5. Fuel System

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Service Information

⚠ WARNING

- **Bending or twisting the control cables will impair smooth operation and could cause the cable to stick or bind, resulting in loss of vehicle control.**
- **Gasoline is extremely flammable and is explosive under certain conditions.**

- Work in a well ventilated area. Smoking or allowing flames or sparks in the work area or where gasoline is stored can cause a fire or explosion.

CAUTION

- **Be sure to remove the diaphragms before cleaning air and fuel passages with compressed air. The diaphragms might be damaged.**

- Refer to section 2 for fuel tank removal and installation.
- Refer to section 21 for fuel pump inspection, removal and installation.
- When disassembling fuel system parts, note the locations of the O-rings. Replace them with new ones on reassembly.
- Before disassembling the carburetors, place an approved gasoline container under the carburetor drain tube, then loosen the drain bolt and drain the carburetor (page 5-18).
- After removing the carburetors, wrap the intake port of the engine with a shop towel or cover it with piece of tape to prevent any foreign material from dropping into the engine.
- U.S.A. only:
  All hoses used in the secondary air supply system (All U.S.A. types) and evaporative emission control systems ('91—'93: Standard California type and U.S.A. ABS/TCS type/After '93: California type are numbered for identification. When connecting one of these hoses, compare the hose number with the Vacuum Hose Routing Diagram Label, page 1-35, and carburetor tubes, page 5-6.

NOTE

- If the vehicle is to be stored for more than one month, drain the float bowls (page 5-18). Fuel left in the float bowls may cause clogged jets resulting in hard starting or poor driveability.

Troubleshooting

Engine won't start
- Too much fuel getting to the engine
  —Air cleaner clogged
  —Flooded carburetor
- Intake air leak
- Fuel contaminated/deteriorated
  —jets clogged
- Starting enrichment circuit clogged
- No fuel to carburetor
  —Fuel filter clogged
  —Fuel line clogged
  —Fuel level misadjusted
  —Fuel tank breather tube clogged
  —Fuel pump malfunction
  —Auto fuel valve malfunction

Lean mixture
- Fuel jets clogged
- Float valve faulty
- Float level too low
- Fuel line restricted
- Carburetor air vent tube clogged
- Intake air leak
- Fuel pump malfunction
- Auto fuel valve malfunction
- Vacuum piston faulty
- Throttle valve faulty

Rich mixture
- Starting enrichment valve open
- Float valve faulty
- Float level too high
- Air jets clogged
- Air cleaner contaminated
- Flooded carburetor
- Vacuum piston faulty

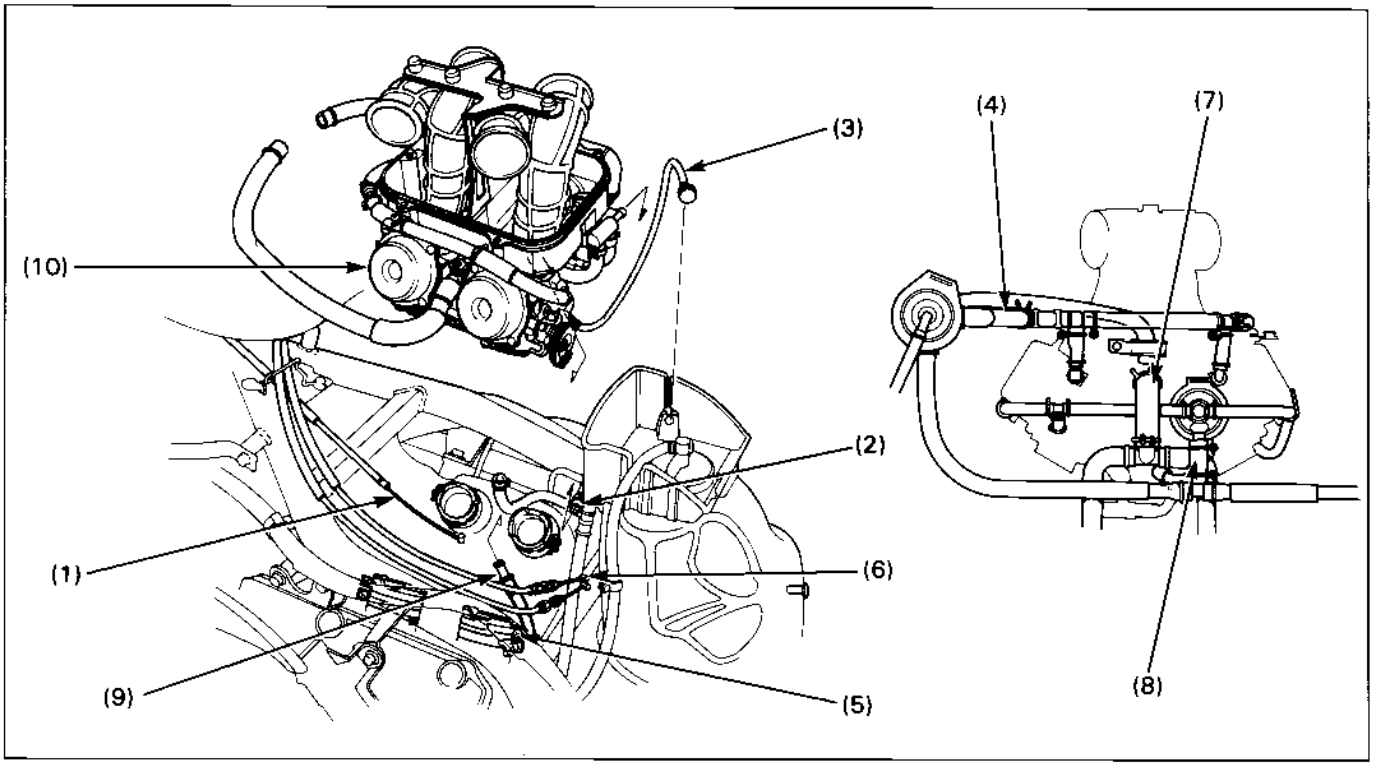
Engine stalls, hard to start, rough idling
- Fuel line restricted
- Ignition malfunction
- Fuel mixture too lean/rich
- Fuel contaminated/deteriorated
  —jets clogged
- Intake air leak
- Idle speed misadjusted
- Float level misadjusted
- Fuel tank breather tube clogged
- Fuel pump malfunction
- Pilot screw misadjusted
- Starting enrichment circuit clogged
- Auto fuel valve malfunction
- EVAP CAV control valve faulty
- Hoses of the emission control system faulty
- EVAP purge control valve faulty

Afterfire when engine braking is used
- Lean mixture in slow circuit
- Air cut-off valve malfunction
- Secondary air supply system faulty
- Hoses of emission control system faulty

Afterfire or misfiring during acceleration
- Ignition system malfunction
- Fuel mixture too lean

Poor performance (driveability) and poor fuel economy
- Fuel system clogged
- Ignition system malfunction
- Faulty EVAP CAV control valve
- Damaged/misconnected emission control system hoses

Carburetor Removal/Installation



⚠ WARNING

- **Gasoline is extremely flammable and is explosive under certain conditions.**

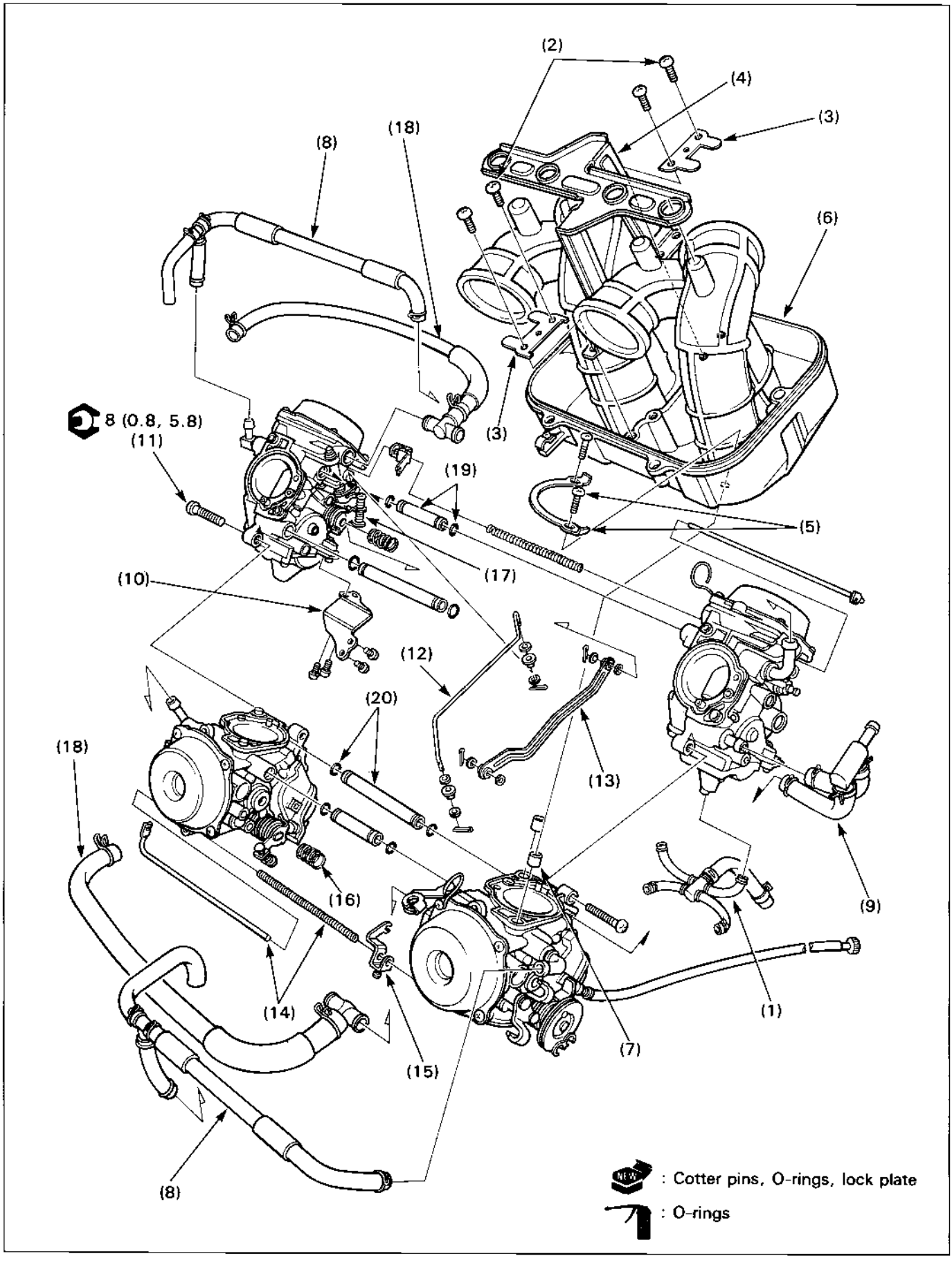
- Work in a well ventilated area. Smoking or allowing flames or sparks in the work area or where gasoline is stored can cause a fire or explosion.

Requisite Service

- Fairing pocket removal/installation (page 2-6)
- Air cleaner housing removal/installation (page 5-10)

	Procedure	Q'ty	Remarks
	Removal Order		Installation is in the reverse order of removal.
(1)	Choke cable	1	
(2)	Fuel tube	1	
(3)	Throttle stop screw cable	1	Remove from the fuel tank tray.
(4)	No. 6 tube	1	Disconnect from the 3-way joint. ('91-'93 : Standard California type and U.S.A. ABS/ TCS type/After '93 : California type)
(5)	Connecting tube band screw	4	Loosen the screws.
(6)	Throttle cable	2	
(7)	No. 15 tube	1	Disconnect from the carburetor
(8)	No. 4 tube	1	Disconnect from the EVAP purge control valve. ('91-'93 : Standard California type and U.S.A. ABS/ TCS type/After '93 California type)
(9)	Carburetor drain tube	1	
(10)	Carburetor assembly	1	

Carburetor Separation/Combination

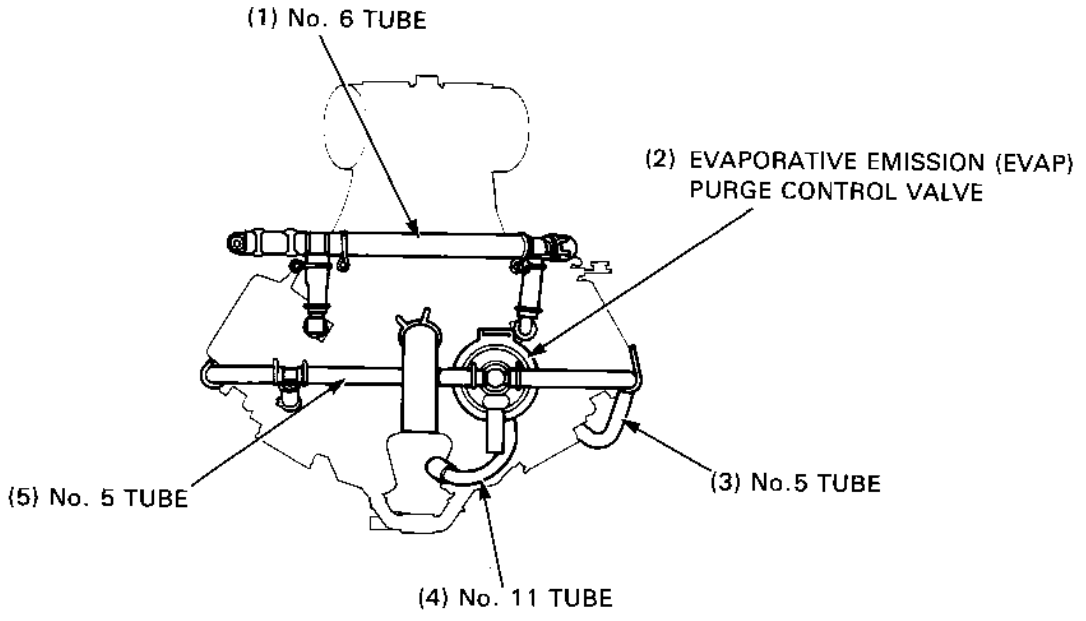


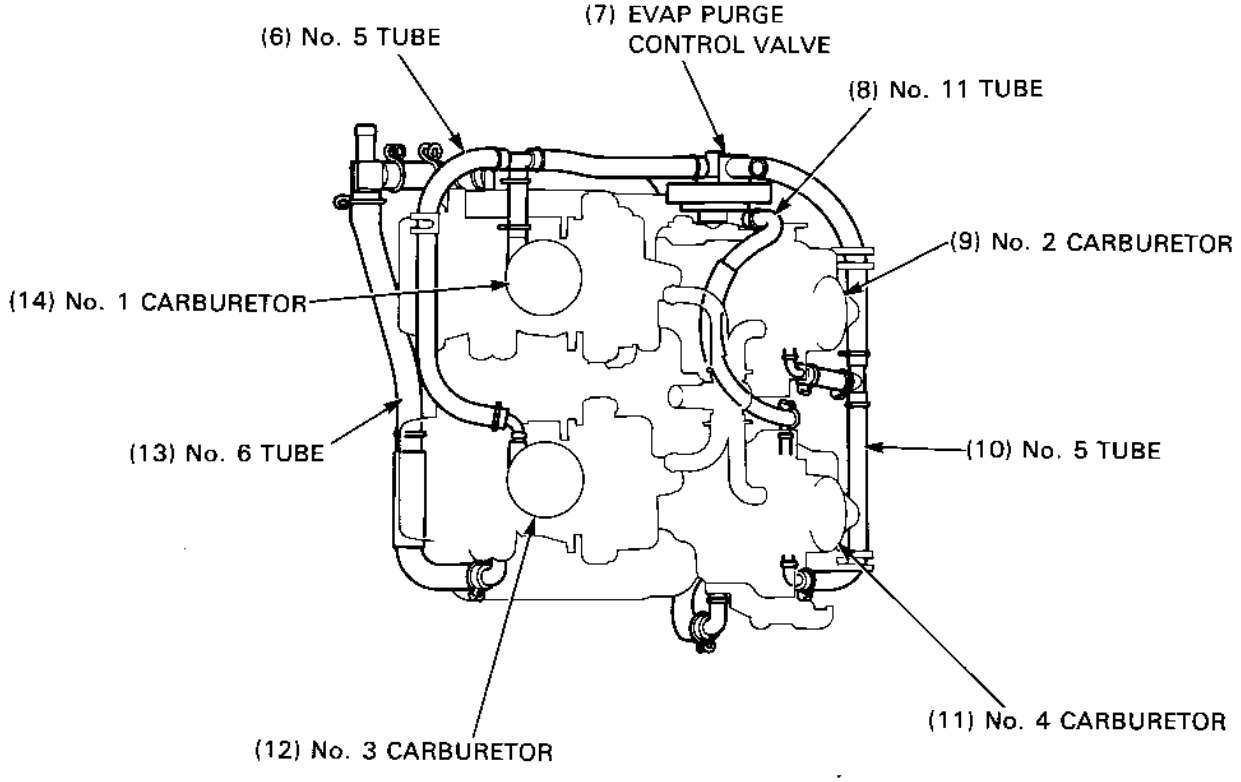
Requisite Service

- Carburetor removal/installation (page 5-3)
- EVAP purge control valve and tube removal/installation
  ('91-'93 : Standard California type and U.S.A. ABS/TCS type/After '93 : California type : page 5-17)

	Procedure	Q'ty	Remarks
	Disassembly Order		
(1)	Carburetor drain tube/joint assembly	1	
(2)	Screw	4	
(3)	Lock plate	2	
(4)	Air duct holder	1	
(5)	Screw/lock plate	8/4	
(6)	Air chamber/duct assembly	1	
(7)	Dowel pin	8	
(8)	Air vent tube/joint assembly	2	
(9)	Fuel tube/joint assembly	1	
(10)	Carburetor joint bracket	1	Remove the four screws.
(11)	Carburetor connecting screw	2	
(12)	Starting enrichment valve link	1	Remove the cotter pins, washers and collars.
(13)	Throttle link	1	Remove the cotter pins and washers.
(14)	Starting enrichment valve arm shaft/spring	2/2	Loosen the starting enrichment valve arm screw.
(15)	Starting enrichment valve arm	2	
(16)	Thrust spring	2	
(17)	Synchronization spring	3	
(18)	Sub air cleaner tube/joint	2	
(19)	Air joint pipe/O-ring	2/4	
(20)	Fuel joint pipe/O-ring	2/4	
	Reassembly Order		
(20)	Fuel joint pipe/O-ring	2/4	
(19)	Air joint pipe/O-ring	2/4	
(18)	Sub air cleaner tube/joint	2	
(15)	Starting enrichment valve arm	2	
(14)	Starting enrichment valve rod/spring	2/2	Do not tighten the starting enrichment valve arm screw.
(11)	Carburetor connecting screw	2	Do not tighten the screws.
(10)	Carburetor joint bracket	1	Do not tighten the screws.
(13)	Throttle link	1	Install with the washers and new cotter pins.
(12)	Starting enrichment valve link	1	Install with the collars, washers and new cotter pins.
(6)	Air chamber/duct assembly	1	Align the air duct flanges with the carburetor grooves. After installing, tighten the carburetor connecting screws and joint bracket screws. Then starting enrichment valve arm screws.
(5)	Screw/lock plate	8/4	
(17)	Synchronization spring	3	
(16)	Thrust spring	2	
(9)	Fuel tube/joint assembly	1	
(8)	Air vent tube/joint assembly	2	
(7)	Dowel pin	8	
(4)	Air duct holder	1	
(3)	Lock plate	2	
(2)	Screw	4	
(1)	Carburetor drain tube/joint assembly		

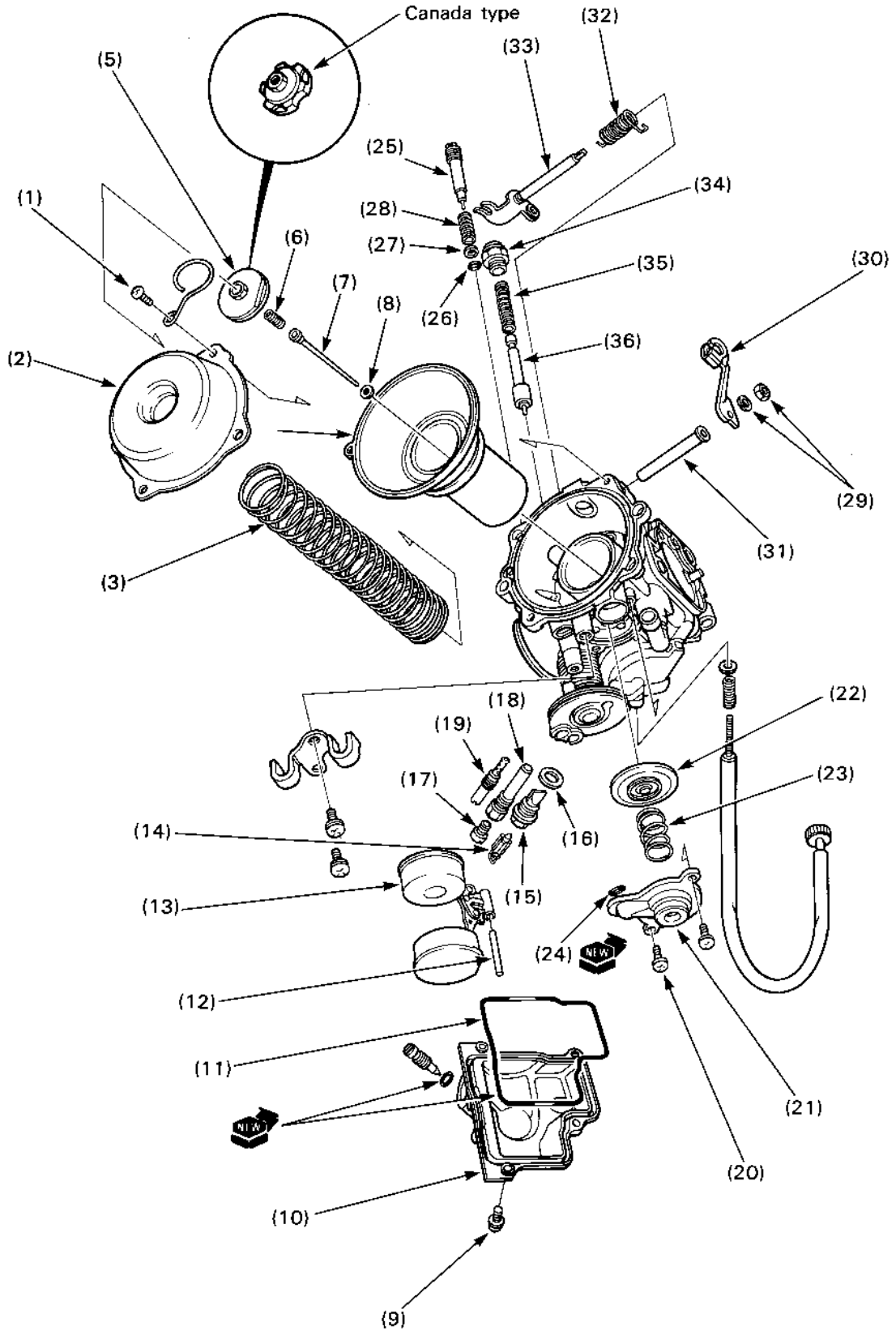
Carburetor Tube Routing ('91-'93 : Standard California type and U.S.A. ABS/TCS type) (After '93 : California type)





MEMO

Carburetor Disassembly/Assembly



NOTE

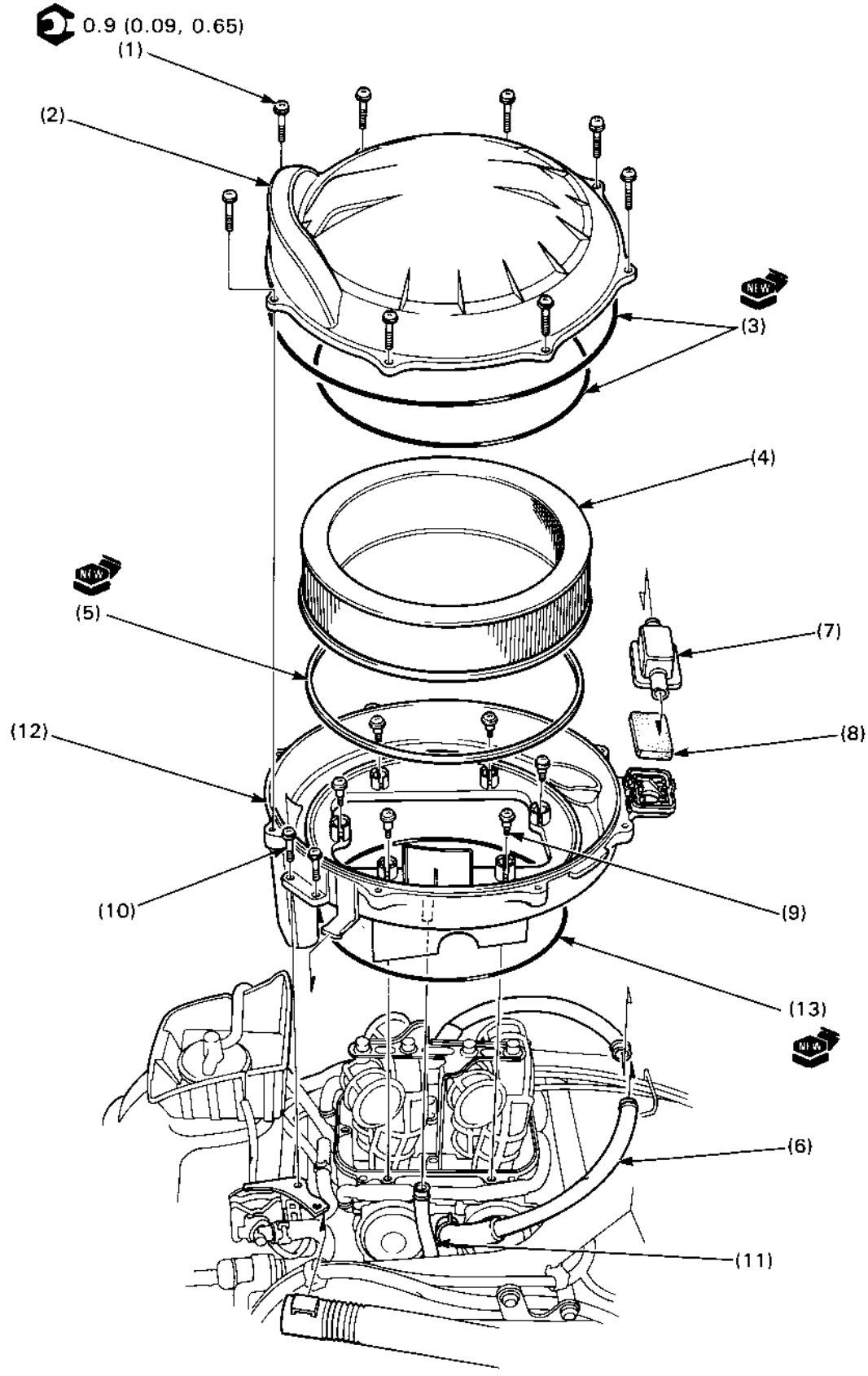
- The vacuum chamber and float chamber can be serviced with the carburetors assembled.
- The pilot screws are factory pre-set and should not be removed unless the carburetors are overhauled.

Requisite Service

- Carburetor separation/combination (page 5-4)

	Procedure	Q'ty	Remarks
	Disassembly Order		Assembly is in the reverse order of disassembly.
	Vacuum chamber		
(1)	Screw	4	
(2)	Vacuum chamber cover	1	
(3)	Compression spring	1	
(4)	Diaphragm/piston	1	
(5)	Needle holder	1	
(6)	Spring	1	
(7)	Jet needle	1	
(8)	Washer (Canada type only)	1	
	Float chamber		
(9)	Screw	4	
(10)	Float chamber	1	
(11)	O-ring	1	
(12)	Float-pin	1	
(13)	Float	1	
(14)	Float valve	1	
(15)	Float valve seat	1	
(16)	Sealing washer	1	
(17)	Main jet	1	
(18)	Needle jet holder	1	
(19)	Slow jet	1	
	Air cut-off valve		
(20)	Screw	2	
(21)	Air cut-off valve cover	1	
(22)	Diaphragm	1	
(23)	Spring	1	
(24)	O-ring	1	
	Pilot screw		
(25)	Pilot screw	1	
(26)	O-ring	1	
(27)	Washer	1	
(28)	Spring	1	
	Starting enrichment (SE) valve		
(29)	Nut/washer	1/1	No.1, No.4 carburetor only
(30)	SE valve lever	1	No.4 carburetor only (Plain washer for No.1 carburetor)
(31)	Collar	1	No.1, No.4, carburetor only
(32)	Spring	1	No.1, No.4, carburetor only
(33)	SE valve shaft	1	No.1, No.4, carburetor only
(34)	SE valve nut	1	
(35)	SE valve spring	1	
(36)	SE valve	1	

Air Cleaner Housing Removal/Installation



Requisite Service

- Top shelter removal/installation (page 2-5)

	Procedure	Q'ty	Remarks
	Removal Order		Installation is in the reverse order of removal.
(1)	Air cleaner housing cover screw	8	
(2)	Air cleaner housing cover	1	
(3)	O-rings	2	Do not remove the O-rings from the air cleaner housing cover unless necessary.
(4)	Air cleaner	1	
(5)	Air cleaner gasket	1	Do not remve the gasket from the air cleaner housing unless necessary.
(6)	Sub air cleaner tube	2	
(7)	Sub air cleaner cover	1	
(8)	Sub air cleaner	1	
(9)	Air cleaner housing screw	6	
(10)	Auto fuel valve mounting screw	2	
(11)	Breather tube	1	
(12)	Air cleaner housing	1	
(13)	O-ring	1	

Pilot Screw Adjustment

Idle Drop Procedure

For pilot screw access, see pages 5-13, 14 and 15.

Adjust the pilot screws as follows:

NOTE

- Make sure the carburetor synchronization is within specification before pilot screw adjustment.
- The pilot screws are factory pre-set and no adjustment is necessary unless the pilot screws are replaced.
- Use a tachometer with graduations of 50 rpm or smaller that will accurately indicate a 50 rpm change.
- A pilot screw wrench is necessary to turn the pilot screws. (All U.S.A. types)

S TOOL

Pilot screw wrench — **07KMA—MS60101 or 07LMA—MT8010A or 07MMA—MT3010A (U.S.A. only)**

Insert the pilot screw wrench from the direction shown to turn each pilot screw. Use a flashlight to help locate the pilot screw.

1. Turn each pilot screw clockwise until it seats lightly and back it out to the specification given.
   This is an initial setting prior to the final pilot screw adjustment.

   Initial opening:
   2-1/4 turns out (Standard 49 state type)
   2-5/8 turns out (Standard California type and U.S.A. ABS/ TCS type)
   1-7/8 turns out (Canada type)

CAUTION

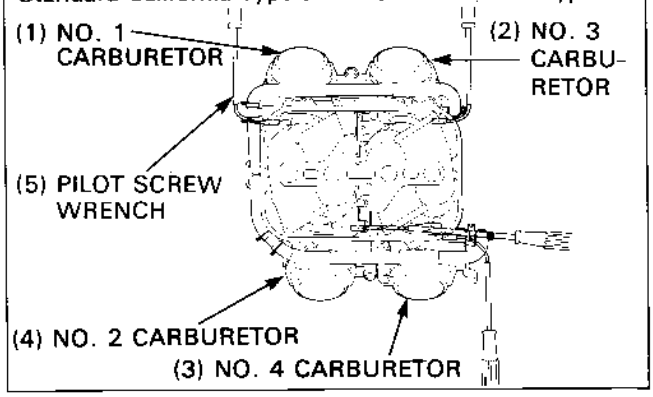
- **Damage to the pilot screw seat will occur if the pilot screw is tightened against the seat.**

2. Warm up the engine to operating temperature. Stop-and-go riding for 10 minutes is sufficient.
3. Attach the tachometer according to the tachometer manufacturer's instructions.
4. Adjust the idle speed with the throttle stop control knob.

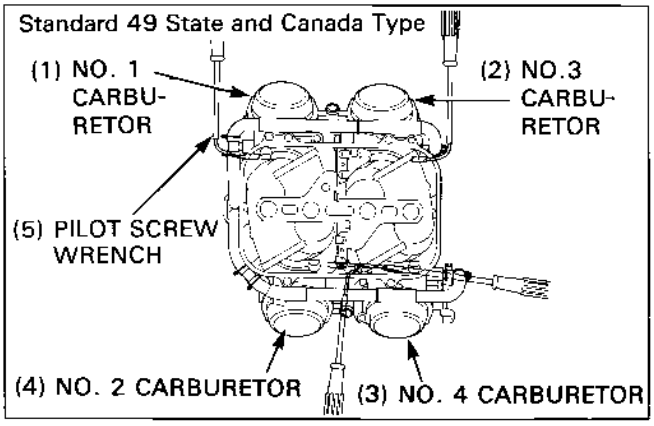
   Idle speed: 1,200 ± 100 rpm
   1,000 ± 100 rpm (Canada type)

5. Turn each pilot screw 1/2 turn out from the initial setting.
6. If the engine speed increases by 50 rpm or more, turn each pilot screw out by successive 1/2 turn increments until engine speed does not increase.
7. Adjust the idle speed with the throttle stop control knob.
8. Turn the No. 1 carburetor pilot screw in until the engine speed drops 50 rpm.
9. Turn the No. 1 carburetor pilot screw out 7/8 turn from the position obtained in step 8.
10. Adjust the idle speed with the throttle stop control knob.
11. Perform steps 8, 9 and 10 for the No. 2, 3 and 4 carburetor pilot screws.

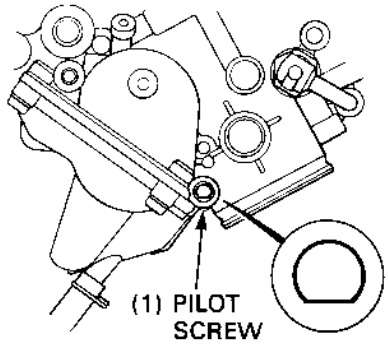
Standard California Type and U.S.A. ABS/TCS Type



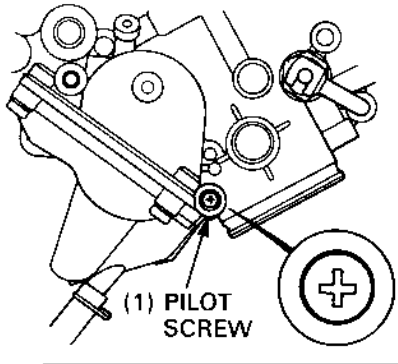
Standard 49 State and Canada Type



All U.S.A. Types



Canada Type



Pilot Screw Access

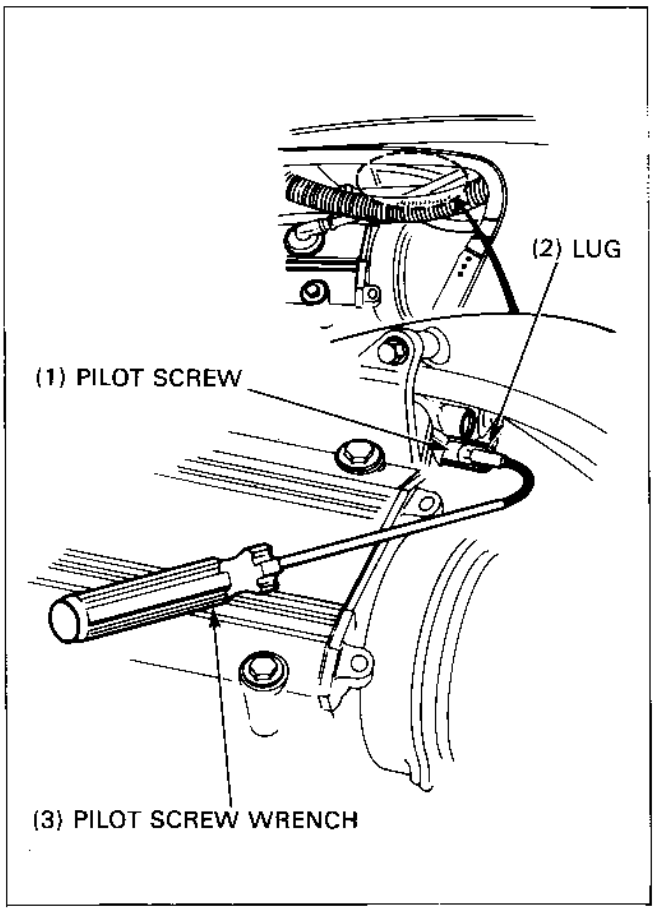
No. 1 Carburetor
Remove the right side Maintenance Cover. Remove the plastic timing belt cover on the front of the cylinder head. Using a 12-inch or longer #1 screwdriver and a flashlight to guide you, push the rubber carburetor heat insulator away from the carburetor body.

Insert the Pilot Screw Wrench into the pilot screw hole by using the lug on the carburetor body as a guide. Align the socket with the pilot screw head by turning the wrench slowly while pushing it lightly onto the pilot screw head.

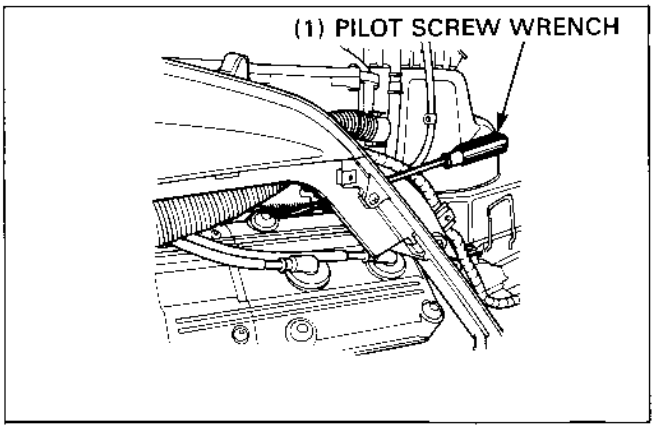
Return the carburetor heat insulator to its original position after making the adjustment.

S TOOL

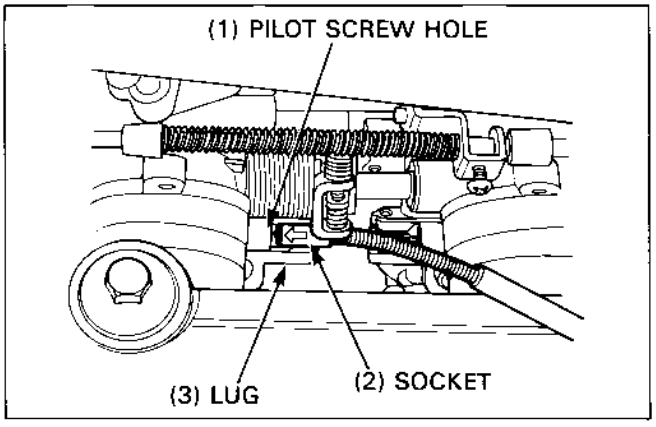
Pilot screw wrench — **07LMA—MT8010A or 07MMA—MT3010A**



No. 2 Carburetor
Insert the Pilot Screw Wrench from the rear upper side of the cylinder head between the frame and the fairing as shown.

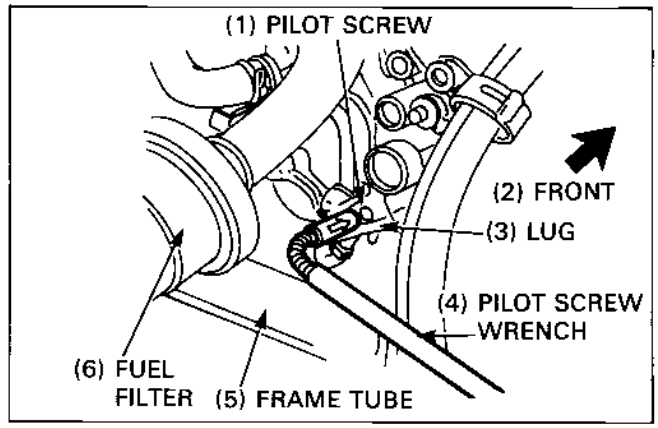


Align the socket of the wrench to engage with the pilot screw head in the same manner as for No. 1 carburetor.

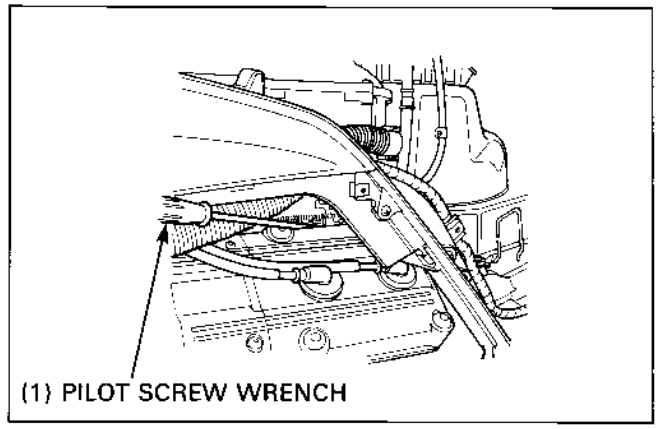


No. 3 Carburetor
Insert the pilot screw wrench from the lower side of the auto fuel valve between the frame and the fuel filter as shown.

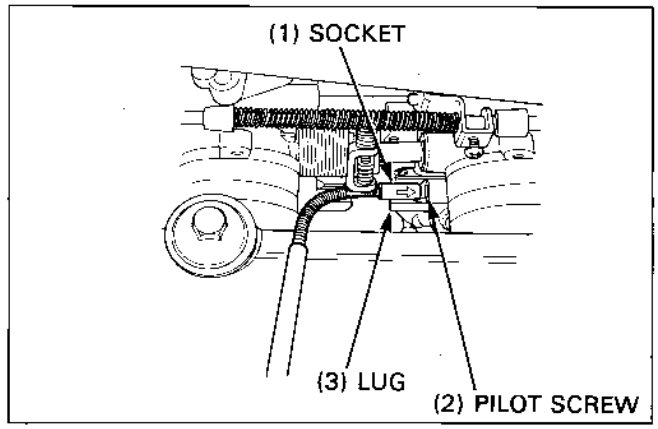
Align the socket of the wrench to engage with the pilot screw head in the same manner as for No. 1 carburetor.



No.4 Caburetor (Standard 49 state and Canada type)
Insert the pilot screw wrench from the front upper side of the cylinder head through the middle fairing hole as shown.

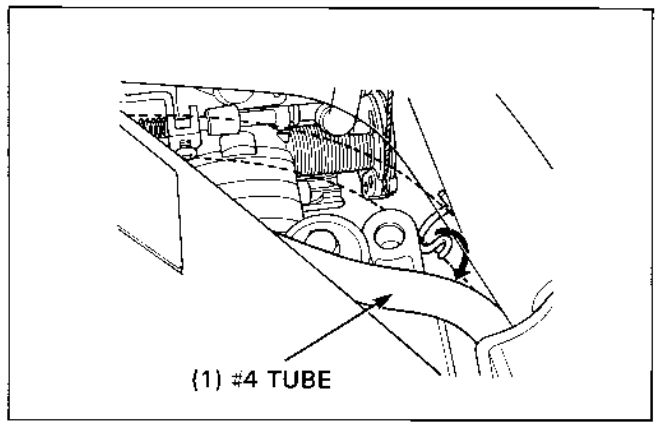


Align the socket of the wrench to engage with the pilot screw head in the same manner as for No. 1 carburetor.

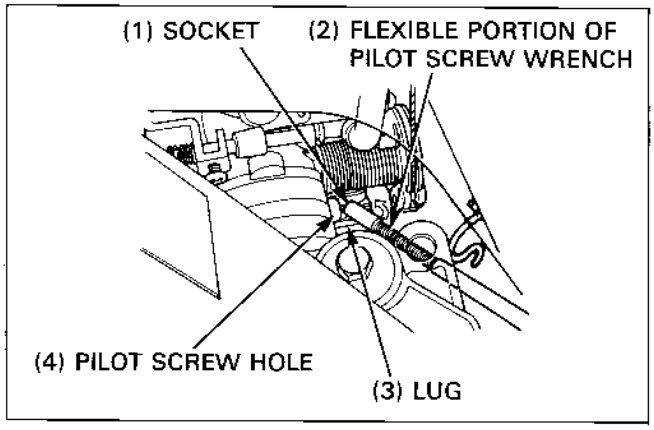


No.4 Carburetor (Standard California type and U.S.A. ABS/TCS type)

Move the tube marked #4 down, out of the way as shown.



Position the socket end of the wrench against the lug on the carburetor.



Push the tool against the lug to bend the flexible portion of the tool under the throttle bell crank as shown.

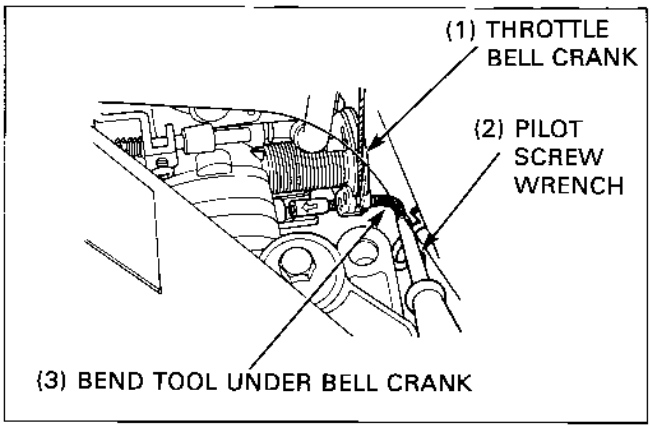
Align the socket of the wrench to engage with the pilot screw head in the smae manner as for No. 1 carburetor.

Use a flashlight to verify that the socket seats on the pilot screw.

NOTE

- Do not operate the throttle when the Special Tool is on the pilot screw.

After making the adjustment, return the #4 tube to its original position.



High Altitude Adjustment (U.S.A. only)

When the vehicle is to be operated continuously above 2,000 m (6,500 feet), the carburetor must be readjusted as described below to improve driveability and decrease exhaust emissions.
For pilot screw access, see pages 5-13, 14 and 15.

Warm up the engine to operating temperature. Stop and go riding for 10 minutes is sufficient.

Turn each pilot screw clockwise 1/2 turn with a pilot screw wrench.

NOTE

- A pilot screw wrench is necessary to turn the pilot screws.

S TOOL

Pilot screw wrench — **07KMA–MS60101 or 07LMA–MT8010A or 07MMA–MT3010A (U.S.A. only)**

Insert the pilot screw wrench from the direction shown for each pilot screw. Use a flashlight to help locate the pilot screw.

Adjust the idle speed to the specified rpm with the throttle stop control knob.

Idle speed: 1,200 ± 100 rpm

NOTE

- These adjustments must be made at high altitude to ensure proper high altitude operation.

Attach the Vehicle Emission Control Information Update label on the left side of the frame as shown. See Service Letter No. 132 for information on obtaining the label.

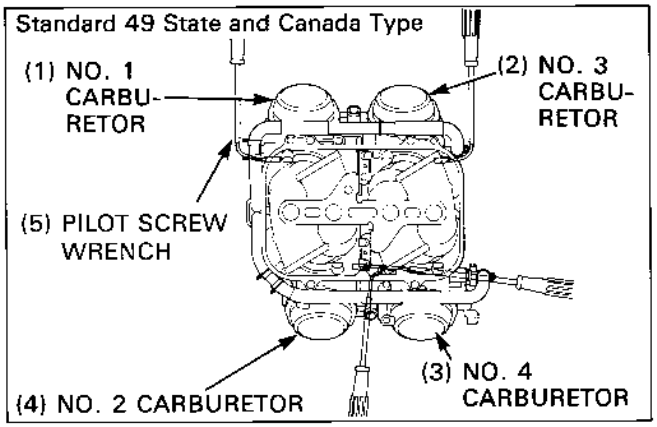
NOTE

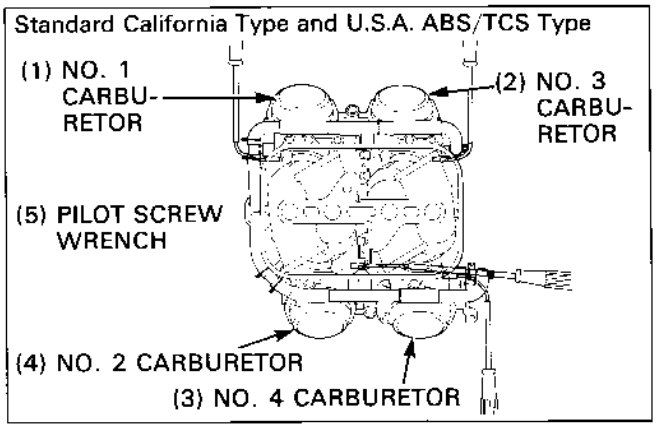
- Do not attach the label to any part that can be easily removed from the vehicle.

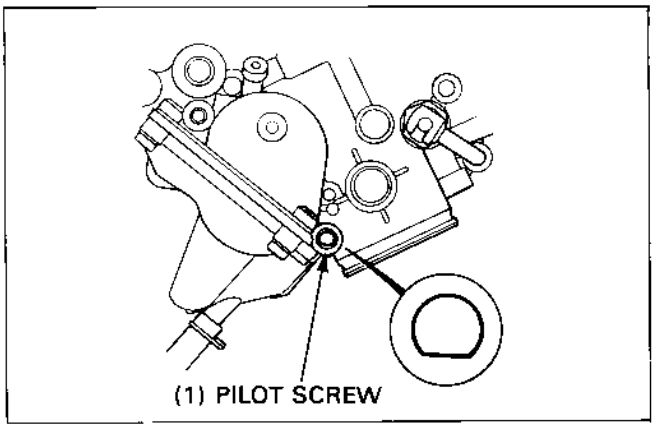
⚠WARNING

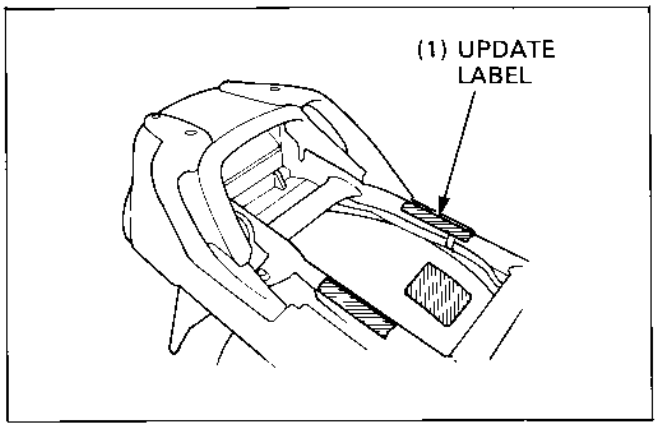
- **Operation at an altitude lower than 1,500 m (5,000 feet) with the carburetors adjusted for high altitudes may cause the engine to idle roughly and stall.**

When the vehicle is to be operated continuously below 1,500 m (5,000 feet), turn each pilot screw counterclockwise 1/2 turn to its original position and adjust the idle speed to the specified rpm. Remove the Vehicle Emission Control Update Label.
Be sure to do these adjustments at low altitude with the engine at normal operating temperature.









Emission Control System (U.S.A. only)

Secondary Air Supply System

NOTE

- The pulse secondary air injection (PAIR) control valve and the pulse secondary air injection (PAIR) check valve are combined in one assembly.

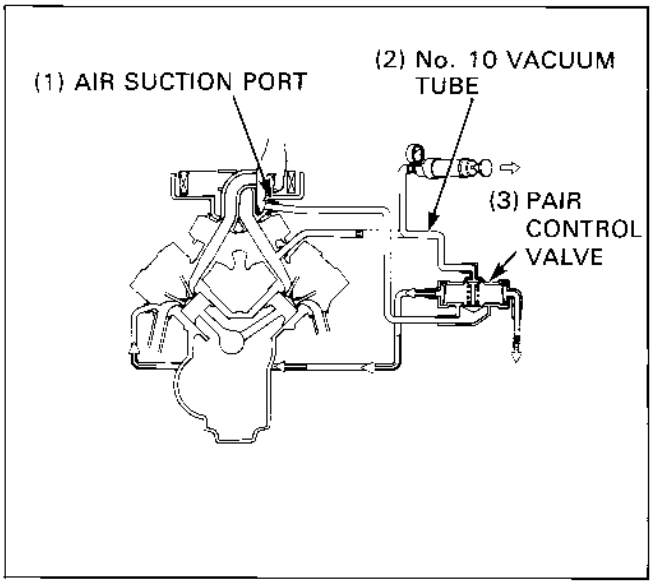
Remove the fairing pocket (page 2-6).

Disconnect the No. 10 vacuum tube (routed from the PAIR control valve) from the 3-way joint.
Plug the 3-way joint and connect the vacuum pump to the No. 10 vacuum tube.

Remove the air cleaner housing cover and put your finger on the air suction port of the air chamber.

Perform the secondary air supply system inspection (refer to section 7 of the Common Service Manual).

Specified vacuum: 360 mmHg (14.2 inHg)

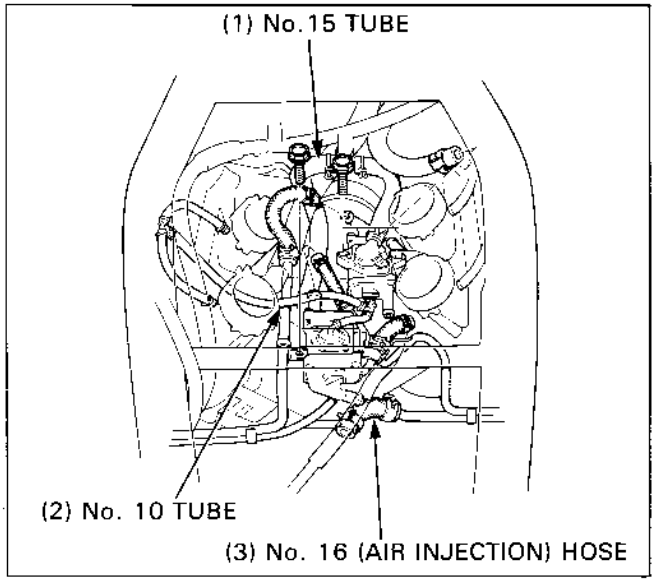


Pulse Secondary Air Injection (PAIR) Control Valve Removal/Installation

Remove the carburetor (page 5-3).
Remove the heat insulator rubber.

Remove the bolts, disconnect the No. 16 (air injection) hoses, No. 10 tubes and No. 15 (air suction) tubes from the PAIR control valves, and remove the PAIR control valves.

Install the PAIR control valve in the reverse order of removal.



Evaporative Emission (EVAP) Purge Control Valve and Tube Removal/Installation ('91—'93 : Standard California type and U.S.A. ABS/TCS type) (After '93 : California type)

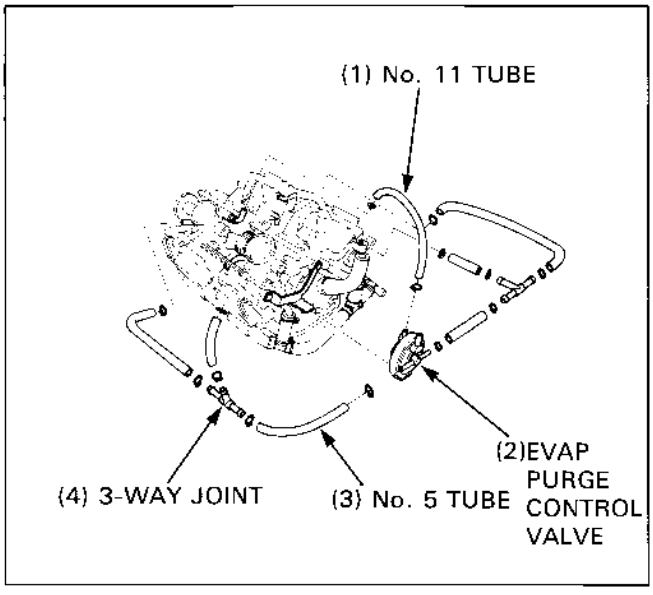
Remove the carburetor (page 5-3).

Remove the No. 5 and No. 11 tubes, 3-way joints and the EVAP purge control valve from the carburetor.

Install the EVAP purge control valve in the reverse order of removal.

NOTE

- For EVAP purge control valve tube routing, see page 5-6.



Carburetor Draining

Remove the maintenance covers (page 2-5).

Remove the access covers from the fairing pockets.

Place a suitable container under the carburetor drain hose.

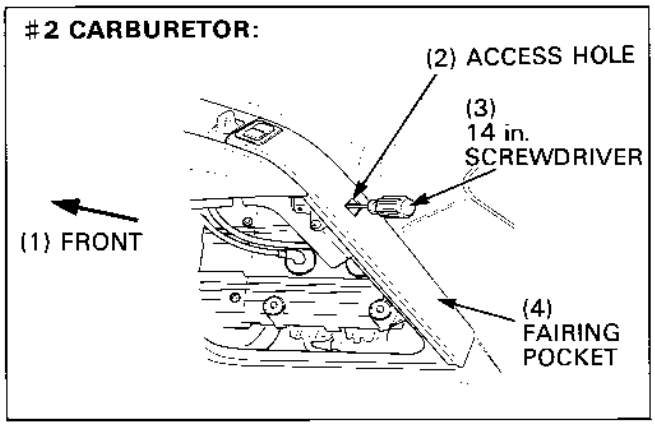
Drain the #2 carburetor by placing a long (minimum 14 in) flat blade screwdriver through the access hole, between the carburetor synchronization linkage and the carburetor-to-manifold boot. The screwdriver must be angled down, toward the front of the motorcycle.

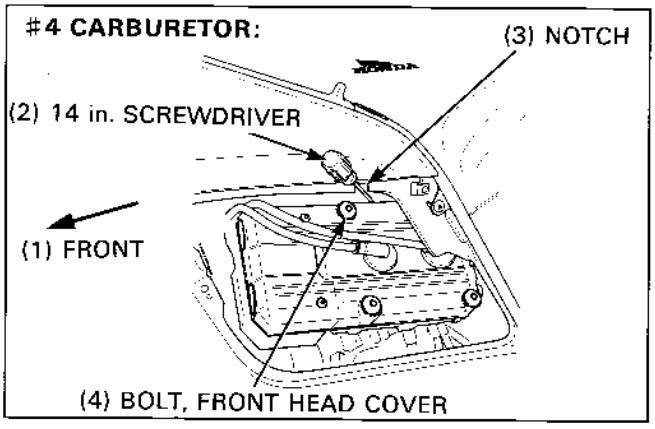
An adjustable flashlight will help locate the drain screw.

Drain the #4 carburetor by placing a long screwdriver through the maintenance opening, above the cylinder head, to the rear of the head cover bolt, between the carburetor synchronization linkage and the carburetor-to-manifold boot. The screwdriver fits in a notch in the upper fairing. The screwdriver must be angled down, foward the rear of the motorcycle.

Loosen the screws until the fuel is drained, and tighten the screws.

Repeat this procedure on the right side of the motorcycle for the #1 (front) and #3 (rear) carburetors.





Symbols

The symbols used throughout this manual show specific service procedures. If supplementary information is required pertaining to these symbols, it would be explained specifically in the text without the use of the symbols.

	Replace the part(s) with new one(s) before assembly.
	Use special tool
	Use optional tool. Use the same procedure you use to order parts.
 10 (1.0, 7.2)	Torque specification. 10 N·m (1.0 kg-m, 7.2 ft-lb)
	Use recommended engine oil, unless otherwise specified.
	Use molybdenum oil solution (mixture of the engine oil and molybdenum grease in a ratio of 1 : 1).
	Use multi-purpose grease (Lithium based multi-purpose grease NLGI #2 or equivalent)
	Use molybdenum disulfide grease (containing more than 3% molybdenum disulfide, NLGI #2 or equivalent) Example: Molykote® BR-2 plus manufactured by Dow Corning, U.S.A. Multi-purpose M-2 manufactured by Mitsubishi Oil Japan
	Use molybdenum disulfide paste (containing more than 40% molybdenum disulfide, NLGI #2 or equivalent) Example: Molykote® G-n Paste manufactured by Dow Corning, U.S.A. Honda Moly 60 (U.S.A. only) Rocol ASP manufactured by Rocol Limited, U.K. Rocol Paste manufactured by Sumico Lubricant, Japan
	Use silicone grease
	Apply a locking agent. Use a middle strength locking agent unless otherwise specified.
	Apply sealant
	Use brake fluid, DOT 3 or DOT 4. Use the recommended brake fluid, unless otherwise specified.
	Use Fork or Suspension Fluid.