SPECIFICATIONS

CARBURETTOR

Type ..... Twin barrel, downdraught
Choke control ..... Automatic, electric
Idle control ..... Electrical solenoid
Float level ..... *5.0-6.0 mm

NOTE: See Engine Tune-up section for engine idle speed Specifications.

* Measured between the float flat surface and the top cover with the gasket removed.

FUEL PUMP

Type ..... Mechanical, disposable

FUEL FILTER

Type ..... In line, disposable

AIR CLEANER

Type ..... Dry, paper element

1. FUEL SYSTEM TROUBLE SHOOTING

ENGINE WILL NOT START

(1) Fuel tank empty: Replenish the fuel in the fuel tank.

(2) Lack of fuel in the float chamber: Blocked fuel filter or fuel lines, clean fuel system.

(3) Inoperative fuel pump: Check and renew as necessary.

(4) Engine flooded with fuel when cold, by excessive use of accelerator: Hold accelerator flat until engine starts and revise starting procedure.

(5) Engine flooded when hot by excessive use of accelerator: Hold accelerator flat until engine starts, also check that the choke is fully open.

(6) Engine flooded by faulty needle valve and seat: Clean and blow out the carburettor.

NOTE: Check for lack of fuel in float chamber by disconnecting fuel pump inlet pipe at the carburettor, inserting the pipe into a suitable container and an assistant cranking the engine. This also checks out the fuel pump. Engine flooding is indicated by a heavy petrol smell and fuel leaking from the carburettor throttle shaft.

ENGINE STALLS AT IDLE SPEED

(1) Incorrect adjustment of the idle speed screw and/or the idle mixture screw: Check and adjust the idle speed and idle mixture screws, refer to the Engine Tune-up section if necessary.

(2) Inoperative fuel cut solenoid: Check the wiring and the solenoid.

(3) Carburettor float bowl flooding: Check for sticking needle valve, clean and blow out carburettor.

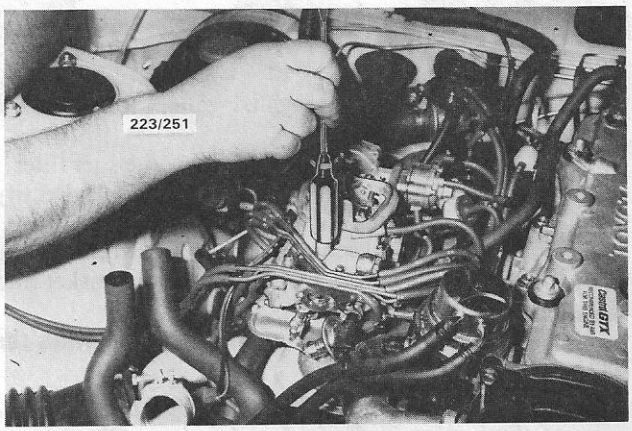
Checking for fuel at the carburettor inlet pipe.

(4) Carburettor starving for fuel: Check fuel delivery at needle valve, check fuel pump.

(5) Carburettor mounting nuts loose: Check and tighten the mounting nuts.

(6) Leaking carburettor flange gaskets or inlet manifold gaskets: Check and renew faulty gaskets.

(7) Blocked idle jet: Remove the idle jet and clean out the jet and all the idle speed passages with compressed air.



Float chamber flooding can sometimes be rectified by tapping the caburettor in the vicinity of the needle valve and seat.

NOTE: Check out this condition by a process of elimination in the fault order given. Air leaks at the manifold can be checked out by running engine oil around the suspect joints with the engine running.

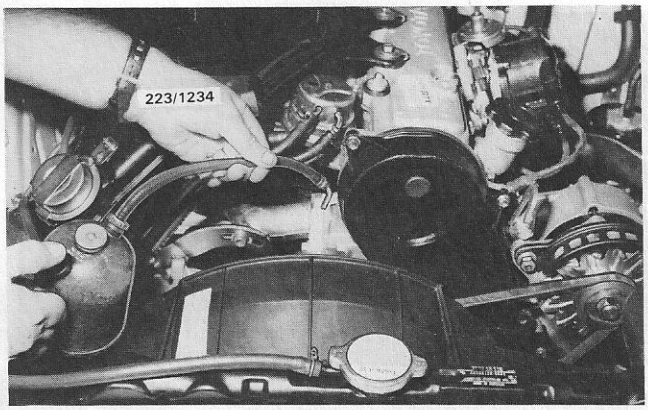
FLAT SPOT ON ACCELERATION

(1) Blocked accelerator pump passages: Blow out the passages with compressed air.

(2) Faulty accelerator pump linkage: Check and repair the linkage as necessary.

(3) Damaged accelerator pump diaphragm: Check and renew the diaphragm.

NOTE: Check out pump circuit by removing air cleaner and actuating accelerator linkage by hand. A squirt of fuel should be seen in the carburettor throttle bore.



Air leaks at the inlet manifold can be checked by running oil around the suspect joint.

ENGINE MISFIRES OR CUTS OUT AT HIGH SPEED

(1) Obstruction in main or power jets: Dismantle and blow out the jets.

(2) Low fuel level in float chamber or float chamber starving for fuel: Check float level setting, check the fuel pump and the supply lines.

(3) Failure of fuel pump to deliver sufficient fuel: Renew the fuel pump.

(4) Blockage in fuel tank pipe: Remove the blockage.

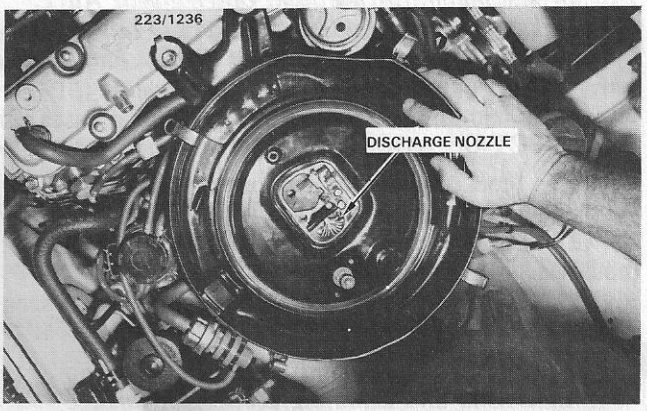
(5) Restriction in fuel filter: Renew the fuel filter.

(6) Air leaks between fuel pump and tank: Rectify the air leaks.

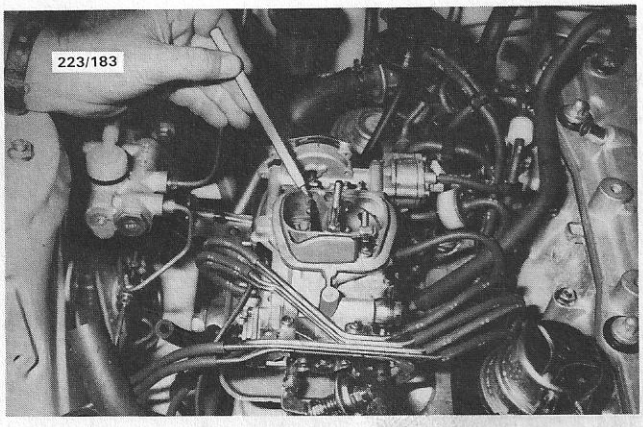
(7) Air leak between the carburettor top and the main body assemblies: Check and renew the gasket and tighten the securing screws.

(8) Water in the carburettor: Drain and clean the fuel system.

NOTE: Check out possible faults by a process of elimination in the fault order given. Check out fuel pump delivery pressure and capacity as outlined under the appropriate heading. Check for water in float chamber and low fuel level by removing the top cover.



Check for discharge of fuel at the carburettor accelerator pump discharge nozzle.



Check that the choke valve is fully open at normal operating temperature.

EXCESSIVE FUEL CONSUMPTION

(1) Float level too high: Check and adjust the float level.

(2) Choke valve partially closed: Check and rectify faulty choke operation.

(3) Air cleaner element dirty: Renew the air cleaner element.

(4) Faulty fuel pump diaphragm: Renew the fuel pump.

(5) Leaks between the fuel pump and the fuel tank or the fuel pump and the carburettor: Check and repair the leaks.

(6) Worn or damaged jets: Check and renew the faulty components.

(7) Excessive use of accelerator pump: Revise driving habits.

NOTE: Most common causes of excessive fuel consumption are a blocked air cleaner element, which can be removed and checked visually, and external fuel leakage from system components which can also be checked visually.

2. AIR CLEANER

DESCRIPTION

The air cleaner assembly consists of a top cover, a paper element and the air cleaner body. The air must pass through the paper element where dust particles and any other suspended solids are trapped, allowing only clean air to enter the engine which reduces engine wear.

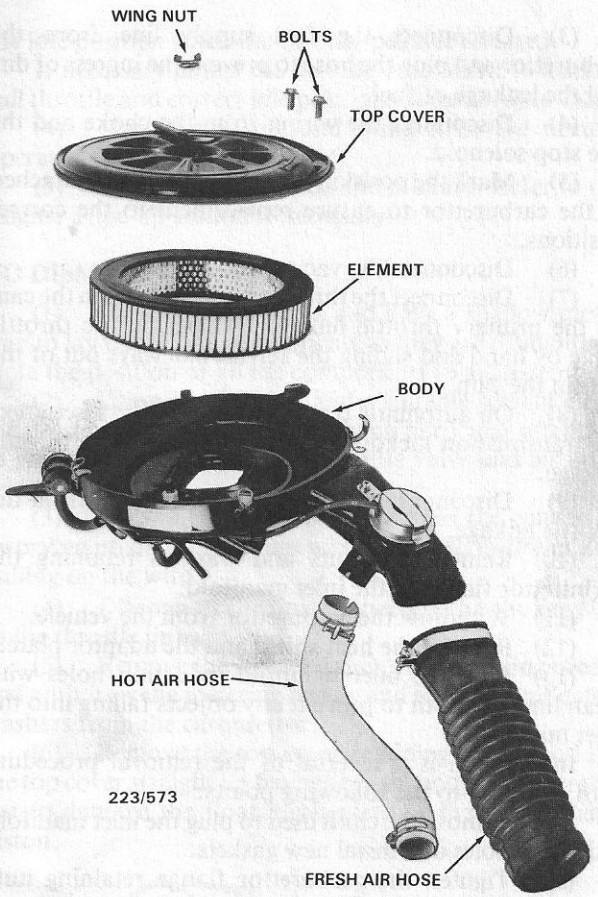
The servicing of the air cleaner is confined to periodical renewal of the paper element and cleaning of the inside of the body.

TO SERVICE

(1) Disconnect the hose from the top cover.

(2) Release the clips which retain the sides of the air cleaner top to the air cleaner body.

(3) Remove the wing nut and seal assembly from the centre of the air cleaner top.



Dismantled view of air cleaner.

(4) Withdraw the air cleaner top cover and lift the paper element out of the air cleaner body.

(5) Wipe the dust out of the air cleaner body with a slightly damp lint free cloth.

(6) If the element is serviceable thoroughly clean the element by blowing it from the inside to the outside with moisture free compressed air.

NOTE: Paper air cleaner elements should not be washed in petrol or any other type of cleaning solvent. If the element has been washed in solvent or has become oil soaked then it should be discarded and a new element fitted.

(7) Instal the element to the main body, fit the top cover, ensuring that the mating arrows are aligned and engage the retaining clips.

(8) Instal the wing nut and securely tighten.

TO REMOVE AND INSTAL

(1) Disconnect the fresh air inlet hose from the inner fender panel.

(2) Disconnect the hot air inlet hose from the air cleaner horn.

(3) Remove the air cleaner bracket to the rocker cover retaining bolts.

(4) Remove the hose connecting the air cleaner top cover to the rocker cover.

(5) Remove the air cleaner retaining wing nut and seal assembly.

(6) Carefully lift the air cleaner to expose the hoses which are attached to the underbody of the air cleaner. Mark the position of the hoses to aid assembly.

(7) Disconnect all the hoses and withdraw the air cleaner assembly from the vehicle.

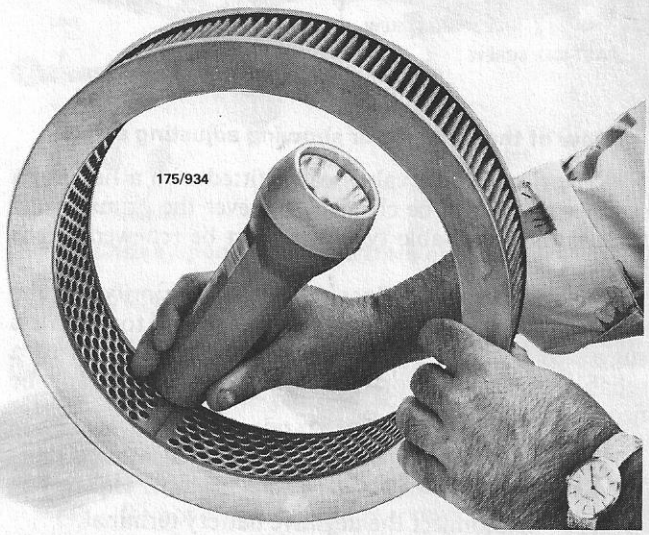
Installation is a reversal of the removal procedure with attention to the following points:

(1) Check and renew any hoses which show signs of deterioration.

(2) Ensure that all clips and bolts are tight.

(3) Ensure all the hoses are returned to their correct position.

(4) Refer to the Emission Control section to check the operation of the various air cleaner ancilaries.



Inspecting air cleaner paper element for serviceability.

3. CARBURETTOR

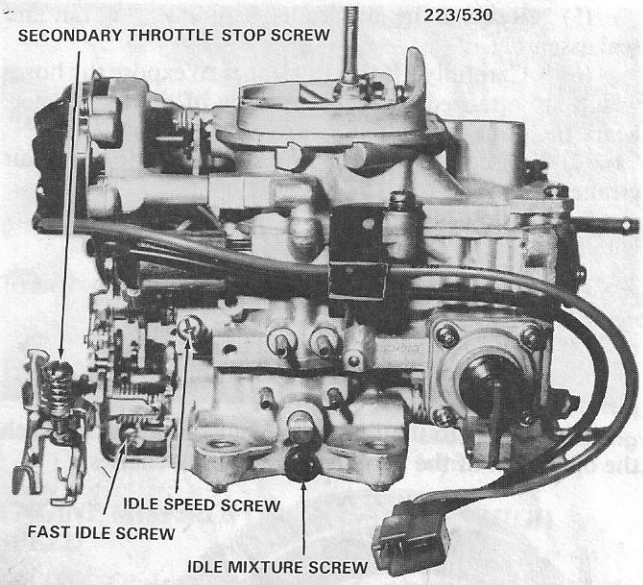
DESCRIPTION

The carburettor is a twin barrel downdraught type with a primary and a secondary system. Each system has its own throttle valve, jet system and discharge nozzle. The primary and secondary systems are supplied with fuel from a common chamber in which the fuel level is controlled by a float operated needle and seat assembly.

The primary system provides suitable mixtures for low speed, moderate speed, acceleration and cold starting.

The secondary system provides mixtures for high speeds.

The carburettor is equipped with a solenoid operated idle cut off valve which is controlled by the ignition switch. The solenoid, when de-energised, allows the spring loaded cut off needle to close the idle fuel passage interrupting the flow of fuel to the engine, which minimises engine "run on" after the ignition is turn off. When the ignition is turned on the solenoid is energised and the cut off needle is drawn towards the solenoid, against the spring, to open the idle fuel passage.



View of the carburettor showing adjusting screws.

The float needle valve seat is fitted with a fine mesh strainer which can be cleaned, however the primary fuel filter is the disposable type and must be renewed if it is blocked.

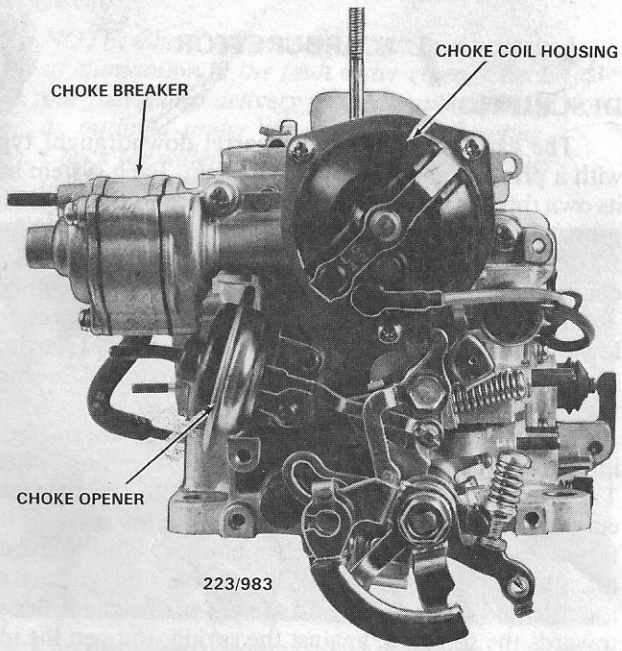
Apart from the float level, the majority of the adjustments of the carburettor require special tools, so it is suggested that the carburettor assembly be taken to a reliable specialist workshop should an overhaul be necessary.

TO REMOVE AND INSTAL

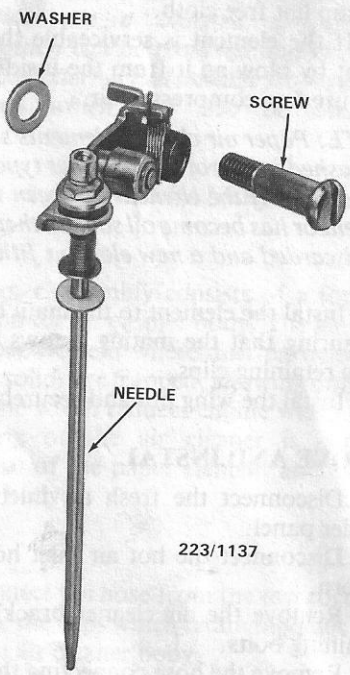
(1) Disconnect the negative battery terminal.
(2) Remove the air cleaner as previously described.
(3) Disconnect the fuel supply line from the carburettor and plug the hose to prevent the ingress of dirt and the leakage of fuel.
(4) Disconnect the wiring from the choke and the idle stop solenoid.
(5) Mark the position of the vacuum hoses attached to the carburettor to ensure replacement to the correct positions.
(6) Disconnect the vacuum hoses.
(7) Disconnect the throttle inner cable from the cam on the primary throttle linkage by opening the throttle valve by hand and sliding the ferrule sideways out of the hole in the cam.
(8) On automatic transmission models, disconnect the transmission kickdown inner cable from the throttle linkage.
(9) Disconnect the throttle return spring from the throttle linkage.
(10) Remove the nuts and washers retaining the carburettor flange to the inlet manifold.
(11) Withdraw the carburettor from the vehicle.
(12) Remove the heat shield and the adaptor plate.
(13) Plug the inlet manifold induction holes with clean lint free cloth to prevent any objects falling into the inlet manifold.

Installation is a reversal of the removal procedure with attention to the following points:

(1) Remove the cloth used to plug the inlet manifold induction holes and instal new gaskets.
(2) Tighten the carburettor flange retaining nuts progressively in a diagonal sequence.
(3) Have an assistant depress the throttle pedal to the limit of its travel and check that the throttle valve is completely open. Also check that the throttle returns to



Automatic choke side view of the carburettor.



Dismantled view of the metering needle.

the idle position when the throttle pedal is released.

If necessary adjust the throttle outer cable to achieve full throttle and correct idle positions at the throttle valve.

(4) Start the engine and bring it to the normal operating temperature.

(5) Adjust the idle speed and mixture. Refer to the Engine Tune-up section if necessary.

TO DISMANTLE

(1) Clean the work area and have a shallow metal tray to lay out all the components as they are dismantled. Note the position of all the components to aid assembly.

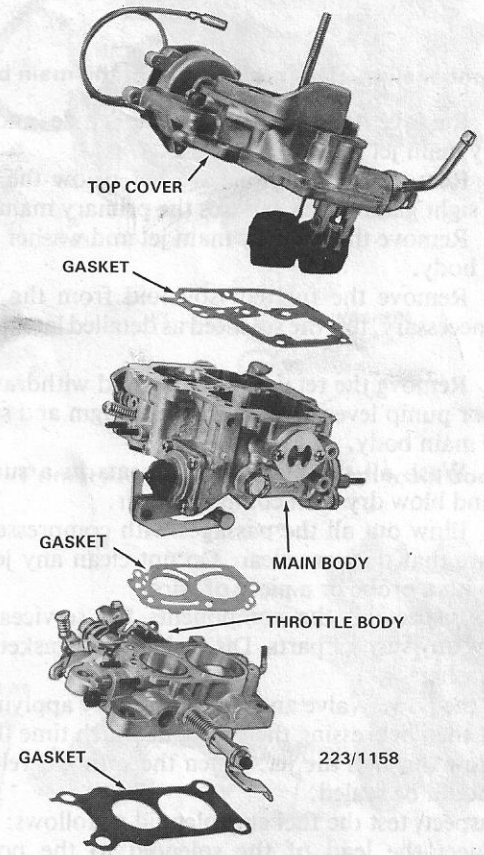
(2) Using a soft brush and a suitable solvent clean the outside of the carburettor paying particular attention to any carbon deposits in the throttle valve and air horn areas.

(3) Disconnect the choke wire from the connector by prying up the locking lugs with a small screwdriver and pulling on the wire.

(4) Disconnect the link connecting the choke valve to the throttle linkage.

(5) Remove the screw retaining the metering needle and withdraw the metering needle and the steel and nylon washers from the carburettor.

(6) Remove the top cover retaining screws and lift the top cover straight up from the main body being careful not to damage the float mechanism or the power valve piston.



Carburettor main components.

(7) Remove the throttle positioner where fitted.

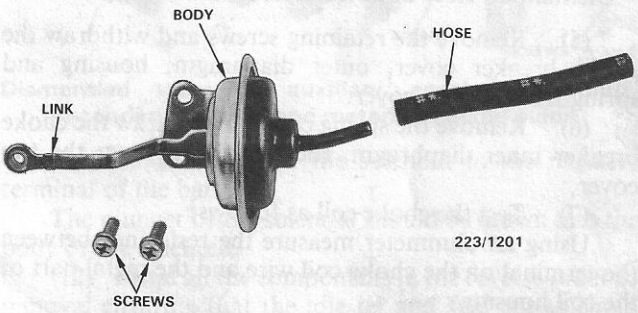
(8) Disconnect the choke opener link and remove the choke opener retaining screws.

(9) Withdraw the choke opener from the main body.

(10) Remove the screws retaining the main body to the throttle body and separate the main body from the throttle body.

(11) The carburettor is now dismantled into its three major sub assemblies, these being the top cover, the main body and the throttle body.

(12) Proceed as necessary in dismantling by referring to the individual service procedures.



Choke opener removed from carburettor.

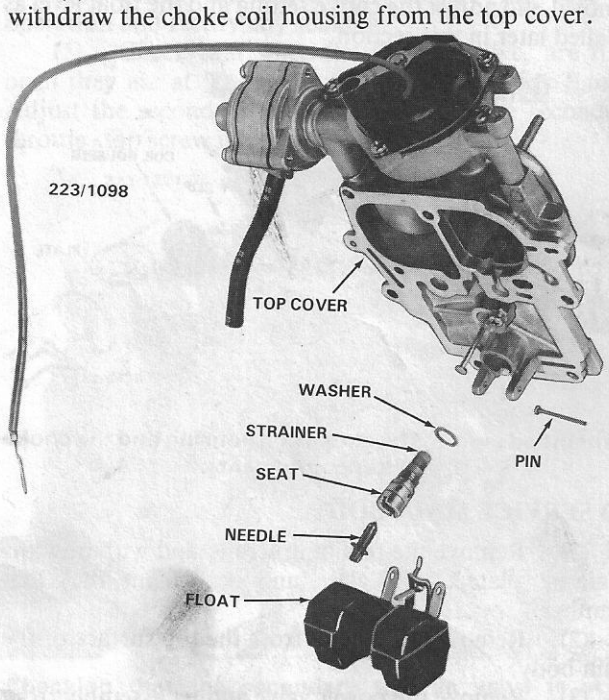
TO SERVICE TOP COVER

(1) Remove the screw and retainer and withdraw the power valve piston and spring from the top cover.

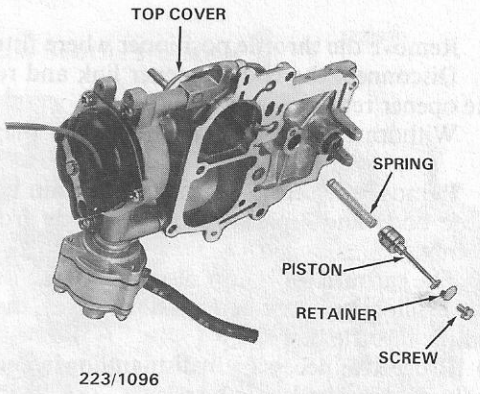
(2) Remove the pin and withdraw the float and needle valve from the top cover.

(3) Remove the needle seat and strainer assembly and washer from the top cover.

(4) Remove the retaining screws and plate and withdraw the choke coil housing from the top cover.



Dismantled view of the float valve components.



Dismantled view of power valve piston components.

(5) Remove the retaining screws and withdraw the choke breaker cover, outer diaphragm, housing and spring from the top cover.

(6) Remove the spring clip and withdraw the choke breaker inner diaphragm, rod and collar from the top cover.

(7) Test the choke coil as follows:

Using an ohmmeter measure the resistance between the terminal on the choke coil wire and the metal part of the coil housing.

The resistance should be approximately 18 Ohms at 20°C.

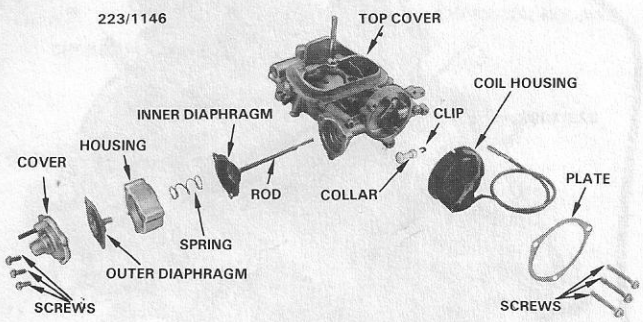
Renew the coil housing assembly if the resistance is not near this figure.

(8) Wash all the metal parts in a suitable solvent and blow dry with compressed air.

(9) Blow out all the passages with compressed air and ensure that they are clear.

(10) Discard all used gaskets and sealing washers.

(11) Instal all the components in the reverse order to removal and adjust the choke setting and the float level as detailed later in this section.



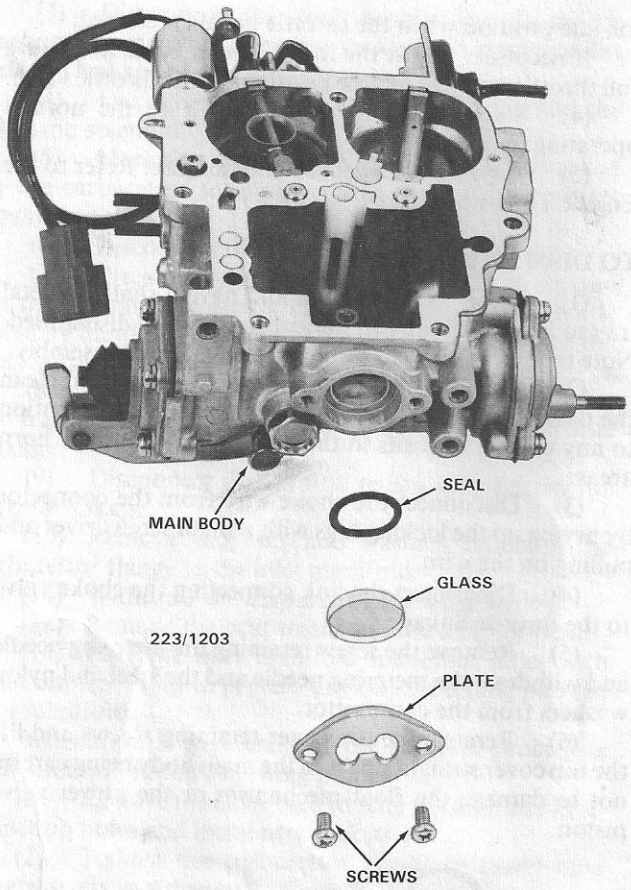
Dismantled view of the choke coil housing and the choke breaker components.

TO SERVICE MAIN BODY

(1) Remove the retaining screws and withdraw the retaining plate, sight glass and seal from the float chamber.

(2) Remove the idle jet from the top surface of the main body.

(3) Remove the power valve and jet assembly from the bottom of the float chamber.



Float chamber sight glass removed from the main body.

(4) Remove the metering needle guide and the secondary main jet from the main body.

(5) Remove the plug and washer below the float chamber sight glass which exposes the primary main jet.

(6) Remove the primary main jet and washer from the main body.

(7) Remove the fuel cut solenoid from the main body. If necessary, test the solenoid as detailed later in this section.

(8) Remove the retaining screws and withdraw the accelerator pump lever and cover, diaphragm and spring from the main body.

(9) Wash all the metal components in a suitable solvent and blow dry with compressed air.

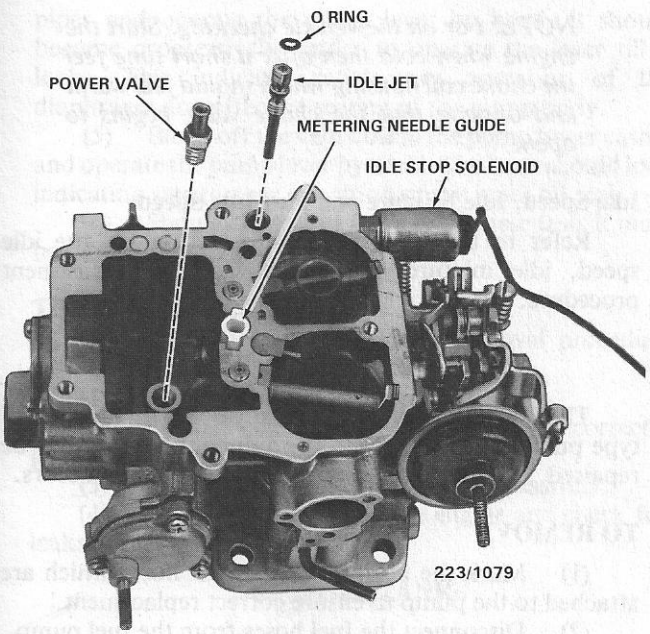
(10) Blow out all the passages with compressed air and ensure that they are clear. Do not clean any jets or orifices with a probe or a piece of wire.

(11) Inspect all the components for serviceability and renew any suspect parts. Discard all used gaskets and sealing washers.

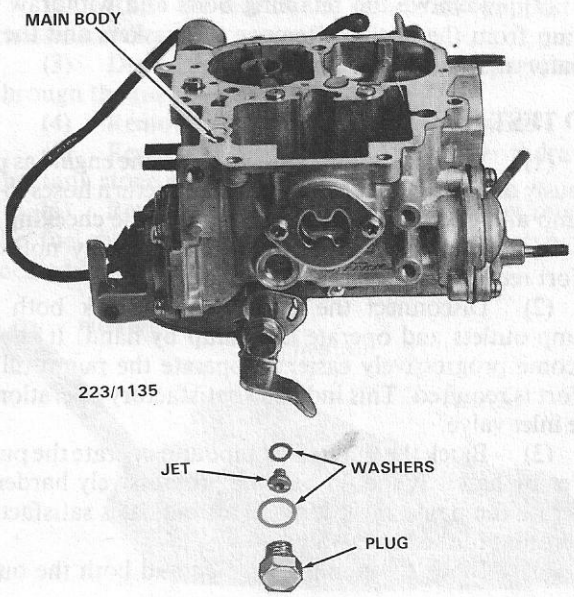
Test the power valve and jet assembly by applying air to the jet then depressing the spring at which time the air should flow through the jet. When the spring is released the jet should be sealed.

If suspect, test the fuel cut solenoid as follows:

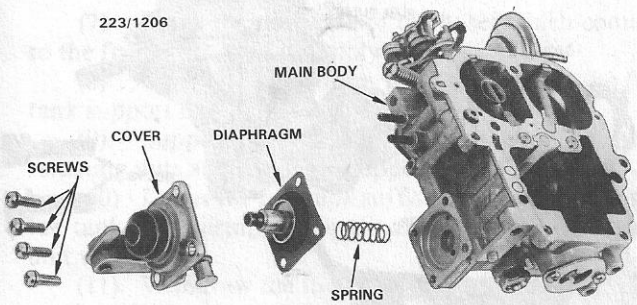
Connect the lead of the solenoid to the positive terminal of a fully charged 12 V battery.



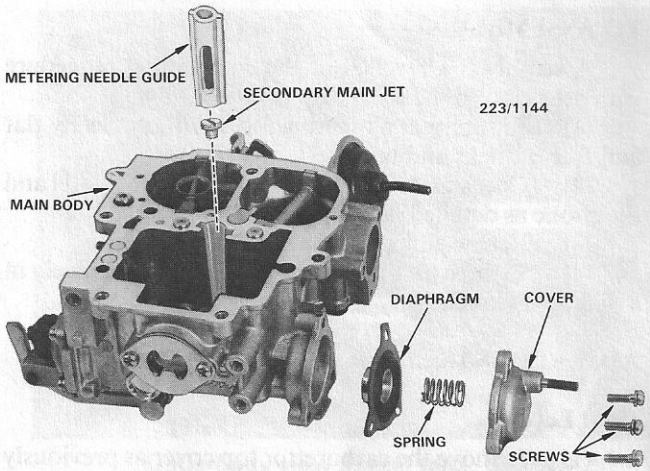
View of power valve and idle jet removed from main body.



Primary main jet removed from main body.



Dismantled view of accelerator pump.



Dismantled view of auxiliary accelerator pump, secondary main jet and metering needle guide.

Connect the body of the solenoid to the negative terminal of the battery.

The plunger of the solenoid should be drawn into the body of the solenoid.

(12) Instal all the components in the reverse order to removal ensuring that the idle jet and fuel cut solenoid valve have new O rings fitted.

TO SERVICE THROTTLE BODY

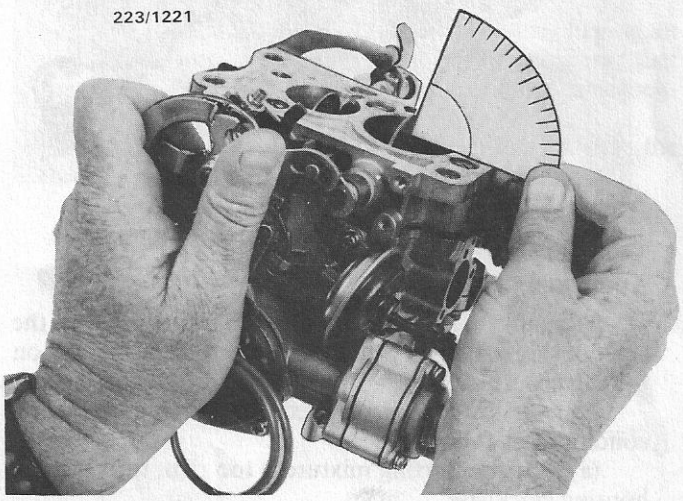
(1) Wash all the metal components in a suitable solvent and blow dry with compressed air.

(2) Blow out all the passages with compressed air and ensure that they are clear.

(3) Inspect the throttle valve shafts which must be free to rotate with no movement in their bushes.

(4) Check all levers and linkage for ease of operation and rectify any sticking.

(5) Check that when the throttle valves are fully open they are at 90 degrees to the throttle body flange. Adjust the secondary throttle valve with the secondary throttle stop screw if necessary.



Checking that the secondary throttle valve is at 90 degrees to the body when the throttle is fully open.

TO ASSEMBLE

Assembly is a reversal of the dismantling procedure with attention to the following points:

(1) Ensure that all mating faces are completely flat and free of nicks and burrs.

(2) Check and if necessary adjust the float level and the choke as detailed later in this section.

(3) Renew all gaskets and sealing washers.

(4) Tighten all the retaining screws progressively in a diagonal sequence.

ADJUSTMENTS

Float Level

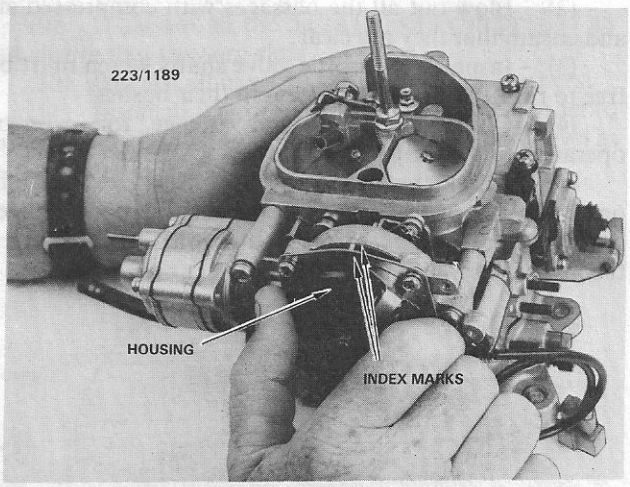
(1) Remove the carburettor top cover as previously detailed.

(2) Invert the top cover and let the float rest on the needle valve.

(3) Check the distance between the top level of the float and the machined face of the top cover with the gasket removed. This distance should be 5.0–6.0 mm.

(4) Adjust by bending the metal hinge strips, close to where they are moulded into the floats. During this operation be careful not to damage the float and ensure that both sides of the float are exactly even by repeating operation (3) and measuring each side of the float.

(5) Replace the top cover. Start the engine and check the fuel level in the float bowl sight glass.



Adjusting the choke operation setting.

Automatic Choke

The choke is set correctly when the index mark on the coil housing is aligned with the centre mark of the scale on the top cover.

The choke may be altered for varying operating conditions as follows:

(a) If the starting mixture is too rich, turn the coil housing clockwise.

(b) If the starting mixture is too lean, turn the coil housing anti-clockwise.

NOTE: For on the vehicle checking. Start the engine when cold then after a short time feel the choke coil housing which should feel warm and observe that the choke valve begins to open.

Idle Speed, Idle Mixture and Fast Idle Speed

Refer to the Engine Tune-up section for the idle speed, idle mixture and choke fast idle adjustment procedure.

4. FUEL PUMP

The fuel pump is a mechanically operated diaphragm type pump which is sealed in production and cannot be repaired. It must be renewed if any malfunction occurs.

TO REMOVE

(1) Mark the position of the fuel hoses which are attached to the pump to ensure correct replacement.

(2) Disconnect the fuel hoses from the fuel pump.

(3) Plug the hoses to prevent fuel leaks and the entry of dirt into the fuel system.

(4) Remove the retaining bolts and withdraw the pump from the engine. Remove the gaskets and the insulator and drip tray assembly.

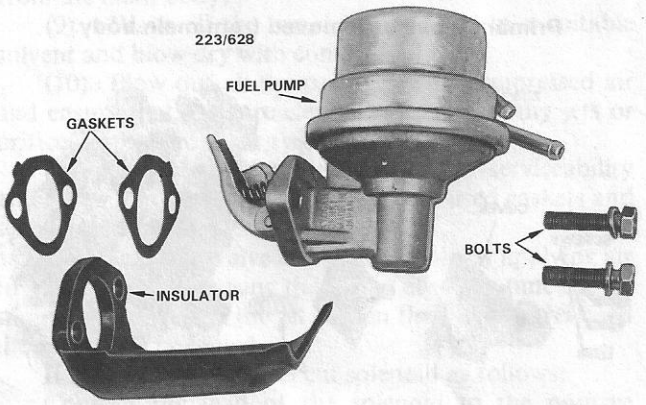
TO TEST

(1) With the pump removed from the engine as previously described, connect the inlet and return hoses to the pump and operate the pump by hand while checking the discharge into a suitable container. Carefully note the effort required to operate the pump.

(2) Disconnect the return hose. Block both the pump outlets and operate the pump by hand. It should become progressively easier to operate the pump till no effort is required. This indicates satisfactory operation of the inlet valve.

(3) Block the pump inlet pipe and operate the pump lever by hand. It should become progressively harder to operate the pump till it locks. This indicates satisfactory operation of the outlet valve.

(4) Block the pump inlet pipe and both the outlet



Fuel pump removed from the engine.

pipes and operate the pump lever by hand. It should become progressively harder to operate the lever till it locks. This indicates satisfactory operation of the diaphragm and effective sealing of the pump body.

(5) Block off the vent hole in the pump lower casing and operate the pump lever by hand. The lever should lock indicating satisfactory condition of the inner oil seal.

(6) Should the pump fail any of these tests it must be renewed.

TO INSTAL

Installation is a reversal of the removal procedure with attention to the following points:

(1) Renew the pump flange gaskets.

(2) Ensure that the pump lever is correctly positioned on the camshaft lobe.

(3) Tighten the mounting bolts progressively.

(4) After installation run the engine and check for leaks.

5. FUEL TANK

TO REMOVE AND INSTAL

(1) Disconnect the negative battery terminal.

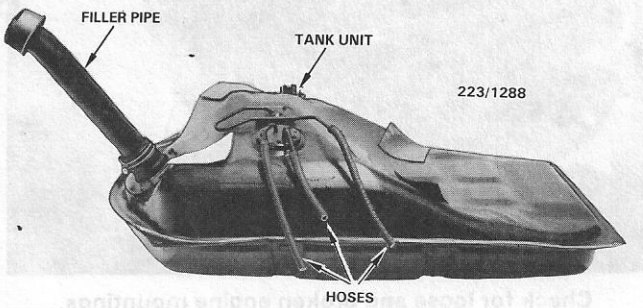
(2) Raise the rear of the vehicle and support it on chassis stands.

(3) Drain the fuel from the tank by syphoning through the fuel filler tube.

(4) Remove the right hand rear road wheel.

(5) Remove the retaining screws and withdraw the fuel tank stone guards from the vehicle.

(6) Remove the screws, plate and gasket retaining the fuel filler pipe to the rear fender. The screws are located inside the fuel filler service door.



Fuel tank removed from the vehicle. Sedan.

(7) Mark the positions of the hoses which connect to the fuel tank to aid assembly.

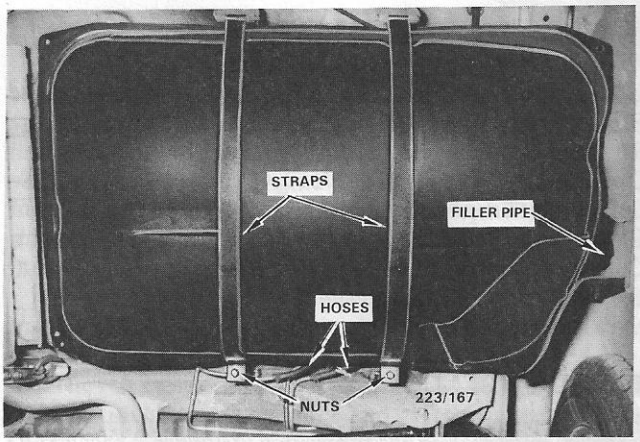
(8) Disconnect the hoses from the pipes at the fuel tank support bracket.

(9) Support the fuel tank, remove the support strap retaining nuts and lower the support straps.

(10) Lower the fuel tank sufficiently to gain access to the tank unit wiring connector and disconnect the tank unit wiring.

(11) Withdraw the fuel tank from the vehicle.

Installation is a reversal of the removal procedure with attention to the following points:



Underbody view of fuel tank. Sedan.

(1) Ensure that the fuel hoses are connected to the positions as marked prior to dismantling.

(2) Do not overtighten the support strap retaining nuts.

(3) Check for leaks after filling the fuel tank.

6. THROTTLE CABLE

TO REMOVE AND INSTAL

(1) Remove the air cleaner assembly as previously described.

(2) Open the throttle by hand and disconnect the inner cable from the cam on the throttle linkage.

(3) Loosen the locknuts and disconnect the outer cable from the bracket on the inlet manifold.

(4) Working inside the vehicle, pull the inner cable back and move it sideways out of the slotted hole in the top of the throttle pedal.

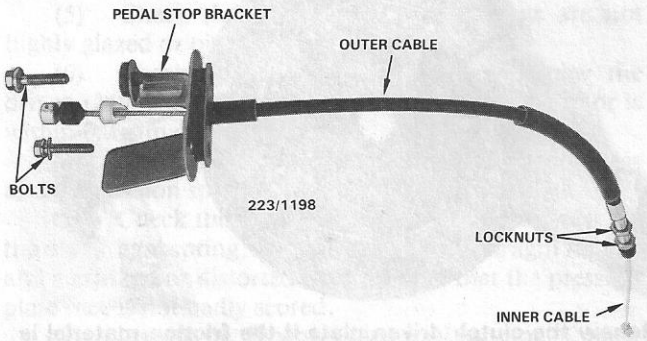
(5) Remove the outer cable and pedal stop retaining bolts and remove the pedal stop.

(6) Withdraw the cable into the interior of the vehicle.

Installation is a reversal of the removal procedure with attention to the following points:

(1) Check the full throttle operation by having an assistant depress the throttle pedal fully and observe that the throttle valve is fully open. Adjust the outer cable locknuts till this situation is achieved.

(2) Release the throttle pedal and check that the throttle valve returns to the idle position.



Throttle cable removed from the vehicle.