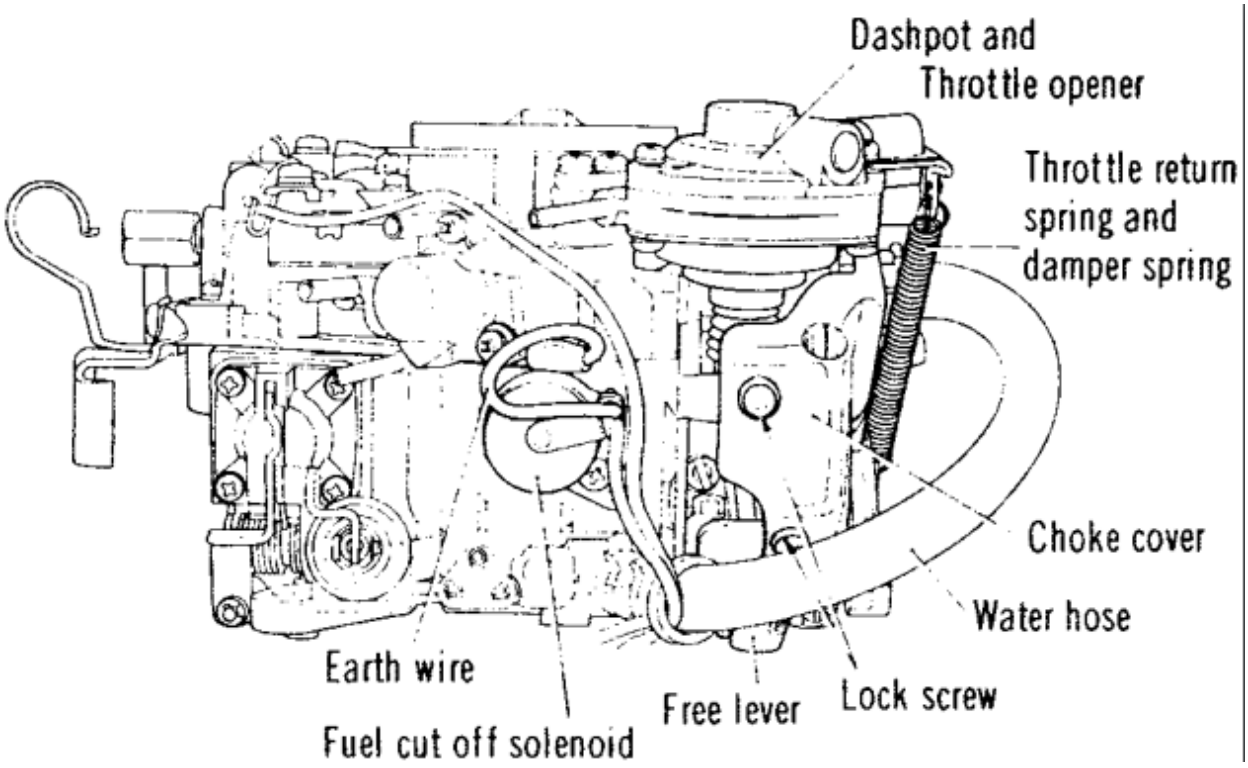
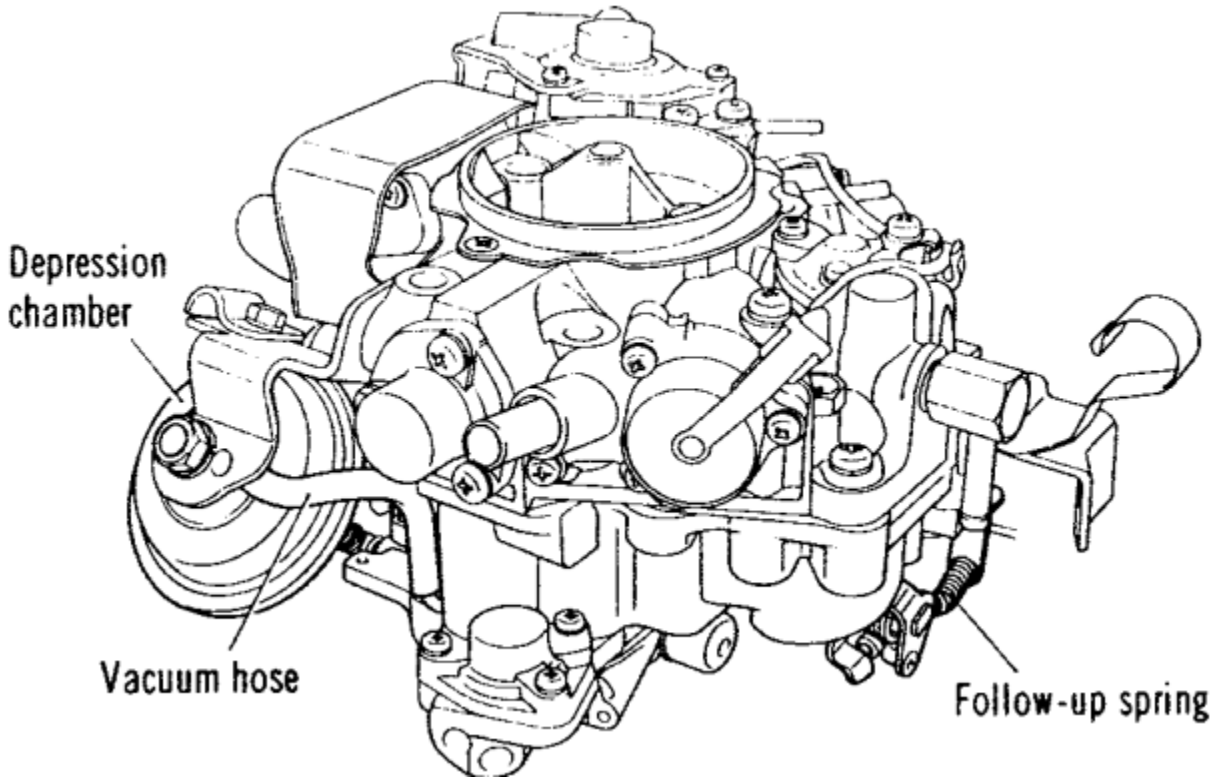
Non-Feedback Models

The carburetor is comprised of three main sections: the top or float bowl cover, the main body and the throttle body or base. Separating these sections requires the removal and installation of many small parts and fittings. Do not disassemble anything unnecessarily. Some important components are not removed or adjusted during an overhaul.

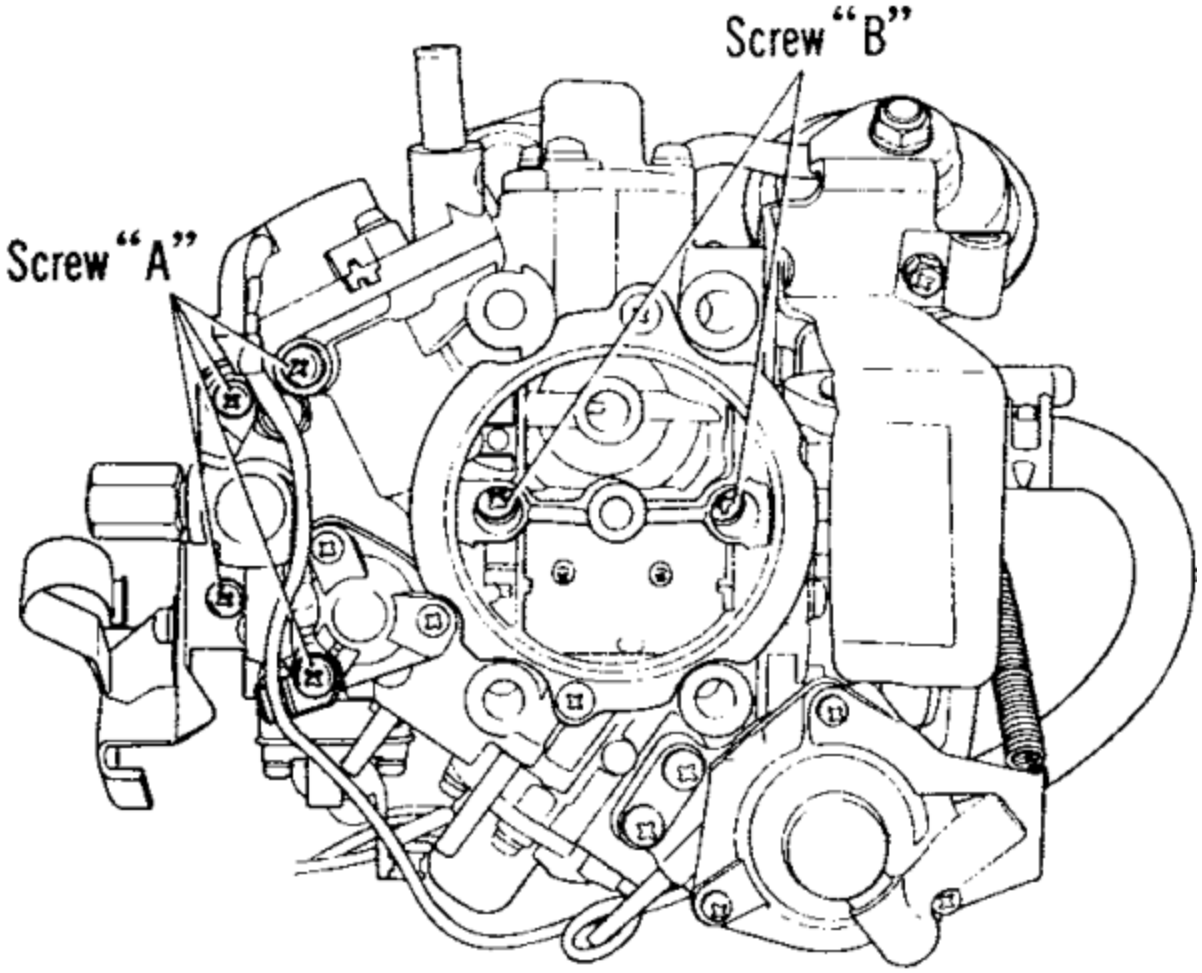
1. Remove the carburetor from the vehicle, following the instructions earlier in this section. Drain any remaining fuel into a container with an airtight lid. Place the carburetor on the workbench in a clean, dry area. Placing it on a large, lint-free cloth will help prevent parts from getting lost or rolling around.
2. Remove the coolant hose from the throttle body and from the wax element.
3. Using a small hand grinder or similar tool, remove the heads from the two lock screws in the choke cover.
4. Disconnect the fuel cut-off solenoid ground wire from the top of the carburetor.
5. Remove the throttle return spring and the damper spring.
6. Disconnect the vacuum hose running from the depression chamber to the throttle body.
7. Remove the accelerator pump rod from the throttle lever.
8. Remove the dashpot rod (for manual transmission) or the throttle opener rod (automatic transmission) from the free lever.
9. Remove the depression chamber rod from the secondary throttle lever.



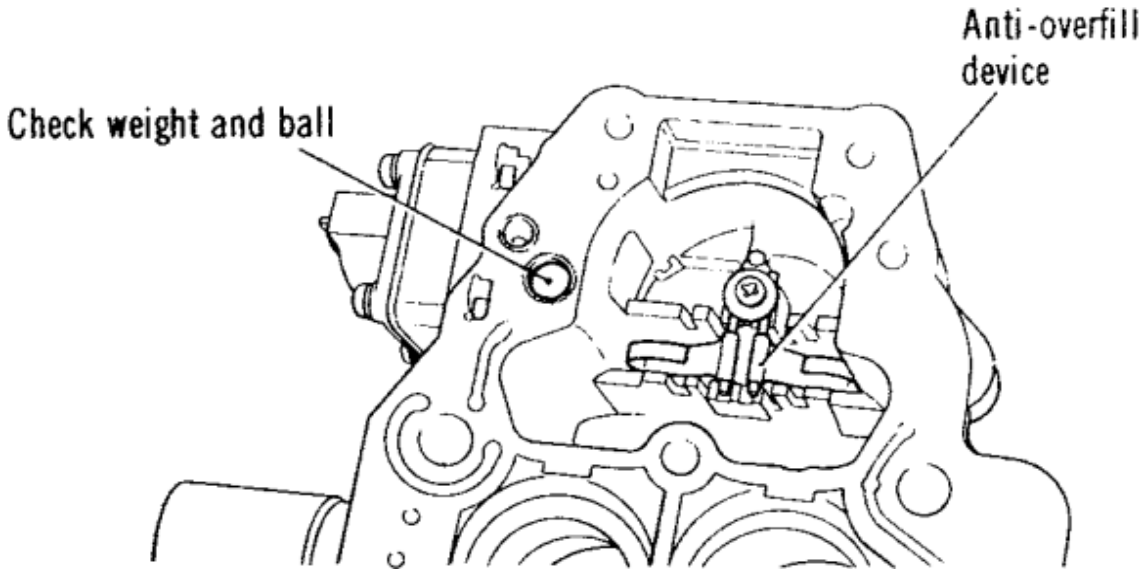
View of the left side of the non-feedback carburetor



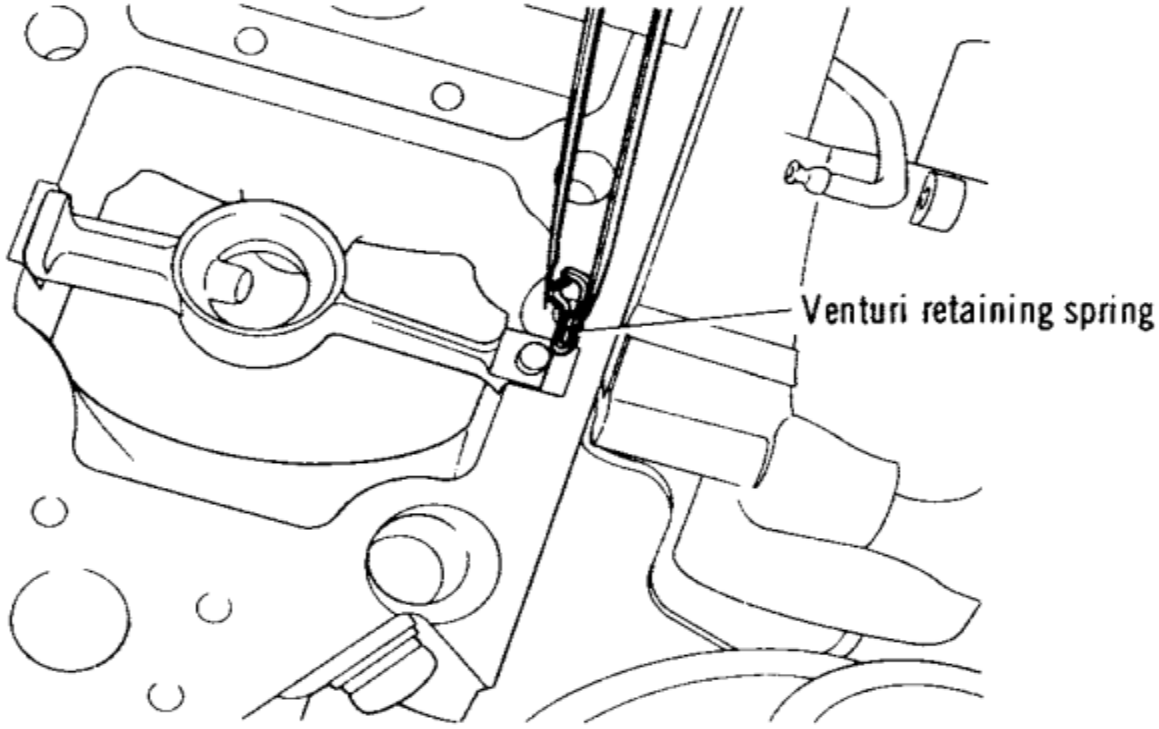
View of the right side of the non-feedback carburetor



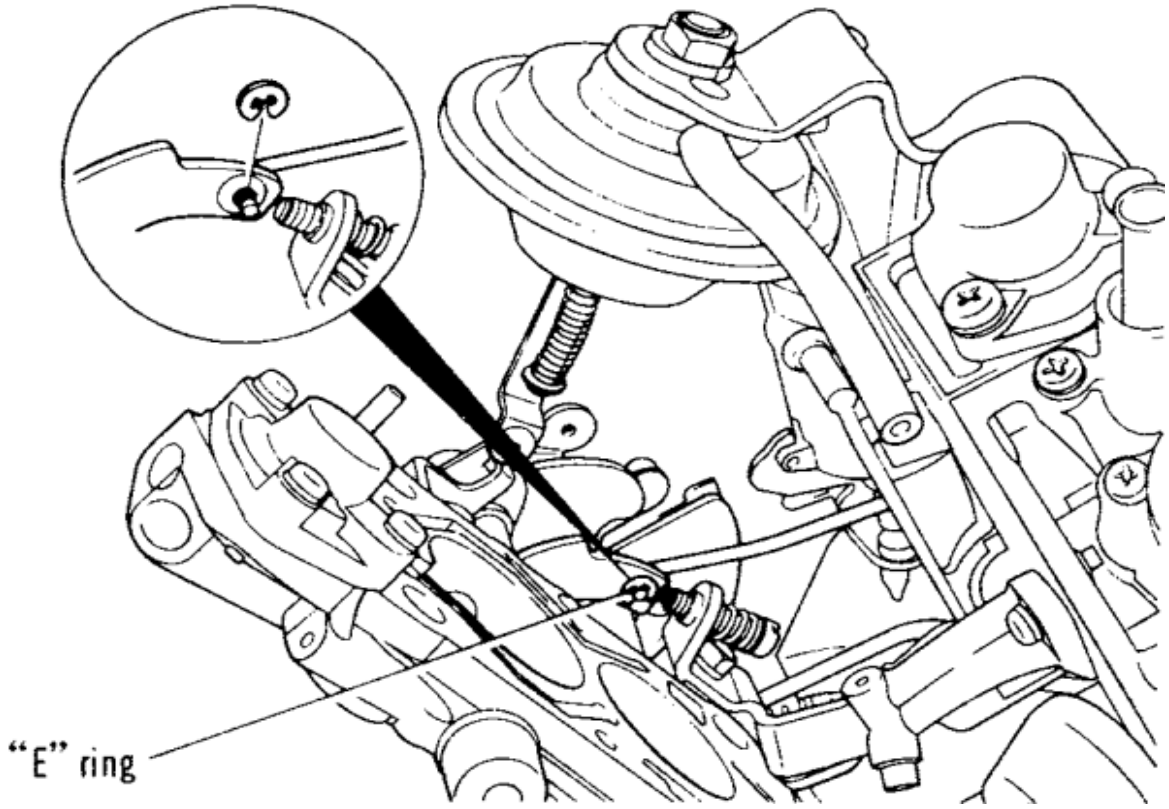
Top view of the non-feedback carburetor



When removing the main body, check to make sure the steel balls and weight are intact

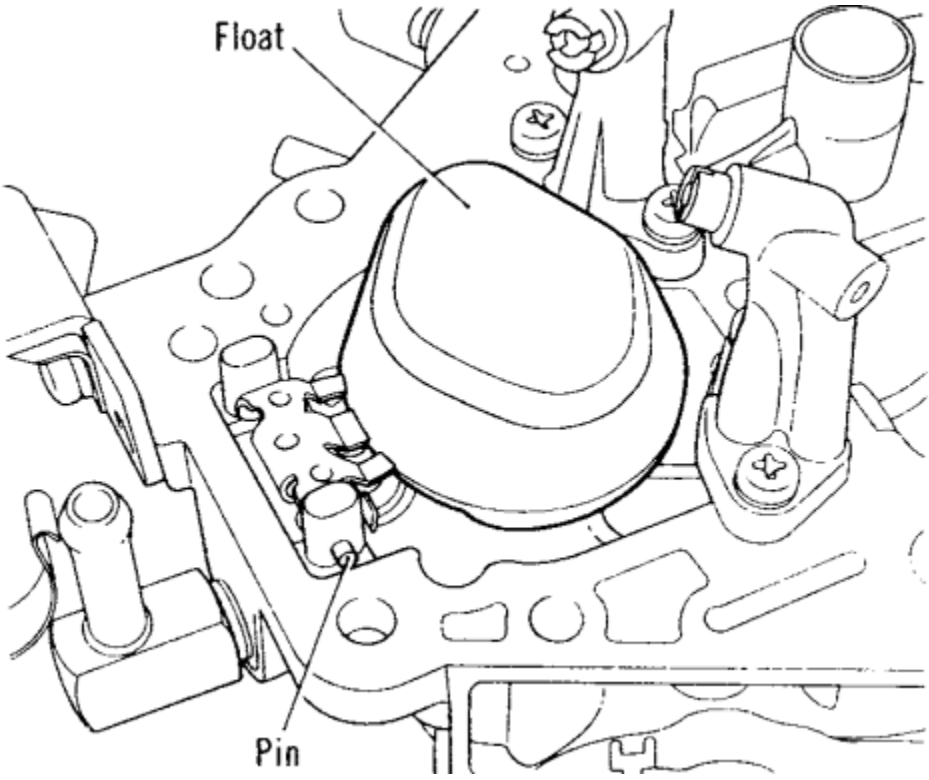


When lifting the chamber cover, the venturi spring may drop down

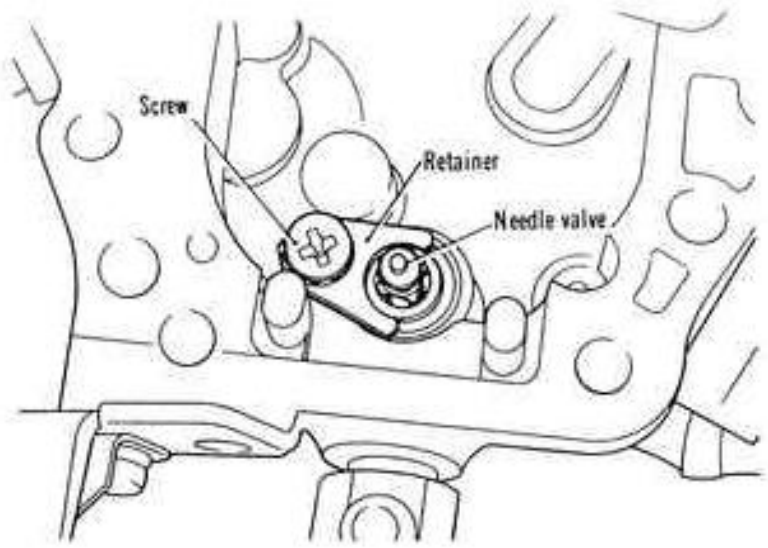


Removing the E-ring at the lower end of the choke unloader rod

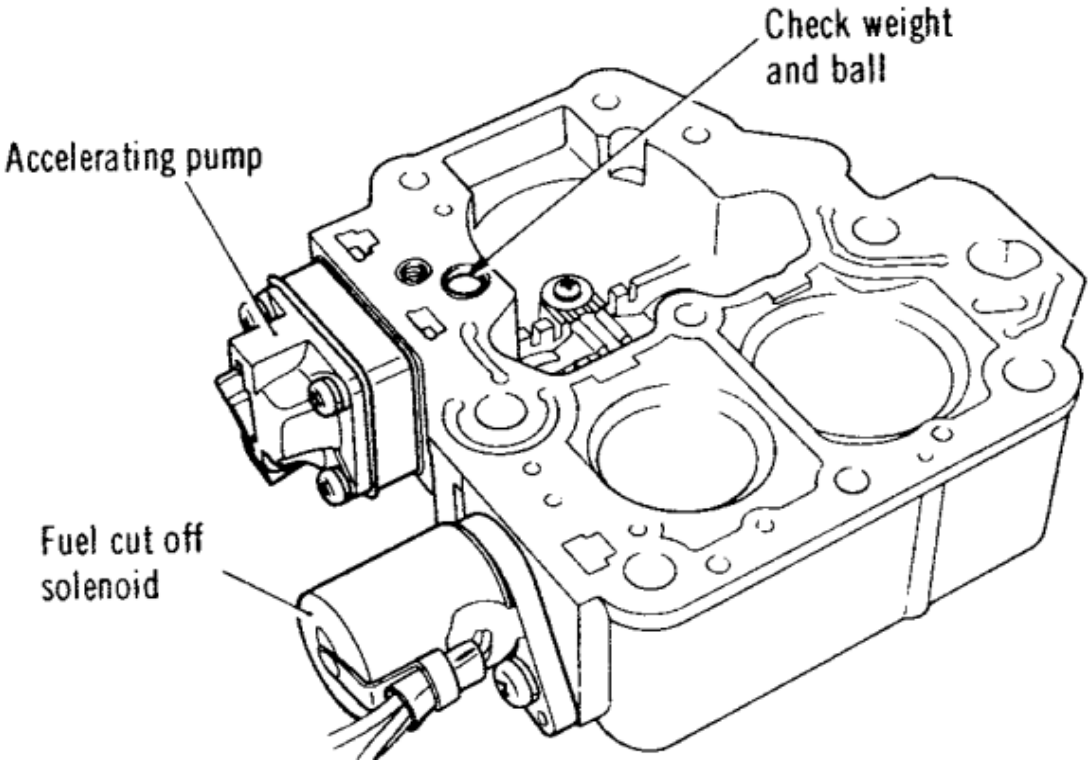
10. Remove the six screws from the carburetor top. The four outer ones connect to the main body of the carburetor; the two bolts within the air passage connect to the throttle body.



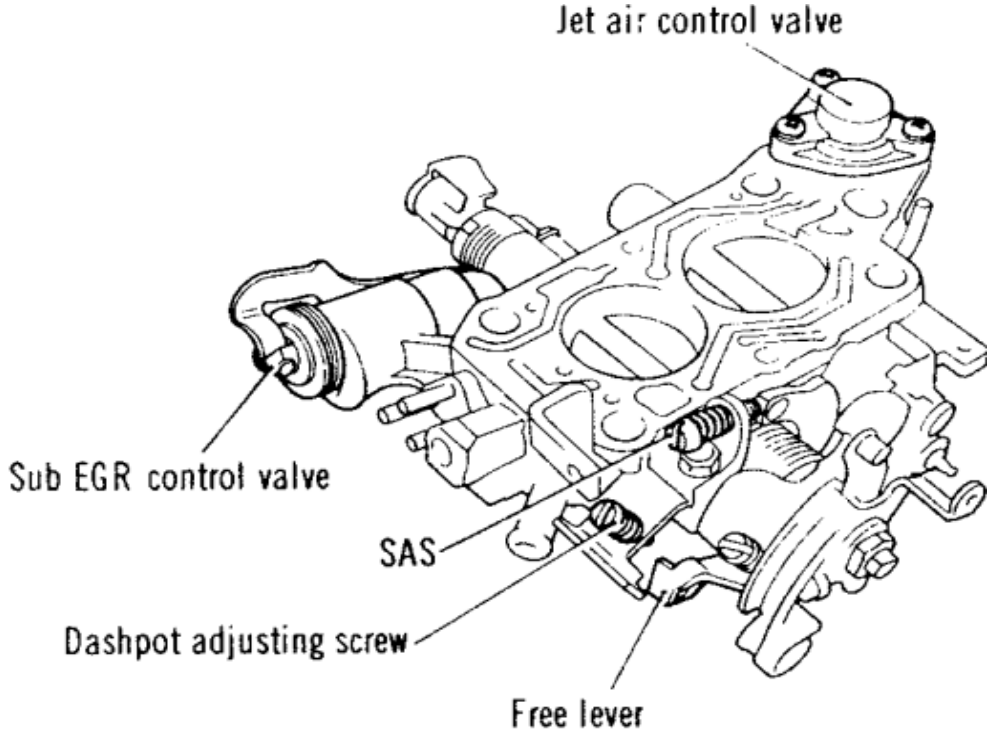
The float can be removed by pulling the pin off



The needle valve can be taken off by removing the screw and retainer



Remove the accelerator pump and fuel cut-off solenoid



Do not remove the throttle valves, and the SAS and dashpot adjusting screws

Many of the screws use Phillips-type heads. Use a screwdriver which fits the head exactly. An improper tool can damage the head of the screw and cause problems during reassembly.

11. Remove the main body with the top attached (the top cannot come free yet) by lifting straight up. Do not turn the carburetor upside down during the removal; if it is inverted, the accelerator pump check weight, ball and steel ball of the anti-overfill device will fall out.

When lifting the chamber cover, the venturi spring may drop down.

12. Remove the E-clip from the lower end of the choke unloader rod and disconnect the rod from the lever.
13. Separate the top from the main body.
14. At this point, the carburetor is disassembled enough to perform common overhaul replacements. Do not disassemble any further components without good diagnostic reasons. In particular, do not disassemble the automatic choke system or attempt to remove the throttle plates; both systems require very precise alignment which is beyond the ability of the home mechanic.
15. Remove the float from the float arm by removing the pivot pin.
16. Inspect the float bowl for any sign of particulate dirt or solid matter. Carefully wipe the bowl clean. Shake the float, listening for any sign of liquid fuel inside. If the float has absorbed fuel, it must be replaced.
17. Remove the retaining screw and bracket holding the needle valve. Carefully remove the needle valve and inspect it for uneven wear or pitting. (A magnifying glass is very helpful for checking the tip.) Check the seat for signs of pitting. Don't remove the seat without planning to replace it; if it looks OK, leave it alone. If the seat is to be removed, it must be carefully unscrewed with pliers. It will be difficult to loosen and care must be take not to damage or deform the seat. When the seat is removed, the spacing shim below it must be recovered and reinstalled. This shim determines float level adjustment.
18. Remove the accelerator pump and the fuel cut-off solenoid. Remove the check weight and ball.

19. Wearing eye protection and gloves, carefully clean the fuel and air passages with a spray cleaner and, if available, compressed air. A majority of carburetor problems are caused by very small bits of dirt lodging in the air or fuel passages. Clean everything thoroughly.

To assemble:

20. Inspect the motion of both the choke and throttle plates. They must move smoothly with absolutely no sign of binding or notching. Clean the linkages and plates as necessary, then apply a small amount of lubricant to the pivot points.
21. If any of the fuel jets are to be replaced due to wear or etching, they must be replaced with the identical item. Each jet has a number on the side of it to aid in identification. (The jets are selected based on precise airflow measurements during assembly. Installation of the wrong jet will send the wrong fuel mixture to the engine under almost all conditions).
22. Install the accelerator pump, the fuel cut-off solenoid and the check weight and ball.
23. Install the needle valve and its retainer.
24. Hold the float in position and install the pivot pin.
25. Carefully place the carburetor top onto the main body and install the four retaining screws holding the top to the body.
26. Install the choke unloader rod to the lever and install the E-ring to hold the rod in place.

Be careful that the E-ring does not spring out of place during installation.

27. Install the two screws through the air horn and tighten them.
28. Install the depression chamber rod to the secondary throttle lever.
29. Connect the dashpot or throttle opener rod to the free lever.
30. Install the accelerator pump rod to the throttle lever.
31. Install the vacuum hose between the depression chamber and the throttle body.
32. Install the throttle return spring and the damper spring.

33. Connect the ground wire for the fuel cut-off solenoid.
34. Install new screws to hold the choke cover in place.
35. Install the coolant hose from the throttle body to the wax element.
36. Move the carburetor linkage by hand, checking that motions are smooth and there is no binding in any of the mechanisms.
37. Reinstall the carburetor.

This page intentionally left plank

Feedback Models

WARNING
Certain parts or assemblies must not be disassembled or altered during overhaul. The choke plate and shaft, automatic choke linkage, inner venturi, throttle plate and shaft, and fuel inlet nipple must be left alone. Damage and or reduced performance may result from tampering with these components. Many of the screws have Phillips-type heads. Use a screwdriver which fits the head exactly. An improper tool can damage the head of the screw and cause problems during reassembly.

1. Remove the carburetor from the vehicle, following the instructions earlier in this section. Drain any remaining fuel into a container with an airtight lid. Place the carburetor on the workbench in a clean, dry area. Placing it on a large, lint-free cloth will help prevent parts from getting lost or rolling around.
2. Remove the throttle return spring and the damper spring.
3. Remove the throttle opener (automatic transmission) or the dash-pot (manual transmission) rod from the free lever and remove the opener or dashpot unit from the top of the carburetor.
4. If equipped with automatic transmission, remove the Idle Speed Control (ISC) servo by removing the bracket screws. Put the ISC servo out of the way until reassembly.

WARNING
Do not attempt to test the servo with battery voltage. It runs on a lower voltage sent from the ECM. Applying battery voltage to this unit will destroy it.

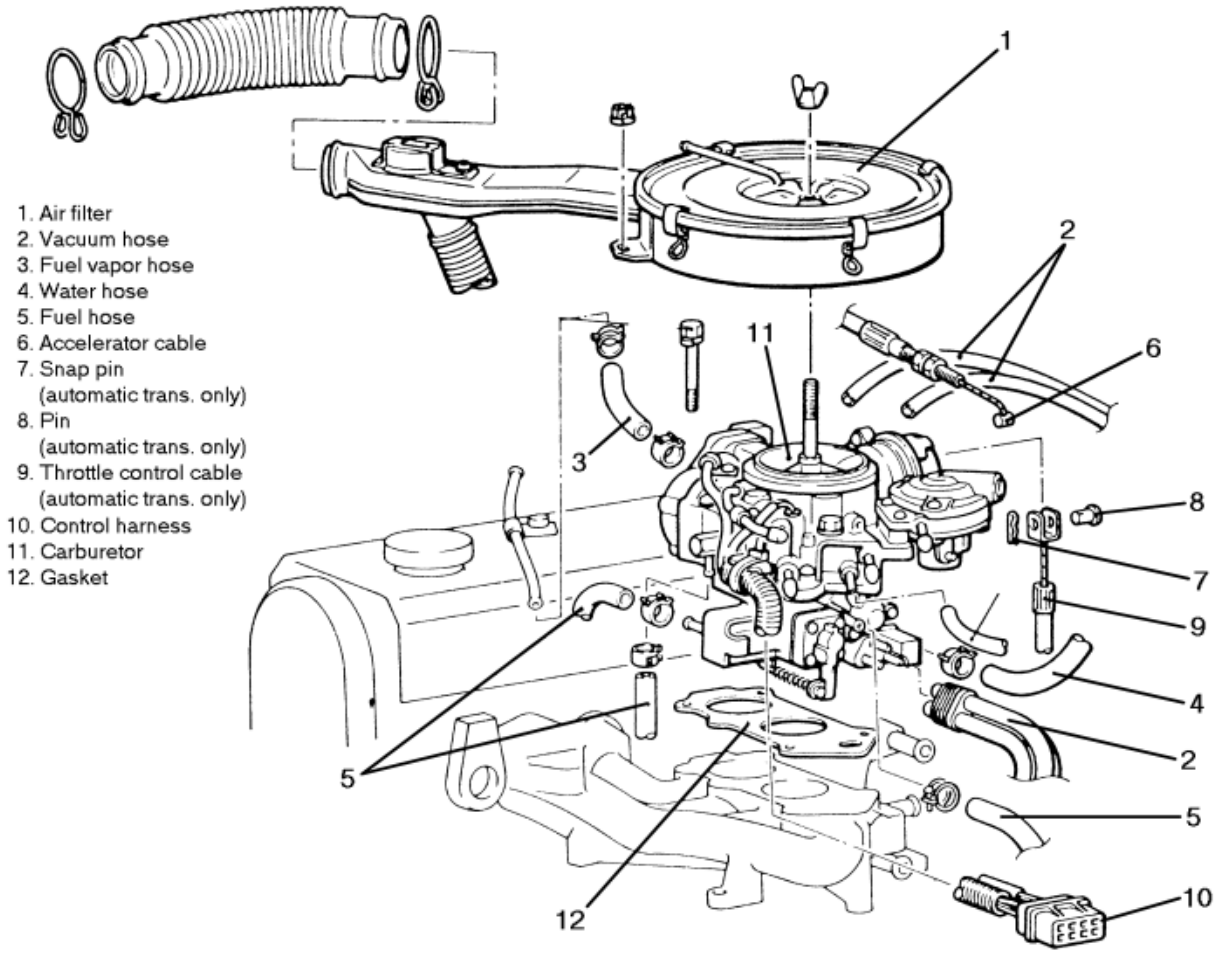
5. Remove the connector bracket.
6. Remove the vacuum hose running from the base to the choke breaker. This vacuum line will have a delay valve in it.
7. Remove the five screws holding the top of the carburetor to the body and base.
8. The top of the carburetor will be firmly held to the mixing body by the gasket. Do not attempt to lift the top by hand. Use a screwdriver blade or similar thin, flat tool inserted between the top and the enrichment cover. Lightly pry the top upwards and lift the top slowly. Do not apply excessive force and don't try to rush the job.

9. Remove the float pivot pin and remove the float. Carefully remove the needle valve.

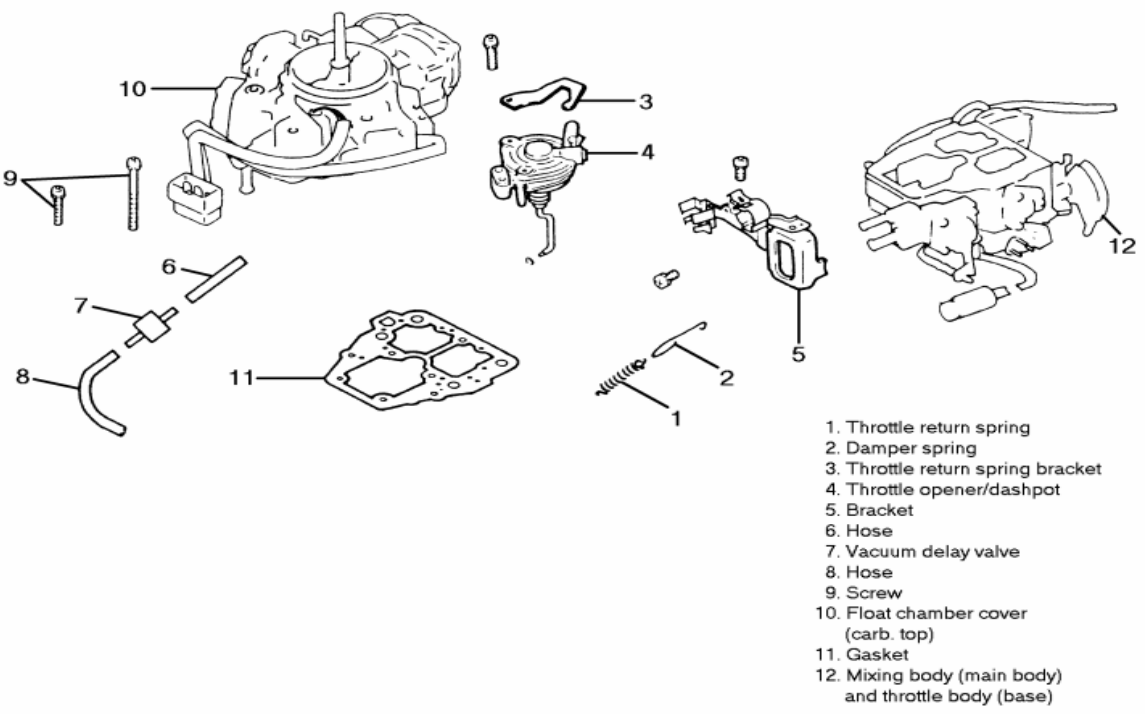
WARNING

Do not let the float drop and do not apply any force to the float. The needle valve controlled by the float will be damaged.

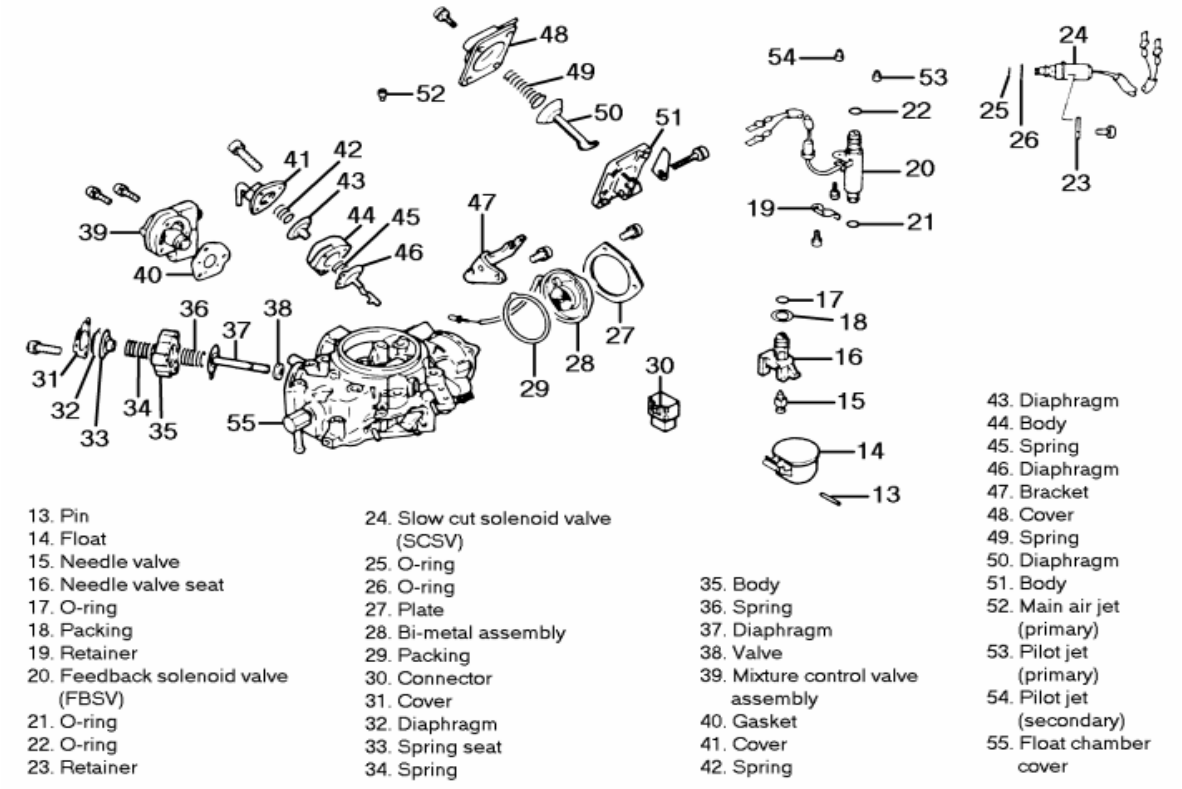
10. The valve seat may be removed by using two small, flat-bladed screwdrivers to gently lever the seat upwards and out of position. Use care not to damage the surrounding area or the seat mounts during this process.



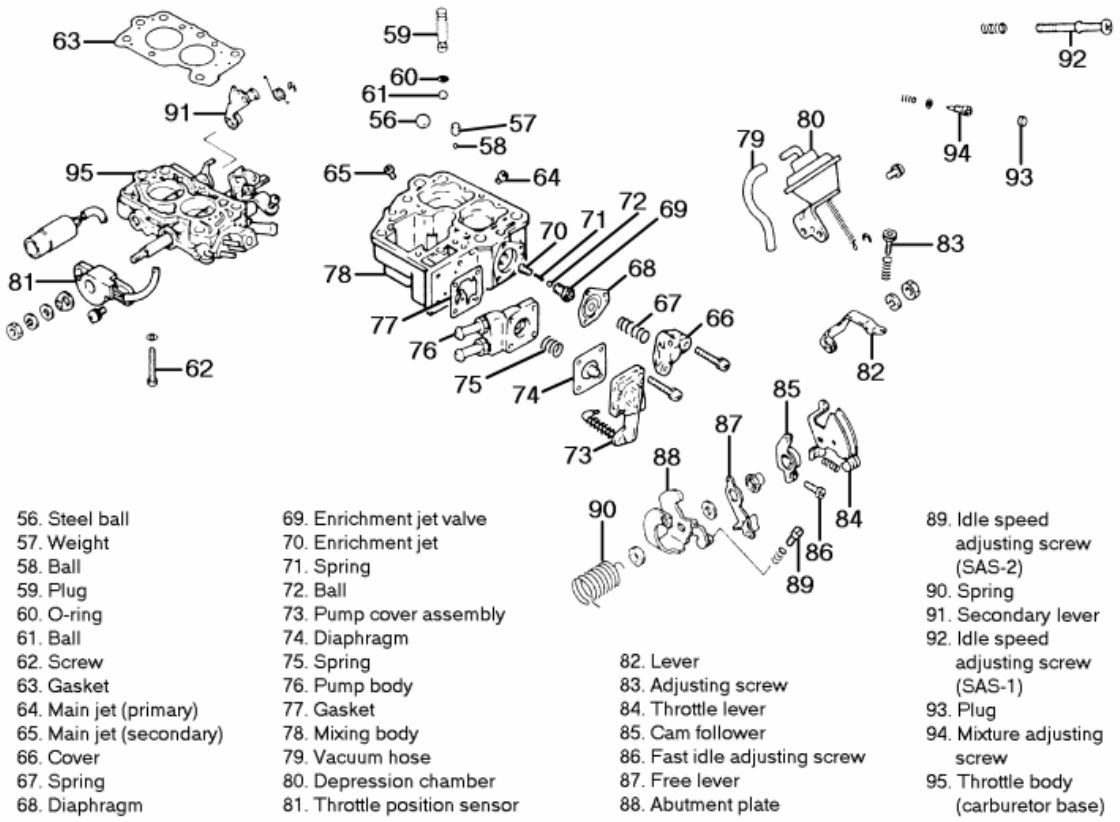
Exploded view of the carburetor mounting



Components removed when separating the float chamber from the mixing body

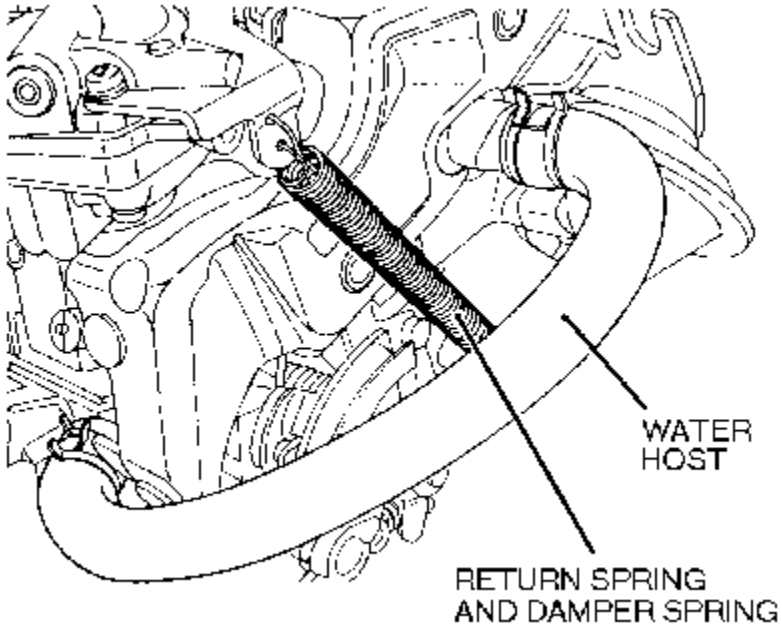


Feedback carburetor float chamber assembly

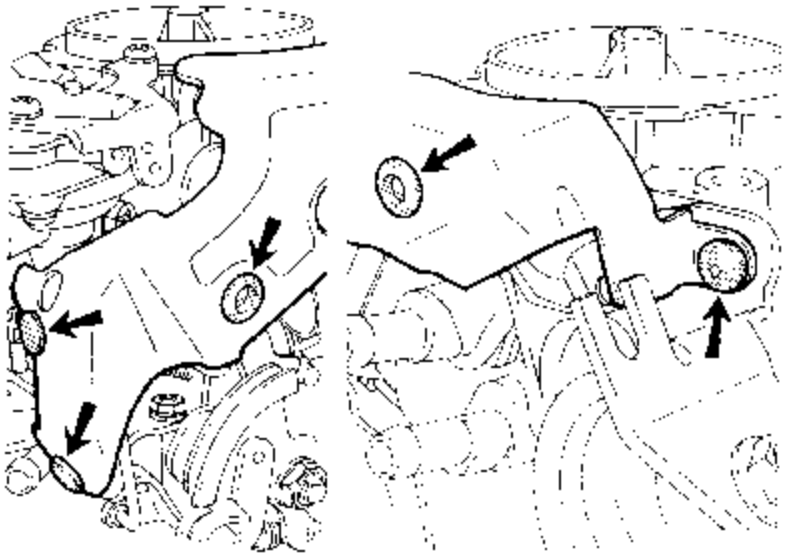


56. Steel ball
57. Weight
58. Ball
59. Plug
60. O-ring
61. Ball
62. Screw
63. Gasket
64. Main jet (primary)
65. Main jet (secondary)
66. Cover
67. Spring
68. Diaphragm
69. Enrichment jet valve
70. Enrichment jet
71. Spring
72. Ball
73. Pump cover assembly
74. Diaphragm
75. Spring
76. Pump body
77. Gasket
78. Mixing body
79. Vacuum hose
80. Depression chamber
81. Throttle position sensor
82. Lever
83. Adjusting screw
84. Throttle lever
85. Cam follower
86. Fast idle adjusting screw
87. Free lever
88. Abutment plate
89. Idle speed adjusting screw (SAS-2)
90. Spring
91. Secondary lever
92. Idle speed adjusting screw (SAS-1)
93. Plug
94. Mixture adjusting screw
95. Throttle body (carburetor base)

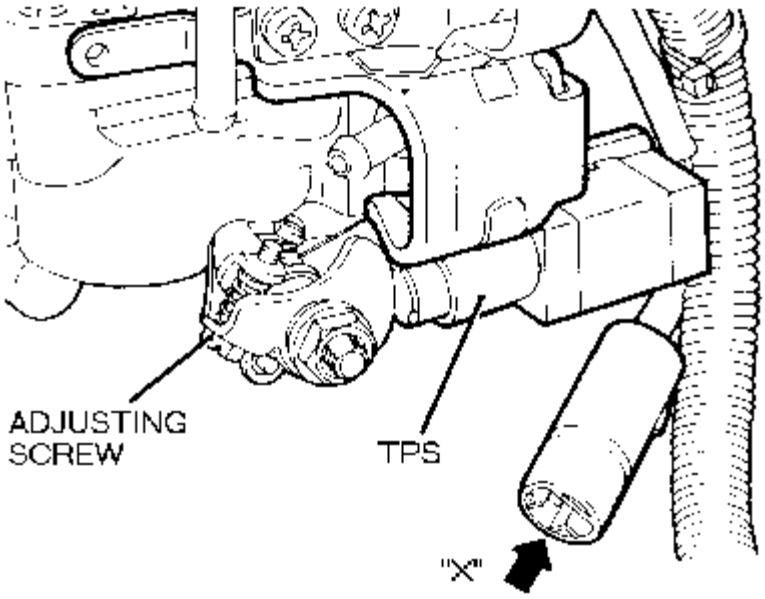
Feedback carburetor mixing body and throttle body assembly



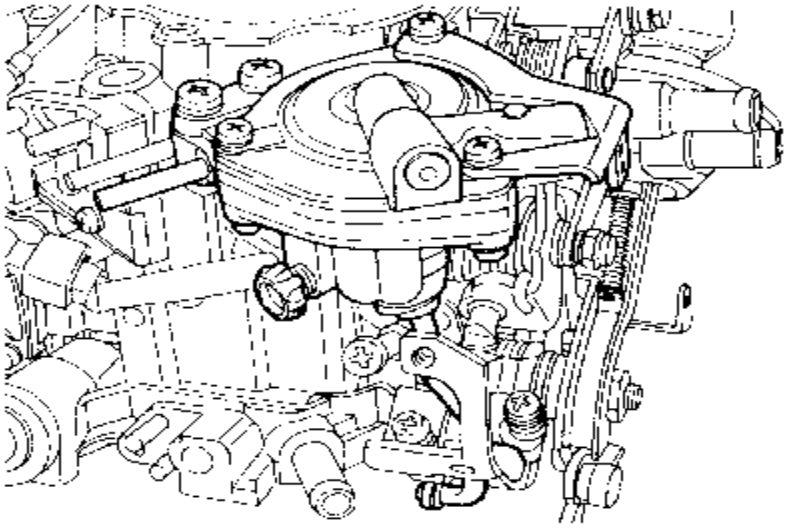
Remove the water hose and the return and damper springs



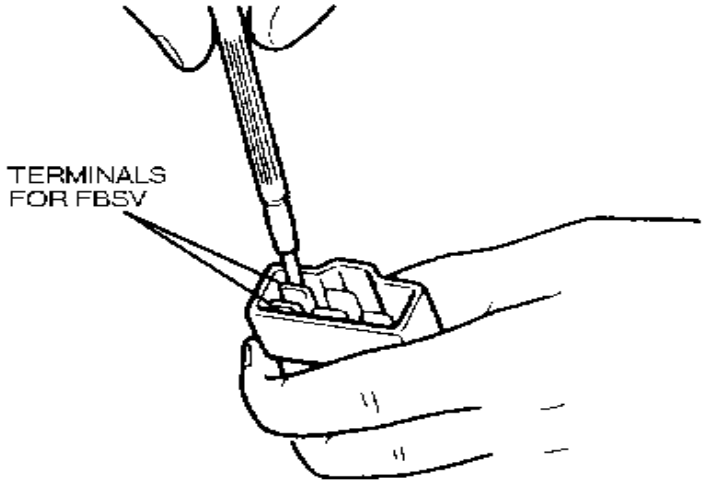
Remove the retainers securing the choke cover

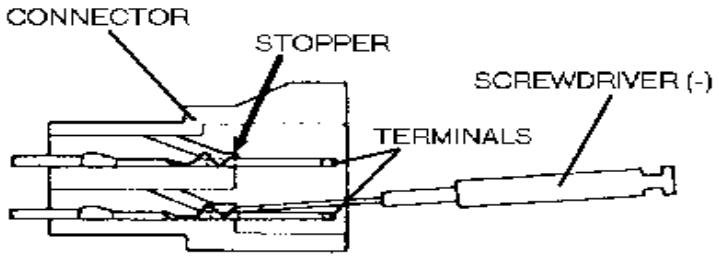


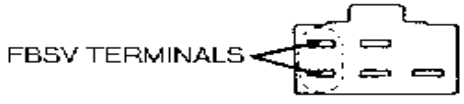
Remove the Throttle Position Sensor (TPS) from the carburetor



Remove the throttle opener/dashpot. Be careful not to bend the actuating rods

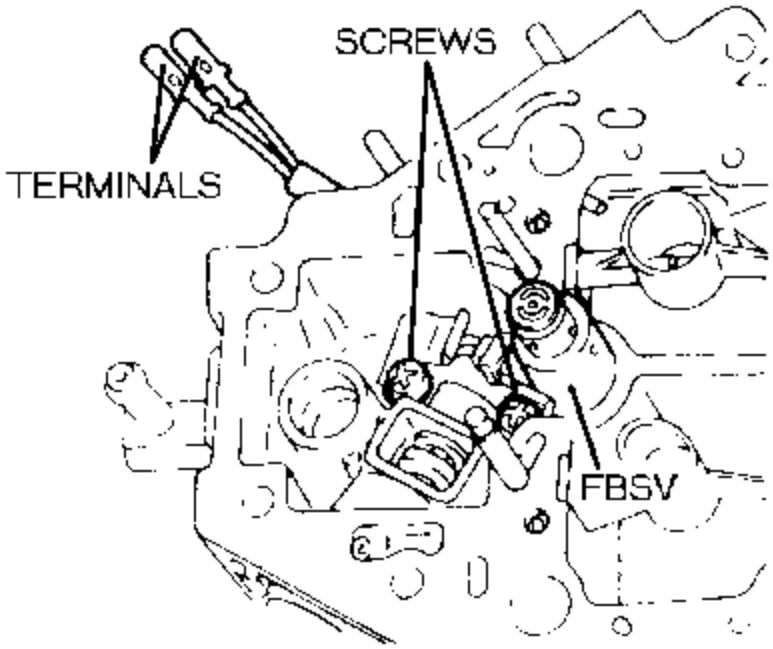




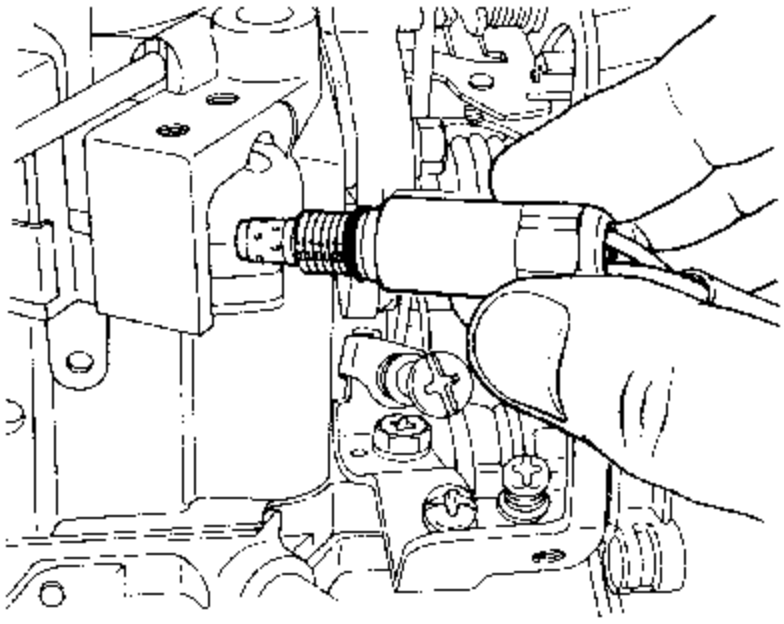


Removing the terminals from the connector body. Use a very small pry tool to gently lift the stop tab within the plastic shell

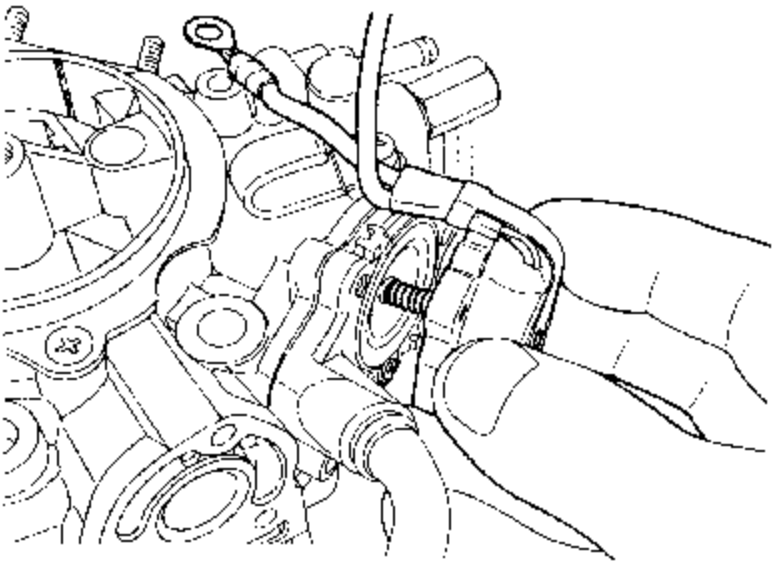
11. Find the electrical connector for the Feedback Solenoid Valve (FBSV). The terminals must be removed from the connector housing before the valve can be removed. Use a very thin, flat tool (such as a jeweler's screwdriver) inserted into the connector to loosen the stopper and remove each terminal.
12. Remove the grommet from the top of the carburetor. Remove the retainer and remove the FBSV attaching screw; remove the feedback solenoid valve.
13. Remove the retainer and remove the Slow Cut Solenoid Valve (SCSV) from the carburetor top. Hold the solenoid by the body and avoid pulling on the wiring.
14. Using the same small screwdriver technique as in Step 11, disconnect the SCSV terminals from the plastic connector body and remove the SCSV from the carburetor.
15. Use a hand grinder or similar tool to remove the heads of the rivets holding the cover of the choke assembly. Remove the small screw in the bottom of the cover.
16. Remove the packing (gasket), bimetal assembly and plate.
17. Using a pin punch or similar tool, remove the remainder of the rivets from each hole. Take care not to damage the surrounding material.
18. Remove the bimetal terminal from the wiring connector.
19. Remove the bowl vent valve.



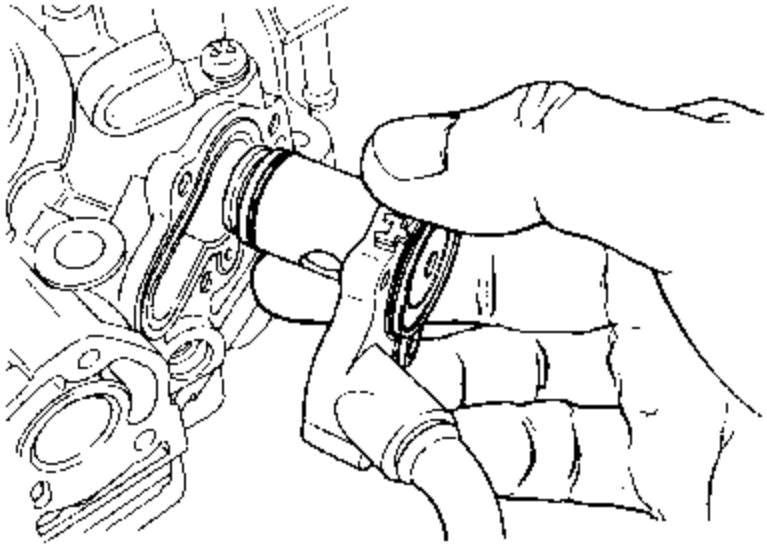
Remove the feedback solenoid valve after the terminals are free



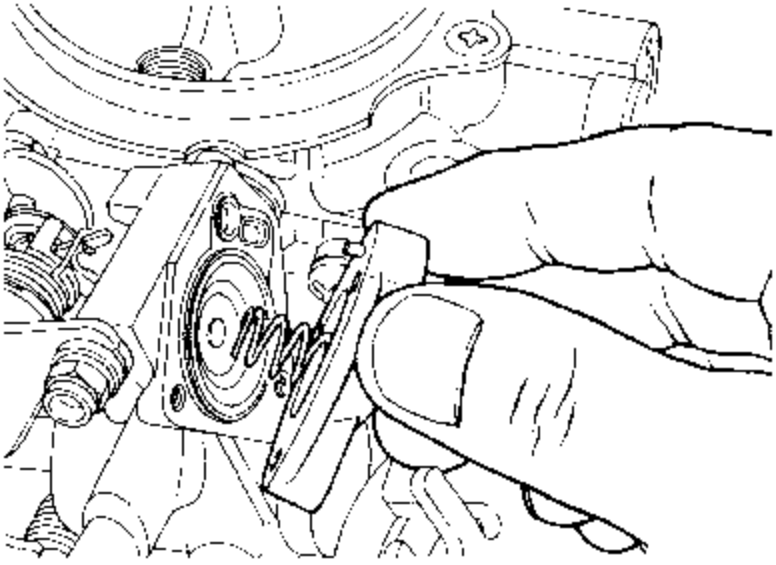
Unscrew the solenoid valve



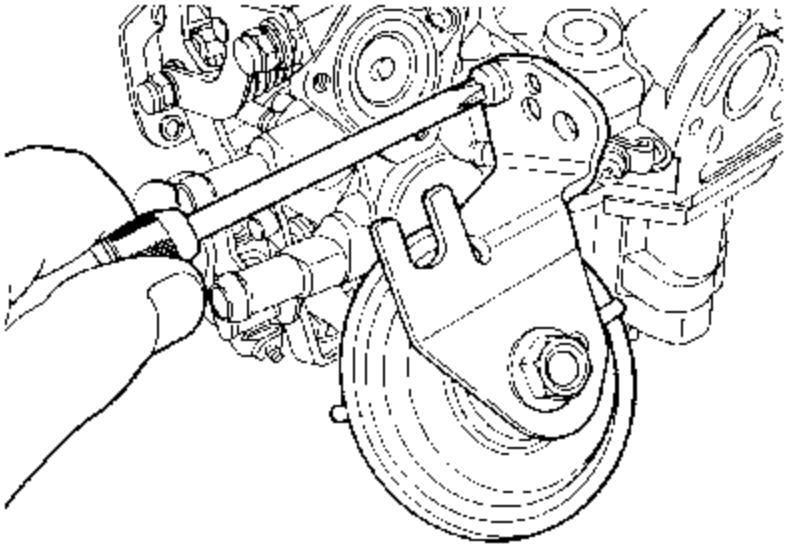
Remove the bowl vent solenoid from the carburetor



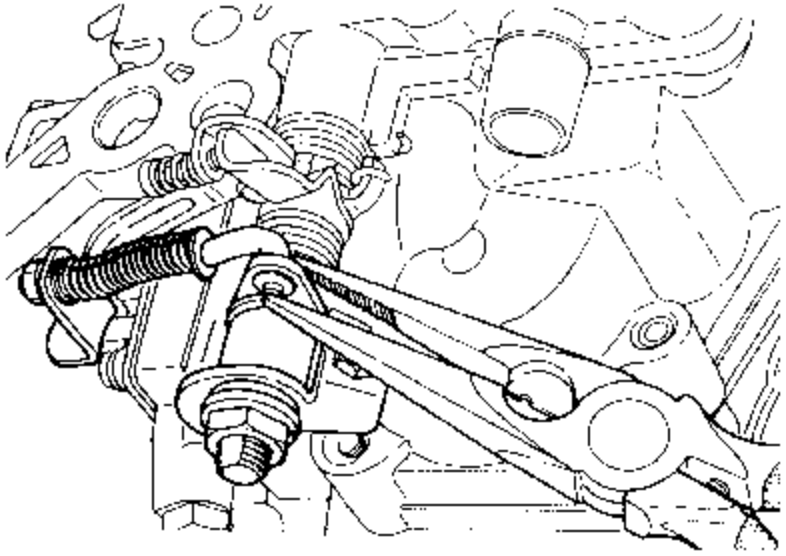
Removing the Bowl Vent Valve (BVV)



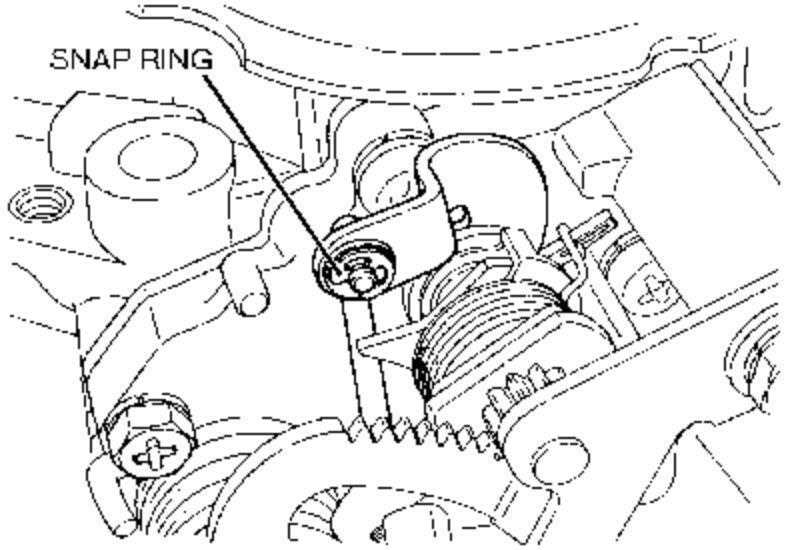
Removing the choke breaker cover



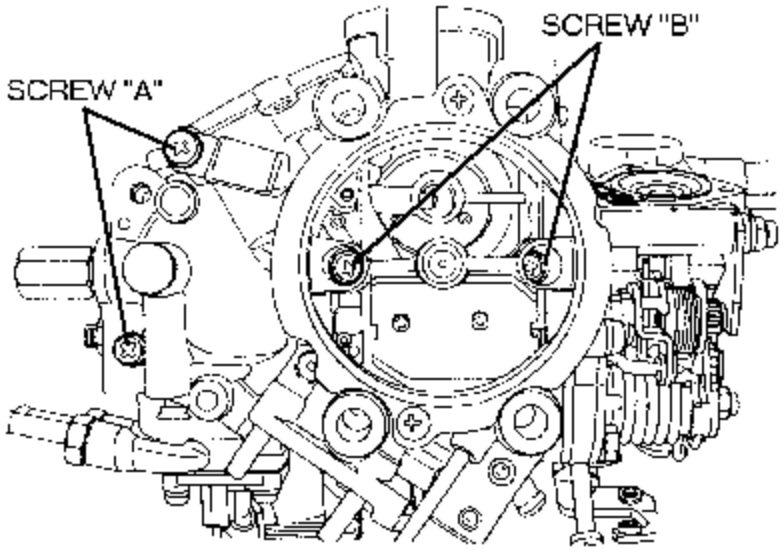
Remove the screws securing the depression chamber



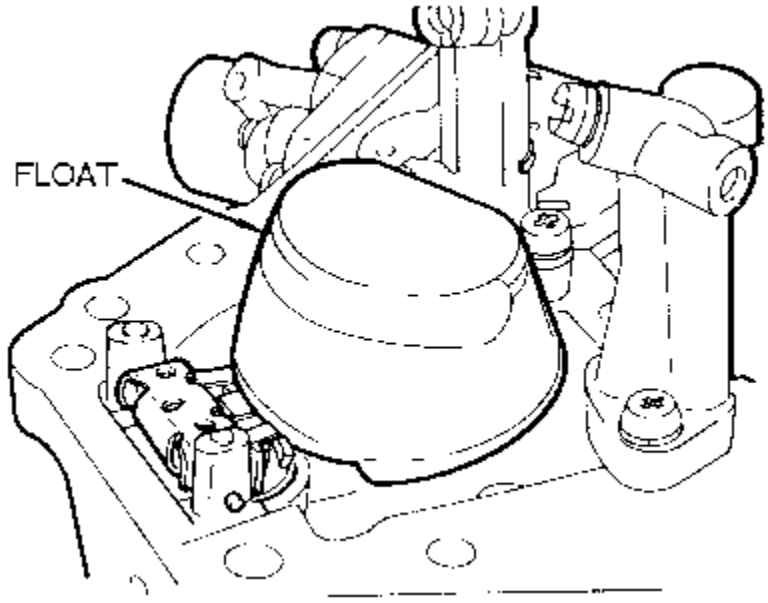
Use pliers to remove the accelerator pump rod



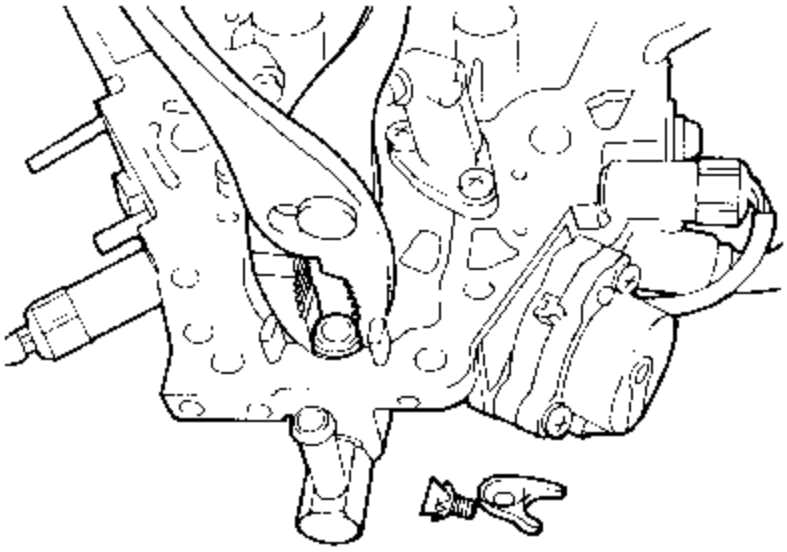
Remove the snap ring, then the choke rod



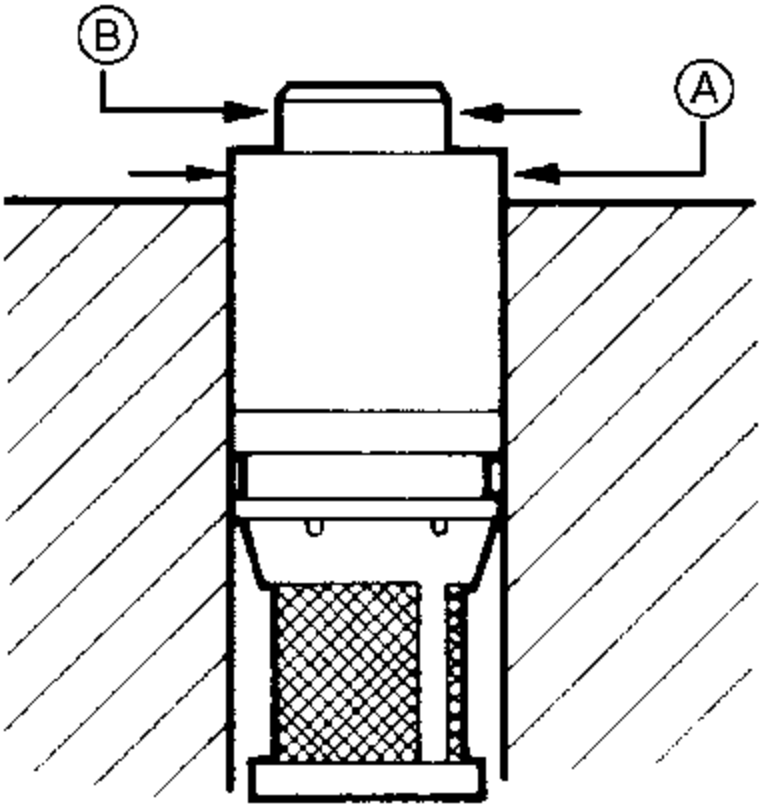
Remove the screws securing the float chamber cover



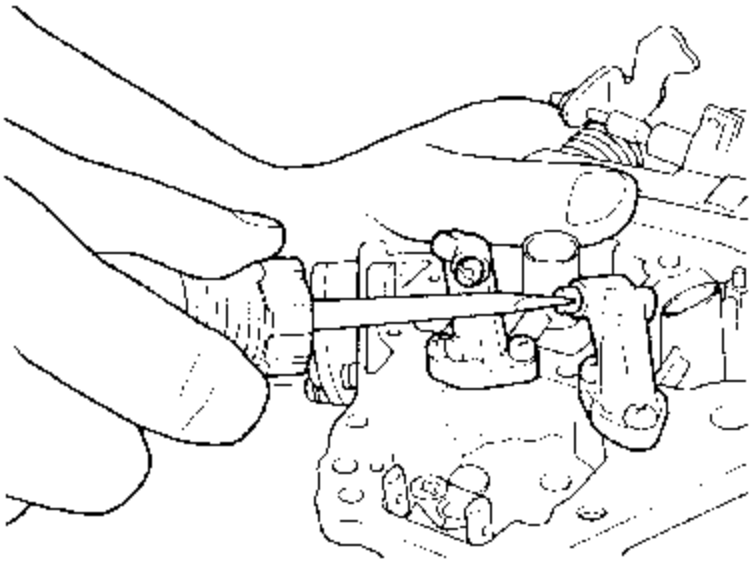
Remove the pin, then remove the float and needle



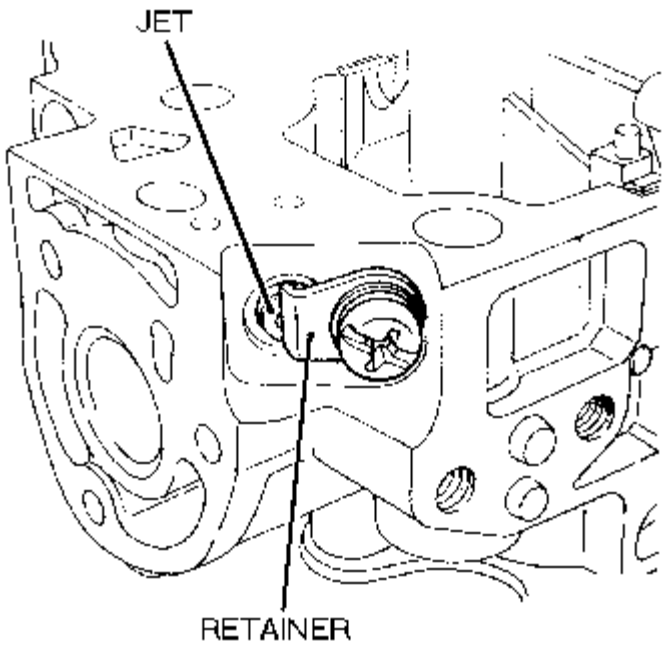
Use a pair of pliers to remove the needle seat

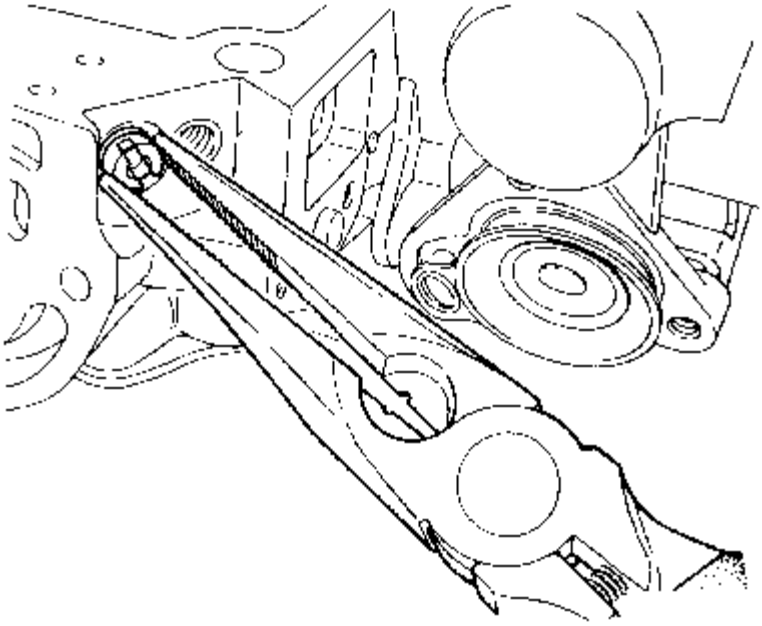


When removing the needle seat, grasp it by area A, not area B

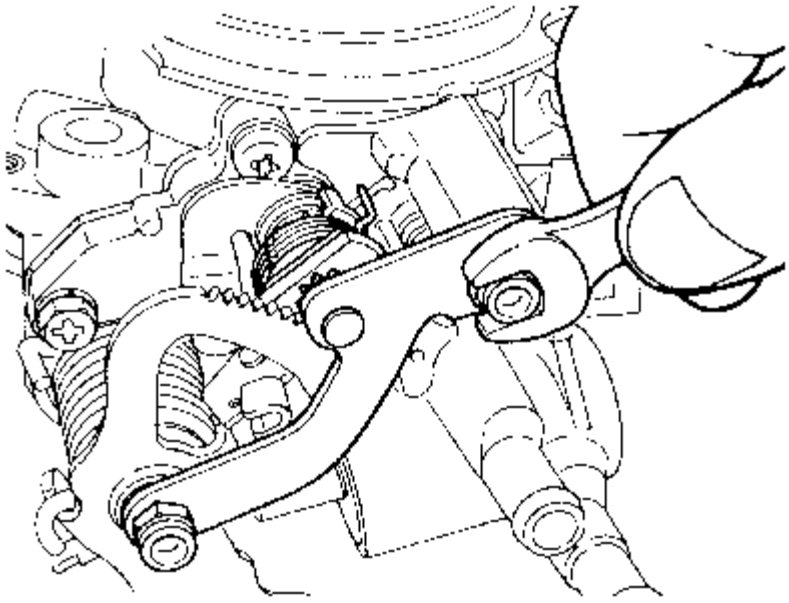


Remove the main jet with a proper sized screwdriver

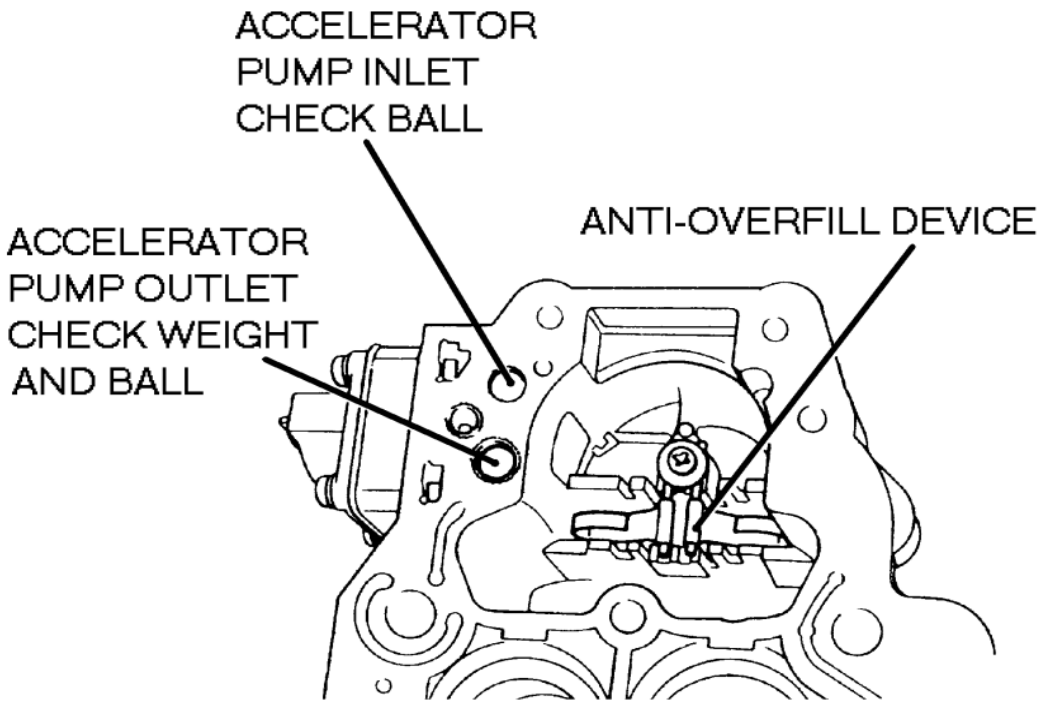




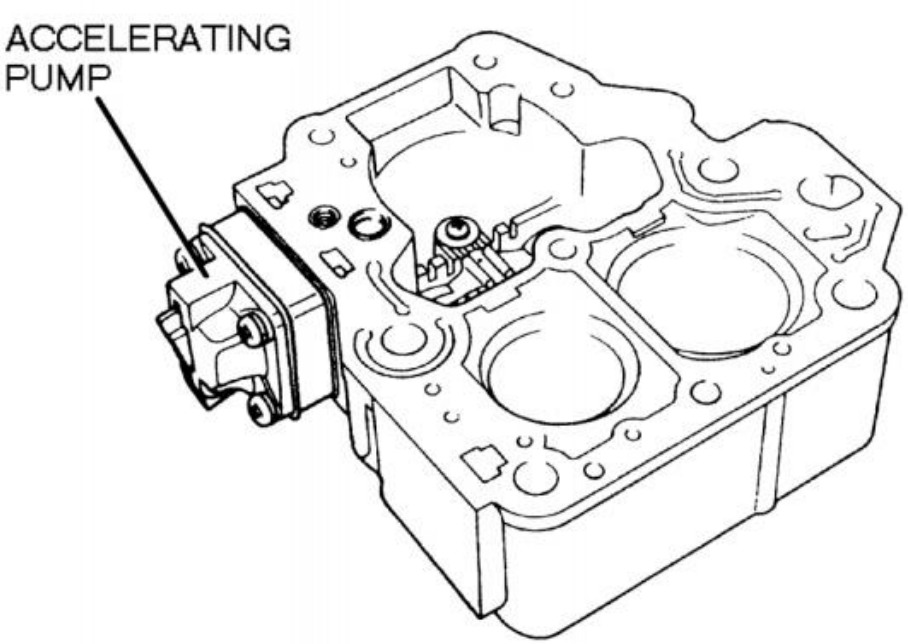
Remove the pilot jet retainer and pull the secondary jet out with pliers



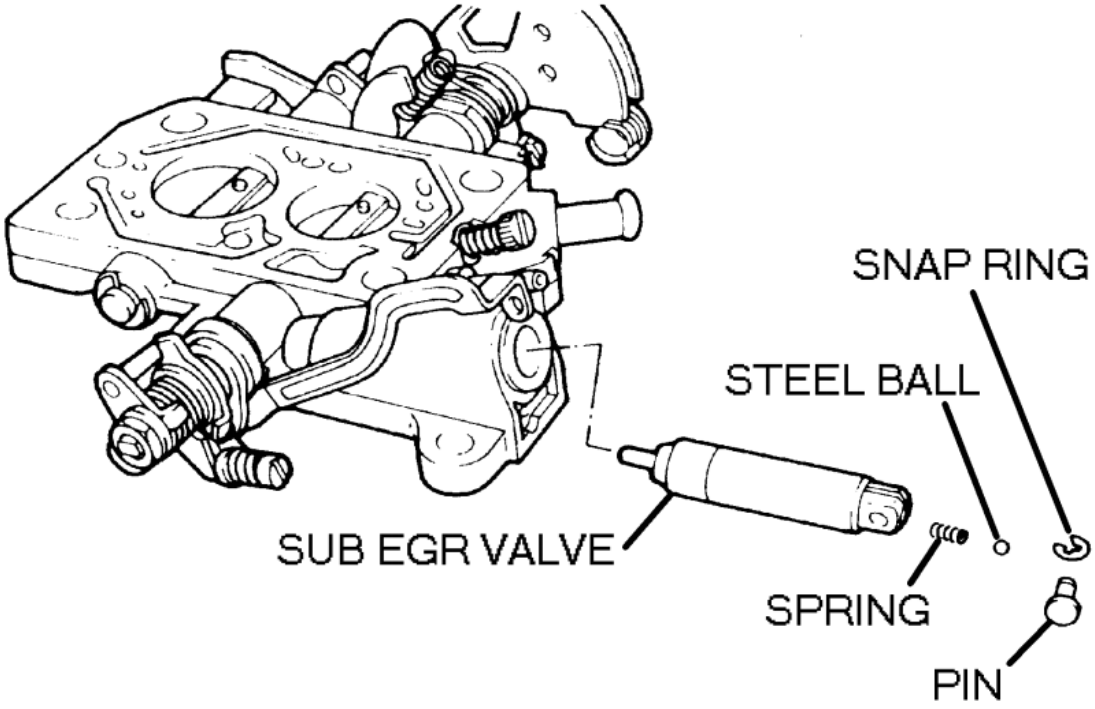
Remove the two lock screws, then remove the choke pinion assembly



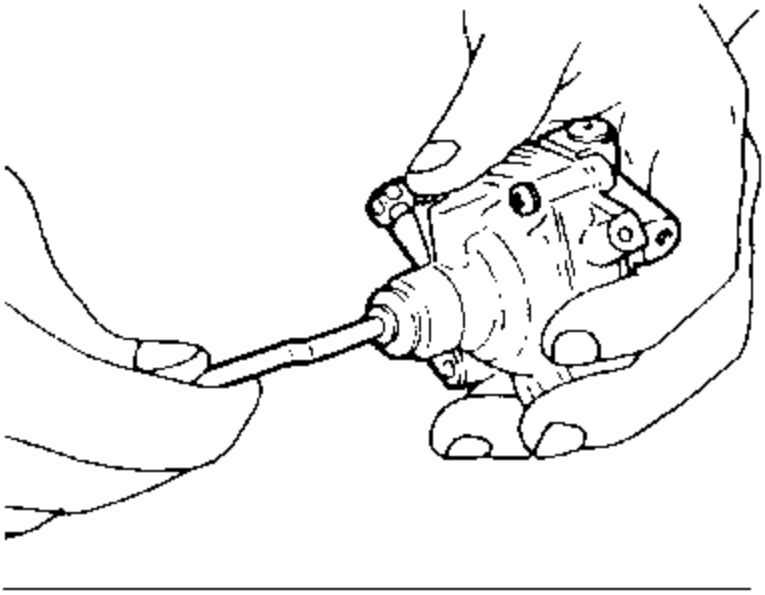
Remove the check weight and ball, as well as the steel ball of the anti-overfill device

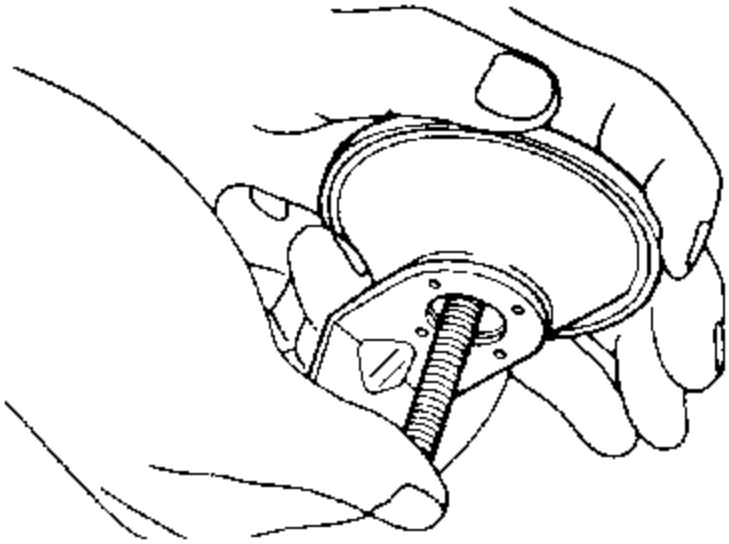


Remove the accelerator pump mounting screws, then remove the pump cover link assembly, diaphragm, spring, body and gasket from the main body



After removing the snap ring from the sub-EGR control valve pin, remove the pin and the link from the valve. Take the little steel ball and spring out of the sub-EGR control valve





Inspect the function of the dashpot and depression chamber

There are small springs within this unit. Take note of their location and placement, and be careful not to lose them.

20. Remove the choke breaker cover.
21. Remove the check weight and its ball and remove the steel ball from the anti-overfill device.
22. Remove the accelerator pump rod from the throttle shaft lever.

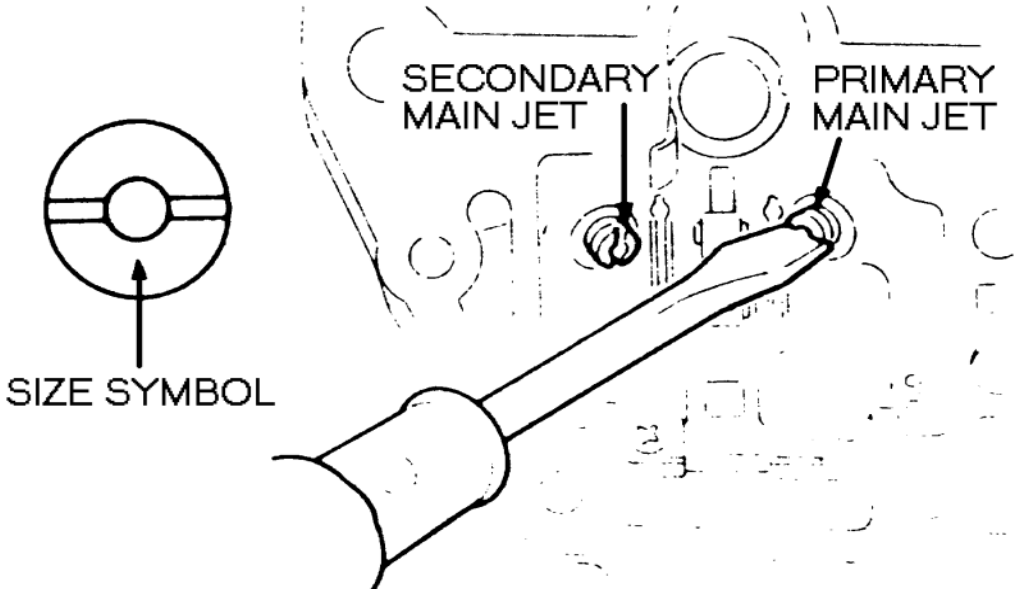
23. Remove the screw from the throttle body assembly, taking care not to raise burrs on the head of the screw. Any deformation will prevent the base from mating to the manifold properly.
24. Using a screwdriver which exactly matches the groove, remove the main jets.
25. Remove the accelerator pump mounting screws and remove the pump cover link assembly, the diaphragm, spring, pump body and gasket from the carburetor body.
26. Remove the three attaching screws from the enrichment valve and remove the cover, spring, and diaphragm assembly from the main body of the carburetor.
27. Remove the vacuum hose running between the depression chamber and the throttle body.
28. Disconnect the depression chamber rod from the secondary throttle lever. Unbolt and remove the depression chamber.
29. Using a screwdriver that exactly matches the screw heads, remove the throttle position sensor from the throttle body (base) of the carburetor.

To assemble:

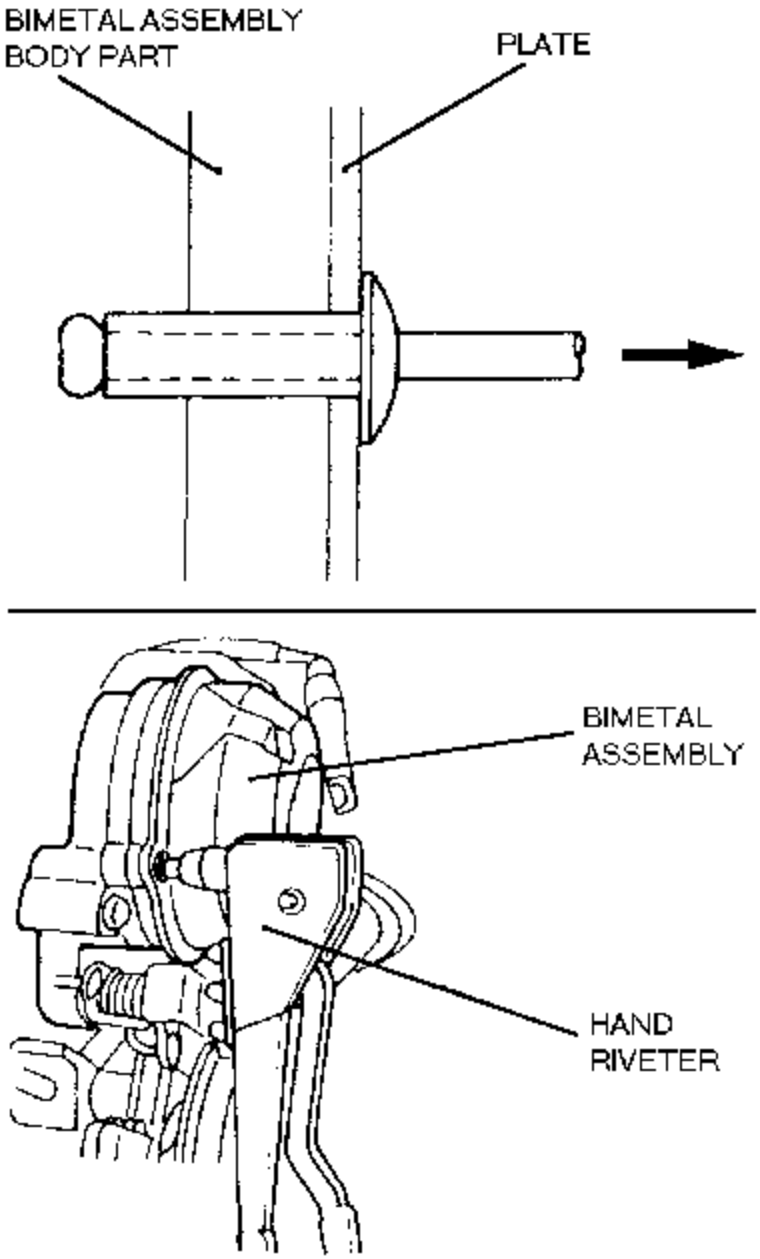
30. Wearing eye protection and gloves, carefully clean the fuel and air passages with a spray cleaner and, if available, compressed air. A majority of carburetor problems are caused by very small bits of dirt lodging in the air or fuel passages. Do NOT use metal wire or similar to clean the passages.
31. Check the diaphragms carefully for any sign of damage or cracking.
32. Check the operation of the needle valve; it should move lightly and smoothly. If any binding is felt, replace it.
33. Check the fuel inlet filter (above the needle valve) for clogging.
34. Check the float for cracks, deformation or internal leakage.
35. Inspect the motion of the various linkages and pivots. If any binding is felt, clean the system thoroughly and apply a light coat of lubricant.
36. Check the operation of both solenoid valves. Apply battery voltage to the terminals; the solenoid should operate with a distinct click each time power is

applied or removed. Inspect the tip of the FBSV to insure the jet is open and clean.

37. Use an ohmmeter to check the solenoids' resistance. The SCSV should have a resistance of 48-60 ohms at 68°F (20°C); the FBSV should have 54-66 ohms resistance at the same temperature.



Sizes are marked on each jet; exact replacements must be used



Use a hand riveter to refasten the bimetal choke cover back onto the choke body

Resistance will increase or decrease as the temperature rises or falls. Make common sense allowances for the temperature in which you are testing the units.

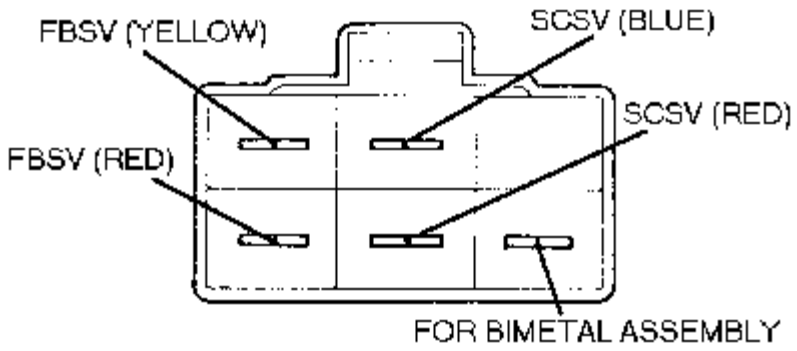
38. Hold one lead of the ohmmeter against the case of each solenoid and touch the other lead to each terminal. There should NOT be continuity between the case and the terminals.

39. Use the ohmmeter to check the bimetal assembly. Connect one lead to the wire terminal and the other lead to the body of the assembly. Correct resistance is approximately 6 ohms at 68°F (20°C).
40. The dashpot should be inspected by pulling outward on the rod. Resistance should be felt; when released, the lever should return quickly to its original position.
41. The depression chamber is checked by pushing the rod all the way into the unit and then blocking the vacuum port firmly with a finger. Release the rod; if it stays in place (with the vacuum port blocked), the unit is good. If the rod returns to its original extended position, the diaphragm inside has failed.
42. Before reassembly, make certain that all parts are clean and dry. Any gasket or O-ring which was removed MUST be replaced with a new one during reinstallation.

If the jets are to be replaced, the new ones must be exact replacements. The jets have a number stamped on them for identification. Jet size is selected based on sophisticated air flow measurements during assembly of the carburetor; changing the jets will lead to extreme driveability and emission problems.

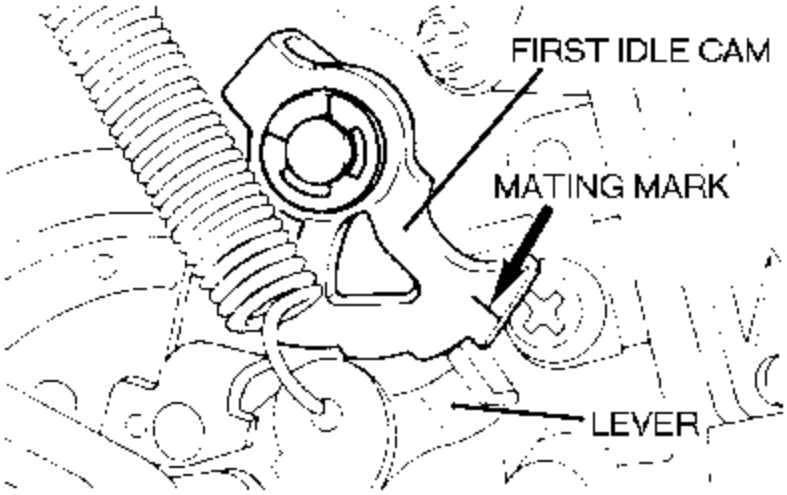
43. Install the throttle position sensor onto the throttle body and tighten the screws without causing damage.
44. Install the depression chamber. Connect the chamber rod to the secondary throttle lever.
45. Install the vacuum hose from the depression chamber to the throttle body.
46. Assemble the diaphragm, spring and cover for the enrichment valve. Install the valve and cover assembly onto the main body.
47. Assemble the accelerator pump and install it to the body with a new gasket.
48. Install the main jets without damaging them.
49. Place the screw into the throttle body assembly without damaging the head of the screw.
50. Attach the accelerator pump rod to the throttle shaft lever.
51. Install the check weight and ball and the steel ball for the anti-overfill device.

52. Install the choke breaker cover.
53. Install the bowl vent valve, taking care to assemble the small springs and diaphragm correctly.
54. Loosely hold the bimetal choke assembly in place. Route the terminal and wiring correctly to the plastic connector. Install the terminal in the connector by pushing it into the correct location. The stopper pin will engage the terminal automatically. A slight click may be heard or felt when the terminal is in position.
55. To install the bimetal assembly:
    1. Using a new gasket, place the cup on the top of the spiral spring in line with the choke lever. Fit the cap into place and use the small screw to hold it in place.
    2. Line up the mating marks on the case and body.
    3. Once aligned, install the rivets to hold the case in place. A hand riveter is required; the use of nuts and bolts is NOT recommended.
56. Route the wiring for the FBSV and SCSV correctly. Install terminals into the correct connector port by pushing them in firmly.
57. Install the SCSV and its retainer into the top of the carburetor. Handle the unit only by the body and avoid pulling on the wire.
58. Install the FBSV into the carburetor. Install the retainer and attaching screw as well as a new grommet.
59. Install the seat and needle valve, making sure each is correctly placed and securely installed.
60. Install the float and pivot pin, taking great care not to put any undue force on the float. Refer to the carburetor adjustment section for float level adjustment procedure.

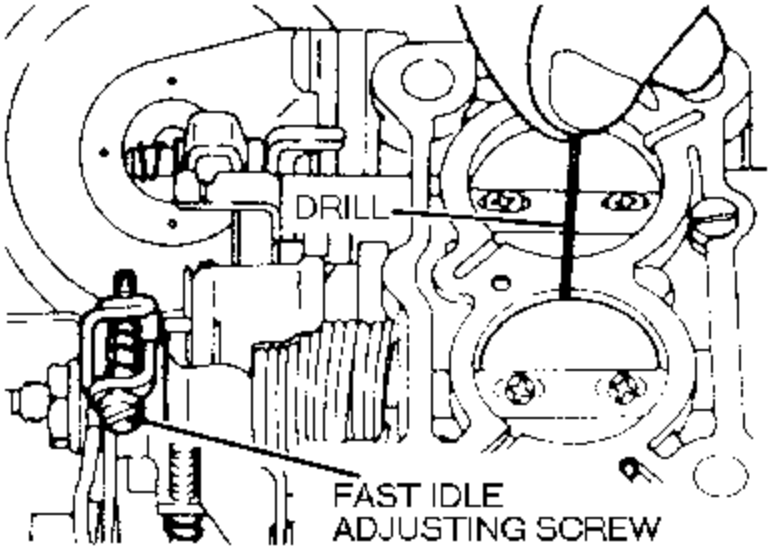


The terminals must be correctly installed in the connector body

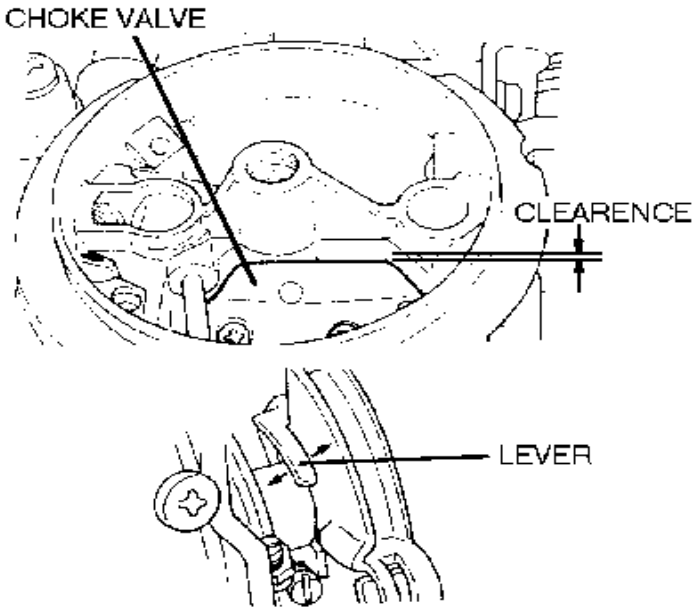
61. Install the carburetor top to the main body (with a new gasket) and install the five screws. Make sure each screw is tight without deforming the head.
62. Install the vacuum hose and delay valve running from the base of the carburetor to the choke breaker.
63. Install the connector bracket.
64. Install the ISC servo if it was removed (automatic transmission only).
65. Attach either the dashpot or throttle opener unit and connect the rod to the free lever.
66. Install the throttle return spring and damper spring.
67. Move the carburetor linkages by hand, checking that motions are smooth and there is no binding in any of the mechanisms.
68. With the carburetor correctly assembled, some adjustments must be made on the bench. Set the high idle cam to the second highest position and turn the carburetor upside down. Using a drill bit of known diameter or a clearance tool, check the clearance between the primary throttle plate and the throttle bore. Correct clearances are:



The throttle plate clearance must be checked after the high idle cam is correctly set



Use a drill or feeler gauge to check the throttle plate clearance



Check the choke plate clearance with the throttle wide open; make needed adjustments by carefully bending the lever

- 2.0L engine with manual transmission: 0.025 in. (0.63mm)
- 2.0L engine with automatic transmission: 0.028 in. (0.71mm)
- 2.6L engine with manual transmission: 0.028 in. (0.71mm)
- 2.6L engine with automatic transmission: 0.031 in. (0.80mm)

69. Check the choke unloader clearance by using your finger to lightly press and set the choke plate. When it is fully closed, move the throttle linkage to open the throttle plate(s) all the way; the throttle plates should be vertical in their bores. Measure the clearance between the choke plate and the choke bore. Correct clearance is 0.079 in. (2mm). If adjustment is needed, gently bend the throttle lever to achieve the correct clearance. Bending the lever upwards increases the clearance and bending it downward reduces the clearance.

Generally, the choke unloader clearance should not change after an overhaul. Adjusting this clearance greatly affects cold driveability; check the clearance after an overhaul, but don't adjust it unless necessary.

70. Install a new base gasket and reinstall the carburetor on the engine, following instructions given previously in this section.