Fuel System

The fuel system, as covered in this section of the Manual, applies mainly to the 1968 through 1974 vehicles that have carburetors. The electronic fuel injection system, introduced on the 1975 models, is covered separately in **FUEL INJECTION**. The data given in this section under **3. Fuel Tank** and **7.1 Evaporative Emission Control** apply to vehicles both with fuel injection and with carburetors. You should refer to **FUEL INJECTION** for all other information related to fuel injection engines—including emission control data and air cleaner servicing. Whether they have carburetors or fuel injection, VWs covered by this Manual are designed to operate on regular (91 octane) gasoline. Fuel injection vehicles that are equipped with catalytic converters require lead-free gasoline.

The fuel system for dual-carburetor and single-carburetor engines handles five main tasks necessary for proper engine operation: (1) it provides storage space for the gasoline; (2) it includes the components necessary for delivering gasoline to the engine; (3) it is responsible for admitting the proper amount of filtered air to the engine; (4) it incorporates a carburetor and distribution system for mixing fuel and air in precisely controlled proportions and delivering it to the cylinders; and (5) it modifies the density of the incoming air so that the combustion process does not produce an excess of undesirable exhaust emissions. The fourth function mentioned above, that of mixing the fuel with air, is handled on 1968 through 1971 models by one single-venturi downdraft carburetor. The 1972 through 1974 models have two single-venturi downdraft carburetors.

On 1968 through 1971 models, the single carburetor is mounted atop a tubular welded-steel intake manifold that has an exhaust-warmed preheating pipe. On 1971 models, the cylinder heads have dual intake ports rather than the single siamesed intake port used in the heads of earlier engines. On the 1971 engines, the two outer ends of the intake manifold are joined to bifurcated cast aluminum intake pipes that conduct the fuel/air mixture into the cylinder head intake ports. The dual-carburetor engine introduced on the 1972 models has each carburetor mounted on a bifurcated cast aluminum intake manifold bolted to the top of each cylinder head. The dual manifolds are connected by a balance pipe and are heated solely by their contact with the cylinder heads.

Because many of the repairs and tune-up procedures described in this section of the Manual have a direct influence on exhaust emissions, they should not be undertaken unless all prescribed equipment is available. If you lack the skills, special equipment, or tools needed for servicing and adjusting the fuel system, we suggest you leave such repairs to an Authorized VW Dealer or other qualified shop. We especially urge you to consult your Authorized VW Dealer before attempting repairs on a car still covered by the new-car warranty.

4 FUEL SYSTEM

1. GENERAL DESCRIPTION

As noted earlier, the fuel system may conveniently be divided into five subsystems, each with a separate function. For brevity, these will be called fuel storage, pump and lines, air cleaner, carburetor, and emission controls.

Fuel Storage

The fuel tank is housed beneath the rear luggage area, ahead of the engine. The fuel capacity is 15.8 U.S. gallons (13.2 Imperial gallons; 60 liters). The tank is equipped with a sending unit for the electrical fuel gauge, a pickup tube for transfer of fuel to the engine, and a vent system—routed, on 1970 and later vehicles, into the evaporative emission control system. Except on 1974 and later models, the unvented filler cap is concealed beneath a spring-loaded flap in the left rear side of the vehicle.

Pump and Lines

Three different fuel pump designs have been used on the carburetor-engined vehicles covered by this Manual. The 1968 through 1970 models have a pump with a slightly cone-shaped cover. The 1971 model has a pump with a dome-shaped stamped steel cover. Individual parts are available for the pump used on 1968 through 1970 vehicles, but the pump with the domed cover is the standard replacement part for all single-carburetor engines.

The third type of fuel pump, used on dual-carburetor engines only, is located at the front of the engine near the flywheel—just ahead of the No. 1 cylinder. This pump has a cast metal top that houses a fuel cutoff diaphragm. The built-in fuel cutoff prevents a gradual flow of fuel to the carburetors after the engine has been stopped.

On vehicles with single-carburetor engines, fuel reaches the pump through a steel line connected to the tank by a hose. On vehicles with dual-carburetor engines, the tank and pump are connected by a hose only. All models have a hose from the pump to the carburetor. However, there is a metal T-piece on dual-carburetor engines so that the single hose from the pump can serve two hoses connected to the widely-separated carburetors.

Air Cleaner

Single-carburetor engines and 1972 dual-carburetor engines have an oil bath air cleaner. Dual-carburetor engines on 1973 and later vehicles have a dry-type air cleaner with a pleated paper filter. The air cleaner used on 1975 and later vehicles is covered in **FUEL INJECTION**. There have been almost annual modifications to the air cleaner and its ducts. Most of the modifications have been to the intake air preheating system. Originally incorporated to prevent carburetor icing, intake air preheating has become an important auxiliary to the emission control system.

Carburetors

The 1968 and 1969 models have a single Solex 3' PICT-2 carburetor. The 1970 models have a single Solex 30 PICT-3 carburetor and the 1971 models a single Solex 34 PICT-3 carburetor. The 1972 through 1974 models have two carburetors. The left carburetor is a Solex 34 PDSIT-2 and the right carburetor is a Solex 34 PDSIT-3. On dual-carburetor engines, the idle mixture circuit and the vacuum ports for the distributor are in the left carburetor.

All the carburetors used on Type 2 vehicles have built-in automatic chokes. A thermostatic spring closes the choke valve when the engine is cold. When the ignition is turned on, an electric heating element warms the thermostatic spring, causing the choke to open at a predetermined rate. Whenever the throttle valve closes—as at idle or during deceleration—a vacuum diaphragm overrides the thermostatic spring, slightly opening the choke.

Emission Controls

The evaporative emission control, standard beginning with the 1970 models, prevents gasoline fumes from escaping into the atmosphere. The fuel tank is vented into a system that traps and contains fuel vapors until they can be drawn into the air cleaner and burned by the engine.

The 1973 and later models are equipped with an EGR (exhaust gas recirculation) system. The system diverts a portion of the exhaust gases into the intake manifolds below the carburetors, modifying the density and content of the incoming mixture. The recirculated exhaust gases lower the flame peaks in the combustion process, thereby reducing the formation of oxides of nitrogen, an air pollutant. The EGR system of 1975 and later models is covered in **FUEL INJECTION**. The 1973 and 1974 models also have an air injection type exhaust afterburning system. An air pump, driven by the engine, injects fresh air into the exhaust system at the point where hot gases emerge from the cylinder heads. The additional air causes unconsumed fuel to burn in the exhaust system, thereby reducing hydrocarbon emissions.

A throttle valve positioner is installed on 1970 and 1971 engines. The positioner automatically adjusts the throttle closing rate for minimum exhaust emissions and prevents the carburetor throttle valve from closing suddenly when the accelerator pedal is released—again to reduce emissions. On 1971 models, this latter function is supplemented by a dashpot installed on the carburetor. A dashpot, but no throttle valve positioner, is used on dual-carburetor engines.

2. MAINTENANCE

There are only a few maintenance operations that must be carried out at a specified mileage or after a cer-

tain period of service. These are listed below and covered briefly in **LUBRICATION AND MAINTENANCE.**

1. Checking the throttle positioner (where fitted)
2. Servicing the air cleaner
3. Replacing the air filter (paper type)
4. Checking the exhaust gas recirculation (EGR) valve (1973 and later models only)
5. Replacing the element-type EGR filter
6. Replacing the activated charcoal canister (1970 and later models only)
7. Replacing the air filter for the exhaust afterburning air pump (1973 and 1974 models only)
8. Checking the air pump belt tension.

3. FUEL TANK

If the fuel tank must be removed for cleaning or repairs, it is important that the connections leading to the tank be reinstalled correctly and in their original locations. Installation errors can lead to fuel starvation or to the improper venting of fumes. Fig. 3-1 shows the ventilation system found on 1970 and 1971 models.

3.1 Removing and Installing Fuel Tank

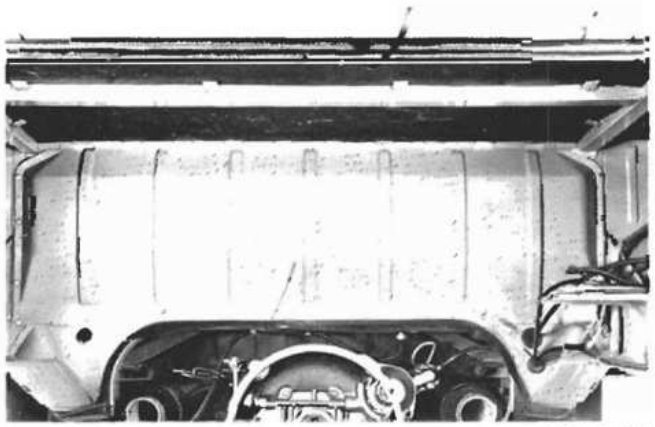
To avoid the hazard of spilled fuel, the tank should be no more than half full during removal. Surplus fuel should be drained off.

WARNING —
Disconnect the battery ground strap. Do not smoke or work near heaters or other fire hazards. Have a fire extinguisher handy.

To remove:

1. Except on pickup trucks, remove the engine as described in **ENGINE AND CLUTCH**. On 1972 and later models, it is possible (barely) to remove the tank panel without removing the engine.

2. On fully-enclosed vehicles manufactured after May 1968, remove the screws that hold the panel in the front of the engine compartment. Then remove the panel (Fig. 3-2).



1974 VWoA—3020

Fig. 3-2. Panel that separates engine compartment from fuel tank compartment.

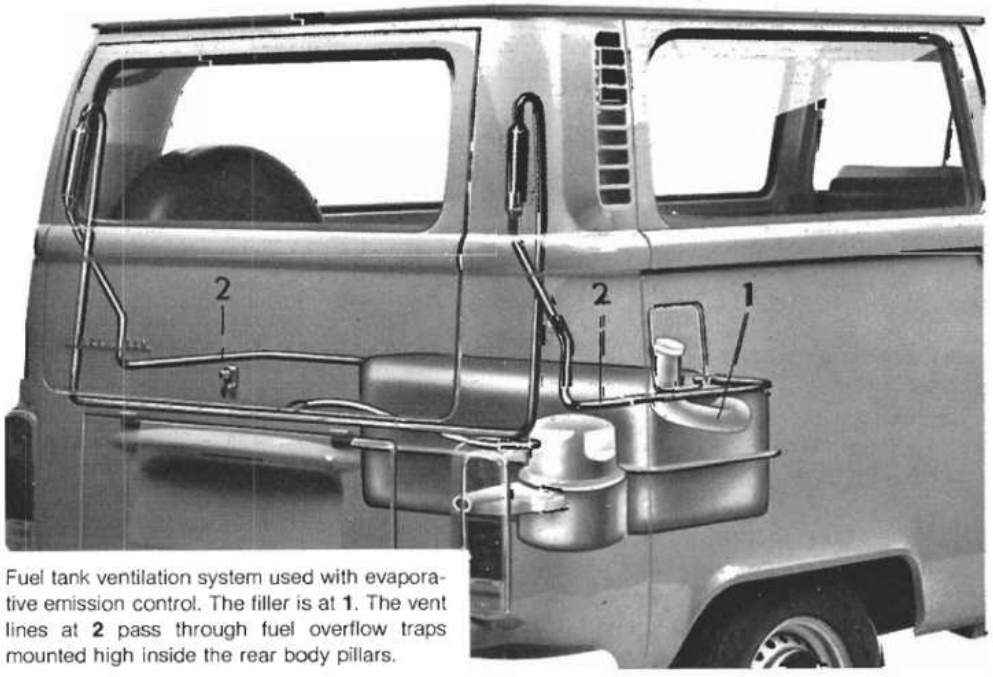


Fig. 3-1. Fuel tank ventilation system used with evaporative emission control. The filler is at **1**. The vent lines at **2** pass through fuel overflow traps mounted high inside the rear body pillars.

1974 VWoA—3254

1976 VWoA

3. On pickup trucks, remove both of the panels shown in Fig. 3-3.
4. Disconnect the fuel hose(s). Quickly plug the hose(s) and connection(s).

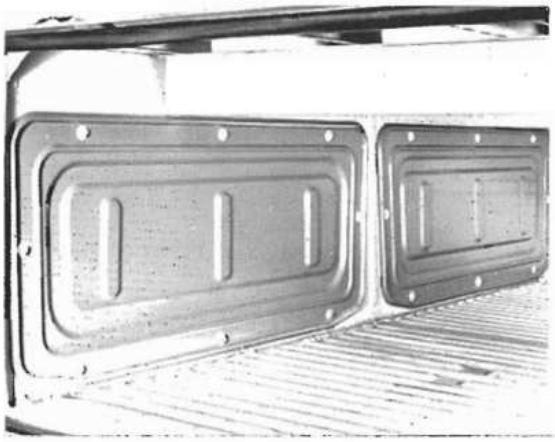


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Fig. 3-3. Two panels that cover tank compartment on pickup truck bodies.

5. Loosen the large hose clamps on the fuel filler neck hose. Then remove the hose.
6. Disconnect the wire from the fuel gauge sending unit. Detach the ventilation hose(s) from the fuel tank.
7. Remove the bolts that hold the tank retaining straps. Then take off both straps.
8. On pickup trucks, remove the tank toward the cargo area; on fully-enclosed vehicles, remove the tank toward the engine compartment.

Installation is the reverse of removal. New clamps should be used on the ventilation hose(s) and the hoses must not be installed in a twisted position or bent sharply enough to collapse them. If necessary, replace the rectangular foam rubber tank seal that goes beneath the tank and surrounds the fuel pickup.

3.2 Fuel Gauge Sending Unit And Fuel Pickup

The removal, installation, and testing of the fuel gauge sending unit is covered in **ELECTRICAL SYSTEM.**

The fuel pickup in the bottom of the tank consists of a union nut, a gasket, and a feed pipe. The inner end of the feed pipe is covered by a wire gauze filter. To remove the filter, unscrew the union nut, remove the feedpipe, and withdraw the wire gauze filter from the opening.

3.3 Treating Corroded Fuel Tank

Water is heavier than gasoline, so condensation or water from contaminated fuel will collect in the bottom of the tank where it may cause rusting. Not only can rust particles contaminate the rest of the fuel system but, given time, the fuel tank may be rusted through. Corroded tanks should be either replaced or cleaned.

WARNING —
Tanks containing holes caused by corrosion should not be welded or soldered using open flame. Even an empty tank contains fumes that make it a potential bomb.

There are two standard agents for cleaning rusted fuel tanks:

A. Derusting phosphate agent (commercially available as Rodine 50 or a similar product) that is mixed either in a solution of one part agent to ten parts water or according to the manufacturer's directions.

B. Aqueous solution of hydrochloric acid (that is, industrial muriatic acid, specific gravity 1.190) in the proportion of 20 parts hydrochloric acid solution, 80 parts water, and one part inhibitor (such as Rodine 50).

Cleaning agent **A** is the preferred treatment. It is milder and leaves a protective phosphate film. Both methods require immediate rinsing with a soluble oil mixture (one part machine coolant to 20 parts water). Rust will form again if the tank is not rinsed thoroughly.

To remove rust:

1. Seal the fuel pickup and vent pipes. Then remove the fuel gauge sending unit.
2. Fill the tank with solution **A** or **B**. Make sure the solution completely fills the tank so that acid fumes will not attack the tank wall above the fluid level.

NOTE —
Leave the solution in the tank until the rust is removed. Forty minutes may be sufficient for a very small accumulation, but severe rusting may require as long as eight hours. For best results, let the solution stand overnight.

3. Pour out the solution, and pour in 4 to 5 U.S. quarts (6.5 to 8.5 Imperial pints; 4 to 5 liters) of rinsing solution. Rock the tank vigorously to slosh the rinse over the entire interior.
4. Drain the tank and dry it with compressed air.

The cleaning solution can be used 10 or 15 times. Store the solution only in a glass container with a glass or rubber stopper that will not be attacked by vapors from the acid in the solution.

4. FUEL PUMP AND LINES

(carburetor engines only)

A mechanical fuel pump is used on all single-carburetor and dual-carburetor engines. The pump on single-carburetor engines is operated by a cam on the distributor drive shaft. On dual-carburetor engines, the pump is operated by an eccentric cam at the front of the camshaft.

4.1 Fuel Pump Troubleshooting

Table a lists possible fuel pump trouble symptoms with their probable causes and remedies. When more than one probable cause or remedy is given, check them in the order in which they are listed. The numbers in bold type in the Remedy column refer to the headings in this section under which the prescribed repairs are described.

4.2 Removing and Installing Fuel Pump

On single-carburetor engines, the fuel pump is mounted near the distributor, on top of the crankcase. On dual-carburetor engines, the fuel pump is mounted at the front right-hand side of the crankcase, just ahead of the No. 1 cylinder. On single-carburetor engines, the stroke of the pump is determined by the number of gaskets installed under the black intermediate flange that goes between the pump and the engine's crankcase. It is important that the stroke be limited to its specified length.

To remove pump:

1. Pull the fuel hoses off the pump, quickly plugging them to prevent the escape of gasoline.

WARNING —
Disconnect the battery ground strap. Do not smoke or work near heaters or other fire hazards. Have a fire extinguisher handy.

2. On single-carburetor engines, remove the nuts on the pump flange; on dual-carburetor engines, remove the socket head screws. Then take off the pump.
3. Remove the pushrod from the center of the intermediate flange. Then remove the intermediate flange and gaskets from the crankcase.

To adjust pump stroke
(single-carburetor engine only):

1. Place two new gaskets on the pump mounting studs. Then install the intermediate flange on top of them.

CAUTION —
Always install the intermediate flange on the crankcase before you insert the pushrod. Otherwise, the pushrod may slip through the flange and into the crankcase.

Table a. Fuel Pump Troubleshooting

Symptom	Probable Cause	Remedy
1. Fuel leaking at joint faces of pump	a. Slotted screws loose b. Diaphragm cracked	a. Tighten screws. See **4.3**. b. Replace diaphragm. See **4.3**.
2. Fuel leaking at diaphragm rivets	Diaphragm damaged during assembly	Replace diaphragm. See **4.3**.
3. Fuel leaking through diaphragm itself	Diaphragm material damaged by solvent in fuel	Replace diaphragm. See **4.3**.
4. Diaphragm damaged, apparently from excessive pump stroke	Pump incorrectly installed, gasket too thin	a. Install pump correctly with additional gasket. Replace diaphragm. See **4.2**, **4.3**. b. Check pushrod stroke. See **4.2**.
5. Pump pressure low	a. Pump incorrectly installed, gasket too thick b. Spring pressure low	a. Install pump correctly, removing one gasket if necessary. See **4.2**. b. Stretch spring to lengthen or, if necessary, replace. See **4.3**.
6. Carburetor flooding	a. Pump pressure excessive, forcing needle valve down. Pump gasket too thin b. Spring pressure excessive	a. Install pump correctly. Check pushrod stroke. Add gasket if needed. See **4.2**. b. Press spring together to shorten or, if necessary, replace spring. See **4.3**.
7. Insufficient fuel delivery	Valves leaky or sticking	Free valves or replace pump. See **4.2**, **4.3**.

2. Install the pushrod in the intermediate flange with the tapered end down.
3. Turn the engine by hand until the pushrod rises to its highest point of travel.
4. Measure the distance that the pushrod projects above the intermediate flange as shown in Fig. 4-1. The pushrod should project 13 mm (½ in.). If it does not, adjust it to this dimension by removing or installing gaskets under the intermediate flange.

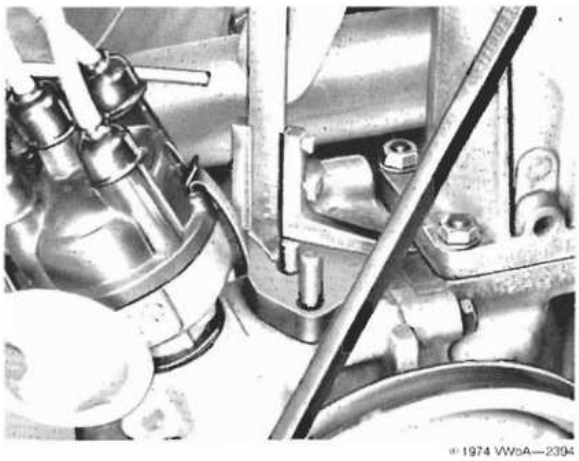


Fig. 4-1. Depth gauge being used to check length of pushrod where it projects from intermediate flange.

To install pump:

1. Fill the lower part of the pump with universal grease. Coat the pushrod with molybdenum grease.
2. On single-carburetor engines, install a new gasket over the studs where they project from the intermediate flange. On dual-carburetor engines, install the intermediate flange with a new gasket on each side. Then insert the pushrod with the tapered end down on single-carburetor engines, or the large-diameter end innermost on dual-carburetor engines.
3. On single-carburetor engines, place the pump over the studs and install the two spring washers and nuts. Torque the nuts to 2.5 mkg (18 ft. lb.).
4. On dual-carburetor engines, install the pump with the two socket head screws.
5. Using new hose clamps, install the fuel hoses on the fuel pump.

NOTE —
If the original hoses are to be reinstalled, carefully inspect their ends to see that they have not been weakened or deformed by the previous installation of hose clamps. A new clamp may not seal hoses that have lost resiliency. In such cases, a new hose should always be installed.

6. Reconnect the battery ground strap.

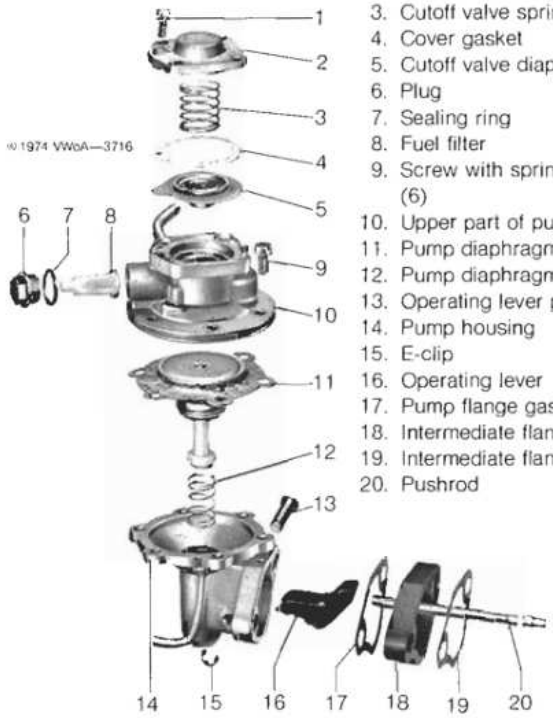
Checking Fuel Pump Pressure And Delivery Capacity

You can check the fuel pump's pressure by installing a "T" fitting between the pump and the carburetor so that a pressure gauge can be installed. To check the fuel pump's delivery capacity, run the engine on an auxiliary fuel supply while you collect the fuel pump output in a container so it can be measured.

Maximum delivery pressure should be between 3.0 and 5.0 psi (0.20 and 0.35 kg/cm²) for single-carburetor engines or 5.0 psi (0.35 kg/cm²) for dual-carburetor engines. Minimum delivery capacity should be 400 cc per minute at 4000 rpm (3800 rpm for dual-carburetor engines).

4.3 Disassembling and Assembling Fuel Pump

Fig. 4-2 is an exploded view of the fuel pump used on dual-carburetor engines.



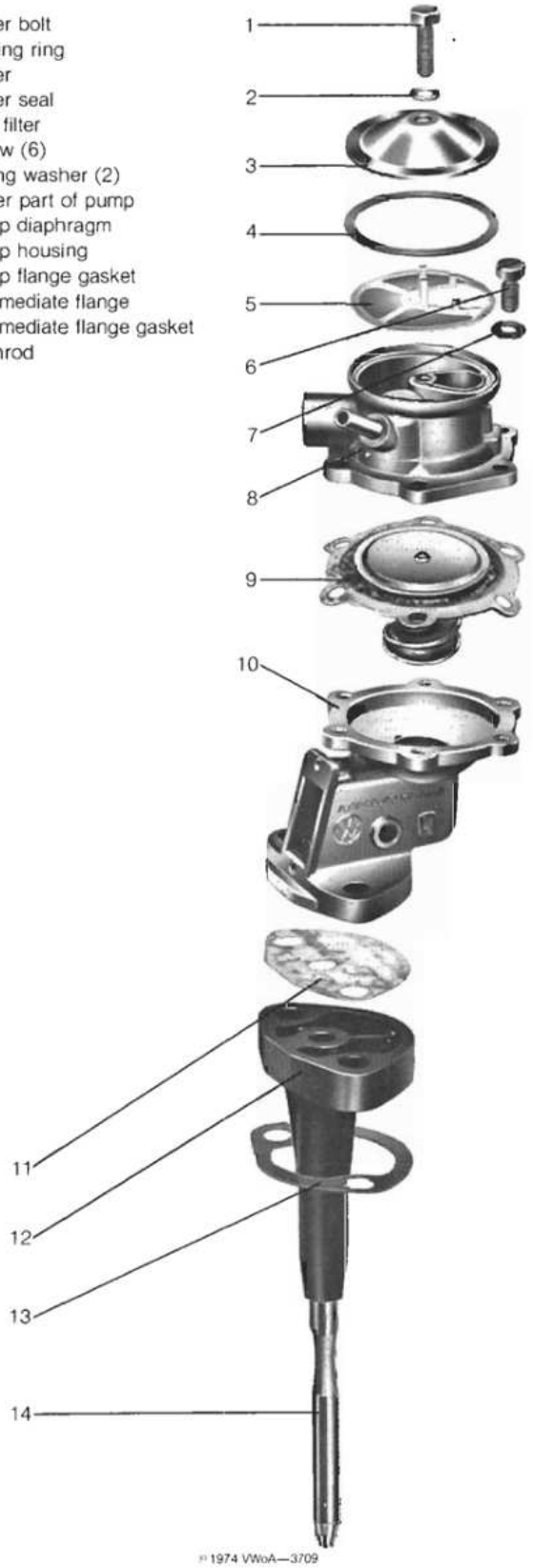
1. Screw with spring washer (4)
2. Fuel cutoff valve cover
3. Cutoff valve spring
4. Cover gasket
5. Cutoff valve diaphragm
6. Plug
7. Sealing ring
8. Fuel filter
9. Screw with spring washer (6)
10. Upper part of pump
11. Pump diaphragm
12. Pump diaphragm spring
13. Operating lever pin
14. Pump housing
15. E-clip
16. Operating lever
17. Pump flange gasket
18. Intermediate flange
19. Intermediate flange gasket
20. Pushrod

Fig. 4-2. Replaceable parts of dual-carburetor engine fuel pump.

Replacement diaphragms and a repair kit are also available for the pump used on 1968 through 1970 models (Fig. 4-3). The fuel filter can be removed for cleaning by taking off the cover. The 1971 single-carburetor engine has the same pump flange gasket, intermediate flange and intermediate flange gasket.

Fig. 4-3. Components of fuel pump used on 1968 through 1970 models.

1. Cover bolt
2. Sealing ring
3. Cover
4. Cover seal
5. Fuel filter
6. Screw (6)
7. Spring washer (2)
8. Upper part of pump
9. Pump diaphragm
10. Pump housing
11. Pump flange gasket
12. Intermediate flange
13. Intermediate flange gasket
14. Pushrod



The fuel pump used on 1971 models can be only partially disassembled, as illustrated in Fig. 4-4, to permit cleaning and replacement of the filter and its gasket. The pump should be replaced if it is faulty or fails to deliver the specified fuel pressure and capacity.

Fig. 4-4. 1971 fuel pump disassembled.

5. CARBURETOR

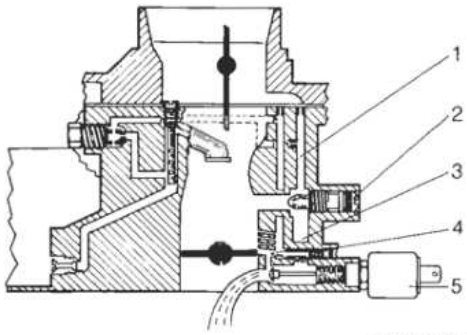
The Solex 30 PICT-2 carburetor installed on 1968 and 1969 models differs from the later carburetors primarily in the design of the idle mixture circuit. The 30 PICT-2 has only a volume control screw—typical of carburetors built prior to the enactment of strict exhaust emissions standards. Later carburetors have a volume control screw with a limited range of adjustment and an idle speed adjusting screw that controls the flow of fuel and air to the idle circuit.

The Solex 30 PICT-3 carburetor installed on 1970 models and the Solex 34 PICT-3 carburetor installed on 1971 models are fundamentally the same. Some of the parts and subsystems on the later unit have been relocated. For example, the electromagnetic cutoff valve is located on the right-hand side of the 30 PICT-2 and 30 PICT-3 and on the left-hand side of the 34 PICT-3 carburetor.

3

The electromagnetic cutoff valve is a simple device that consists of a cutoff plunger and an electrically operated solenoid. The cutoff valve has no influence on carburetion while the engine is running, but prevents the engine from "running on" or "dieseling" after the ignition is turned off. On 34 PICT-3 carburetors, a spring inside the electromagnetic cutoff valve causes the cutoff plunger to snap out of the valve and block the idle air bypass drilling when the ignition is turned off. This prevents air and fuel from reaching the intake manifold when the driver's foot is off the accelerator.

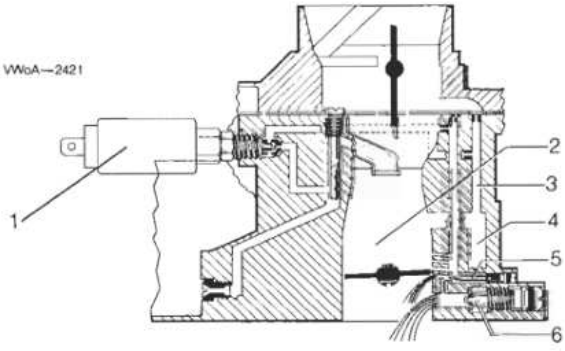
When the ignition is turned on, a wire to the electromagnetic cutoff valve energizes the solenoid. The solenoid withdraws the cutoff plunger to the position shown in Fig. 5-1.



1. Bypass air drilling
2. Idle speed adjusting screw
3. Bypass drilling
4. Idle mixture adjusting screw
5. Electromagnetic cutoff valve

Fig. 5-1. Electromagnetic cutoff valve, 34 PICT-3.

On 30 PICT-2 and 30 PICT-3 carburetors, the electromagnetic cutoff valve controls fuel delivery to the idle system as shown in Fig. 5-2.



1. Electromagnetic cutoff valve
2. Carburetor throat
3. Bypass air drilling
4. Bypass drilling
5. Idle mixture adjusting screw
6. Idle speed adjusting screw

Fig. 5-2. Electromagnetic cutoff valve (30 PICT-2 and 30 PICT-3).

The 34 PDSIT-2 and 34 PDSIT-3 carburetors used on dual-carburetor engines are completely different from th carburetors used on single-carburetor engines. A centra. idling system is built into the 34 PDSIT (left) carburetor. A mixture distributor tube (Fig. 5-3) carries the idle mixture from the idling system on the left carburetor to the two intake manifolds.

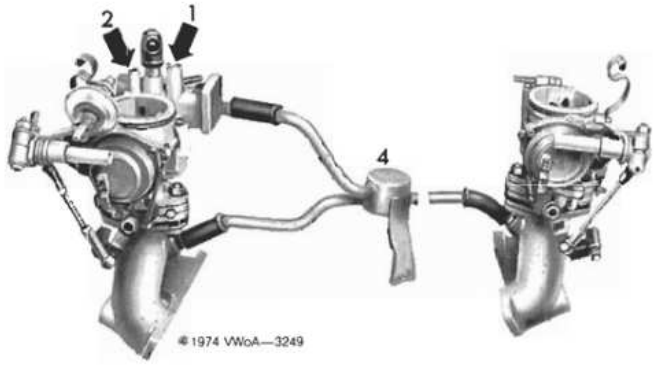
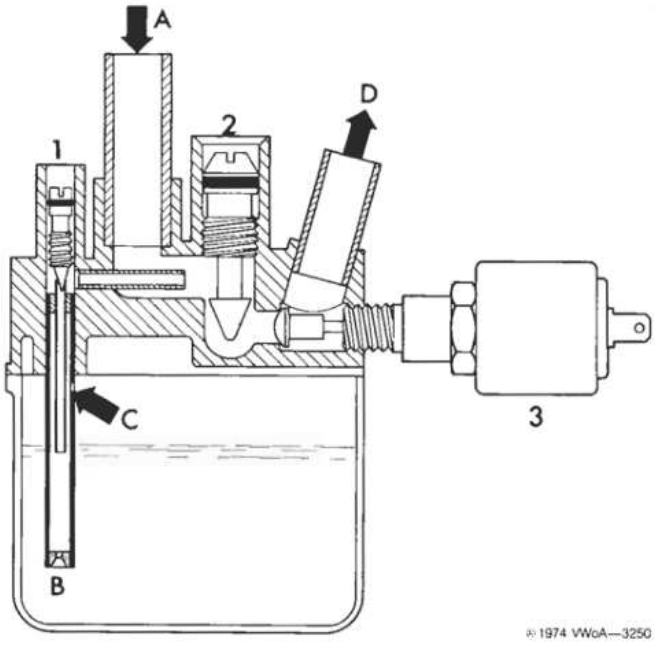


Fig. 5-3. Dual carburetor system. The idle adjustments on the central idling system are at arrows **1** and **2**. The mixture distributor is at **4**.

A schematic view of the central idling system on dual-carburetor engines is given in Fig. 5-4. Notice the position of the electromagnetic cutoff valve in the idle circuit.



1. Mixture control screw
2. Idle speed adjusting screw
3. Electromagnetic cutoff valve
A. Air from air cleaner
B. Emulsion tube jet
C. Emulsion tube air drilling
D. Mixture to cylinders

Fig. 5-4. Central idling system.

5.1 Carburetor Troubleshooting

Table b lists carburetor troubles with their probable causes and remedies. The numbers in bold type in the Remedy column refer to the headings in this section under which the prescribed repairs are described.

5.2 Synchronizing Dual Carburetors

If the carburetors need to be synchronized, do so before you adjust the idle.

Table b. Carburetor Troubleshooting

Symptom	Probable Cause	Remedy
1. Idle poor, resists adjustment	a. Dirt in idle system	a. Clean carburetor(s), adjust as prescribed. See **5.4**, **5.2**, **5.3**.
	b. Throttle valve gap incorrect	b. Adjust gap to 0.10 mm (.004 in.). See **5.3**.
2. Engine does not start (tank has fuel, and ignition is working)	a. Choke valve sticking	a. Apply penetrating fluid to free choke valve shaft. See **5.4**.
	b. Automatic choke not working properly	b. Check vacuum diaphragm for freedom of movement. See **5.4**.
	c. Bimetal spring unhooked or broken	c. Reconnect spring or, if broken, replace complete ceramic plate (when installing, match index marks). See **5.4**.
	d. Ceramic plate broken	d. Replace ceramic plate (when installing, match index marks). See **5.4**.
	e. Float needle valve sticking and carburetor flooding	e. Clean or replace float needle valve. See **5.4**.
3. Engine runs continuously at fast idle	a. Automatic choke not switching off	a. Check heater element and connections. See **5.4**.
	b. Choke valve or fast idle cam sticking	b. Apply penetrating fluid to free choke valve or cam. See **5.4**.
	c. Carburetors not synchronized	c. Adjust linkage, then adjust carburetors. See **5.2**.
	d. Throttle valve sticking	d. Free throttle valve lever and pull rod. A bent pull rod must be replaced. See **5.4**.
	e. Throttle valve positioner out of adjustment	e. Adjust throttle valve positioning. See **5.4**.
	f. Throttle valve positioner cannot be adjusted	f. Replace throttle valve positioner. See **5.4**.
4. Exhaust backfire when car is overrunning the engine (coasting)	a. Idle mixture slightly weak	a. Enrich mixture by turning volume control screw, or idle mixture adjusting screw, counterclockwise. See **5.3**.
	b. Throttle valve positioner out of adjustment	b. Adjust throttle valve positioner or replace it. In extreme cases, set cut-in speed to max. 1900 rpm. See **5.4**.
	c. Faulty mixture control valve on vehicles with exhaust afterburning (from 1973)	c. Replace mixture control valve. See **7.4**.
5. Engine idles unevenly or stalls (ignition dwell correct)	a. Vacuum hose to brake servo or automatic transmission disconnected or leaking	a. Replace or reconnect vacuum hose. Tighten hose clamps. See **BRAKES AND WHEELS**.
	b. Vacuum hoses between exhaust gas recirculation (EGR) valve and intake manifolds cracked, loose, or off	b. Replace hose. See **7.2**.
	c. Faulty EGR valve	c. Check valve and replace if necessary. See **7.2**.
	d. Idle adjustment incorrect	d. Adjust idle to 850 ± 50 rpm. (950 ± 50 rpm for vehicles with automatic transmission). See **5.3**.
	e. Pilot jet blocked	e. Clean jet. See **5.4**.
	f. Air leak in manifold	f. Check carburetor flange gasket, manifold sleeves, and intake pipe gaskets. See **5.4**, **ENGINE AND CLUTCH**.
6. Engine "runs on" when ignition is switched off	a. Faulty electromagnetic cutoff valve or wire	a. Test wire for current. Test solenoid for continuity. Replace faulty cutoff valves. See **5.4**.
	b. Idle speed too fast	b. Adjust idle speed. See **5.3**.
	c. Idle mixture too rich	c. Weaken idle mixture by turning volume control screw, or idle mixture adjusting screw, clockwise. See **5.3**.

Continued on next page

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Table b. Carburetor Troubleshooting (continued)

Symptom	Probable Cause	Remedy
7. Poor transition from idle to operating speed	a. Accelerator pump passages blocked or ball sticking b. Torn accelerator pump diaphragm c. Idle adjustment incorrect d. Amount of fuel injected is incorrect	a. Clean accelerator pump and check operation. See **5.4**. b. Replace diaphragm. See **5.4**. c. Adjust idle. See **5.3**. d. Adjust accelerator pump volume. See **5.3**.
8. Engine stalls when accelerator pedal is released suddenly	Idle mixture too rich	Adjust idle. See **5.3**.
9. Engine runs unevenly (surges) with black smoke at low idle and smokes badly as idle speed increases. Spark plugs soot up quickly and misfire	a. Excessive pressure on float needle valve b. Float leaking c. Float needle valve not closing d. Automatic choke stuck closed	a. Check fuel pump pressure and reduce if necessary. See **4.2**. b. Replace float. See **5.4**. c. Clean or replace float needle valve. See **5.4**. d. Apply penetrating fluid to free choke valve shaft. See **5.4**.
10. Engine runs unevenly at full throttle, misfires, and cuts out or lacks power (ignition dwell, spark advance, and spark plugs all right)	a. Fuel starvation at driving speeds b. Low fuel level in float bowl c. Low fuel pressure d. Dirt in fuel system	a. Clean main jet. See **5.4**. b. Clean float needle valve. See **5.4**. c. Check fuel pump pressure and increase if necessary. See **4.2**. d. Clean fuel tank. Flush lines. Clean carburetor and fuel pump. See **3.3**, **4.3**, **5.4**.
11. Fuel consumption excessive	a. Jet sizes not properly matched b. Excessive pressure at float needle valve c. Float leaking d. Float needle valve not closing e. Automatic choke not working properly	a. Install correct set of jets. Check spark plugs for soot fouling. See **5.4**, **8**, **ENGINE AND CLUTCH**. b. Check fuel pump pressure and reduce if necessary. See **4.2**. c. Replace float. See **5.4**. d. Clean needle valve or replace float. See **5.4**. e. Apply penetrating fluid to free choke valve shaft. See **5.4**.

To synchronize:

1. Dismount the air cleaner ducts from both carburetors, leaving the hose attached (Fig. 5-5).

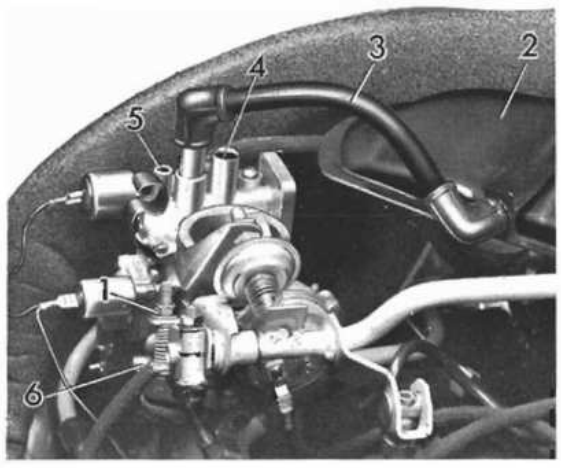

Fig. 5-5. Air cleaner duct (**2**) detached from carburetor. Hose (**3**) must remain connected. Idle speed adjusting screw is at **4**; mixture control screw is at **5**. **1** and **6** are 1972 model synchronizing adjustments.

2. Disconnect the lower ball joint of the right-hand throttle operating rod from the lever on the right-hand carburetor's throttle valve switch.
3. On 1972 models, turn the synchronizing screw on the left carburetor (Fig. 5-6) until the right carburetor's throttle operating rod can be reconnected to the throttle arm without moving either carburetor's throttle valve from its fully closed position.

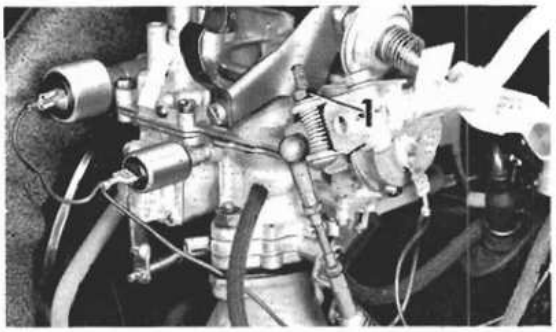

Fig. 5-6. Synchronizing screw (at **1**) on the left-hand carburetor.

4. On 1973 and 1974 models, adjust the length of the right-hand carburetor's throttle operating rod until the rod can be reconnected to the throttle arm without moving either carburetor's throttle valve from its fully closed position. The approximate distance between the two ball joints of the operating rod should be 107 mm ($4^{7}/_{32}$ in.).
5. Insert an oil thermometer in place of the oil dipstick. Start the engine and run it until the oil temperature reaches 50° to 70°C (122° to 158°F). Check to see that both automatic chokes are fully open.
6. Run the engine at a steady speed between 2000 and 3000 rpm. Place a Unisyn®, Auto-Syn®, or other airflow-measuring synchronizing device over the throat of one carburetor and then the other. See Fig. 5-7.

CAUTION —
If you lack the skills, tools, or equipment for synchronizing the carburetor, we suggest you leave such repairs to an Authorized VW Dealer or other qualified shop. We urge you to consult your Authorized VW Dealer before attempting repairs on a car still covered by the new-car warranty.

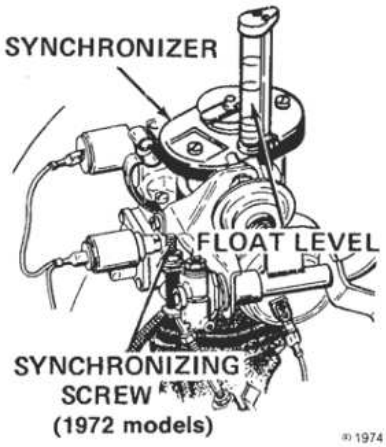

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Fig. 5-7. Synchronizing device placed on carburetor. Air flow is indicated by the height to which the float rises in the graduated tube.

7. If one carburetor is passing more air than the other, adjust the synchronization. On 1972 models, turn the synchronizing screw one way or the other until the air flow is the same at both carburetors. On 1973 and 1974 models, turn the adjustment on the right-hand carburetor's operating rod (Fig. 5-8).
8. Adjust the idle.

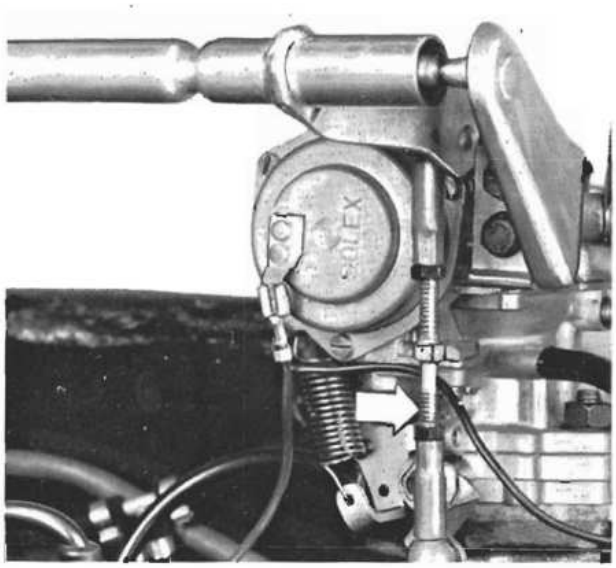

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Fig. 5-8. Adjustment on 1973 and 1974 right-hand carburetor throttle operating rod. Loosen locknuts, then use a wrench to turn the rod.

5.3 Adjusting Idle

Because even minor carburetor adjustment changes will affect exhaust emissions, please follow the instructions carefully and use the specified equipment. Professional mechanics should find out whether state authorization is required before a repair shop can make adjustments that influence exhaust emissions.

On 1970 through 1974 models, adjust only the idle speed adjusting screw during routine maintenance. Do this as described in the last step of each carburetor adjusting procedure. You should not adjust the idle mixture adjusting screw unless (1) you have installed a different carburetor; (2) you have removed, repaired, or rebuilt the carburetor; (3) you have had to alter the carburetor synchronizing adjustments; or (4) the engine is producing excessive emissions.

In troubleshooting the engine, eliminate all other possible trouble sources before you touch the carburetor adjustments. Also, adjusting the idle rpm should be the last step in a tune-up. Otherwise, valve and ignition adjustments will upset the previously made idle adjustment.

CAUTION —
If you lack the skills, tools, or test equipment for adjusting the carburetor, we suggest you leave such repairs to an Authorized VW Dealer or other qualified shop. We urge you to consult your Authorized VW Dealer before attempting repairs on a car still covered by the new-car warranty.

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Adjusting Single Carburetor

Before you adjust the idle, clean, re-gap, or replace the spark plugs as needed. Make certain that valve clearances, ignition dwell angle, and ignition timing are correct. Connect a dwell meter/tachometer to the ignition system so that you can measure idle speed accurately. Insert a thermometer for measuring oil temperature in place of the oil dipstick.

The air cleaner must be installed while you adjust the idle mixture or idle rpm. If you use an exhaust gas analyzer during idle mixture adjustment, disconnect the evaporative emission control hose from the air cleaner (the hose that joins the air cleaner with the activated charcoal filter canister). Otherwise, the analyzer readings may be influenced by possible fuel tank vapors.

To adjust idle (30 PICT-2):

1. Start the engine and run it until the oil temperature reaches 50° to 70°C (122° to 158°F). Check to make sure that the automatic choke is fully open.
2. Adjust the idle speed by turning the idle speed adjusting screw on the throttle arm (see Fig. 5-9). The idle speed should be 800 to 900 rpm.

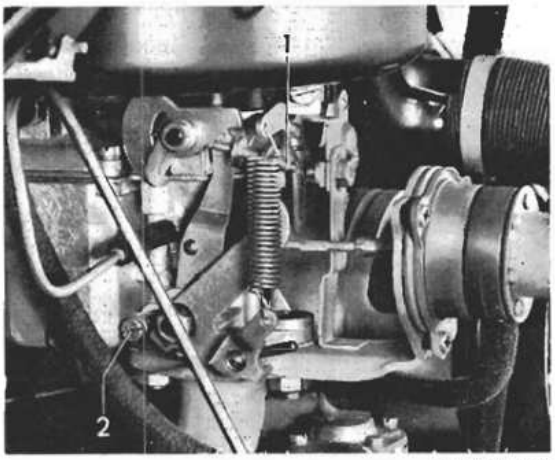


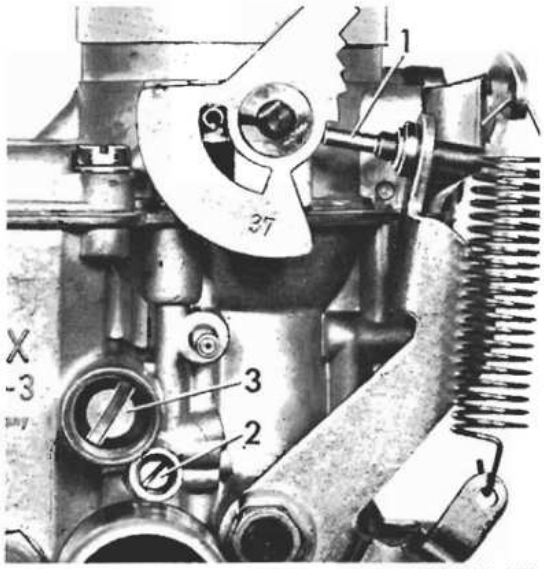
Fig. 5-9. Idle adjustments on 30 PICT-2 carburetor. The idle speed adjusting screw is at **1**; the volume control screw is at **2**.

3. Gradually turn the volume control screw clockwise until the engine begins to slow down. From this position, turn the volume control screw counterclockwise until the engine achieves the fastest obtainable idle.
4. If necessary, return the idle to 800 to 900 rpm by turning the idle speed adjusting screw.

To adjust idle (30 PICT-3):

1. Start the engine and run it until the oil temperature reaches 50° to 70°C (122° to 158°F). Check to make sure that the automatic choke is fully open.
2. Adjust the idle speed by turning the idle speed adjusting screw (Fig. 5-10). The idle speed should be 800 to 900 rpm.

CAUTION —
Do not adjust the idle speed on the 30 PICT-3 carburetor by turning the throttle valve stop screw. Doing so would adversely affect exhaust emissions.



1. Throttle valve stop screw
2. Idle mixture adjusting screw
3. Idle speed adjusting screw

Fig. 5-10. Adjustments influencing idle speed on 30 PICT-3 and 34 PICT-3 carburetors.

To adjust idle (34 PICT-3):

1. Start the engine and run it until the oil temperature reaches 50° to 70°C (122° to 158°F). Check to make sure that the automatic choke is fully open, then stop the engine.
2. Turn the throttle valve stop screw out until there is clearance between its tip and the fast idle cam. See Fig. 5-10 given earlier. Then turn the screw in until it just touches the fast idle cam.
3. From this position, turn the screw one-quarter turn further in.

4. Slowly turn the idle mixture adjusting screw in until it comes to a stop, and then turn it back 2½ to 3 complete turns.
5. Start the engine and note the idle rpm. If necessary, turn the idle speed adjusting screw to adjust the idle to 800 to 900 rpm.
6. By turning the idle mixture adjusting screw, adjust to the fastest obtainable idle. Then turn the idle mixture adjusting screw slowly clockwise until the engine speed drops by 20 to 30 rpm.
7. By turning the idle speed adjusting screw, reset the idle to 800 to 900 rpm.

NOTE —
If a CO tester is used to check the concentration of CO in the exhaust, follow the instrument manufacturer's instructions. With the idle speed adjusted to specifications, CO should be 3% ± 1%. If not, turn the idle mixture adjusting screw to obtain a reading in that range.

Adjusting Dual Carburetors

Before you adjust the idle, clean, re-gap, or replace the spark plugs as needed. Make certain that valve clearances, ignition dwell angle, and ignition timing are correct. Connect a dwell meter/tachometer to the ignition system so that you can measure idle speed accurately. Insert a thermometer for measuring oil temperature in place of the oil dipstick.

If you are installing a new or rebuilt left-hand carburetor, or if the regular idle adjustment procedure fails to obtain the correct results, carry out the following preparatory steps before attempting to adjust (or readjust) the idle.

NOTE —
The 0.10-mm (.004-in.) throttle valve opening, measured in the following procedure, is to be measured with the choke valve fully open. Do not confuse this dimension with the 0.60-mm or 0.70-mm (.024-in. or .028-in.) settings given in **8. Fuel System Technical Data**. The latter dimension is the fast idle setting, measured with the choke valve fully closed. See **5.4 Removing, Rebuilding, and Installing Carburetor**.

To prepare:

1. Check the throttle valve opening. With the choke valve fully open, the gap between the throttle valve and the throttle body must not exceed 0.10 mm (.004 in.). Adjust the gap (Fig. 5-11) and then secure the stop screws with plastic caps.

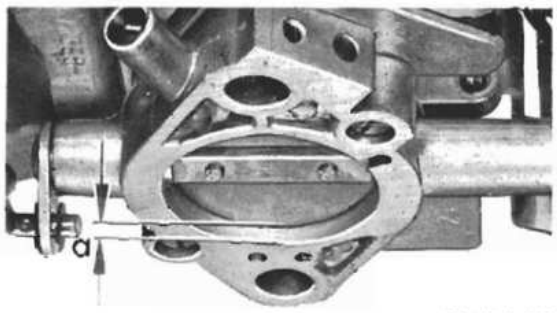


Fig. 5-11. Throttle valve closing gap (dimension **a**).

2. Install the carburetor and check synchronization. Then connect the tachometer and a CO tester.
3. Pull the right-hand carburetor's throttle valve operating rod off the ball on the throttle relay shaft. Pull the vacuum hose off the retard side of the vacuum unit on the distributor.
4. On 1973 and 1974 vehicles, pull the left hose off the exhaust afterburning air injection pump and seal the hose. Disconnect the wire from the terminal on the central idling system's electromagnetic cutoff valve (Fig. 5-12).

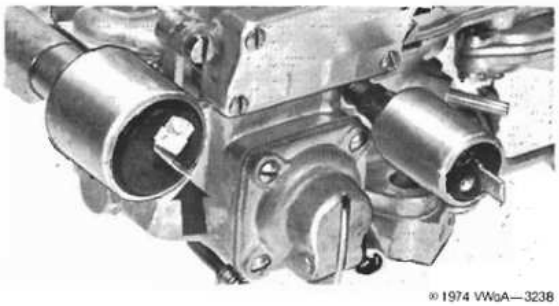


Fig. 5-12. Terminal (arrow) of the central idling system's electromagnetic cutoff valve.

5. Without using force, carefully turn in the volume control screws (Fig. 5-13) on both carburetors until the screws contact their seats. From this position, turn the screws out 2½ turns.

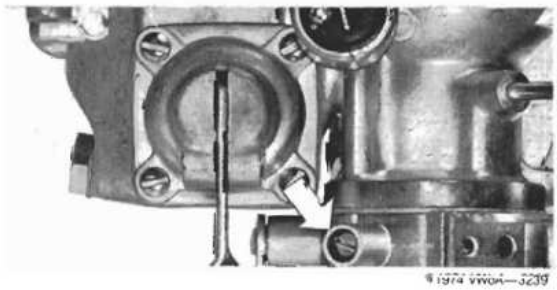


Fig. 5-13. Volume control screw (arrow) in throttle body.

6. Start the engine and set the idle at 500 to 700 rpm. By turning both volume control screws uniformly in the same direction, adjust the CO level to between 3% and 5%.
7. Disconnect the wire from the terminal on the electromagnetic idling cutoff valve on one carburetor (Fig. 5-14). Read the decrease in rpm.

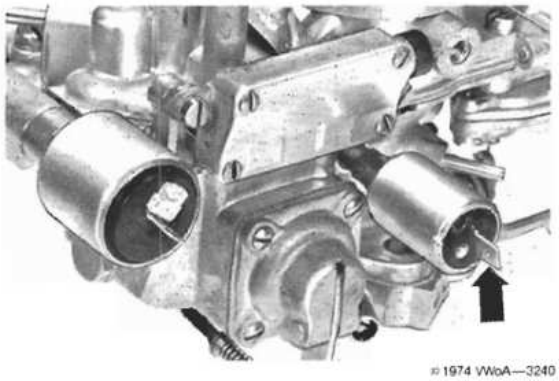


Fig. 5-14. Terminal on electromagnetic idling cutoff valve.

8. Repeat Step 7 on the other carburetor. The decrease in rpm should be the same as for the first carburetor. If it is not, turn the volume control screws in opposite directions until the decrease in rpm is the same at both carburetors with CO at between 3% and 5%.

NOTE —
The objective of your adjustments is to synchronize the mixture richness of the two carburetors. The regular synchronizing procedure is for synchronizing the throttle valve openings only.

9. Reconnect all hoses and wires. Then adjust the idle as described in the following procedure.

To adjust idle:

1. Check the synchronization of the carburetors as described in **5.2 Synchronizing Dual Carburetors**.
2. Start the engine and run it until the oil temperature reaches 50° to 70°C (122 to 158°F). Check to make sure that both automatic chokes are fully open.
3. Connect an accurate tachometer to the engine, following the instructions supplied by the instrument's manufacturer.
4. Adjust the idle speed by turning the idle speed adjusting screw (Fig. 5-15). The idle speed should be 800 to 900 rpm for vehicles with manual transmissions or 900 to 1000 rpm for vehicles with automatic transmissions.

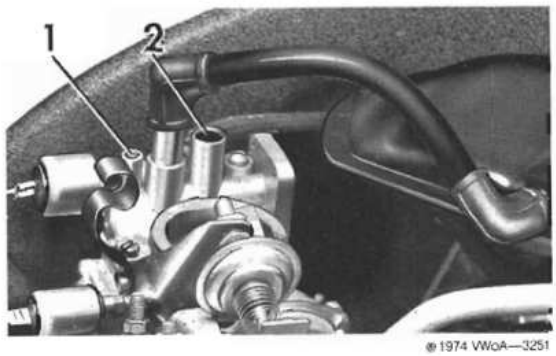


Fig. 5-15. Idle adjustments for the dual-carburetor engine's central idling system. The idle speed adjusting screw is at **2**; the idle mixture screw is at **1**.

5. If you have a CO tester, turn the idle mixture screw to obtain 3 ± 1 volume % of CO. Then perform Step 9. If you do not have a CO tester, carry out Steps 6 through 9.
6. Slowly turn in the idle mixture screw on the central idling system until the idle speed drops noticeably.
7. Gradually turn out the idle mixture screw until the fastest obtainable idle speed is reached.
8. Slowly turn in the idle mixture screw until the idle slows by 30 to 50 rpm. Then turn out the screw ¼ turn from this point.
9. By turning the idle speed adjusting screw, reset the idle to 800 to 900 rpm on vehicles with manual transmissions or to 900 to 1000 rpm on vehicles with automatic transmissions.

NOTE —
If a satisfactory idle cannot be obtained, carry out the preparatory steps given earlier, then adjust the idle again.

Adjusting Throttle Valve Positioner

(1968 through 1971 models only)

Two throttle valve positioners have been used. The 1968 and 1969 models have a one-piece positioner; the 1970 and 1971 models have a two-piece positioner. A tachometer with a range of at least 0 to 3000 rpm must be used to adjust either kind of positioner.

To adjust one-piece positioner:

1. Start the engine and run it until the oil temperature reaches 50° to 70°C (122° to 158°F). Then adjust the idle.
2. Loosen the lock screw for the adjusting screw on the altitude corrector (Fig. 5-16).

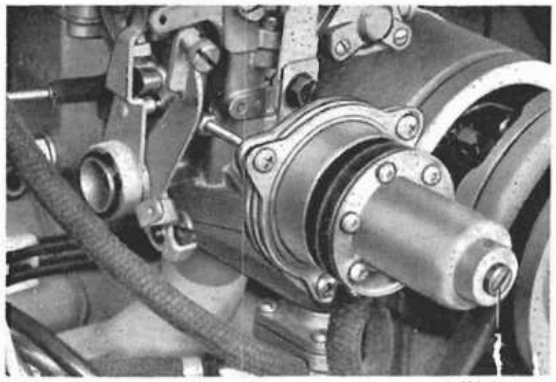


Fig. 5-16. One-piece throttle valve positioner. The adjusting screw on the altitude corrector is at **1**.

3. With the engine running, turn the adjusting screw on the altitude corrector clockwise until the stop washer on the pull rod contacts the throttle valve positioner housing. The idle speed should then be between 1700 and 1800 rpm.
4. If the idle speed is above 1800 rpm, loosen the locknuts on the pull rod. Turn the rod to lengthen it, thereby reducing the idle speed to between 1700 and 1800 rpm. Then tighten the locknuts.
5. If the idle speed is below 1700 rpm, loosen the locknuts on the pull rod. Turn the rod to shorten it, thereby increasing the idle speed to between 1700 and 1800 rpm. Then tighten the locknuts.
6. Turn the adjusting screw on the altitude corrector counterclockwise until the engine idle speed is 800 to 900 rpm.
7. Pull the throttle valve arm to the rear until the engine is running at 3000 rpm. Then release the lever. It should take from 3 to 4 seconds for the idle speed to drop to 1000 rpm.
8. If the time taken is less than 3 seconds, correct it by turning the adjusting screw on the altitude corrector clockwise. If the time taken is more than 4 seconds, correct it by turning the adjusting screw on the altitude corrector counterclockwise.
9. Tighten the lock screw for the adjusting screw on the altitude corrector.

To adjust two-piece positioner:

1. Start the engine and run it until the oil temperature reaches 50° to 70°C (122° to 158°F). Then adjust the idle.
2. Check the fast idle speed by pulling the fast idle lever back against the adjusting screw in the fast idle lever stop as shown in Fig. 5-17. The fast idle should be 1550 rpm ± 100 rpm.

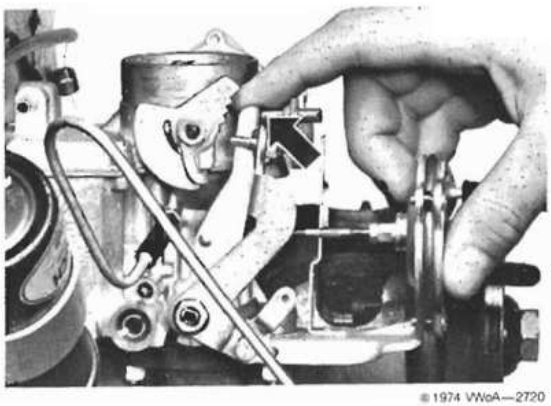


Fig. 5-17. Fast idle lever being pulled back with fingertip until it contacts adjusting screw (arrow).

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3. If the fast idle is not within specifications, turn the adjusting screw in the fast idle lever stop to bring it within the prescribed range. After a warmup drive, the fast idle should not exceed 1700 rpm.
4. Pull the throttle valve lever away from the fast idle lever until the engine is running at 3000 rpm. Then release the lever. It should take 3.5 seconds ± 1 second for the engine to return to its normal idle.
5. If the throttle valve closing time is not within specifications, loosen the lock screw for the adjusting screw on the altitude corrector. Then turn the screw on the altitude corrector (Fig. 5-18) clockwise to increase closing time or counterclockwise to decrease closing time.

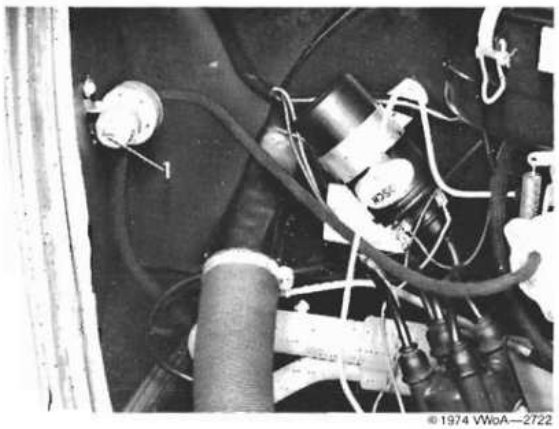

Fig. 5-18. Adjustment screw (**1**) on the altitude corrector.

After a warmup drive, the throttle valve closing time should not exceed 6 seconds. If the adjustment produces erratic results, check the condition of the hoses between the altitude corrector and the throttle valve positioner's diaphragm unit.

Adjusting Dashpot

(1971 models only)

The 1971 models are equipped with a dashpot. It is adjusted by loosening the two locknuts and repositioning the dashpot in its mounting bracket. Dimension **a** in Fig. 5-19 should be adjusted to 1.00 mm (.040 in.) with the dashpot's plunger fully in and the throttle fully closed on the warm running position of the fast idle cam.

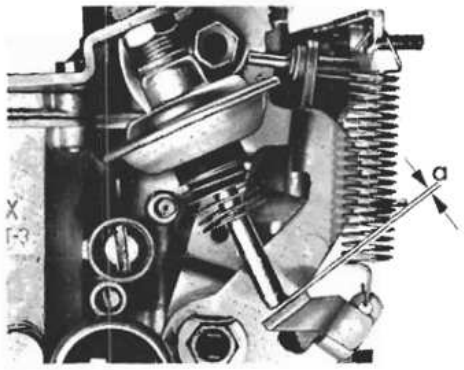

Fig. 5-19. Clearance (at dimension **a**) between the plunger and throttle valve arm with the dashpot in its closed position.

Adjusting Dashpot

(1972 through 1974 models only)

The dashpot installed on dual-carburetor engines does not normally require adjustment unless it is removed or the throttle linkage has been disassembled. The dashpot (Fig. 5-20) is adjusted by loosening the two locknuts and repositioning the dashpot in its mounting bracket. Adjust the dashpot until the clearance between its plunger and the tab on the throttle relay shaft is 0.04 mm (.0015 in.) with the dashpot's plunger held fully in.

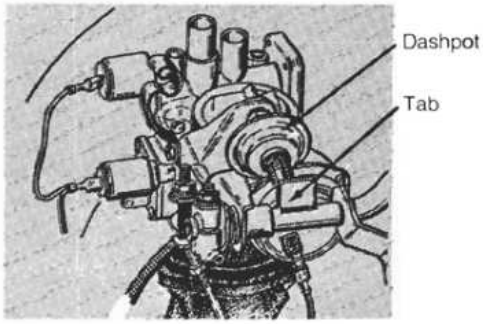

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Fig. 5-20. Dashpot mounted on left carburetor. Measure clearance between the dashpot plunger and the tab on the throttle relay shaft.

Adjusting Accelerator Pump

(single-carburetor engines)

The accelerator pump's injection quantity is adjustable. Except on 34 PICT-3 carburetors, the adjustment is made by installing the cotter pin through a different hole in the connecting link. The 34 PICT-3 carburetors have a bellcrank with an adjusting segment (Fig. 5-21).

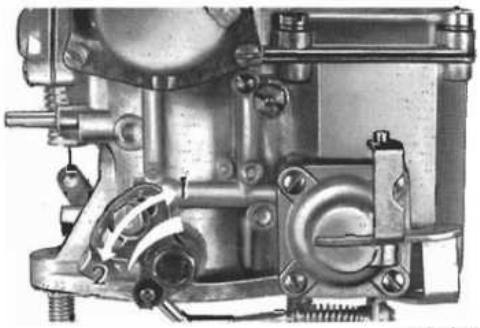

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Fig. 5-21. Injection quantity adjustment on 34 PICT-3 carburetor. Turning the segment toward **1** increases the pump output; turning the segment toward **2** decreases output.

Before you measure the injection quantity, make sure that the float bowl is filled with fuel. Then attach a length of hose or tubing to the discharge end of the accelerator pump injector so that the expelled gasoline can be caught and measured in a 25 cc glass graduate. Hold the glass graduate under the end of the tubing and operate the throttle valve rapidly exactly ten times. Divide the amount caught by ten to get the average quantity of a single injection pulse. The specified injection quantity for carburetors of a particular type and part number can be found in **8. Fuel System Technical Data**.

Except on 34 PICT-3 carburetors, move the cotter pin to the outer hole to decrease injection quantity; to the inner hole to increase injection quantity. On 34 PICT-3 carburetors, loosen the retaining screw and turn the adjusting segment clockwise to decrease injection quantity or counterclockwise to increase injection quantity. Then tighten the retaining screw to hold the adjusting segment in that position.

Check the injection quantity again after making the adjustment to see that it is within specifications. Best economy is obtained with the adjustment at the lower end of the specification range. If the injection quantity exceeds specifications, exhaust emission will be adversely affected.

Adjusting Accelerator Pump

(dual-carburetor engines)

The accelerator pump's injection quantity is adjustable. On dual carburetors, you should strive to adjust the

injection quantities of the two carburetors to as near the same amount as possible. Always check the injection quantity of a new carburetor, since the factory often adjusts it to a higher amount than is economical on the engine. You should also adjust the injection quantity after rebuilding the carburetor or when there is engine hesitation during acceleration.

On carburetors used with manual transmissions, and on carburetors used with automatic transmissions during the 1972 and early 1973 model years, the accelerator pump adjustment is made by installing the cotter pin through a different hole in the connecting link. Fig. 5-22 shows the location of the cotter pin. The cotter pins of the two carburetors should always be installed in the same hole of their respective connecting links.

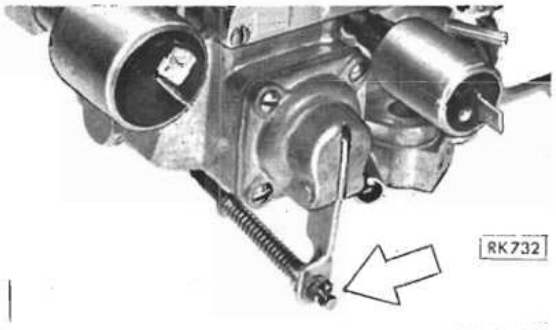


Fig. 5-22. Location of cotter pin in accelerator pump connecting link. There are three holes in the connecting link.

Beginning late in the 1973 model year, a new kind of accelerator pump adjustment was introduced on carburetors used with automatic transmissions. On these carburetors, there is an adjusting sleeve that can be turned in order to adjust the injection quantity. See Fig. 5-23.

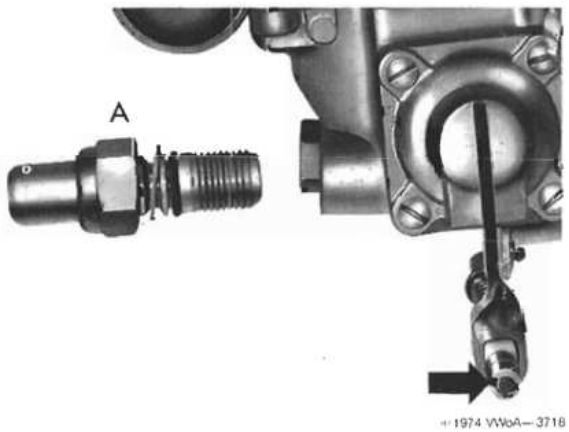


Fig. 5-23. Accelerator pump adjustment on 1974 carburetor. The thermostatic valve is at **A**. The threaded adjusting sleeve is indicated by the arrow.

On the 34 PDSIT-series carburetors installed on 1974 models with automatic transmissions, a thermostatic valve (Fig. 5-23) regulates the injection quantity of the accelerator pump. When the carburetor body temperature is below about 21°C (70°F), the accelerator pump injects approximately 1.5 cc of fuel per stroke. When the carburetor body temperature is above about 21°C (70°F), the thermostatic valve opens so that part of the fuel from the accelerator pump can flow through a relief drilling and back into the float bowl. With the thermostatic valve open, approximately 0.7 cc of fuel is injected per pump stroke.

To test the thermostatic valve, remove the carburetor upper part. Then blow into the relief drilling in the float bowl. Air should pass through the drilling at temperatures above 23°C (73°F), but not at temperatures below 19°C (66°F). You can check the carburetor temperature by inserting a thermometer into the fuel in the float bowl.

Before you measure the injection quantity, make sure that the float bowl is filled with fuel. Then attach a length of hose or tubing to the discharge end of the accelerator pump injector so that the expelled gasoline can be caught and measured in a 25 cc glass graduate. Hold the glass graduate under the end of the tubing and operate the throttle valve rapidly exactly ten times. Divide the amount caught by ten to get the average quantity of a single injection pulse.

NOTE —
When measuring the injection quantity of a carburetor that has a thermostatic valve, the carburetor body temperature must be below 19°C (66°F) so that the thermostatic valve will be closed.

The specific injection quantity for carburetors of a particular type and part number can be found in **8. Fuel System Technical Data**. Move the cotter pin to the outer hole to decrease injection quantity or to the inner hole to increase the injection quantity. If the carburetor has an adjusting sleeve, move the sleeve outward to decrease the injection quantity or inward to increase the quantity.

5.4 Removing, Rebuilding, And Installing Carburetor

If a carburetor must be replaced, it is important that the new carburetor have the same part number as the original, or that the new carburetor be the correct replacement for the car model being serviced. Always obtain replacement parts with reference to the carburetor part number and the engine number.

To remove carburetor:

1. Remove the air cleaner as described in **LUBRICATION AND MAINTENANCE.**

2. Disconnect all vacuum, air, and fuel hoses from the carburetor.

WARNING —
Disconnect the battery ground strap. Do not smoke or work near heaters or other fire hazards. Have a fire extinguisher handy.

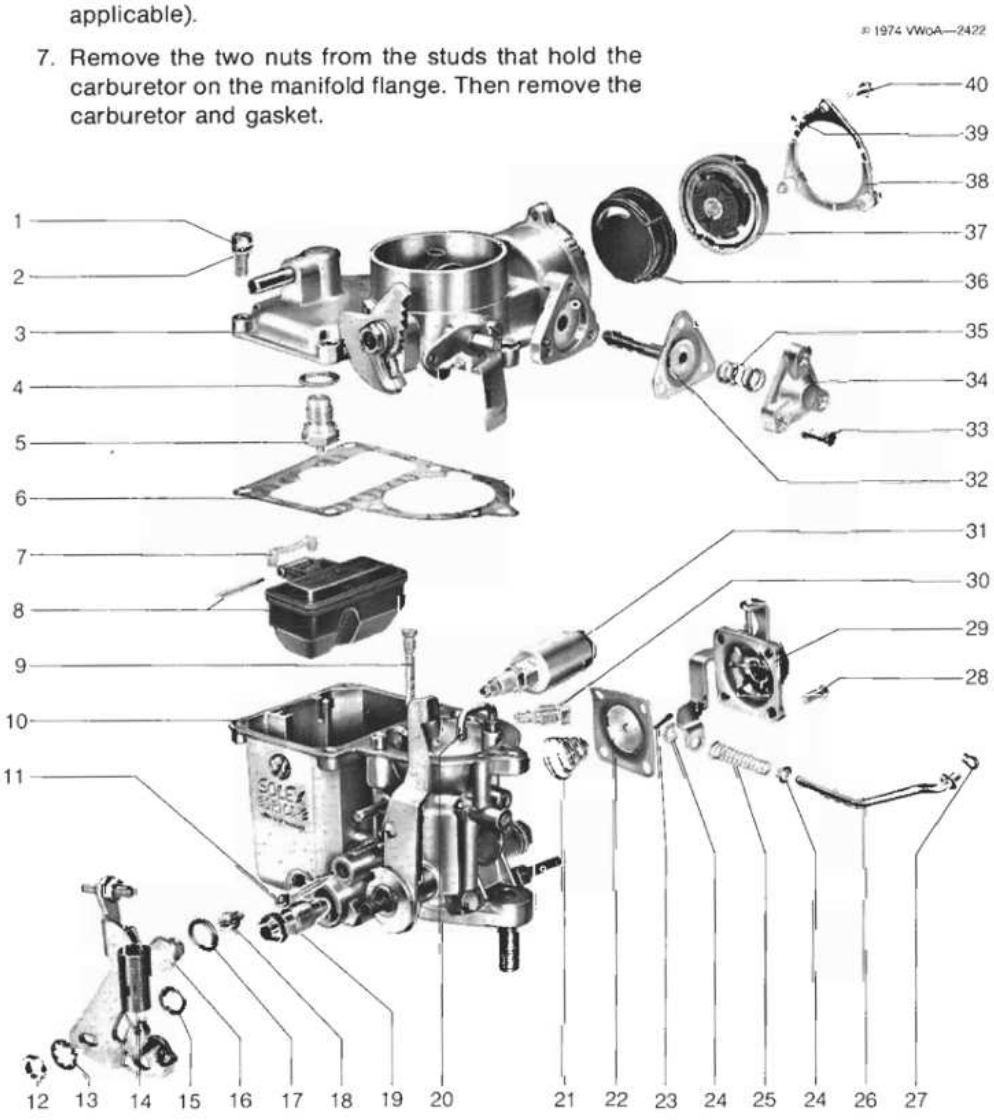
3. Disconnect the wires from the automatic choke heating element and the electromagnetic cutoff valve(s).
4. On single-carburetor engines, loosen the clamp screw in the accelerator cable pivot pin, then pull the cable out of the pin.
5. On dual-carburetor engines, pull the throttle operating rod ball sockets off the balls on the carburetor throttle arms.
6. Unhook the throttle return spring (where applicable).
7. Remove the two nuts from the studs that hold the carburetor on the manifold flange. Then remove the carburetor and gasket.

Removing and Installing Throttle Valve Positioner

On single-carburetor engines, the throttle valve positioner or the positioner's diaphragm unit will come off along with the carburetor. The pull rod should be disconnected from the carburetor's fast idle lever by prying off the retaining pin for the pull rod clevis and not by unscrewing the pull rod from the clevis or the diaphragm. Disconnecting the pull rod as described will avoid the need for adjusting the pull rod when the unit is reinstalled. If any part of the throttle valve positioner is replaced, installation should be followed by the adjustments described in **7.3 Throttle Valve Positioner** and in **5.3 Adjusting Idle.**

Disassembling and Assembling Carburetor

The 30 PICT-3 carburetor is shown disassembled in Fig. 5-24. Disassembly of the 30 PICT-2 carburetor is il-



1. Fillister head screw
2. Spring washer
3. Carburetor upper part
4. Float valve washer
5. Float valve
6. Gasket
7. Float pin retainer
8. Float with pivot pin
9. Air correction jet with emulsion tube
10. Carburetor body
11. Idle mixture adjusting screw
12. Nut
13. Lock washer
14. Throttle return spring
15. Spring washer
16. Main jet cover plug
17. Main jet cover plug seal
18. Main jet
19. Idle speed adjusting screw
20. Accelerator pump injector
21. Pump diaphragm spring
22. Pump diaphragm
23. Cotter pin
24. 1-mm (.040-in.) thick washer
25. Connecting link spring
26. Connecting link
27. Clip
28. Screw
29. Pump cover
30. Pilot jet
31. Electromagnetic cutoff valve
32. Vacuum diaphragm
33. Oval head screw
34. Vacuum diaphragm cover
35. Vacuum diaphragm spring
36. Plastic cap
37. Choke heating element
38. Cover retaining ring
39. Retaining ring spacer
40. Small fillister head screw

Fig. 5-24. 30 PICT-3 carburetor disassembled.

lustrated in Fig. 5-25; disassembly of the 34 PICT-3 carburetor is illustrated in Fig. 5-27; disassembly of the 34 PDSIT-2/3 carburetor is illustrated in Fig. 5-26.

As can be seen by comparing Fig. 5-24 through Fig. 5-27, the parts of the various carburetors are quite similar. Jet sizes and other specifications for the different units can be determined from the Table **I** in **8. Fuel System Technical Data**. The following basic disassembly sequence applies to all carburetors:

1. Remove the carburetor upper part from the carburetor body.
2. Remove the various jets and adjustment screws from the carburetor body and remove the float valve from the carburetor upper part.
3. Disassemble the accelerator pump and linkage.
4. On the 34 PDSIT-2/3 only, remove the throttle body from the carburetor body.
5. Disassemble the throttle valve shaft assembly.
6. Disassemble the automatic choke assembly.
7. On the 34 PDSIT-2 only, disassemble the central idling system.

1. Fillister head screw
2. Spring washer
3. Carburetor upper part
4. Float valve washer
5. Float valve
6. Gasket
7. Float pin retainer
8. Float with pivot pin
9. Air correction jet with emulsion tube
10. Carburetor body
11. Main jet
12. Main jet cover plug seal
13. Main jet cover plug
14. Throttle return spring
15. Volume control screw
16. Spring
17. Accelerator pump injector
18. Pump diaphragm spring
19. Pump diaphragm
20. Cotter pin
21. 1-mm (.040-in.) thick washer
22. Connecting link
23. Clip
24. Connecting link spring
25. Pump cover
26. Screw
27. Electromagnetic cutoff valve
28. Vacuum diaphragm spring
29. Oval head screw
30. Vacuum diaphragm cover
31. Vacuum diaphragm
32. Plastic cap
33. Choke heating element
34. Retaining ring spacer
35. Cover retaining ring
36. Small fillister head screw

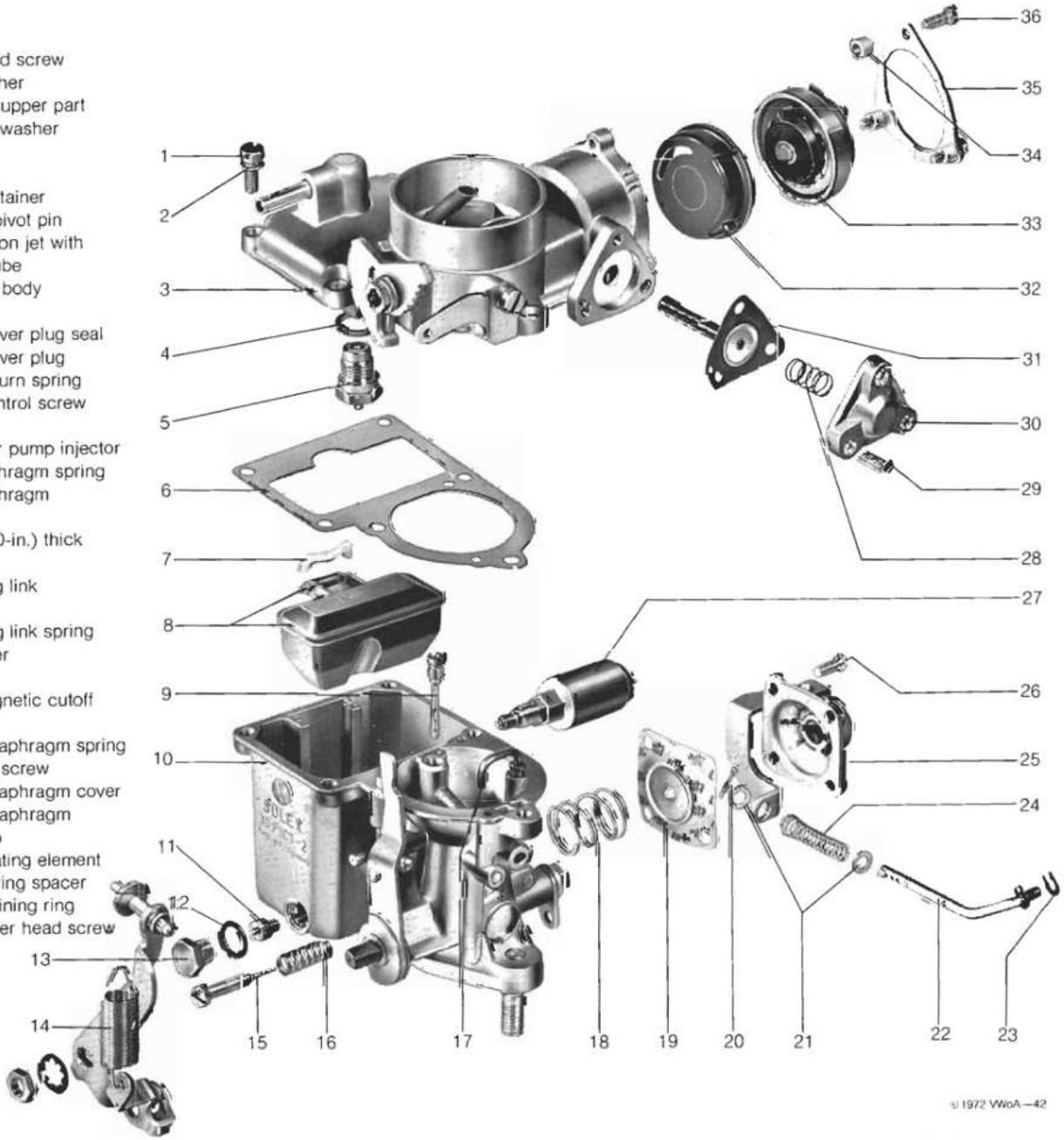
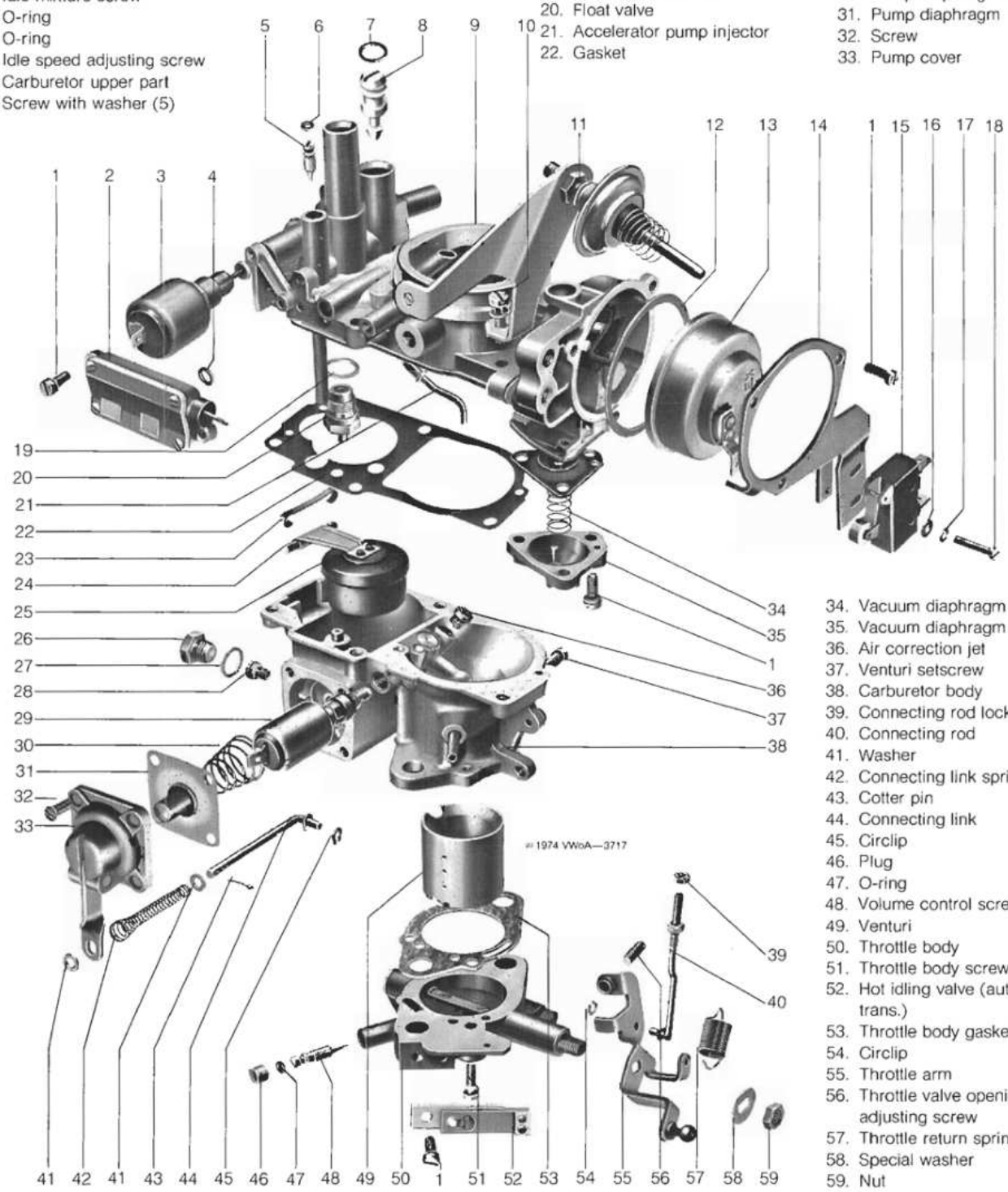


Fig. 5-25. 30 PICT-2 carburetor disassembled.

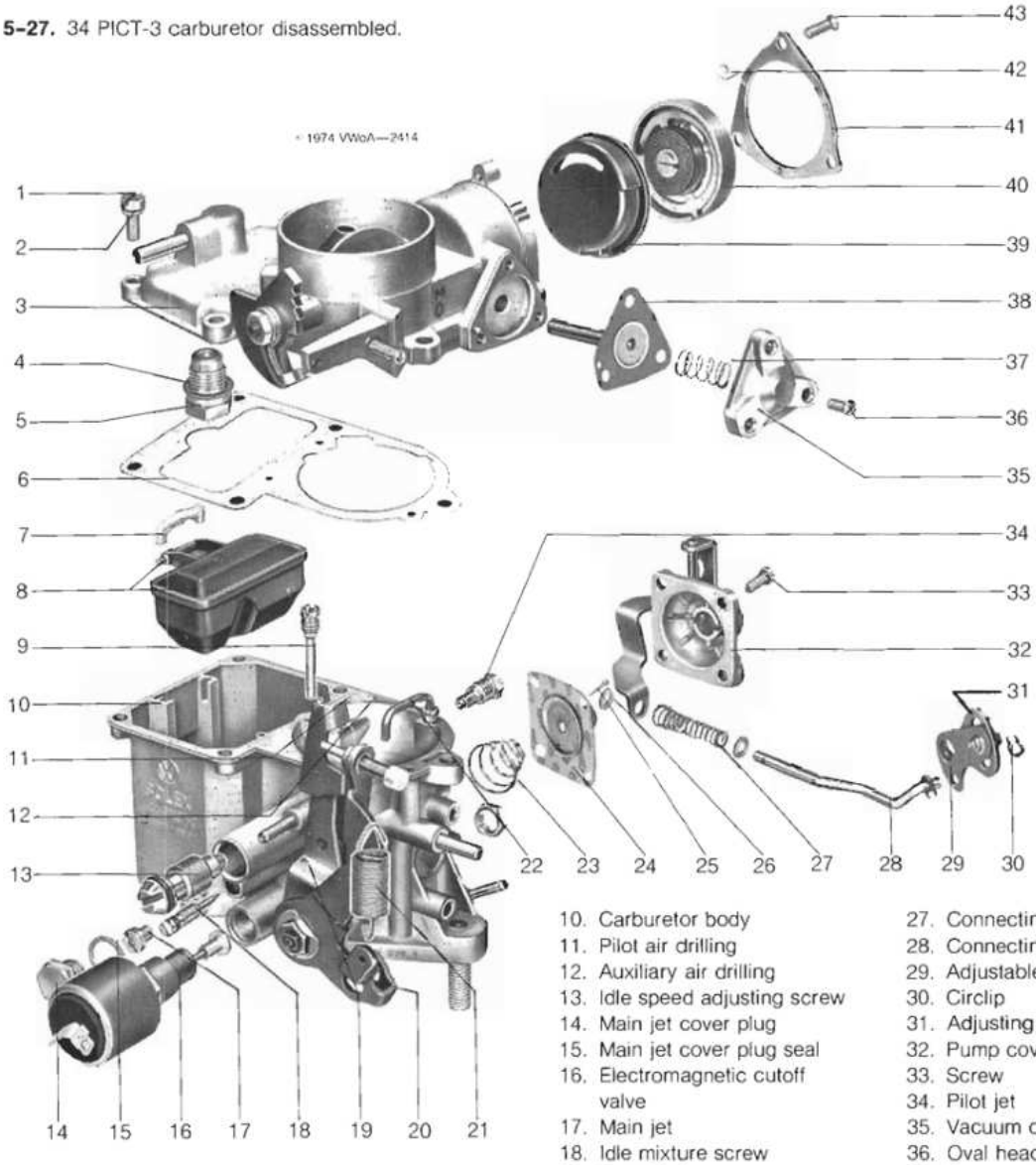
Fig. 5-26. 34 PDSIT-2/3 carburetor disassembled.

1. Screw with spring washer (6)
2. Idle mixture enrichment
3. Central idling system electromagnetic cutoff valve
4. O-ring
5. Idle mixture screw
6. O-ring
7. O-ring
8. Idle speed adjusting screw
9. Carburetor upper part
10. Screw with washer (5)
11. Dashpot with bracket
12. Gasket for choke heating element
13. Choke heating element
14. Cover retaining ring
15. Throttle shaft switch (auto. trans. 34 PDSIT-3)
16. Washer (auto. trans. 34 PDSIT-3)
17. Spring ring (auto. trans. 34 PDSIT-3)
18. Screw (auto. trans. 34 PDSIT-3)
19. Float valve washer
20. Float valve
21. Accelerator pump injector
22. Gasket
23. Float pin retainer
24. Float pin
25. Float
26. Main jet cover plug
27. Main jet cover plug seal
28. Main jet
29. Electromagnetic idling cutoff valve
30. Pump diaphragm spring
31. Pump diaphragm
32. Screw
33. Pump cover



34. Vacuum diaphragm spring
35. Vacuum diaphragm cover
36. Air correction jet
37. Venturi setscrew
38. Carburetor body
39. Connecting rod locknut
40. Connecting rod
41. Washer
42. Connecting link spring
43. Cotter pin
44. Connecting link
45. Circlip
46. Plug
47. O-ring
48. Volume control screw
49. Venturi
50. Throttle body
51. Throttle body screw (2)
52. Hot idling valve (auto. trans.)
53. Throttle body gasket
54. Circlip
55. Throttle arm
56. Throttle valve opening adjusting screw
57. Throttle return spring
58. Special washer
59. Nut

Fig. 5-27. 34 PICT-3 carburetor disassembled.



1. Fillister head screw
2. Spring washer
3. Carburetor upper part
4. Float valve washer
5. Float valve
6. Gasket
7. Float pin retainer
8. Float with pivot pin
9. Air correction jet with emulsion tube
10. Carburetor body
11. Pilot air drilling
12. Auxiliary air drilling
13. Idle speed adjusting screw
14. Main jet cover plug
15. Main jet cover plug seal
16. Electromagnetic cutoff valve
17. Main jet
18. Idle mixture screw
19. Fast idle lever
20. Throttle valve lever
21. Throttle return spring
22. Accelerator pump injector
23. Pump diaphragm spring
24. Pump diaphragm
25. Cotter pin
26. 1-mm (.040-in.) thick washer
27. Connecting rod spring
28. Connecting link
29. Adjustable bellcrank
30. Circlip
31. Adjusting segment
32. Pump cover
33. Screw
34. Pilot jet
35. Vacuum diaphragm cover
36. Oval head screw
37. Vacuum diaphragm spring
38. Vacuum diaphragm
39. Plastic cap
40. Choke heating element
41. Cover retaining ring
42. Retaining ring spacer
43. Small fillister head screw

Assembly is the reverse of disassembly. Obtain a rebuilding kit and install the components it contains. With the exception of the choke heating element, the pump diaphragm, the float, and the vacuum diaphragm, wash all old parts in lacquer thinner, acetone, or a commercial carburetor cleaner.

WARNING —
Do not smoke or work near heaters or other fire hazards. The cleaning agents are highly flammable.

CAUTION —
If you lack the skills, tools, or a suitable workshop for rebuilding the carburetor, we suggest you leave such repairs to an Authorized VW Dealer or other qualified shop. We especially urge you to consult your Authorized VW Dealer before attempting repairs on a car still covered by the new-car warranty.

3

Blow out all jets, valves, and drillings with compressed air. Do not clean them with pins or pieces of wire, which could upset their precise calibration. Install the choke heating element with its mark in line with the middle mark on the housing (Fig. 5-28).

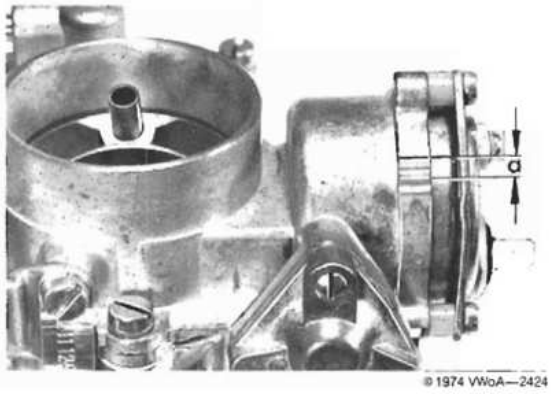


Fig. 5-28. Distance **a** from upper to middle mark. Some 1970 carburetors have the element's mark at the upper housing mark, as shown, rather than at the middle mark. Check before disassembly.

The body joint gasket for PICT carburetors must be the correct one. Those for the 30 PICT-2 are marked with brown stripes; those for the 30 PICT-3 are marked with yellow stripes; those for the 34 PICT-3 are marked with black stripes. The location of these stripes is shown in Fig. 5-29.

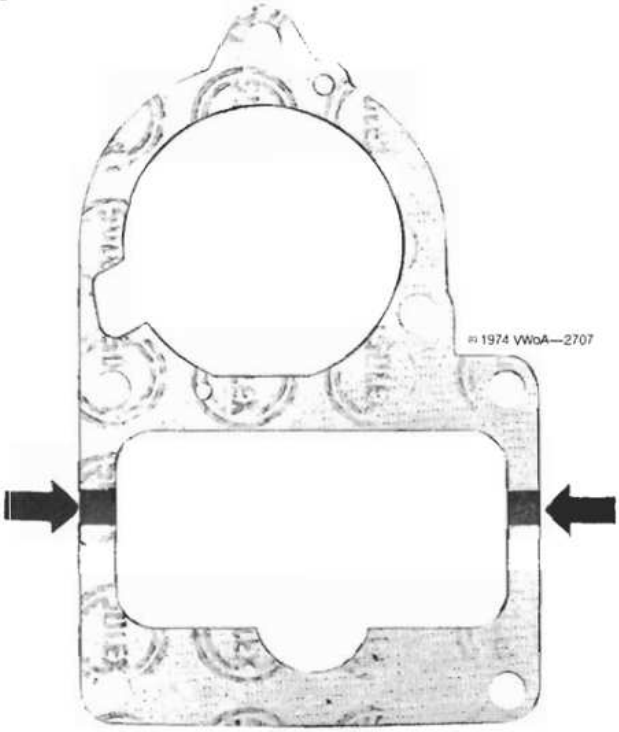


Fig. 5-29. PICT carburetor gasket identification stripes.

When assembling the accelerator pump linkage on a 30 PICT-2, 30 PICT-3, or 34 PDSIT-2/3 carburetor, install the cotter pin in its original hole in the connecting link. On carburetors of all types, the opposite end of the connecting link should have at least 0.30 to 0.50 mm (.012 to .020 in.) of axial play in the bellcrank.

Check the float valve for binding and leakage. It should not be possible to blow air through the valve while the needle is pressed lightly onto its seat. To check it for leaks, immerse the float in hot water. If bubbles appear, replace the float. Also make certain that an 8.5-gram float (PICT carburetors) or a 7.0-gram float (PDSIT carburetors) is installed and that the washer used under the float valve is the correct thickness. Select the washer as described in the procedure that follows.

On 34 PDSIT-2/3 carburetors only, you must adjust the throttle valve's fast idle opening after you have installed the carburetor upper part on the carburetor body. This opening measurement, made with the choke valve fully closed, should not be confused with the throttle valve gap which is measured with the choke valve fully open. See **5.3 Adjusting Idle**.

To adjust the throttle valve's fast idle opening, hold the choke valve fully closed. Then adjust the positions of the two nuts on the connecting rod until the throttle valve just permits a rod-type feeler gauge to be inserted as shown in Fig. 5-30. Use an 0.60-mm (.024-in.) feeler for 1972 and 1973 models; use an 0.70-mm (.028-in.) gauge for 1974 models. Tighten the nuts against the choke linkage pivot. Then recheck the throttle valve opening measurement with the choke valve fully closed.

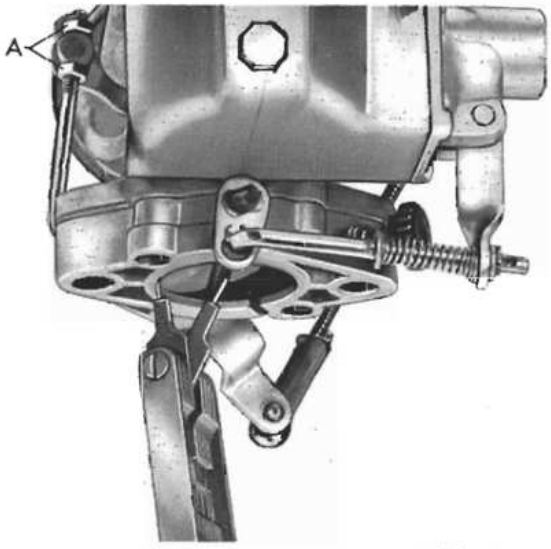


Fig. 5-30. Throttle valve fast idle opening being adjusted. Feeler gauge is inserted between throttle valve and throttle body. Connecting rod adjusting nuts are at **A**.

If you have disassembled the throttle body, or if you have disturbed the adjustment of the throttle valve stop screw, adjust the throttle valve opening with the choke valve open as described in **5.3 Adjusting Idle**.

Adjusting Fuel Level in Float Bowl

Either the carburetor must be level (carburetor removed), or the car positioned on a level surface (carburetor installed). If the carburetor is installed, idle the engine briefly to ensure that the float bowl is full; if the carburetor is not installed, fill the float bowl using a piece of hose attached to the fuel inlet pipe. Then remove the carburetor upper part and the gasket so that the fuel level can be measured as shown in Fig. 5-31.

WARNING
Disconnect the battery ground strap. Do not smoke or work near heaters or other fire hazards. Have a fire extinguisher handy.

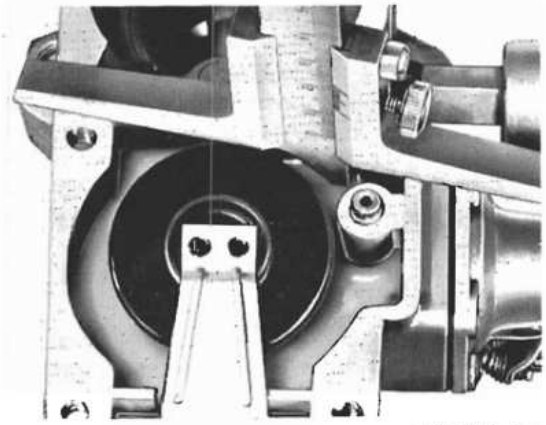


Fig. 5-31. Fuel level being measured using a depth gauge. Gauge bridge contacts the carburetor body. Slide tip just touches fuel.

The distance from the top of the carburetor to the surface of the fuel should be 19.5 to 20.5 mm (.767 to .807 in.) for 1968 through 1970 vehicles; 17.0 to 19.0 mm (.667 to .748 in.) for 1971 models; and 12 to 14 mm (.470 to .550 in.) for dual-carburetor models. If the fuel level is too high, use a thicker washer under the float valve; if it is too low, use a thinner washer. Washers are available in thicknesses of 0.50 mm (.020 in.), 0.80 mm (.031 in.), 1.00 mm (.040 in.), and 1.50 mm (.060 in.).

Checking Electromagnetic Cutoff Valve

The electromagnetic cutoff valve can be checked while it is installed. Turn on the ignition without starting the engine, then remove the wire from the terminal on the electromagnetic cutoff valve. Touch the wire to the terminal several times. The valve should make a clicking sound each time contact is made.

The same test can be carried out with the electromagnetic cutoff valve removed from the car. Connect negative battery current to the valve's outer casing, and apply positive battery current to the terminal. On 34 PICT-3 and 34 PDSIT-2/3 carburetors, you must apply slight finger pressure to the electromagnetic cutoff valve before the plunger will retract into the solenoid.

Carburetor Installation

Lightly lubricate the choke valve shaft and throttle valve shaft with engine oil and the external linkage with molybdenum grease. Using a new gasket, install the carburetor on the intake manifold, then torque the nuts to 2.0 mkg (14 ft. lb.). Secure the fuel hose with a new hose clamp. If new parts have been installed on the throttle positioner's operating diaphragm unit (where fitted), adjust the pull rod as described in **7.3 Throttle Valve Positioner.**

Have someone hold the accelerator pedal to the floor while you connect the accelerator cable. On single-carburetor engines, install the cable end so that gap **a** indicated in Fig. 5-32 is 1.00 mm (.040 in.). Then adjust the carburetor as described in **5.3 Adjusting Idle**. Use the same procedure for dual-carbureator engines, but adjust the gap to 1.00 to 1.50 mm (.040 to .060 in.).

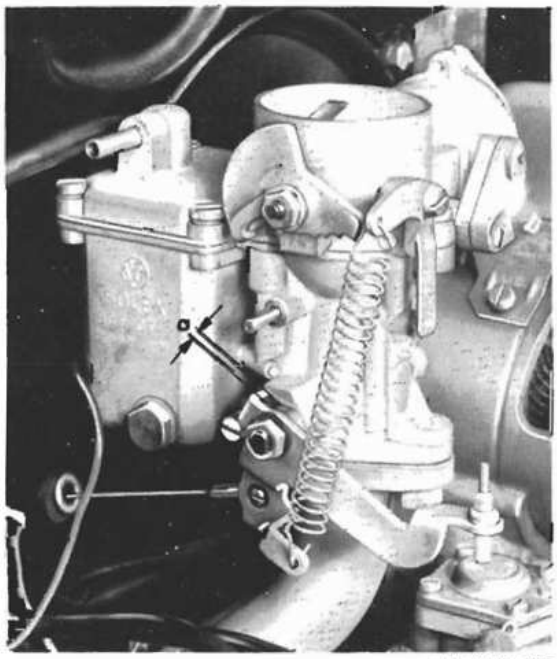


Fig. 5-32. Full-throttle clearance between throttle valve lever and stop on carburetor body.

6. AIR CLEANER

Four different air cleaners have been installed on the carburetor-engined vehicles covered by this Manual. The intake air preheating flap on 1968 through 1970 models is regulated by a cable linked to the engine's cooling air system thermostat. On 1971 models, the flap is controlled by a separate thermostat built into the air cleaner. As on the earlier models, the 1972 models have an oil bath air cleaner. However, the air cleaner on 1972 models has a different design suited to the dual-carburetor engine. 1973 and 1974 models have a dry-type air cleaner with a pleated paper filter. On the air cleaners used on dual-carburetor engines, the intake air preheating flap is regulated by a thermostatically controlled vacuum unit, making the intake air preheating system responsive to both temperature and engine load.

The 1969 through 1971 models also have a weighted control flap on the air cleaner. It is important that you check the weighted arm for free movement after you have installed the air cleaner. If the arm is blocked by a carelessly installed hose, oil may be drawn from the crankcase into the air cleaner. Removing, installing, and servicing the air cleaner are described in **LUBRICATION AND MAINTENANCE.**

Checking and Adjusting 1970 Intake Air Preheating System

Adjust the cable after the air cleaner has been installed and before the carburetor is adjusted when performing a tune-up.

To install and adjust:

1. Push the cable housing as far as it will go into the retainer on the air cleaner intake. Then tighten the clamp screw in the retainer.
2. Place the cable eye over the cranked end on the flap shaft, then secure it with the steel clip.
3. With the engine cold, check to see that the coil spring portion of the cable is slightly compressed and that the flap is completely closed. If they are not, replace the cable. See Fig. 6-1.

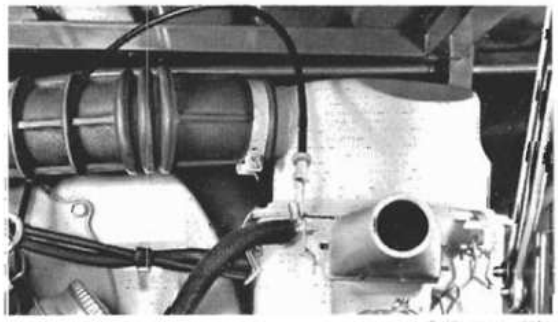


Fig. 6-1. Cable correctly installed on air cleaner.

Checking and Adjusting 1971 Intake Air Preheating System

The thermostat location on the air cleaner's intake tube is shown in Fig. 6-2.

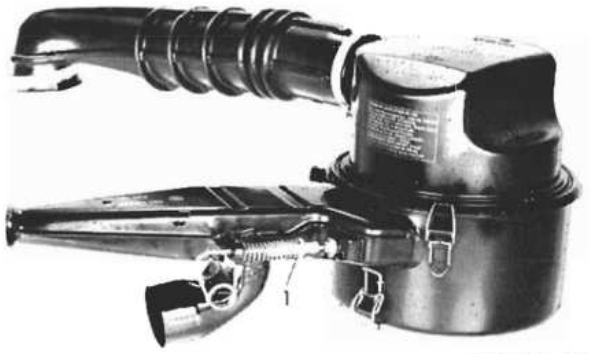


Fig. 6-2. The 1971 air cleaner. Thermostat is located at **1.**

To check the thermostat, temporarily remove the activated charcoal filter hose from the air cleaner and install a thermometer and rubber stopper in its place. The intake air preheating flap should open between 27.5° and 32.5°C (81.5° and 90.5°F). Minor adjustments can be made by bending the looped portion of the preheating flap arm.

Checking and Adjusting 1972 and Later Intake Air Preheating System

The main parts of the temperature- and load-sensitive intake air preheating system are shown in Fig. 6-3.

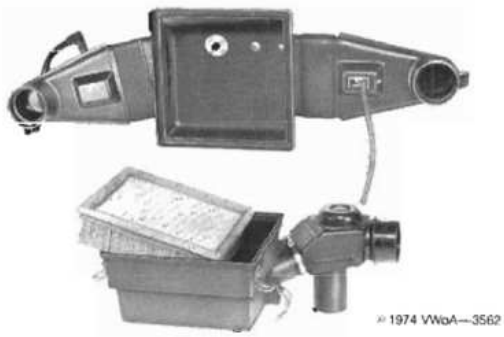


Fig. 6-3. Air cleaner with thermostatically controlled vacuum-operated flap. The thermostatic vacuum valve is located in the upper part. The valve is the part with the hose attached to it in the illustration. The diaphragm-type vacuum unit that moves the flap is in the intake of the air cleaner lower part.

The thermostatic vacuum valve installed after December 1972 is different from that introduced on early 1972 models. It can be identified by a brass hose connection for the vacuum unit. On the early valve, both connections are black plastic. The later valve keeps the flap closed to cool air regardless of engine load during the warm-up period. The early valve allows the flap to admit cool air under heavy engine loads. If the thermostatic valve or vacuum unit is defective, it should be replaced.

7. CHECKING, REPAIRING, AND ADJUSTING EMISSION CONTROLS

The VW engine will not run properly unless the emission controls are kept in proper working order. Be especially careful not to mix up the emission control hoses when you install them. Doing so will adversely affect both performance and fuel economy.

Although all models covered are equipped with an efficient positive crankcase ventilation (PCV) system, it should be noted by those who are not familiar with the VW engine that the system does not include a PCV valve—a fixture that is common on other makes.

7.1 Evaporative Emission Control

The activated charcoal filter canister must be replaced after 30,000 mi. (48,000 km) of service. It is located in the engine compartment as shown in Fig. 7-1.

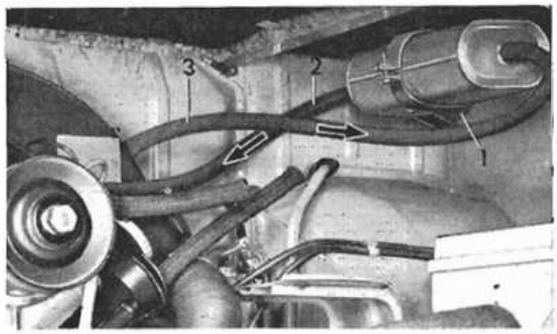


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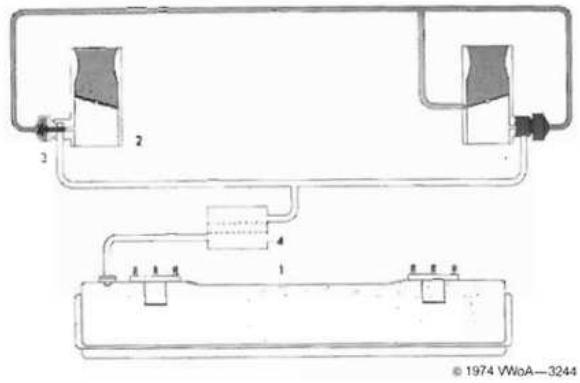
Fig. 7-1. Activated charcoal filter canister (**1**). Air from the fan enters the canister through hose **3**. Hose **2** conducts fuel vapors to the air cleaner. (The air cleaner has been removed for clarity.)

To replace the canister, remove the hoses that are connected to it, then take out the Phillips head screw in the canister mounting bracket. Note the hose installation positions so that the hoses can be installed in their correct positions on the new canister.

7.2 Exhaust Gas Recirculation

Fig. 7-2 is a drawing of the exhaust gas recirculation (EGR) system as installed in 1973 and later models with manual transmissions. The EGR system as installed on 1973 and later models with automatic transmissions is shown in Fig. 7-3. The EGR system of 1975 and later models is covered in **FUEL INJECTION**.



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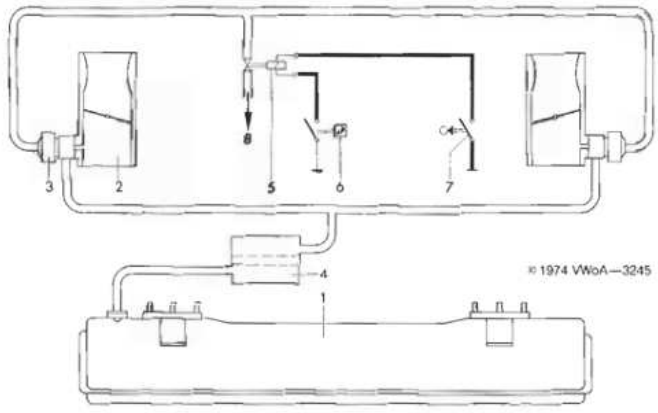
1. Muffler
2. Carburetor and intake manifold (2)
3. Exhaust gas recirculation valve (2)
4. Element type filter

Fig. 7-2. Exhaust gas recirculation system as used on vehicles with manual transmissions. 1974 models have one central EGR valve instead of two separate valves.



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1. Muffler
2. Carburetor and intake manifold (2)
3. Exhaust gas recirculation valve (2)
4. Element type filter
5. Solenoid-operated vacuum valve
6. Temperature-controlled switch
7. Off/on switch on throttle valve shaft
8. Vacuum hose connected to the vacuum powered brake servo system.

Fig. 7-3. Exhaust gas recirculation system as used on vehicles with automatic transmissions. 1974 models have one central EGR valve instead of two separate valves.

3

Exhaust gas is drawn from the muffler into a filter that cools the gas and removes particulates. The introduction of exhaust gas into the intake manifolds is controlled by vacuum operated exhaust gas recirculation valves and, on vehicles with automatic transmissions, by a valve controlled by temperature and throttle valve position.

On early 1973 vehicles with automatic transmissions, the temperature-controlled switch permits exhaust gas circulation only when the engine compartment air temperature exceeds 12°C (54°F). On late 1973 and all 1974 vehicles with automatic transmissions, the switch permits exhaust gas recirculation any time the engine cooling air temperature exceeds 85°C (185°F). The early 1973 temperature-controlled switch is located above the battery. On late 1973 and all 1974 vehicles, the switch is on the engine, between the coil and the distributor. It is operated by a tab on the cooling air control flap shaft.

Checking and Adjusting Throttle Valve Switch

(automatic transmission only)

The off/on switch is mounted on the automatic choke cover retaining ring as shown in Fig. 7-4. The switch should go on when the throttle valve has opened 10° and should remain on until 10° before the throttle valve is fully opened. If not, loosen the screws and move the switch on the elongated mounting bracket holes until the operating range is correct. Use a protractor to check the angle of the throttle valve shaft.

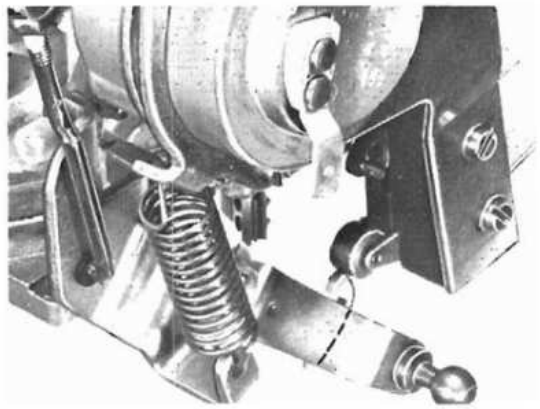

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Fig. 7-4. Throttle valve switch. A cam on the throttle valve shaft arm contacts a roller on the switch.

Checking and Adjusting Temperature Switch

(automatic transmission only)

The temperature switch used on early 1973 models has no adjustment. The switch on late 1973 and 1974 models has a tab that is operated by the cooling air control flap shaft. To check the switch, insert a 1.00-mm (.040-in.) feeler gauge between the switch tab and the flap shaft.

To check the switch, make sure that the cooling air flaps are closed. You should hear the switch click when you insert a 1.00-mm (.040-in.) feeler gauge between the switch tab and the flap shaft. If not, adjust the switch mounting bracket on its elongated screw hole until the switch operates correctly.

Checking Exhaust Gas Recirculation Valve

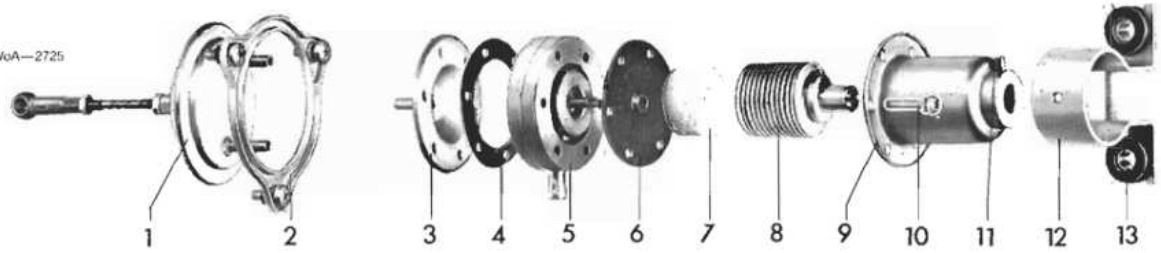
To check the 1973 exhaust gas recirculation valves, remove them from the intake manifolds and make sure that they are clean. Hand-press the valve pin to make sure that it moves freely. Then connect the valve to a vacuum hose on an engine other than that of the vehicle you are servicing. Start the engine. At 1500 to 2000 rpm the valve pin should pull in and then return to its original position when you slow down the engine. To check the 1974 valve, simply run the engine and observe whether the visible pin moves in and out proportional to rpm.

7.3 Throttle Valve Positioner

Individual parts for the throttle valve positioner can be replaced on cars equipped with this emission control device. Fig. 7-5 is an exploded view that shows the components of the unit. The gasket should be replaced whenever the altitude corrector is reassembled.

Fig. 7-5. Exploded view of the two-piece throttle valve positioner. Parts **3** through **11** are the same as on the earlier one-piece positioner.

1. Diaphragm unit
2. Diaphragm unit retaining ring
3. Control part cover
4. Gasket
5. Control part
6. Control diaphragm
7. Plastic foam filter
8. Altitude corrector bellows
9. Altitude corrector housing
10. Phillips screw (6)
11. Setscrew
12. Mounting clamp
13. Rubber mounting



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When a new diaphragm unit is installed, you must adjust the pull rod length after the diaphragm unit has been installed on the carburetor. To adjust, loosen the locknuts at each end of the pull rod. One end of the pull rod has right-hand threads; the other end has left-hand threads. Its effective length can be adjusted by turning the rod in one direction or the other. Adjust its length until the fast idle lever does not touch either the carburetor body or the throttle valve lever when the throttle valve is closed (Fig. 7-6).

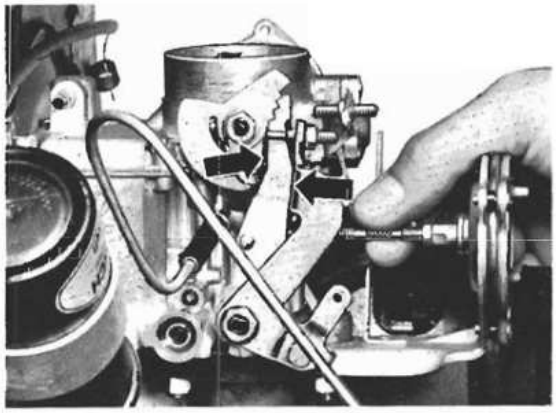

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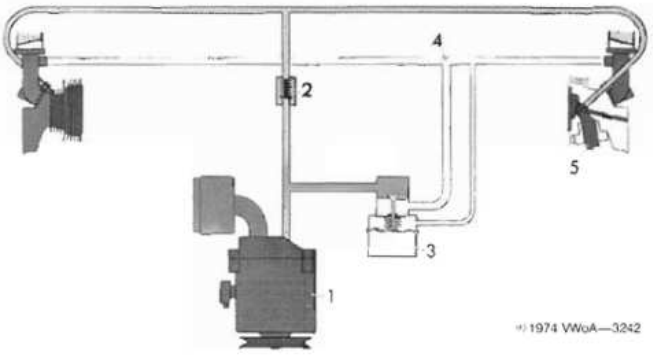
Fig. 7-6. Turning pull rod to adjust its effective length. Large arrows indicate space between fast idle lever and carburetor body and between fast idle lever and throttle valve lever.

After the pull rod length has been adjusted, tighten the two locknuts to hold the pull rod in place. The throttle valve positioner should then be adjusted with the engine running as described in **5.3 Adjusting Idle**. However, it is usually best to perform a tune-up before carrying out fine throttle valve positioner adjustments.

7.4 Exhaust Afterburning

The 1973 and 1974 models are equipped with an air injection exhaust afterburning system. A schematic view of this system is given in Fig. 7-7.



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1. Air pump
2. Check valve
3. Anti-backfire idle mixture valve
4. Vacuum connection to central idling system
5. Exhaust port in cylinder head

Fig. 7-7. Components of exhaust afterburning system.

Replacement parts are not supplied for the air pump. Defective pumps must be replaced. The pump's filter element should be replaced every 18,000 mi. (30,000 km) as described in **LUBRICATION AND MAINTENANCE**. Belt adjustment is also covered there.

If the engine backfires—especially during deceleration—check for leakage in the exhaust system, insufficient valve clearance, and incorrect ignition timing. If these faults are not present, check for leakage in the hoses attached to the anti-backfire idle mixture valve. The valve itself is seldom faulty. However, if no other cause for the backfiring can be found, check to see that the valve diaphragm is not leaking. Faulty valves must be replaced.

8. FUEL SYSTEM TECHNICAL DATA

I. Fuel Pump

Model year	Engine code letter	Part No.	Minimum delivery capacity	Maximum delivery pressure
1968 through 1970	B	211 127 025	400 cc/min. @ 3800 rpm	3.5 psi (0.25 kg/cm²)
1971	AE	113 127 025 C (D)	400 cc/min. @ 4000 rpm	3-5 psi (0.20-0.35 kg/cm²)
1972 and later	CB, CD, AW	021 127 025 A	400 cc/min. @ 3800 rpm	5 psi (0.35 kg/cm²)

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II. Carburetor Settings and Jets

Model year	1968–1969	1970	1971	1972	
Carburetor type	30 PICT-2	30 PICT-3	34 PICT-3	left side: 34 PDSIT-2	right side: 34 PDSIT-3
Part No.	113 129 027 H	211 129 029 Q	211 129 031 G	021 129 027 L	021 129 028 L
From engine No.	B 5 000 001	B 5 116 437	AE 000 001	CB 000 001	
Venturi (dia.)	24 mm	24 mm	26 mm	26 mm	
Main jet	X116	X112.5	X125	X137.5	
Air correction jet	125Z	140Z	60Z	155	
Pilot jet	55	g 65	g 57.5	55	
Pilot jet air bleed	135	135	147.5	145	
Auxiliary fuel jet	—	45	42.5	45	—
Auxiliary air jet	—	130	90	0.7	—
Power fuel jet	60	100/100	95/95	—	
Float needle valve (dia.)	1.5 mm	1.5 mm	1.5 mm	1.2 mm	
Washer under float needle valve (thickness)	1.5 mm	1.5 mm	0.5 mm	0.5 mm	
Fuel level	19.5–20.5 mm	19.5–20.5 mm	17–19 mm	12–14 mm	
Float weight	8.5 g	8.5 g	8.5 g	7.0 g	
Pump injection quantity	1.3–1.6 cc/ stroke	1.05–1.35 cc/ stroke	1.45 ± 0.1 cc/ stroke	0.8–1.0 cc/ stroke	
Throttle valve gap	—	—	—	0.6 mm (choke closed)	
Gasket for carb. upper part	brown	yellow	black	—	

Model year	1973 (Manual transmission)		1973 (Automatic transmission)		1974	
Carburetor type	left side: 34 PDSIT-2	right side: 34 PDSIT-3	left side: 34 PDSIT-2	right side: 34 PDSIT-3	left side: 34 PDSIT-2	right side: 34 PDSIT-3
Part No.	021 129 027 P	021 129 028 P	021 129 027 M	021 129 028 M	021 129 031 N/P/Q*	021 129 032 N/P/Q*
From engine No.	CB 062 001		CD 000 001		AW 000 001	
Venturi (dia.)	26 mm		26 mm		26 mm	
Main jet	X130		X132.5		X130	
Air correction jet	140		155		175	
Pilot jet	55		50		52.5	
Pilot jet air bleed	140		130		120	
Auxiliary fuel jet	45	—	45	—	45	—
Auxiliary air jet	0.7	—	0.7	—	0.7	—
Power fuel jet	—		—		—	
Float needle valve (dia.)	1.2 mm		1.2 mm		1.2 mm	
Washer under float needle valve (thickness)	1.0 mm		1.0 mm		1.0 mm	
Fuel level	12–14 mm		12–14 mm		12–14 mm	
Float weight	7.0 g		7.0 g		7.0 g	
pump injection quantity	0.7 ± 0.1 cc/stroke		0.7 ± 0.5 cc/stroke		0.55–0.85/1.3–1.7 cc/stroke	
Throttle valve gap	0.6 mm (choke closed)		0.6 mm (choke closed)		0.7 mm (choke closed)	
Gasket for carb. upper part	—		—		—	

***N = manual trans. (exc. Calif.), Q = manual trans. (Calif.), P = auto. trans.**