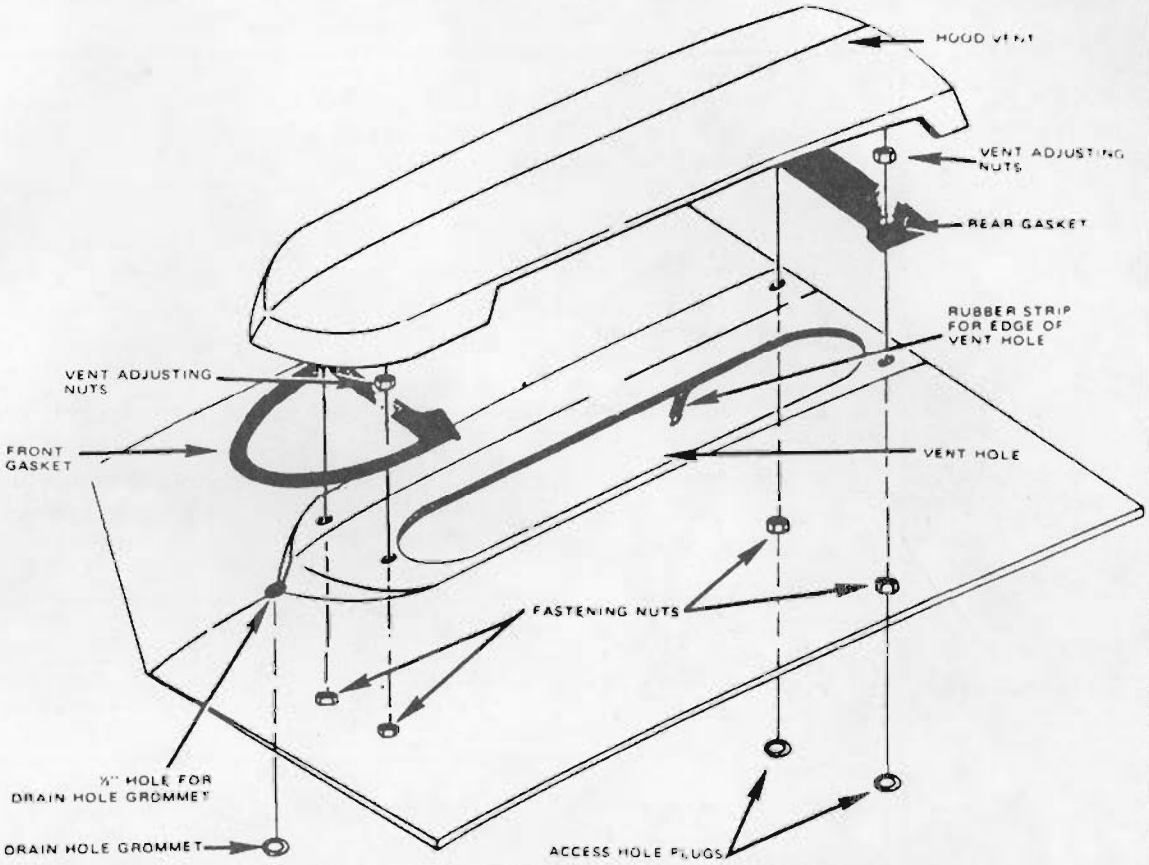
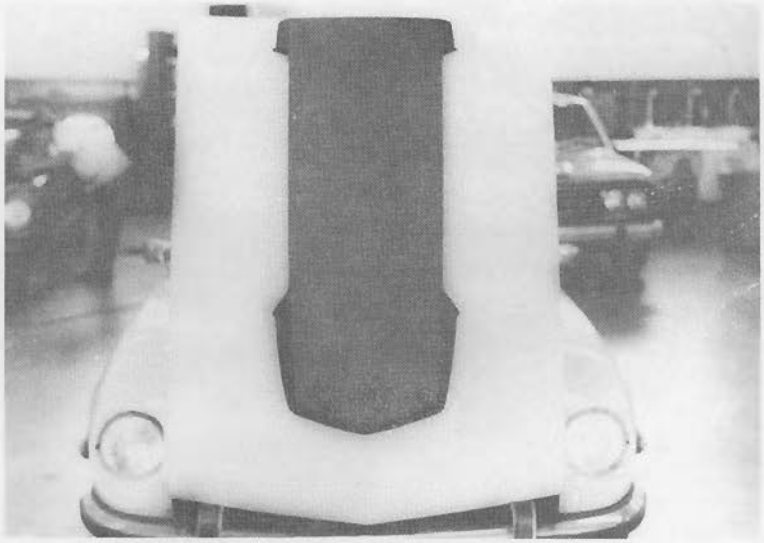


Exploded view of 240-Z Competition Hood Vent



CORRECTIVE ACTION (Contd.)

C. In very extreme cases of heat related starting and performance situations, in which all previously mentioned kits have been installed and all specifications and adjustments are met, a "Wood-Jeffreys Accessory Fan Kit" can be installed. This installation would be at the customer's discretion and at his expense.

DESCRIPTION

The Wood-Jeffreys Accessory Fan Kit contains an electric, thermostatically-controlled fan. By utilizing this forced ventilation system in ambient temperatures up to 120°F, a significant reduction in underhood temperature is realized and improved performance results. Used in conjunction with the Competition Hood Vent, performance improvements are even more significant. Specific improvements are shorter hot-start times, reduction in stumbling phenomena, and improved idle conditions in the higher ambient temperature ranges.

INSTALLATION INSTRUCTIONS

Item is available through: MANTA CARS
3303 Harbor Blvd., Bldg. C, Suite 4
Costa Mesa, Calif. 92626
Phone (714) 557-8125
Attn: Brad Lovette

Fan installation instructions are included in the kit. However, the following special instructions should be followed for correct fan operation in 240-Z vehicles.

1. The fan should be mounted in front of the radiator (and air conditioner condensor, if so equipped), on the driver's side of the vehicle, with the total area of the fan covering some portion of the radiator. Refer to Fig. 1. The fan is of a universal type and requires fabrication of brackets for installation. Refer to Fig. 2.

   Note: The radiator fan shroud should be removed if so equipped. It may be necessary to relocate one of the horns on the '73 models. This may be done with a one-inch spacer.

2. The thermostatic switch should be mounted on the rear carburetor (between carburetor base and heat shield), using the shield securing bolt. The heat shield must remain installed. Refer to Figures 3, 4, and 5.

3. The thermostatic switch should activate the fan at 70° ± 2°C. (158°F.). Adjustment of the thermostatic switch should be the last step in the installation. Proceed as follows:

   a. To raise the tripping point (temperature which activates switch) insert screwdriver into the slot visible in the hole at terminal end of the temperature control unit and turn slightly in a clockwise direction.

   b. To lower the tripping point, turn screw in a counter-clockwise direction. The thermostatic sensor may be placed in a beaker of water maintained at 70°C. (158°F.), then the thermostat switch screw adjusted to activate the fan.

(Continued)

4. The fan circuit (fan and thermostatic switch) should be connected directly to the battery circuit, independent of the ignition switch, as outlined on the attached electrical circuit diagram, Fig. 6. This will allow the fan to operate when the ignition is off, thereby improving hot-starts.

OPERATION

The fan switch may be switched on in either the 'Off' position or the automatic position. The automatic position will activate the fan and the switch-light only when the carburetor base temperature reaches 158°F. When the carburetor base temperature falls below 158°F, the fan and switch-light will automatically shut off. The switch light will only remain on if the fan is operating, regardless of the switch position. The 'Off' position of the switch serves to disconnect the entire system.

INSTRUCTIONS FOR CUSTOMER

The electric fan should be used when ambient temperatures are expected to remain above 100°F. for weeks on end. Fan operation is not necessary under normal climatic temperatures or during winter operation; however, hard driving may produce effects equivalent to those experienced in high climatic temperature areas. Therefore, the driver can decide on when to use the fan.

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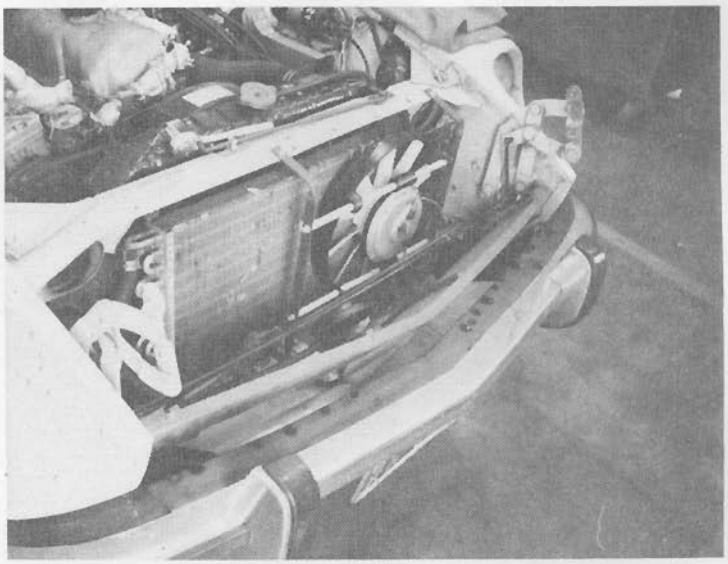

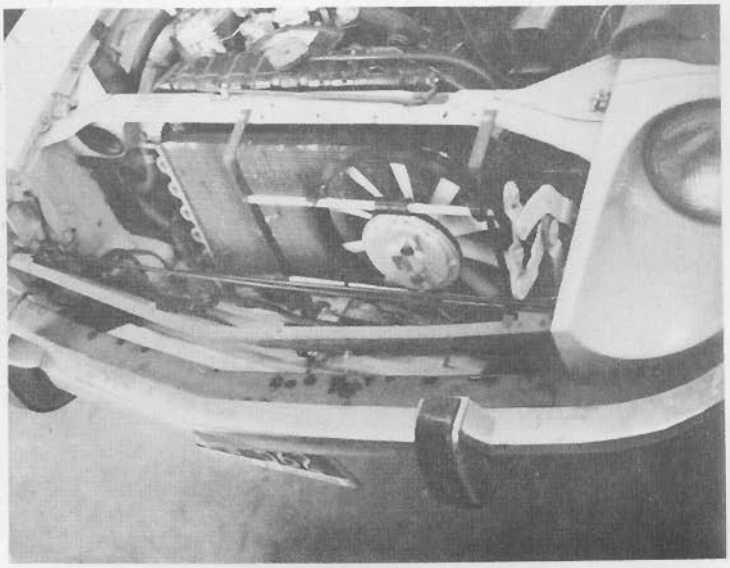

Fig. 1 Recommended fan location

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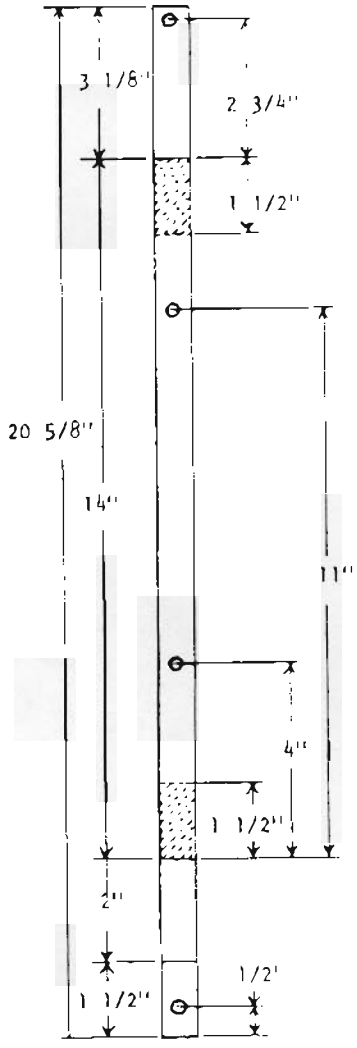
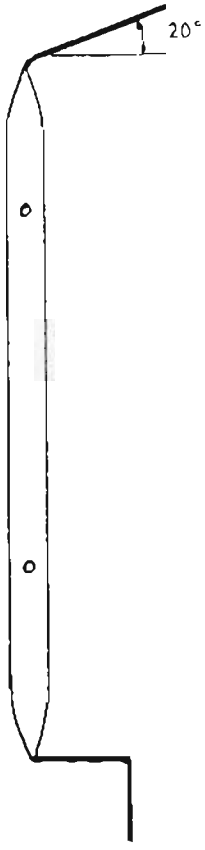
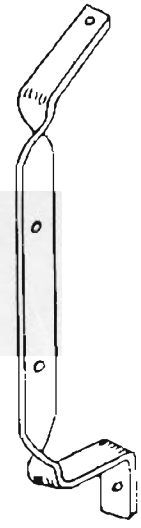
WOOD-JEFFREYS ELECTRIC FAN

MOUNTING BRACKET FOR 240-Z

Fig. 2







ALL HOLES DRILLED 1/4"

Material 3/4" - 1" Flat Stock Approximately 11/8" Thick

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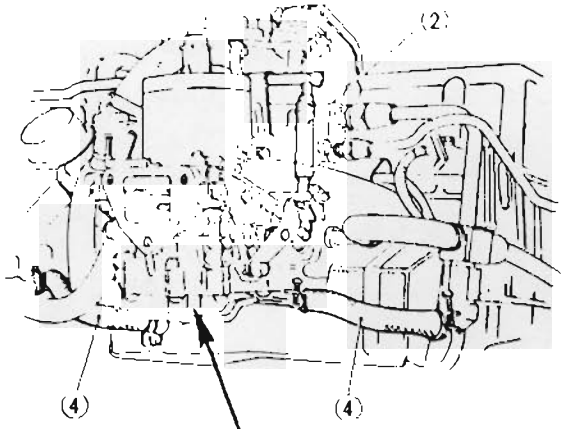

Fig. 3 Temperature Sensor Location

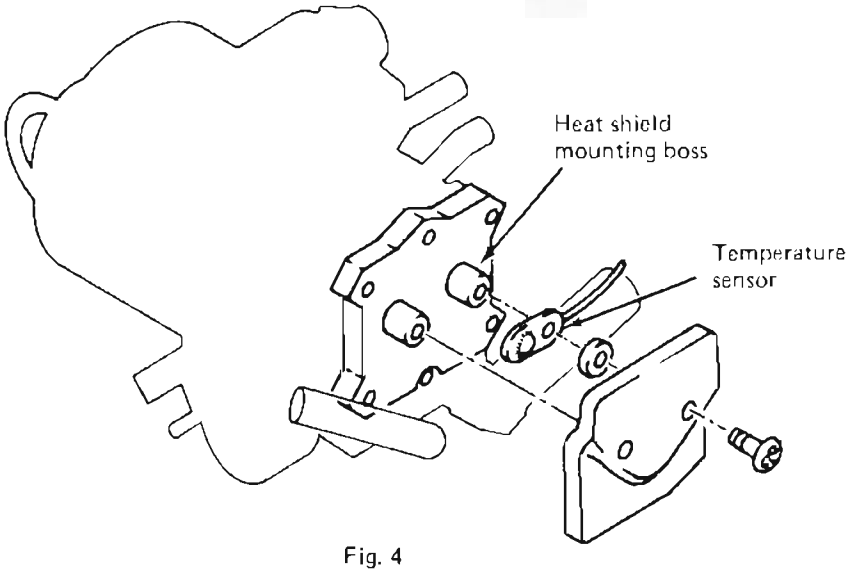

Fig. 4

NOTE: Temperature sensor should be located between mounting boss and heat shield and should use the existing bolt.

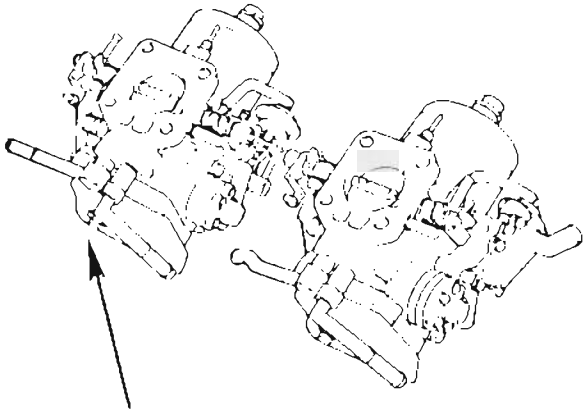

Fig. 5 Heat Shield Mounting Bolt

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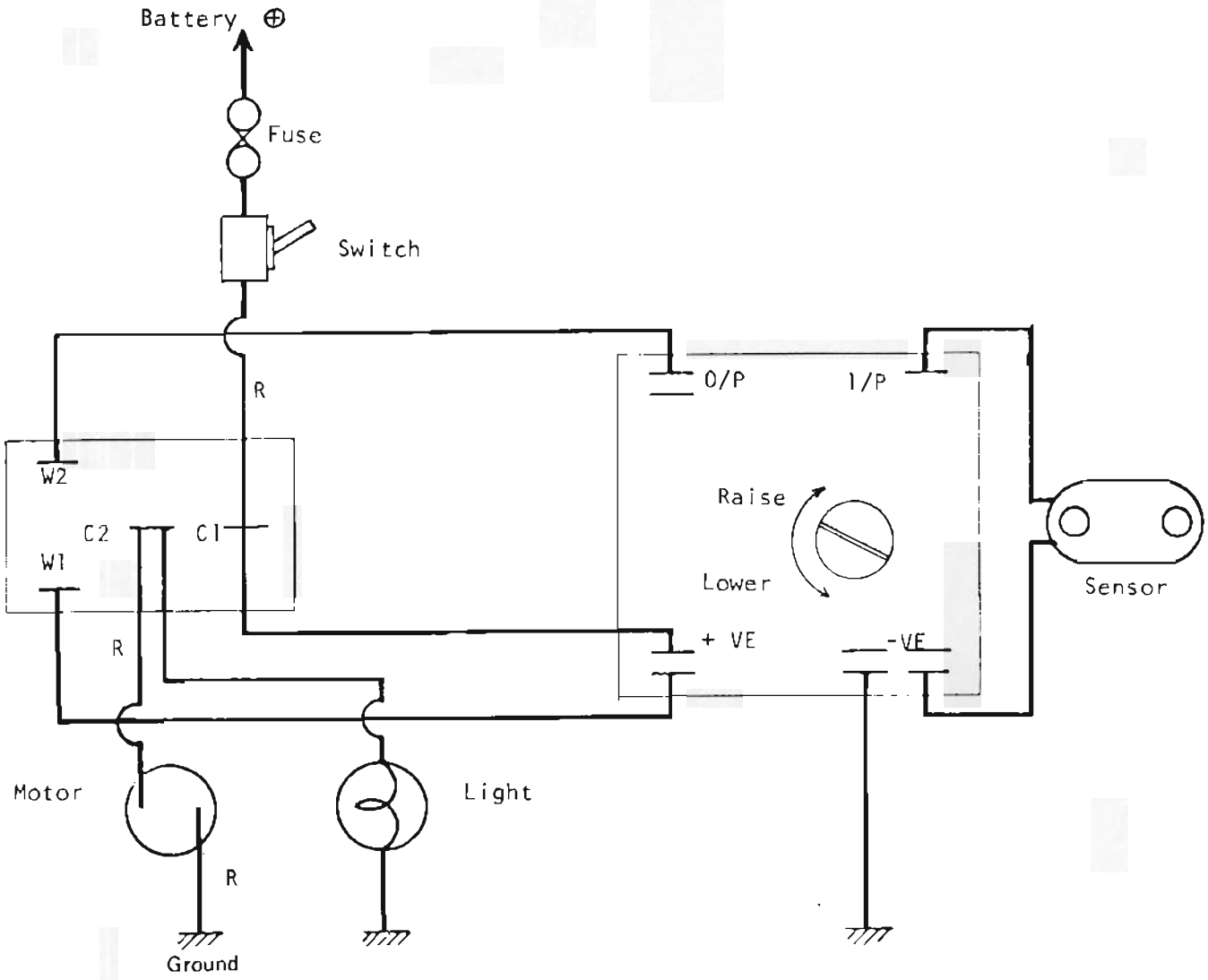
WOOD-JEFFREYS ELECTRIC FAN

WIRING DIAGRAM FOR 240-Z INSTALLATION

Fig. 6



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