



FUEL SYSTEM AND CARBURETION

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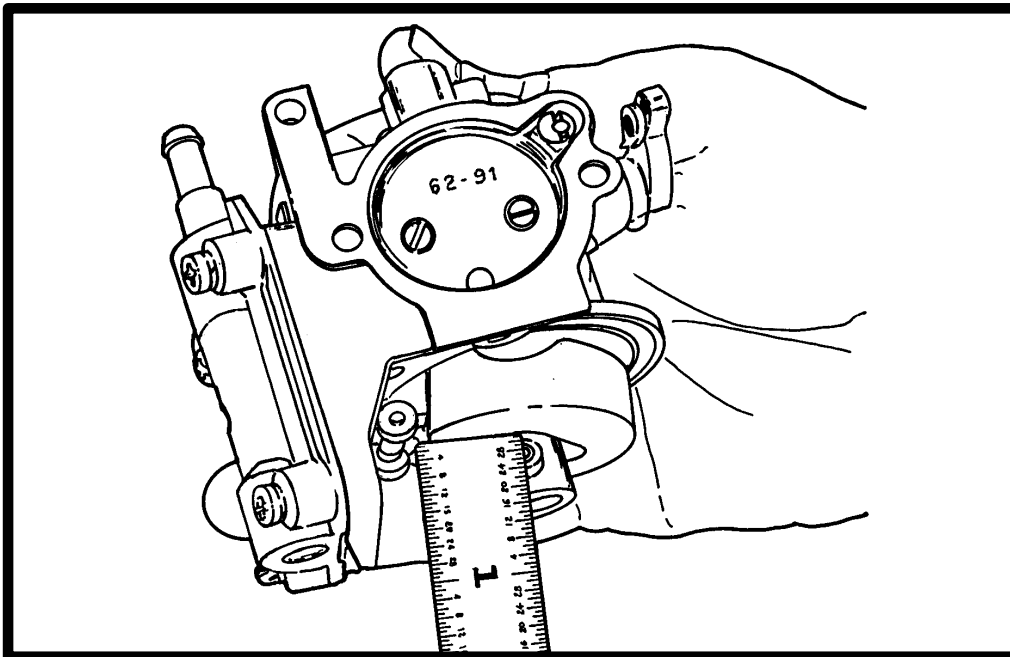




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Specifications

Idle RPM (In Forward Gear)	500-600
Float Level Carb Model WMA7B Carb Model WMA9	1/4 in \pm 1/64 in. (6.4mm \pm 0.4mm) 11/16 in \pm 1/64 in. (16.3mm \pm 0.4mm)
Float Drop Carb Model WMA7B Carb Model WMA9	1/32 in. to 1/16 in. (0.80mm to 1.6mm) No Adjustment

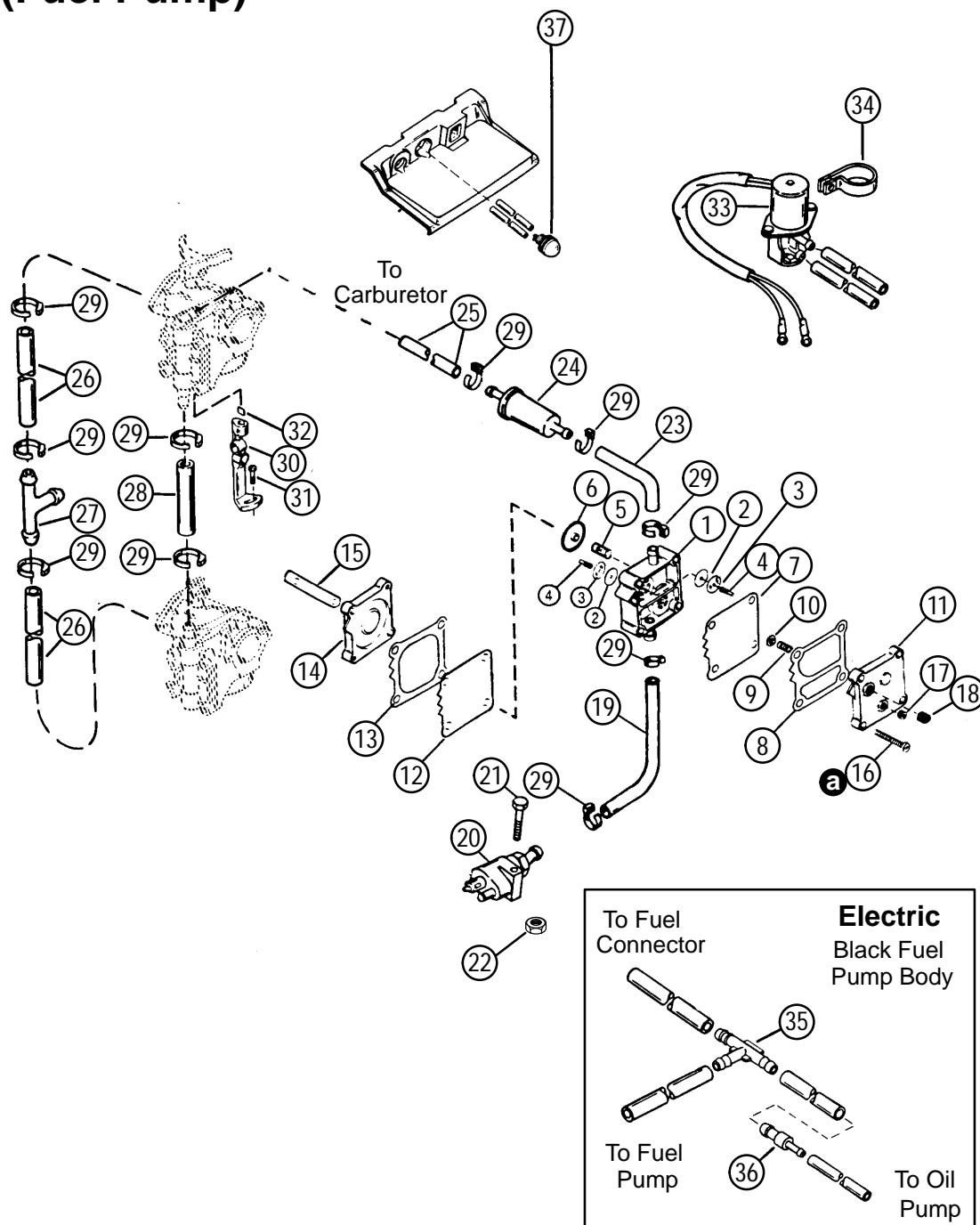
Special Tools

Description	Part No.
Carburetor Scale	91-36392



Fuel System (Fuel Pump)

- 1 - Pump Body
- 2 - Rubber Disk (2)
- 3 - Plastic Disc (2)
- 4 - Retainer (2)
- 5 - Spring
- 6 - Cap
- 7 - Diaphragm
- 8 - Gasket
- 9 - Spring
- 10 - Cap
- 11 - Plate
- 12 - Gasket
- 13 - Gasket
- 14 - Pump Base
- 15 - Gasket
- 16 - Bolt, 40 mm (2)
Bolt, 50 mm(2)
- 17 - Pipe Plug
- 18 - Pipe Plug
- 19 - Hose
- 20 - Fuel Connector
- 21 - Bolt 1-1/2 in.
- 22 - Nut
- 23 - Hose
- 24 - Filter
- 25 - Hose
- 26 - Hose (2)
- 27 - Tee Fitting
- 28 - Balance Tube
- 29 - Sta-Strap
- 30 - Coupling
- 31 - Screw
- 32 - Key
- Electric Start Models**
- 33 - Enrichener Valve
- 34 - Clamp
- 35 - Tee Fitting
- 36 - Check Valve
- Manual Start Models**
- 37 - Primer Bulb



Torque Specifications

- a** 40 lb. in. (4.5 N-m)



Fuel Pump

General Information

FUEL PUMP DESCRIPTION/OPERATION

The fuel pump is a crankcase-pressure-operated, diaphragm-type pump. Crankcase pulsating pressure (created by the up-and-down movement of piston) is transferred to fuel pump by way of a passage (hole) between crankcase and fuel pump.

When piston is in an upward motion, a vacuum is created in the crankcase, thus pulling in a fuel/air mixture (from carburetor) into crankcase. This vacuum also pulls in on the fuel pump diaphragm, thus the inlet check valve (in fuel pump) is opened and fuel (from fuel tank) is drawn into fuel pump.

Downward motion of the piston forces the fuel/air mixture out of the crankcase into the cylinder. This motion also forces out on the fuel pump diaphragm, which, in turn, closes the inlet check valve (to keep fuel from returning to fuel tank) and opens the outlet check valve, thus forcing fuel to the carburetors.

CHECKING FOR RESTRICTED FUEL FLOW CAUSED BY ANTI-SIPHON VALVES

While anti-siphon valves may be helpful from a safety stand-point, they clog with debris, they may be too small, or they may have too heavy a spring. The pressure drop across these valves can create operational problems and/or powerhead damage by restricting fuel to the fuel pump and carburetor(s). Some symptoms of restricted (lean) fuel flow, which could be caused by use of an anti-siphon valve are:

1. Loss of fuel pump pressure
2. Loss of power
3. High speed surging
4. Preignition/detonation (piston dome erosion)
5. Outboard cuts out or hesitates upon acceleration
6. Outboard runs rough
7. Outboard quits and cannot be restarted
8. Outboard will not start
9. Vapor lock

Since any type of anti-siphon device must be located between the outboard fuel inlet and fuel tank outlet, a simple method of checking [if such a device (or bad fuel) is a problem source] is to operate the outboard with a separate fuel supply which is known to be good, such as a remote fuel tank.

If, after using a separate fuel supply, it is found that the anti-siphon valve is the cause of the problem, there are 2 solutions to the problem; either 1) remove the anti-siphon valve or 2) replace it with a solenoid-operated fuel shutoff valve.

Testing

Install clear fuel hose(s) between fuel pump and carburetor(s). Run engine, and inspect fuel passing thru hose(s) for air bubbles. If bubbles are found, see "Air Bubbles in Fuel Line," below. If bubbles are NOT found, see "Lack of Fuel Pump Pressure."

Troubleshooting Fuel Pump

Problem: Air Bubbles in Fuel Line	
Possible Cause	Corrective Action
Low Fuel in Tank	Fill Tank with Fuel
Loose Fuel Line Connection	Check and Tighten All Connections
A Hole or Cut in Fuel Line	Check Condition of all Fuel Lines and Replace any Found to be Bad
Fuel Pump Anchor Screw(s) Loose	Tighten all Screws Evenly and Securely
Fuel Pump Gasket(s) Worn Out	Rebuild Fuel Pump

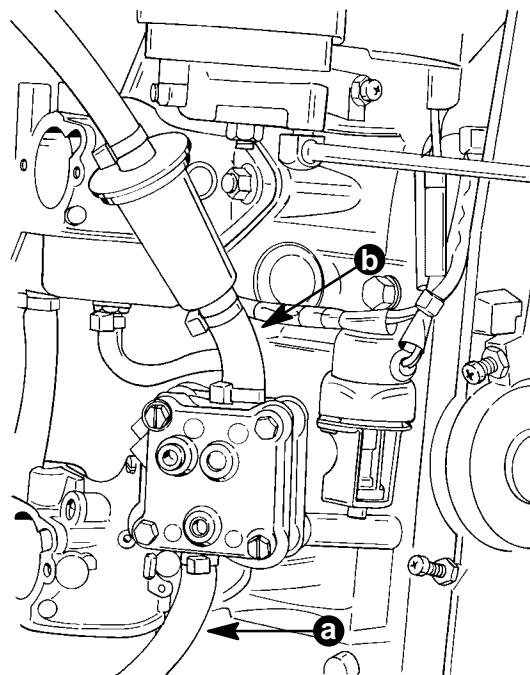


Problem: Lack of Fuel Pump Pressure

Possible Cause	Corrective Action
An Anti-siphon Valve	Read "Checking for restricted Fuel Flow Caused by Anti-siphon Valves" Preceding
Air in Fuel Line	"Air Bubbles in Fuel Line" Preceding
A Dirty or Clogged Fuel Filter	Replace Fuel Filter
The Fuel Pickup in Fuel Tank Clogged or Dirty	Clean or Replace Pickup
Worn Out Fuel Pump Diaphragm	Rebuild Fuel Pump
Defective (Hole or Crack) Check Valve(s) in Fuel Pump	Rebuild Fuel Pump
Broken Check Valve Retainer	Rebuild Fuel Pump
Pulse Hole Plugged	Remove Fuel Pump and Clean Out Hole
Loose Pulse Hose	Tighten Connection
Boost Diaphragm Gasket Distorted or Out of Place	Check Seal Between Mating Surfaces Where "Rib" Divides Pulse Chamber - Gasket Must Align with Rib; Check for Distorted Gasket, Align or Replace Gasket if Necessary.

Fuel Pump Removal (Electric Start Model)

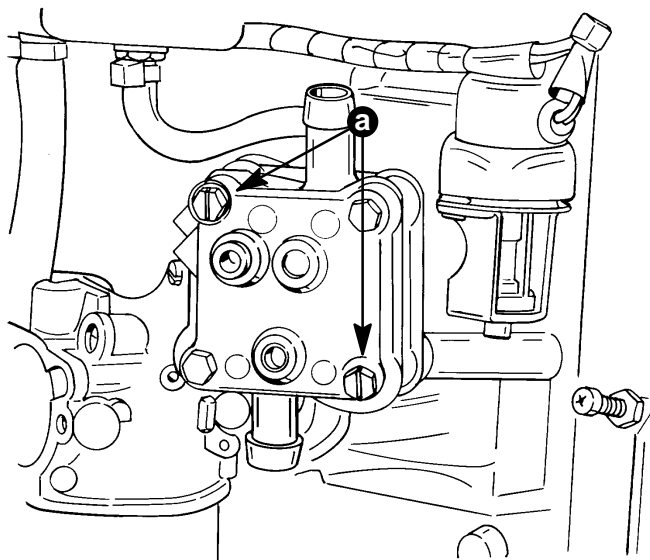
1. Remove oil tank from outboard. Refer to Section 8 "Oil Injection System".
2. Remove fuel "inlet" hose and "outlet" hose.



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- a - Inlet Hose
b - Outlet Hose

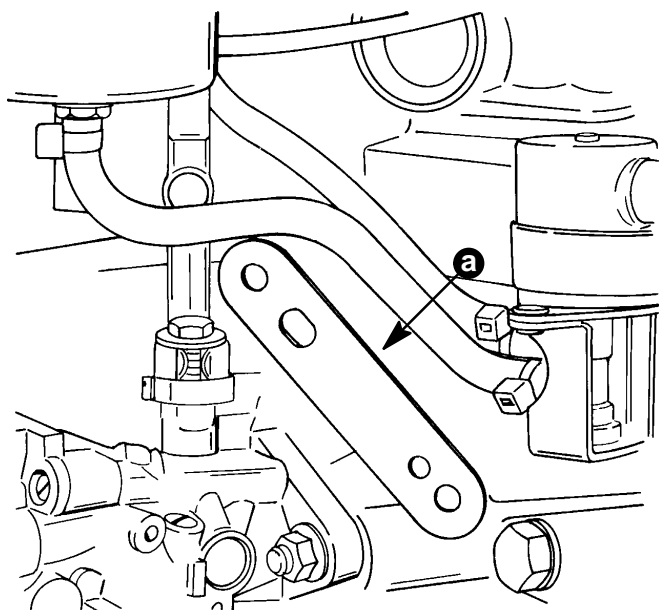
3. Remove 2 screws securing fuel pump to power-head.



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4. Remove gasket from powerhead.

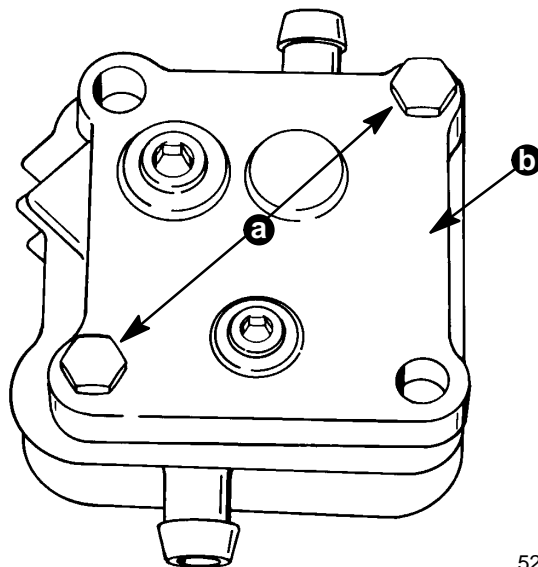


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a - Gasket

Fuel Pump Disassembly

1. Remove bolts and chamber plate.



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a - Bolts

b - Chamber Plate

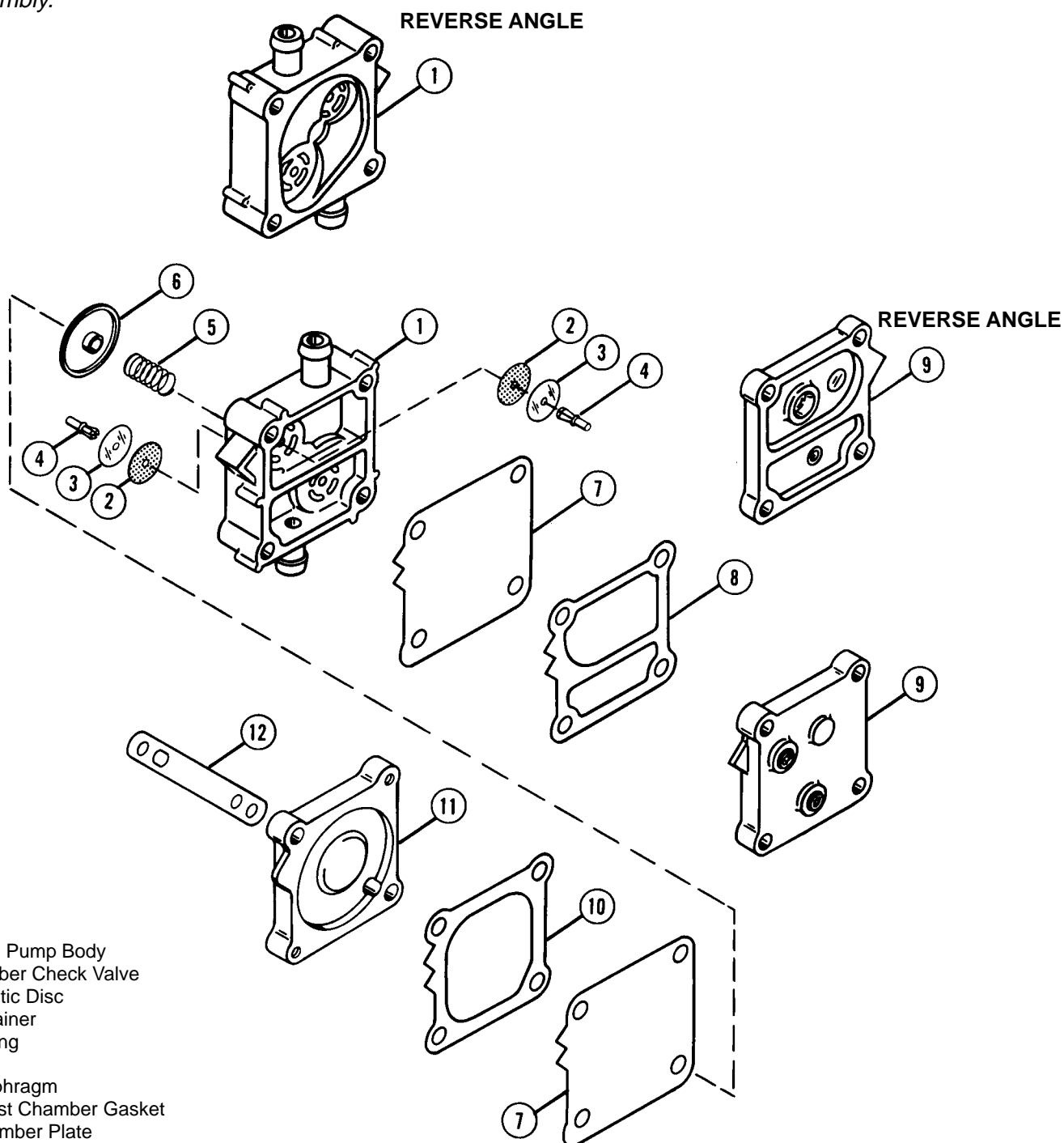
2. Disassemble fuel pump as shown in “**Fuel Pump Exploded View**”.



Fuel Pump Exploded View (Design 1)

IMPORTANT: Align all gasket and diaphragm aligning tabs with fuel pump aligning tabs during reassembly.

NOTE: Respective diaphragms go against the mating surfaces of the fuel pump body and respective gaskets are between the diaphragms and end caps. Gaskets should always be replaced on fuel pump reassembly.



- 1 - Fuel Pump Body
- 2 - Rubber Check Valve
- 3 - Plastic Disc
- 4 - Retainer
- 5 - Spring
- 6 - Cap
- 7 - Diaphragm
- 8 - Boost Chamber Gasket
- 9 - Chamber Plate
- 10 - Pulse Chamber Gasket
- 11 - Fuel Pump Base
- 12 - Base Gasket

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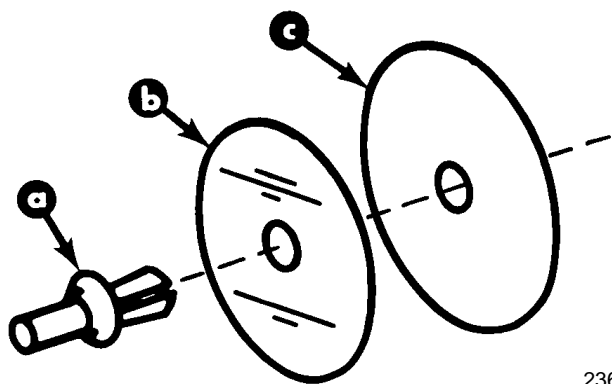


Cleaning and Inspection

1. Clean fuel pump housing, chamber plate and pump base, then dry with compressed air.
2. Inspect spring coils for damage.
3. Inspect pump body, chamber plate and pump base for cracks or rough gasket surfaces.
4. Inspect hoses for looseness or signs of leakage.
5. Inspect check valve discs for cracks, tears or other damage.

Check Valve Reassembly (Design 1)

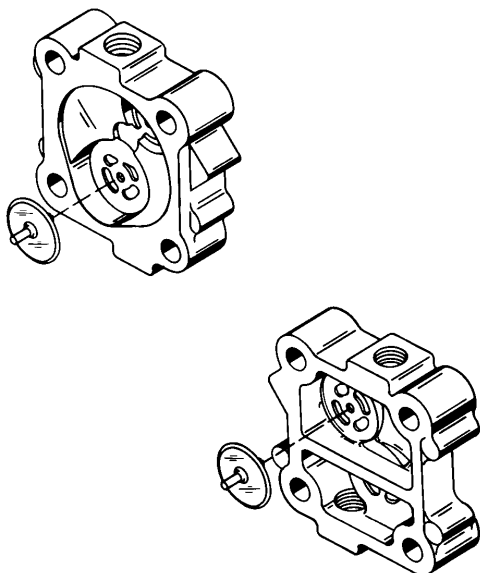
1. Insert retainer thru plastic disc and rubber check valve.



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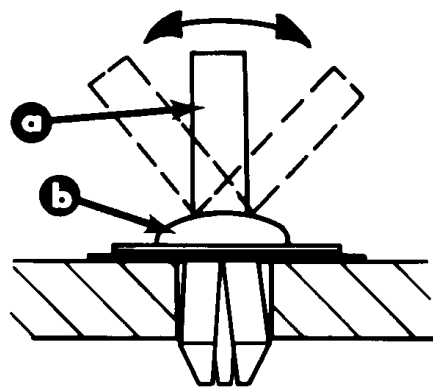
- a - Retainer
b - Plastic Disc
c - Rubber Check Valve

2. Install check valves and retainers into fuel pump body.



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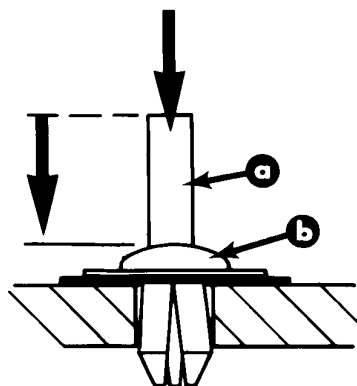
3. With retainer installed in pump body, break retainer rod from retainer by bending sideways.



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- a - Retainer Rod
b - Retainer

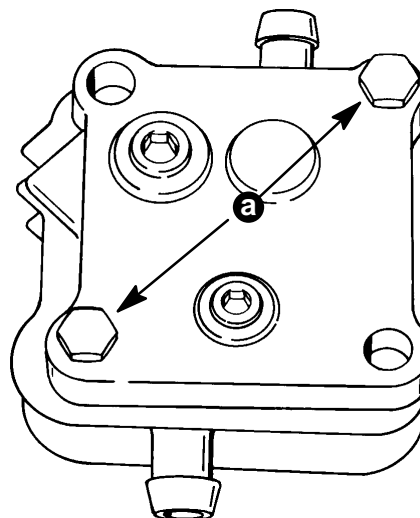
4. Reinstall rod into retainer cap and use a hammer and punch to tap rod down into retainer until flush with top of retainer.



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- a - Rod
b - Retainer Cap

5. Assemble remaining components as shown in "Fuel Pump Exploded View" preceding.
6. Install bolts and torque to 60 lb. in. (6.8 N-m).



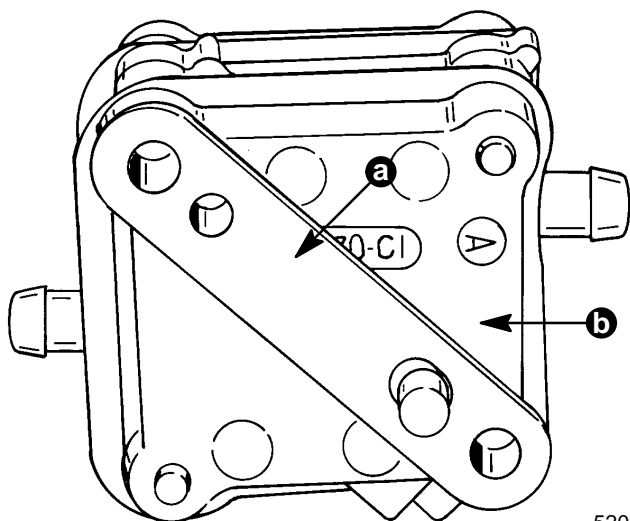
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- a - Bolts [Torque to 60 lb. in. (6.8 N-m)]



Fuel Pump Installation (Design 1)

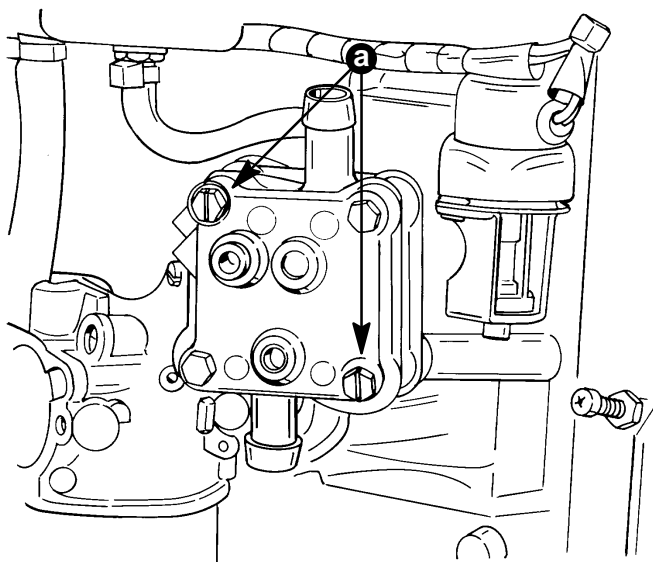
1. Install gasket on fuel pump base.



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- a - Gasket
- b - Base

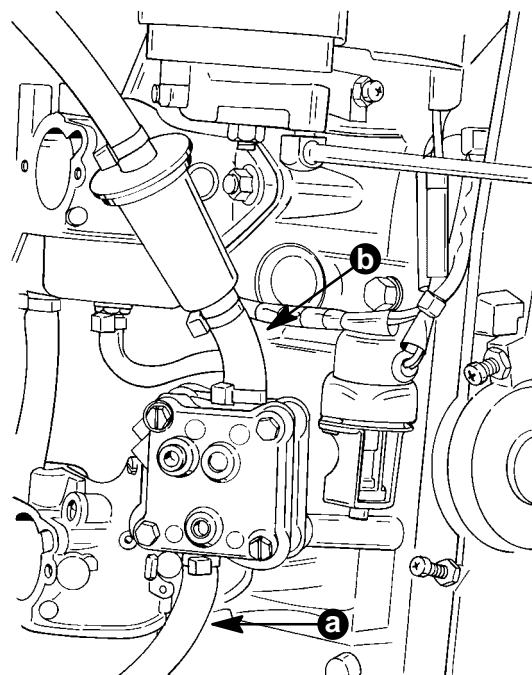
2. Install pump and secure with screws. Torque screws to 60 lb. in. (6.8 N·m).



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- a - Screws [Torque to 60 lb. in. (6.8 N·m)]

3. Connect hoses as shown. Secure hoses with straps.



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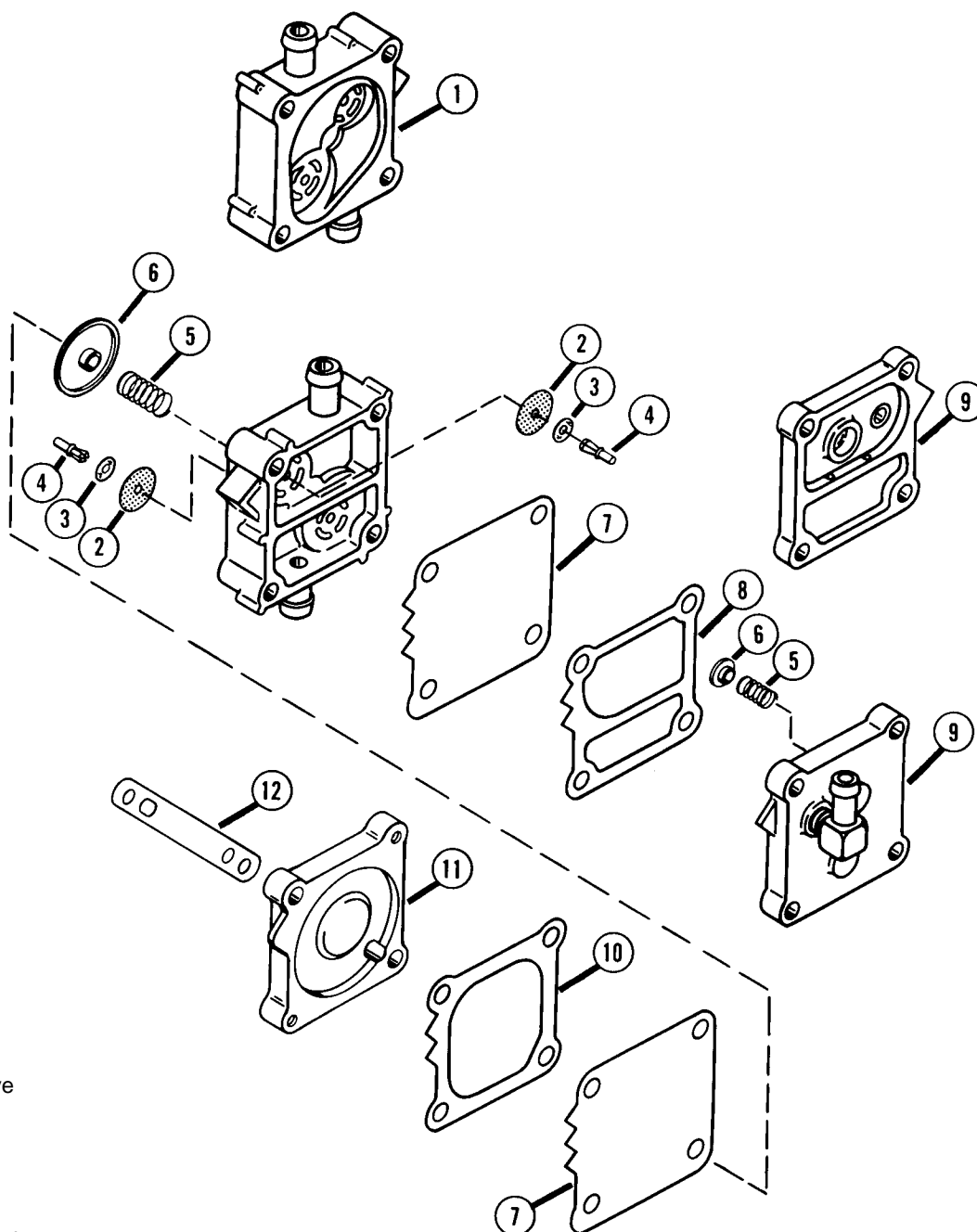
- a - Inlet Hose
- b - Outlet Hose



Fuel Pump Exploded View (Design 2)

IMPORTANT: Align all gasket and diaphragm aligning tabs with fuel pump aligning tabs during reassembly.

NOTE: Respective diaphragms go against the mating surfaces of the fuel pump body and respective gaskets are between the diaphragms and end caps. Gaskets should always be replaced on fuel pump reassembly.



- 1 - Fuel Pump Body
- 2 - Rubber Check Valve
- 3 - Plastic Disc
- 4 - Retainer
- 5 - Spring
- 6 - Cap
- 7 - Diaphragm
- 8 - Boost Chamber Gasket
- 9 - Chamber Plate
- 10 - Pulse Chamber Gasket
- 11 - Fuel Pump Base
- 12 - Base Gasket

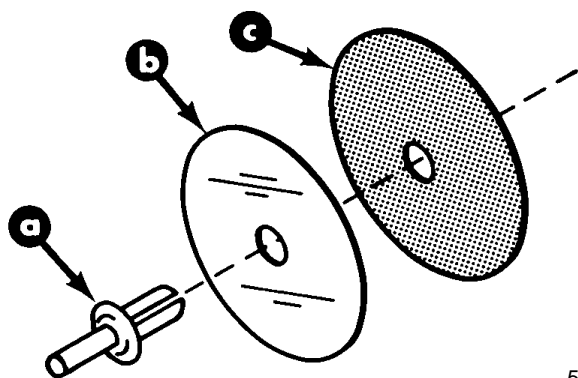


Cleaning and Inspection

1. Clean fuel pump housing, chamber plate and pump base, then dry with compressed air.
2. Inspect spring coils for damage.
3. Inspect pump body, chamber plate and pump base for cracks or rough gasket surfaces.
4. Inspect hoses for looseness or signs of leakage.
5. Inspect check valve discs for cracks, tears or other damage.

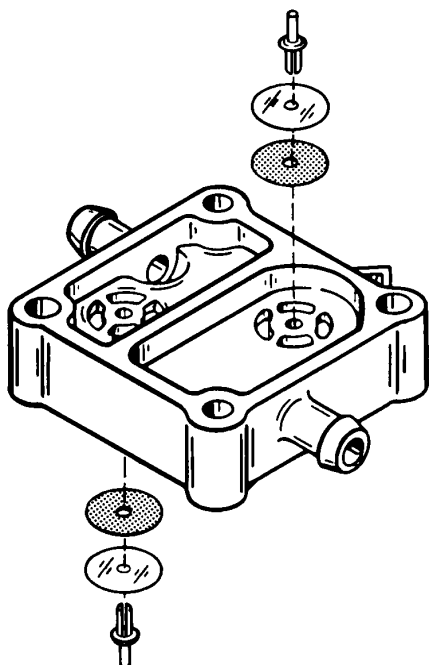
Check Valve Reassembly (Design 2)

1. Insert retainer thru plastic disc and rubber check valve.



- a - Retainer
b - Plastic Disc
c - Check Valve

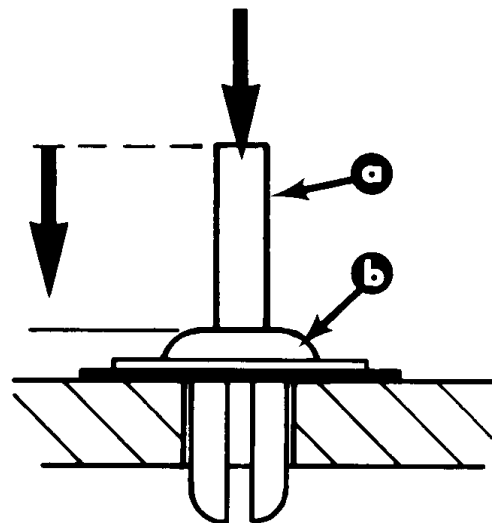
2. Install check valves and retainers into fuel pump body.



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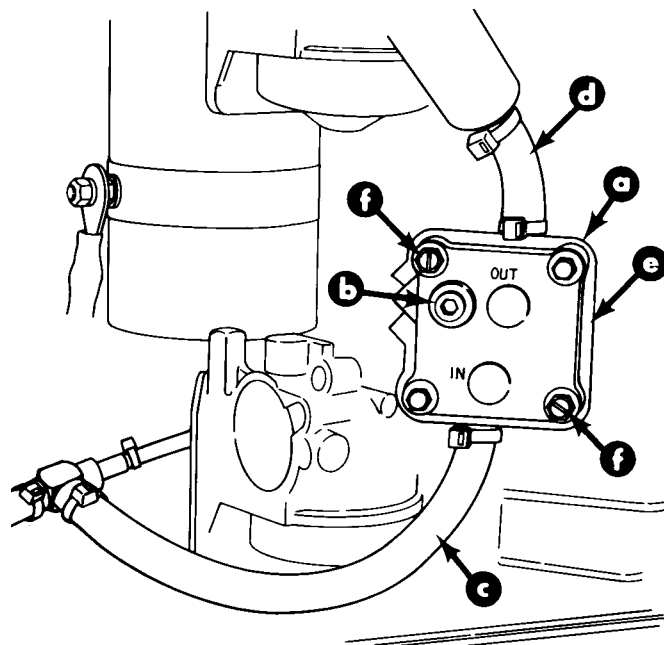
3. Break rod from retainer cap and reinstall rod into cap. Using a hammer and punch, tap rod down into retainer until flush with top of retainer.



- a - Rod
b - Retainer Cap

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Fuel Pump Installation (Design 2)



- a - Fuel Pump
b - Plug [Apply PERFECT SEAL (92-34227--1) to threads]
c - Inlet Hose
d - Outlet Hose
e - Gasket (Cylinder Block to Fuel Pump) (HIDDEN)
f - Screws [Torque to 55 lb. in. (6.2 N-m)]

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Carburetion System

Fuel System - Troubleshooting

Problems, which sometimes are thought to be caused by the fuel system, may be something completely different. Troubles, that are caused by items 1-thru-5, listed below, also may give the impression that a problem exists in the fuel system.

1. Spark Plugs
2. Ignition Spark Voltage
3. Cylinder Compression
4. Reed Valves
5. Ignition Timing

Troubleshooting Charts

Problem: Engine Turns Over But Will Not Start or Starts Hard When Cold	
Possible Cause	Corrective Action
Improper starting procedure.	Check procedure, as outlined in "Operation and Maintenance Manual".
Fuel tank empty; improperly mixed fuel; contaminants (water, dirt, etc.) in fuel.	Check fuel in fuel tank and replace or add.
Fuel tank air vent closed or restricted.	Air vent must be open and free from contaminants.
A pinched or restricted fuel line.	Check, and replace as needed.
Dirty or restricted fuel filter.	Check, replace or clean.
Enrichener Valve not operating.	Check enrichener system. (Refer to "Enrichener System" following.)
An inlet needle (in carburetor) that is stuck open or closed. (A needle stuck open, will cause a flooding condition. A needle stuck closed, will prevent fuel from entering carburetor.)	Remove, clean or replace.
Anti-siphon valve restricting fuel flow.	Refer to "Checking for restricted Fuel Flow caused by Anti-siphon Valves", following.

See "Checking for restricted Fuel Flow caused by Anti-Siphon Valves," page 3A-4.

Problem: Engine Floods	
Possible Cause	Corrective Action
Dirt or foreign particles are preventing inlet needle from seating.	Flush out inlet seat and clean inlet needle.
Worn inlet needle.	Replace.
Punctured float.	Replace.
Incorrect float setting.	Reset float.

Problem: Engine Runs Too Lean	
Possible Cause	Corrective Action
Carburetor is loose. Air leaks past mixing chamber cover.	Tighten bolts securely. Tighten cover or replace gasket.
Fuel level too low.	Reset float level.
Clogged high speed jet.	Check and clean.
Restricted fuel flow to carburetor.	Check fuel lines and filter(s) for restricted flow.
Incorrect high speed jet.	refer to main jet chart and replace with proper jet.
Idle mixture set too lean.	Adjust to run richer.
Air leakage into fuel system.	Check fuel line connections, hose clamps, fuel pump, and fuel outlet tube (located in fuel tank) for loose fittings.
Anti-siphon valve restricting fuel flow.	Refer to "Checking for restricted fuel flow caused by Anti-siphon".

Problem: Engine Runs Too Rich	
Possible Cause	Corrective Action
Fuel level too high.	Reset float to correct level.
Carburetor floods.	See preceding "Engine Floods".
Idle nozzle air holes plugged.	Blow out with compressed air.
Restricted air flow.	Check cowl air inlet and carburetor for obstructions.
Main fuel jet loose.	Retighten jet.

**Problem 1: Engine Idles Rough and Stalls****Problem 2: Engine Runs Uneven or Surges****Problem 3: Engine Will Not Accelerate**

Possible Cause	Corrective Action
Fuel tank air vent closed or restricted.	Check - Air vent must be open all-the-way and free from restrictions.
A pinched, cut or re-restricted fuel line; also loose fuel line connection.	Check all fuel lines and replace as needed. Check and tighten all fuel line connections.
A dirty or restricted fuel filter.	Check, replace, or clean all fuel filters.
Restricted filter in fuel tank.	Clean by rinsing in clean lead-free gasoline or kerosene.
Improperly mixed fuel; contaminants (water, dirt, etc.) in fuel.	Check fuel and replace, if necessary.
An inlet needle (in carburetor) that is either stuck open or closed. (A needle, that is stuck open, will cause a flooding condition. A needle that is stuck closed, will prevent fuel from entering carburetor).	remove and replace with new inlet needle.
Incorrect idle mixture adjustment.	Readjust.
Damaged fuel pump diaphragm.	Replace.
Carburetor is loose.	Tighten bolts securely.
Chamber cover leaking air.	Tighten or replace gasket.
Off idle holes plugged.	Blow out with compressed air.
Main nozzle or idle nozzle air bleed holes plugged.	Blow out with compressed air.
Improper main jet or restricted jet.	Clean or replace with proper jet (refer to "Main Jet Chart").
Damaged reed(s).	Inspect reeds as outlined in Section 4A.
A crack in the fuel pickup outlet tube (located in fuel tank).	Replace.

Problem: Fuel Blow-Back Out of Carburetor

Possible Cause	Corrective Action
Chipped/broken (reed block) reeds.	Replace reeds.

Problem: Rough Idle

Possible Cause	Corrective Action
If related to reed-block, indicates excessive preload in reeds.	Replace reeds.

Problem: Can't Reduce Engine RPM to Slow Idle

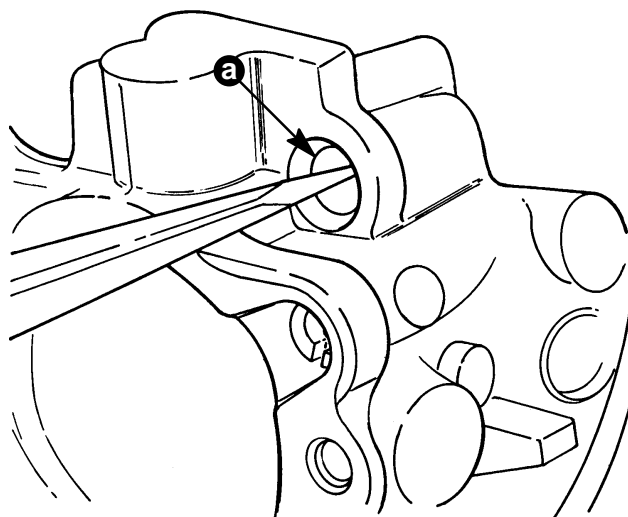
Possible Cause	Corrective Action
Multiple chipped reeds.	Replace reeds.

Checking for Restricted Fuel Flow Caused by Anti-Siphon Valves

Refer to "Fuel Pump – General Information" for troubleshooting procedures, page 3A-4.

Carburetor Adjustments**Initial Starting Adjustment**

1. After service or replacement of carburetor, turn idle mixture screw adjustment in (clockwise) until it seats LIGHTLY--then back-off (each carburetor) 1-1/4 turns. This will permit engine startup.

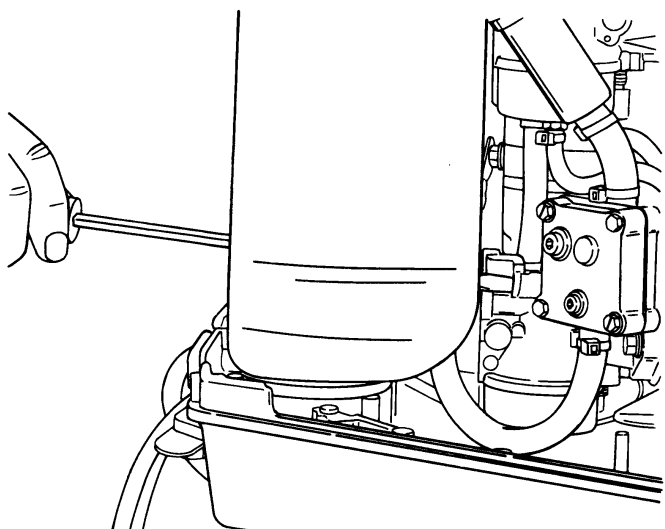
**Idle Speed Adjustment**

1. Adjust engine idle RPM as outlined in Section 2C "Timing/Synchronizing/Adjusting".



Idle Mixture Screw Adjustment

1. Place outboard in test tank or place boat and outboard in water.
2. Preset carburetor idle mixture screw at 1-1/4 turns out from lightly seated position.



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3. Start outboard and allow to warm up to operating temperature.
4. Place outboard in gear with engine running. Slowly turn idle mixture screw counter clockwise until the corresponding cylinders start to load up or fire unevenly due to an over-rich condition.
5. Slowly turn idle mixture screw clockwise until the cylinders fire evenly and engine picks up speed.
6. Continue turning screw clockwise until too lean a mixture is obtained (engine slows down and misfires).
7. Set idle mixture screw at a point midway between TOO RICH and TOO LEAN. When in doubt, set slightly RICH rather than TOO LEAN.
8. Do not adjust leaner than necessary to attain reasonable smooth idling. Too lean a setting is a major cause of hard starting.

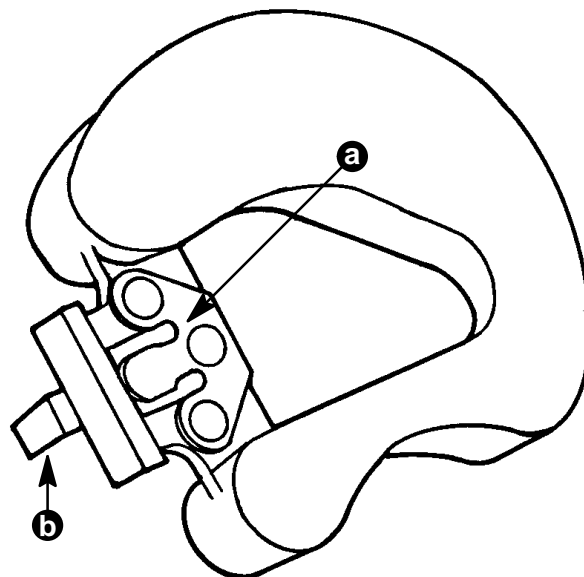
Float Adjustment

1. Remove carburetor as outlined in “**Carburetor Removal**”, following.
2. Remove float bowl and check float level and float drop.

FLOAT LEVEL AND FLOAT DROP ADJUSTMENT

Metal tab controls float level. Plastic tab limits float drop. Bending tab (a) towards needle (when float is installed) decreases float level.

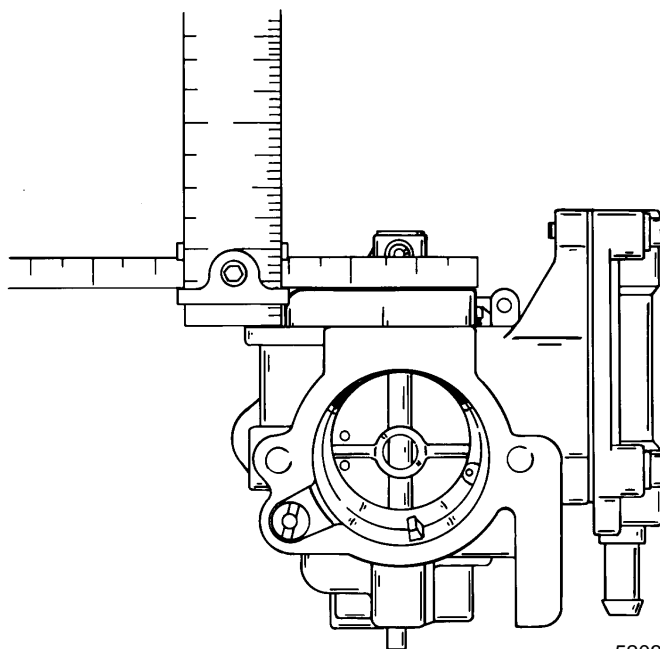
NOTE: Float must be replaced if float drop is out of adjustment.



a - Metal Tab
b - Plastic Tab

FLOAT LEVEL (WMA7B CARBURETOR)

1. On **WMA7B** carburetors, adjust float level to 1/4 in. (6.4mm) from float bottom to casting as shown.

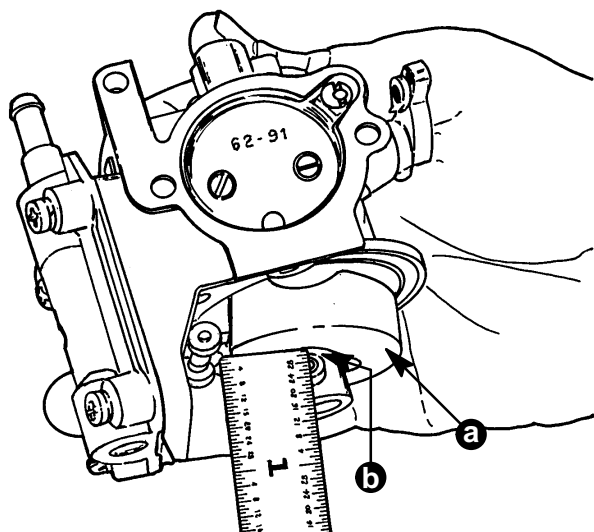


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FLOAT DROP (WMA7B CARBURETOR ONLY)

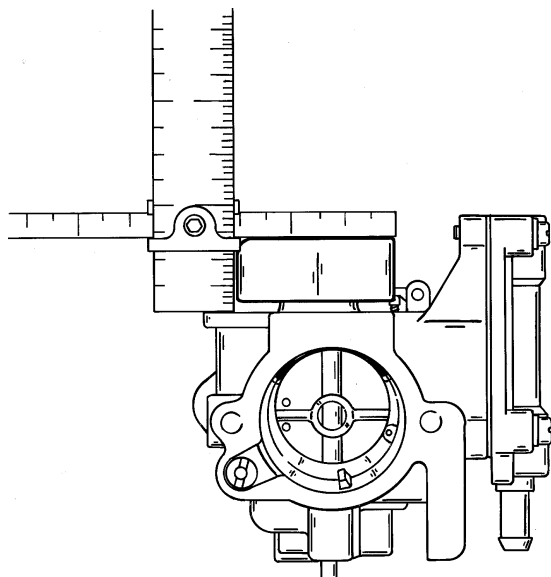
1. Float drop measurement of 1/32 in. (0.793mm) to 1/16 in. (1.587mm) from bottom of float and top of fixed jet as shown. Replace float if measurement is not obtained.



- a - Float Bottom
- b - Fixed Jet

FLOAT LEVEL (WMA9 CARBURETOR)

1. On **WMA9** carburetors, adjust float level to 11/16 in. (17.46mm) from float bottom to casting.



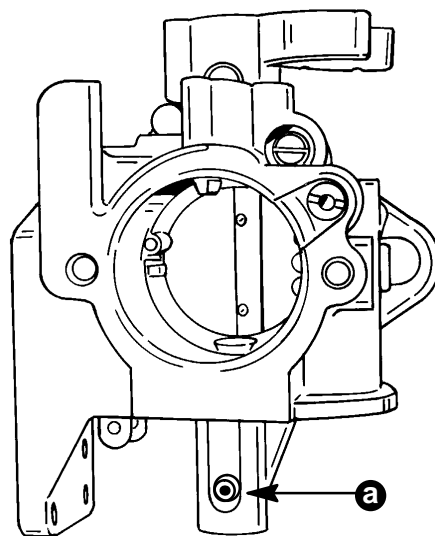
FLOAT DROP (WMA9 CARBURETOR ONLY)

Float drop is not adjustable on **WMA9** carburetors.

Main (High Speed) Jet Adjustment

The carburetor is equipped with a fixed high speed jet and normally no adjustment is required. However, extreme changes in weather (temperature and humidity) and/or elevation may result in a too lean or rich fuel mixture at wide-open-throttle, which may require a change in the high speed jet. A smaller size main jet will lean the fuel mixture, and a larger size jet will richen the fuel mixture.

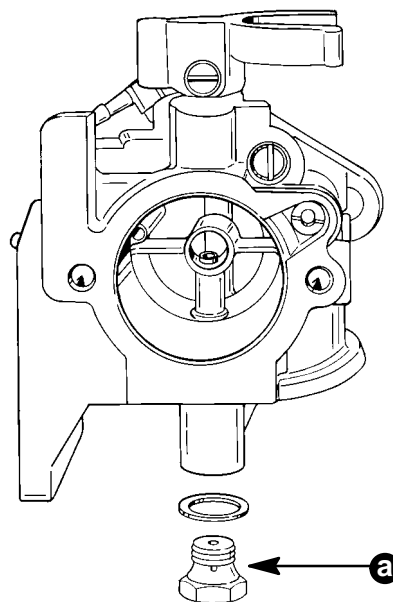
WMA7B Carburetor



- a - Main Jet

52015

WMA9 Carburetor



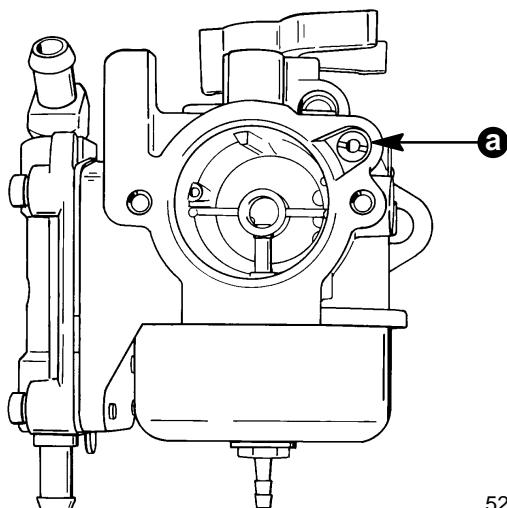
- a - Main Jet

52026



Vent Jet

The vent jet supplies less than atmosphere pressure to the fuel bowl at mid-range, which results in improved fuel economy. If a jet with a larger orifice is installed (or jet is removed), the mid-range fuel/air ratio will be richer.



52019

a - Vent Jet

High Altitude Jetting

The carburetor jets installed at the manufacturer is for outboard operation at sea level through an elevation of 2500 feet (762m) above sea level. If the outboard is to be operated at an altitude higher than 2500 feet, it will be necessary to rejet (remove the carburetor jet and install jet with a different orifice size) the carburetor. Each time the engine is to be operated at a different elevation, refer to the “**Carburetor Jet Chart**”, following and rejet carburetor for elevation outboard will be operated at.

Carburetor Jet Orifice Sizes WMA7B

Model	Jet Type	Standard Jet up to 2500'		2500' – 5000'		5000' – 7500'		7500' and Up	
		Size	Part No.	Size	Part No.	Size	Part No.	Size	Part No.
40 HP (4 Cyl.)	Main^	.057	1399-1457	.055	1399-1655	.053	1399-1653	.051	1399-1651
	Vent*	.098	1399-7335	.096	1399-6249	.094	1395-8423	.092	1395-5733

^8 – 32 Thread

*10 – 32 Thread

Carburetor Jet Orifice Sizes WMA9

Model	Jet Type	Standard Jet up to 2500'		2500' – 5000'		5000' – 7500'		7500' and Up	
		Size	Part No.	Size	Part No.	Size	Part No.	Size	Part No.
40 HP (4 Cyl.)	Main-Top	.050	1395-823621	.048	1395-823621--3	.046	1395-823621--2	.044	1395-823621--1
	Main-Bot	.050	1395-823622	.048	1395-823622--3	.046	1395-823622--2	.044	1395-823622--1
	Vent*	.098	1399-7335	.096	1399-6249	.094	1395-8423	.092	1395-5733

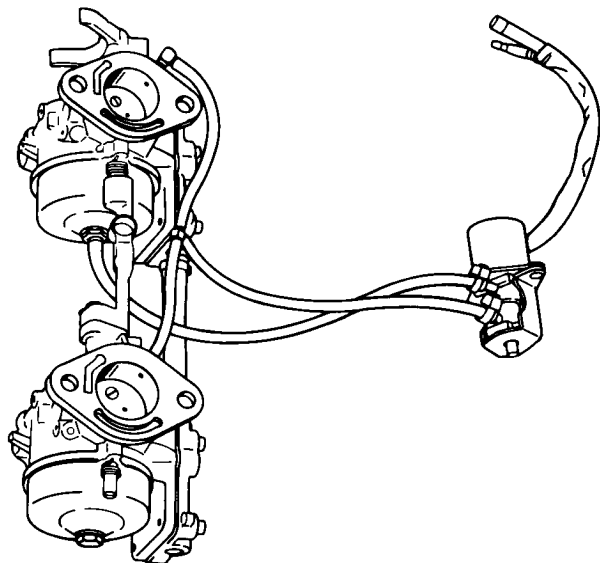
*10 – 32 Thread



Enrichment System (Electric Start Models)

The enrichener system (electric start models) provides the engine with a rich fuel charge (supplied from the float bowl of the top carburetor) for starting ease of a cold engine.

Enrichener Hose Routed to Carburetor Flanges

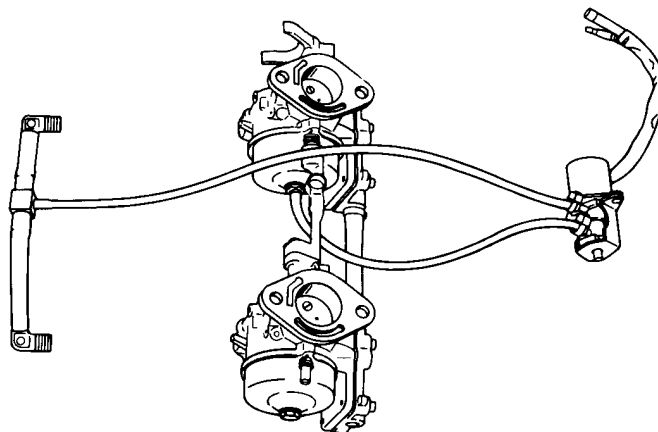


50571

Description:

The enrichener system consists of an electrically actuated valve. With the key in the "RUN" position and pushed in (and held in) the valve is opened allowing gravity fed fuel to be delivered to the engine thru a fitting on the bottom carburetor flange. With the key in the "START" position (and held in) the valve is opened allowing not only fuel to be gravity fed but also drawn into the engine thru both top and bottom carburetor flanges during each engine revolution. When the key is released (from the pushed in position) the valve will return closed. The valve can be operated manually if valve fails to operate electrically; refer to "**Manual Operation of Enrichener Valve**" following.

Enrichener Hose Routed to Balance Tube



50571

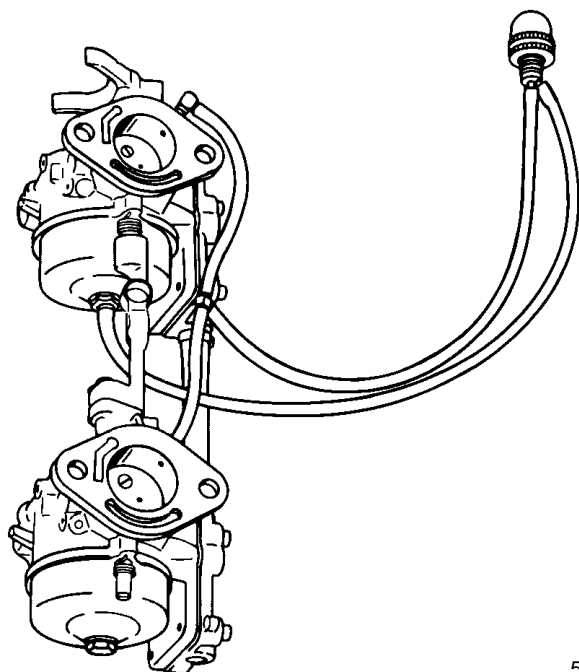
Description:

The enrichener system using enrichener hose routed to balance tube is similar to the system using the enrichener hose routed to the carburetors in that each uses the same electrically actuated valve that can be used manually. Although, with the key in the "RUN" position and pushed in (and held in) the fuel is gravity fed from the top carburetor float bowl directly to the crankcase (fuel is dispensed thru internal passages to the bottom two cylinders) thru the balance tube located on the starboard side of the outboard. With the key in the "START" position fuel is not only gravity fed to the crankcase (bottom two cylinders) but also drawn into the crankcase (top two cylinders) during each engine revolution.



Primer System

Hose Installation



50571

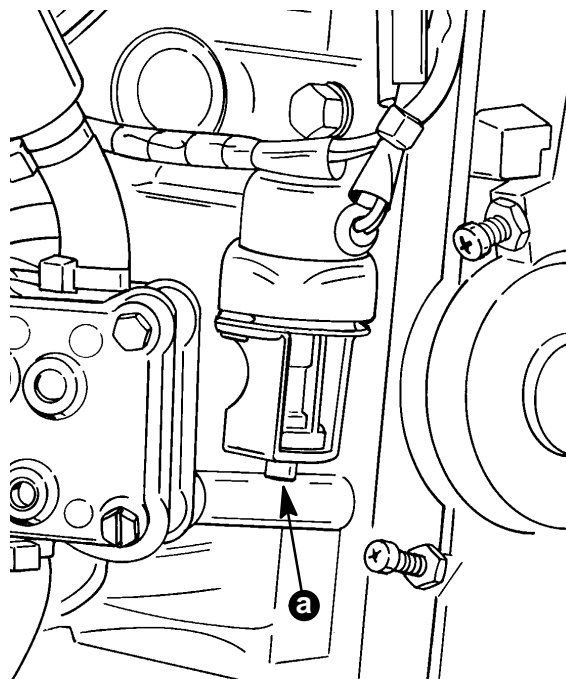
Description:

The primer system consists of a primer bulb that pulls fuel directly from the top carburetor float bowl and delivers fuel to the engine thru fittings located on each carburetor flange. Equal fuel amounts are delivered while depressing primer bulb with engine stopped or running.

Enrichener Valve (Manual Operation)

IMPORTANT: Use of enrichener if motor is warm could result in engine flooding.

Squeeze primer bulb until bulb is firm. Press button in on enrichener valve and hold approximately 5 seconds. Release button. Start outboard.

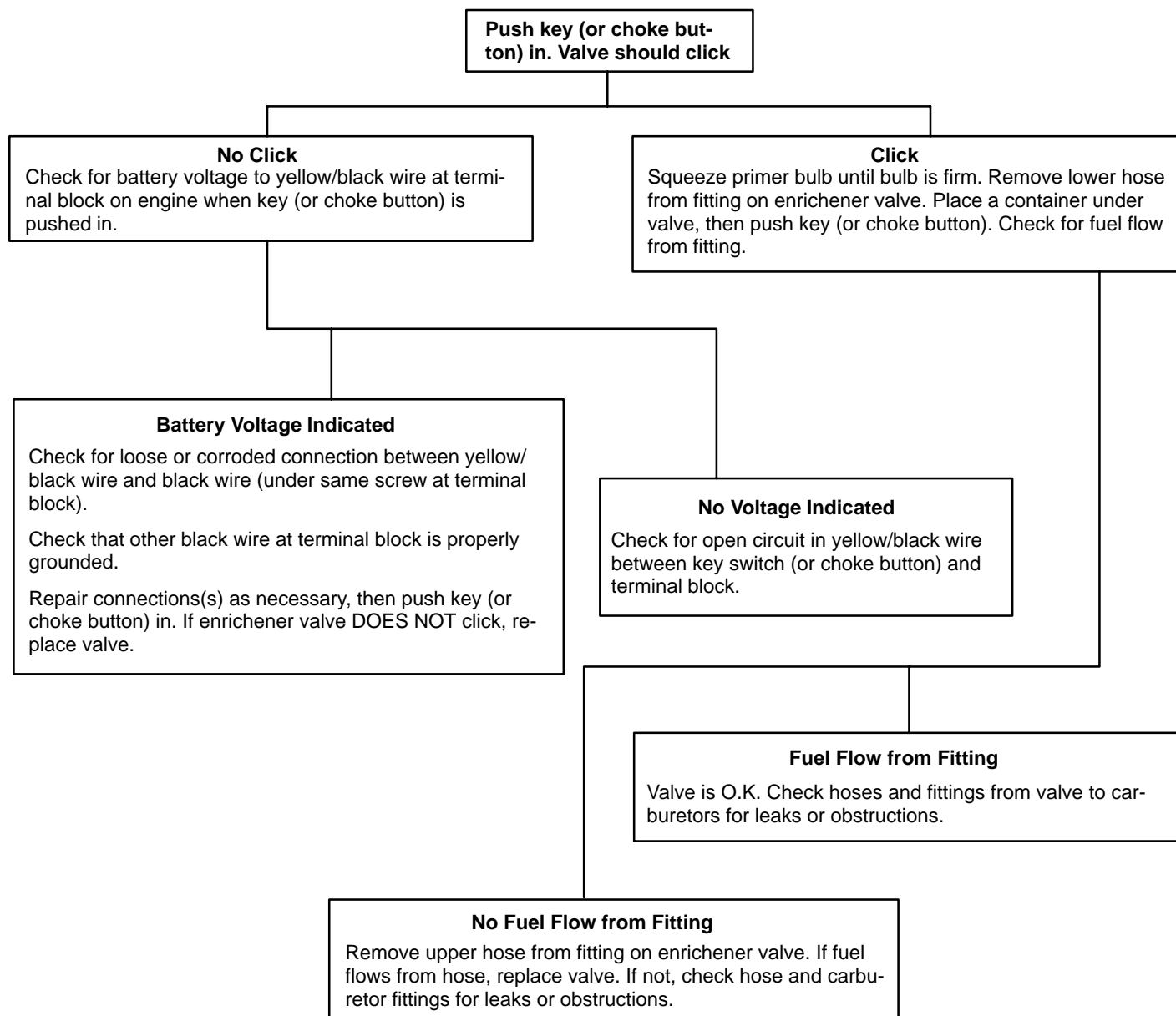


a - Button

52014



Enrichment Valve Test

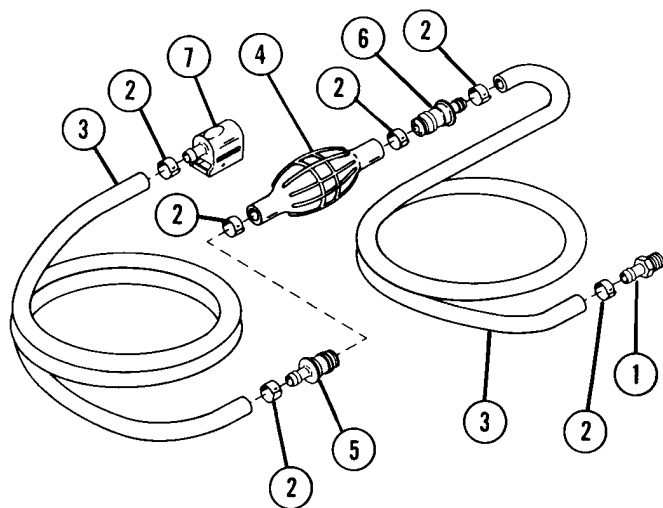


Enrichener Valve Replacement

1. Disconnect enrichener valve leads at bullet connectors.
2. Disconnect hoses from valve.
3. Remove bolt that secures valve mounting bracket to engine, then lift from engine
4. Reinstall hoses to valve. Refer to "Hose Installation," following.
5. Apply a drop of Loctite 271 (92-32609-1) to threads of mounting bracket retaining bolt, then secure valve to engine with bracket and bolt.
6. Connect enrichener valves leads at bullet connectors.



Fuel Line and Primer Bulb Assembly



50165

- 1 - Fitting
- 2 - Clamp
- 3 - Fuel Line
- 4 - Primer Bulb
- 5 - Check Valve (BLACK)
- 6 - Check Valve (WHITE)
- 7 - Fuel Line Connector (Engine End)

Maintenance

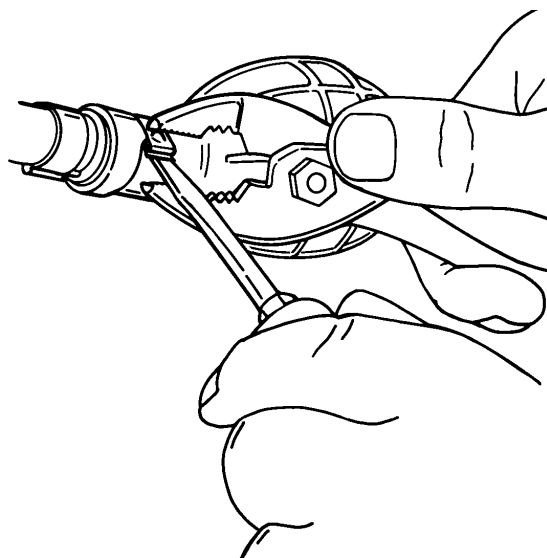
Periodically check fuel line and primer bulb for cracks, breaks, restrictions or chafing. Check all fuel line connections for tightness. All fuel line connections must be clamped securely.

Primer bulb assembly has 2 check valves: Fuel inlet (toward tank) and a fuel outlet (toward engine).

The fuel inlet valve allows fuel to fill primer bulb but closes to prevent fuel from returning to tank when bulb is squeezed. The fuel outlet valve opens when primer bulb is squeezed to allow fuel flow to carburetor, but closes as bulb is released to prevent fuel from returning to primer bulb.

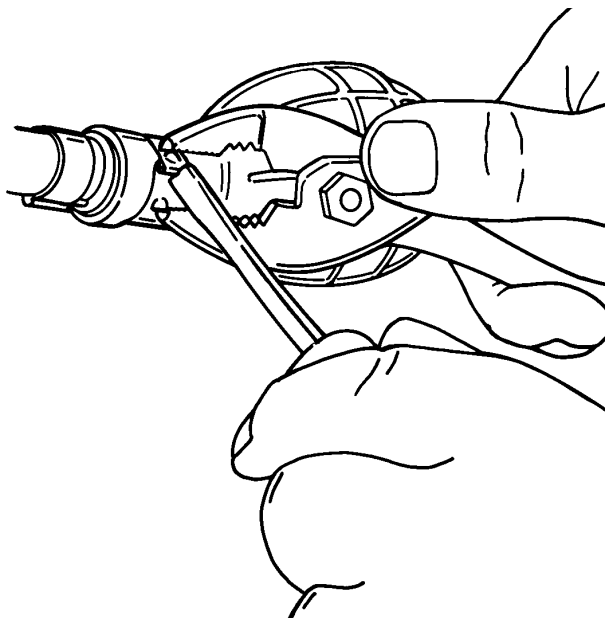
Fuel Line Clamp Removal and Installation

1. To remove fuel line clamps, grip clamp with pliers and bend overlapping hook backward.



51115

2. To install fuel line clamps, grip hose clamp with pliers and push down on hook with screwdriver until hooks interlock.



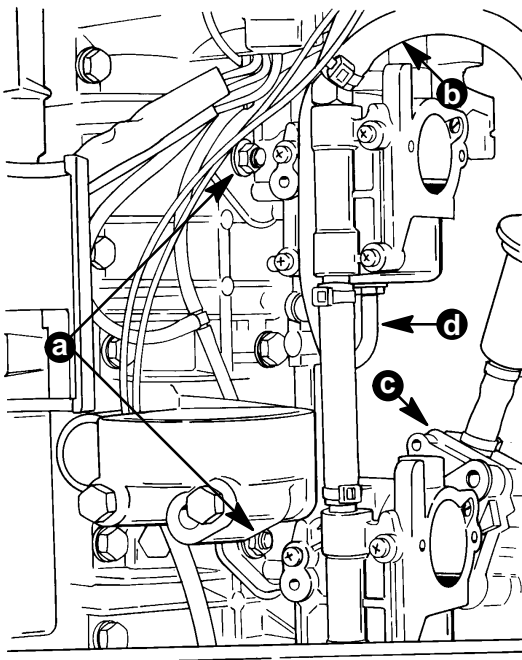
51115



Carburetor Removal (Manual Start Model)

NOTE: Fuel pump can be removed from engine block to aid in carburetor removal.

1. Remove 4 nuts securing carburetors to power-head. Disconnect fuel hose from fuel pump and primer hose.

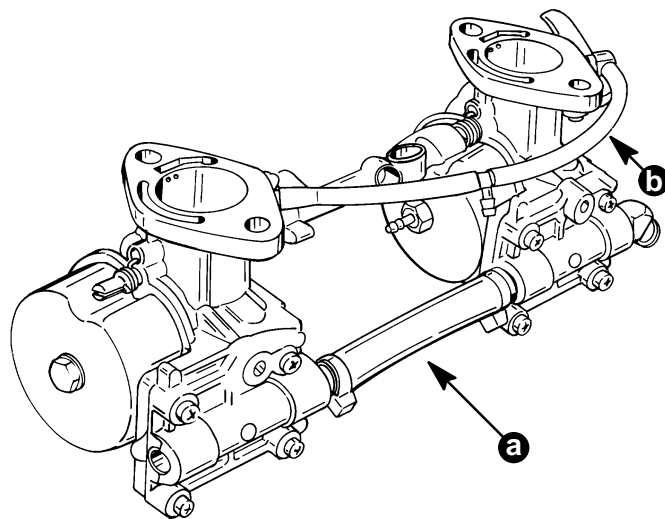


52022

- a - Nuts
- b - Fuel Hose
- c - Fuel Pump
- d - Primer Hose

Carburetor Disassembly (Top Carburetor)

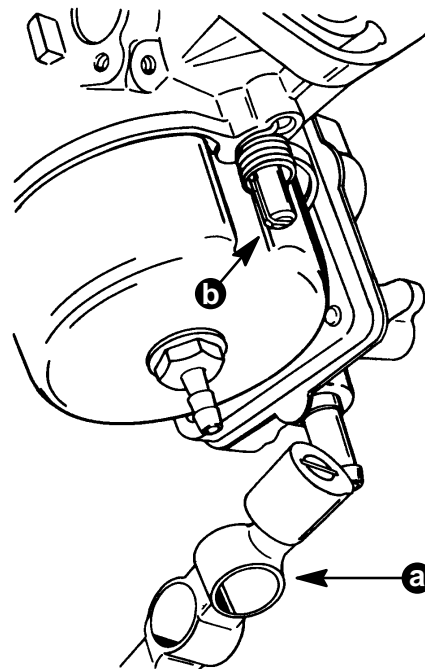
1. Disconnect fuel hose and primer hose from carburetor.



52012

- a - Fuel Hose
- b - Primer Hose

2. Disconnect throttle linkage from throttle shaft.

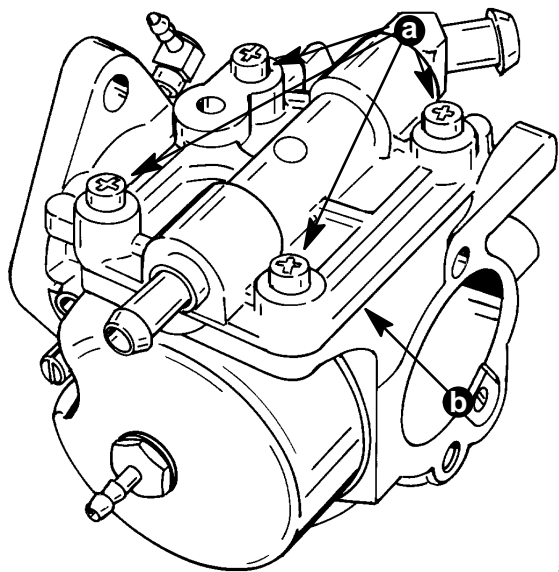


52020

- a - Throttle Linkage
- b - Throttle Shaft



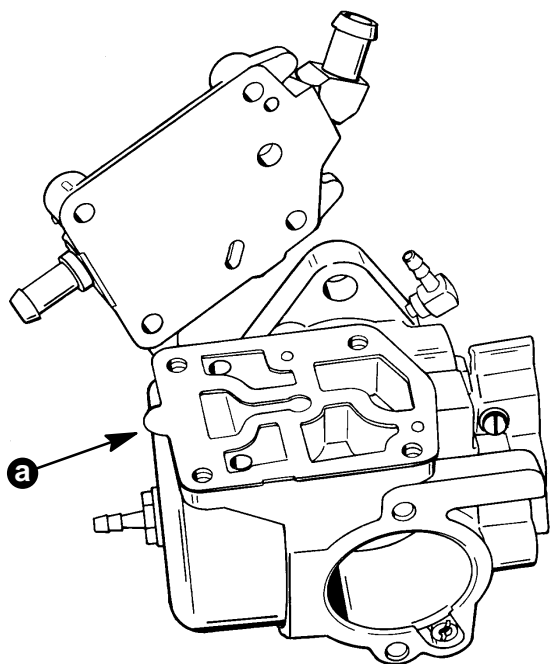
3. Remove 4 screws securing cover plate to carburetor.



52012

- a - Screws
b - Cover Plate

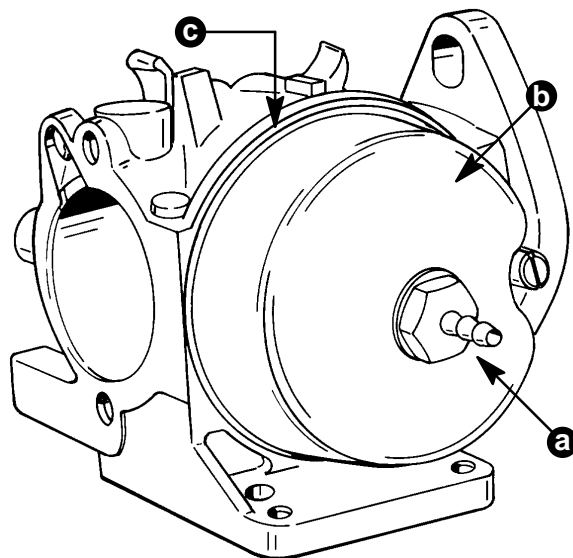
4. Remove cover plate and gasket.



52018

- a - Gasket

5. Remove primer fitting, bowl and bowl gasket from carburetor.

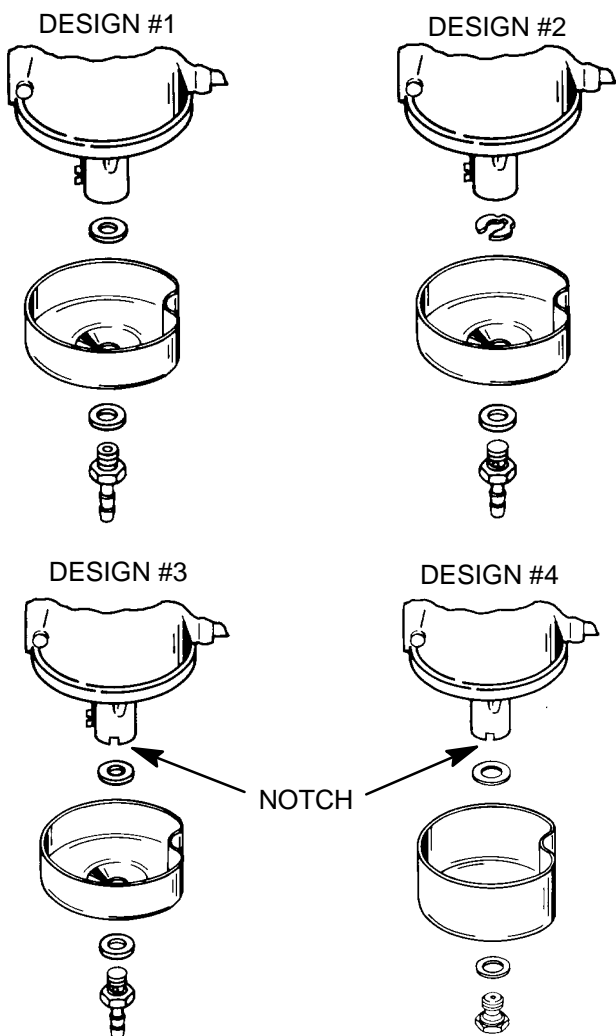


52012

- a - Primer Fitting
b - Bowl
c - Gasket

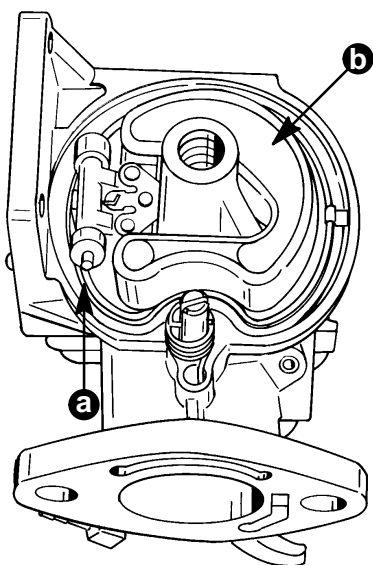


NOTE: Carburetor float bowl primer fitting design can be identified below.



52027

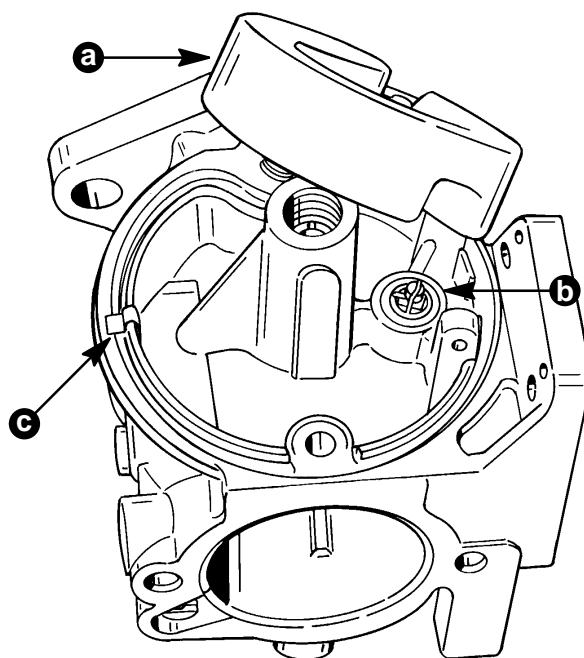
6. Remove pivot pin securing float to carburetor.



52013

a - Pivot Pin
b - Float

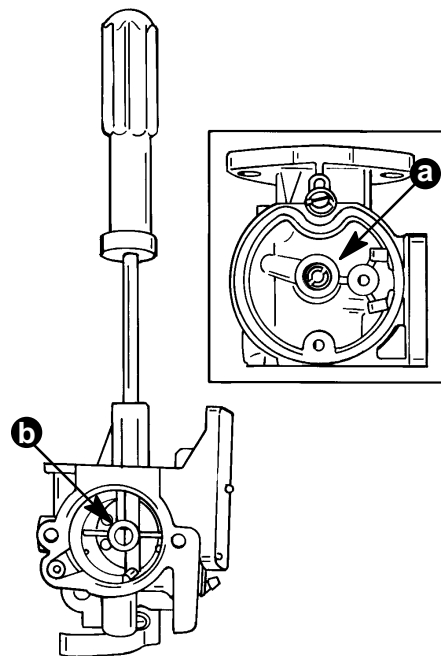
7. Remove float, needle and baffle from carburetor.



52013

a - Float
b - Needle
c - Baffle

8. Remove main nozzle and venturi from carburetor.



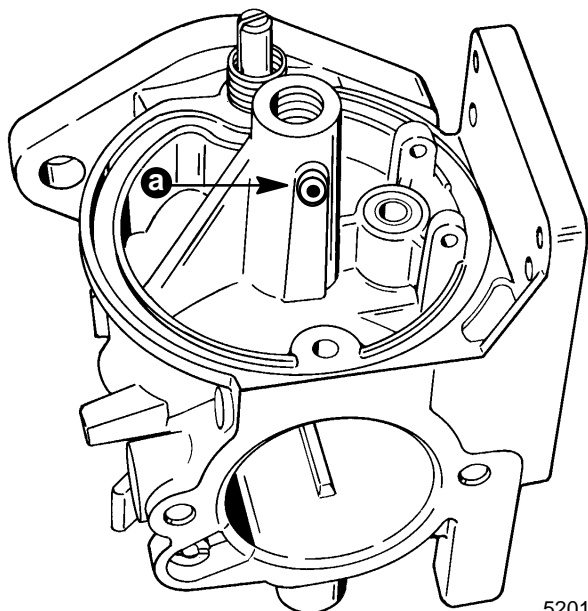
52015

a - Main Nozzle
b - Venturi



9. Remove main jet from carburetor.

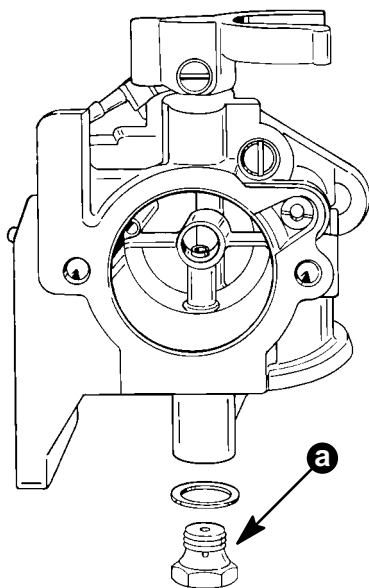
WMA7B CARB



52016

a - Main Jet

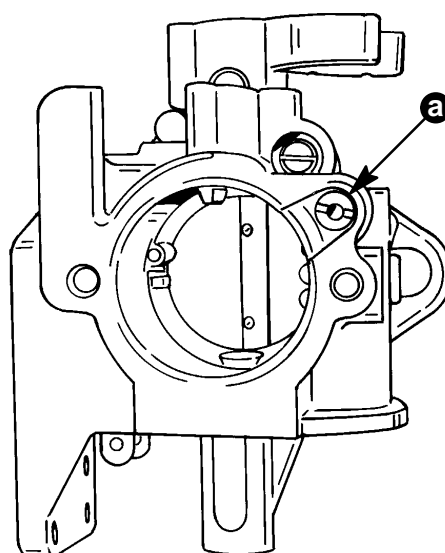
WMA9 CARB



52026

a - Main Jet

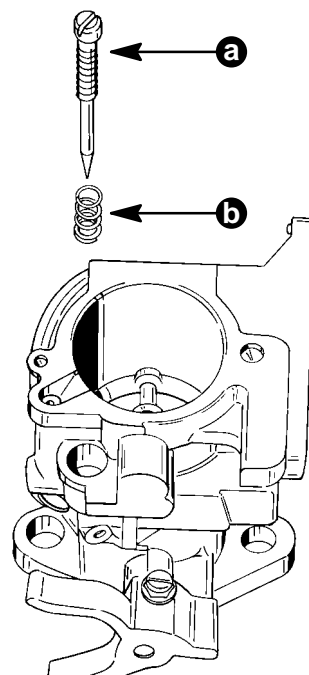
10. Remove vent jet from carburetor.



52015

a - Vent Jet

11. Remove idle mixture screw and spring from carburetor.

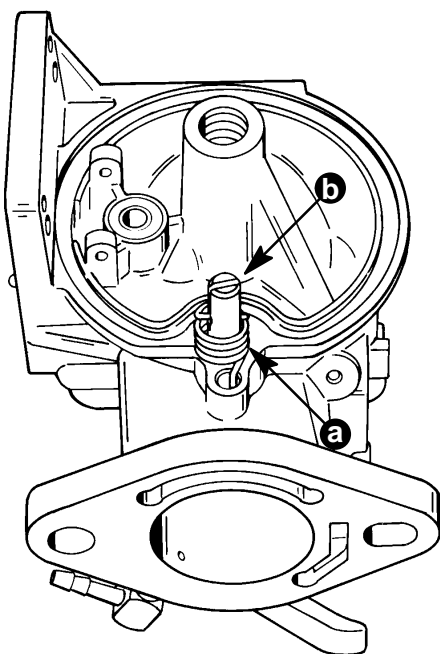


52015

a - Idle Mixture Screw
b - Spring



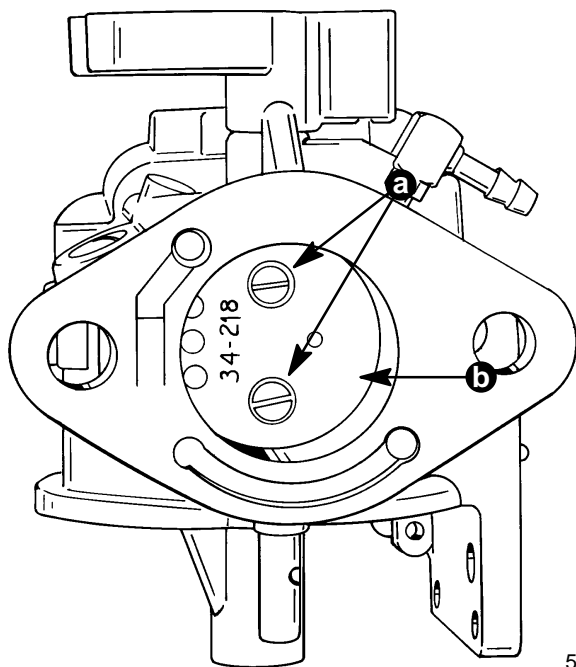
12. Remove throttle return spring from throttle shaft.



a - Throttle Return Spring
b - Throttle Shaft

52016

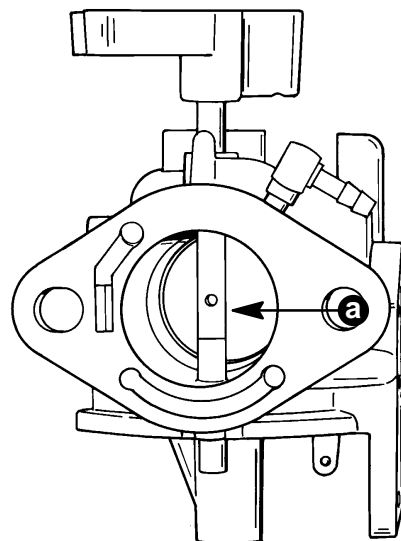
13. Remove screws securing throttle plate to throttle shaft.



a - Screws
b - Throttle Shaft

52023

14. Remove throttle shaft from carburetor.



a - Throttle Shaft

52021

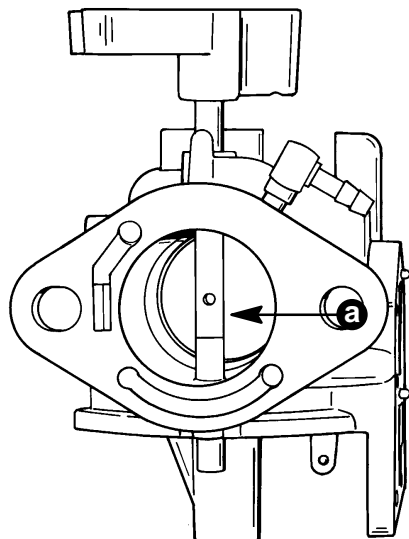
Cleaning and Inspection

1. Carefully inspect carburetor body and fuel bowl for cracks, stripped threads, plugged or restricted passages and passage plugs that show signs of leakage.
2. Thoroughly clean all carburetor parts with a mild cleaning solution (that will not damage rubber or plastic) to remove dirt, gum and varnish that may have accumulated.
3. After washing parts, blow parts dry with compressed air. Be sure to blow air thru all passages, orifices and nozzles.
4. Check float hinge in the float pin area for wear and check float for leaks. Replace parts as necessary.
5. Examine inlet needle for wear. If worn, replace with new inlet needle.



Carburetor Reassembly

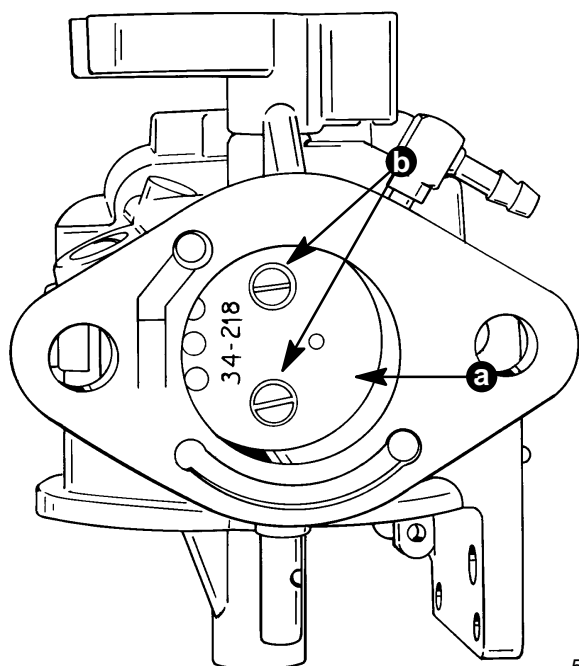
1. Install throttle shaft to carburetor.



52021

a - Throttle Shaft

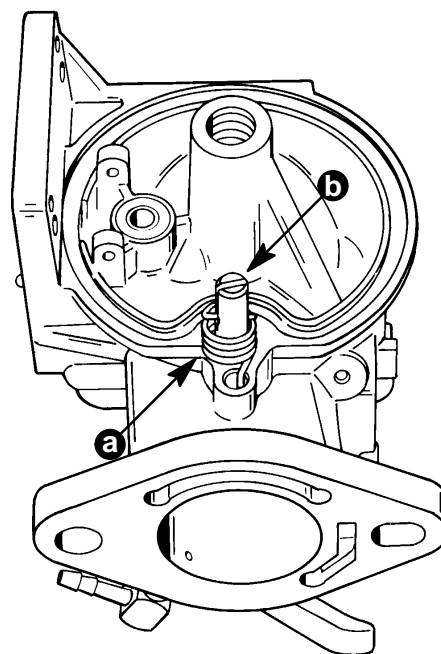
2. Install throttle shaft plate to throttle shaft. Apply Loctite 271 to threads of screws. Tighten securely.



52023

a - Throttle Shaft Plate
b - Screws

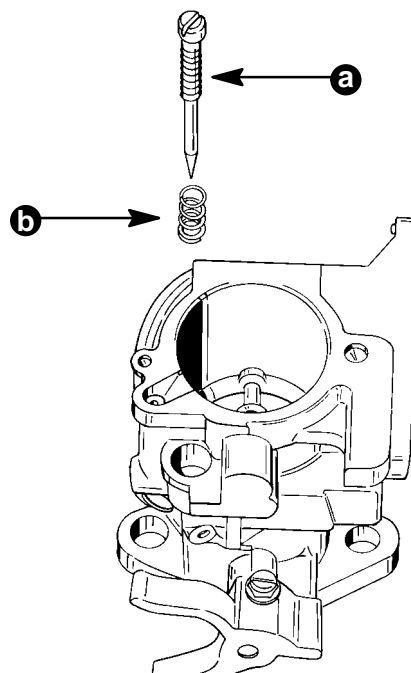
3. Install throttle return spring to throttle shaft.



52016

a - Throttle Return Spring
b - Throttle Shaft

4. Install idle mixture screw and spring in carburetor. Refer to "Idle Mixture Screw Adjustment" preceding.

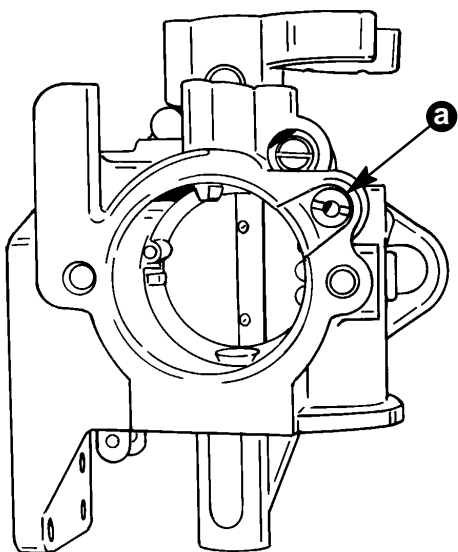


52015

a - Idle Mixture Screw
b - Spring



5. Install vent jet. Torque to 14 lb. in. (1.6 N·m).

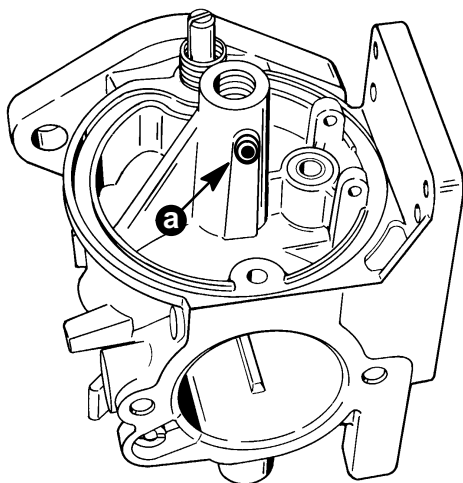


52015

a - Vent Jet [Torque to 14 lb. in. (1.6 N·m)]

6. Install main jet. Torque to 6 lb. in. (0.7 N·m).

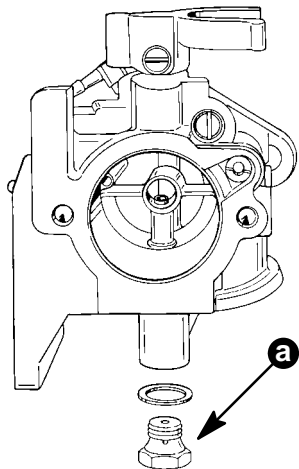
WMA7B CARB



52016

a - Main Jet [Torque to 6 lb. in. (0.7 N·m)]

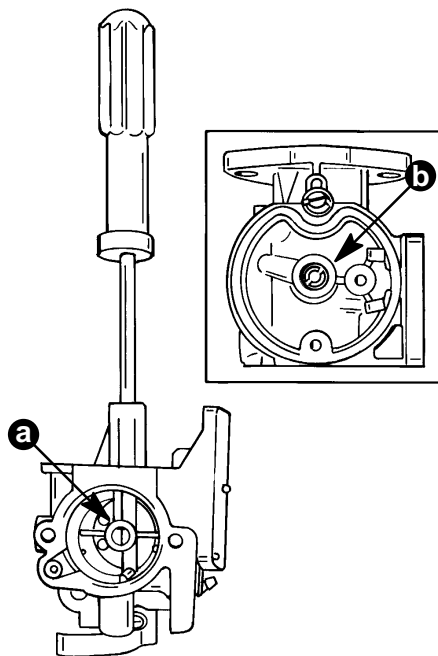
WMA9 CARB



52026

a - Main Jet [Torque to 35 lb. in. (3.9 N·m)]

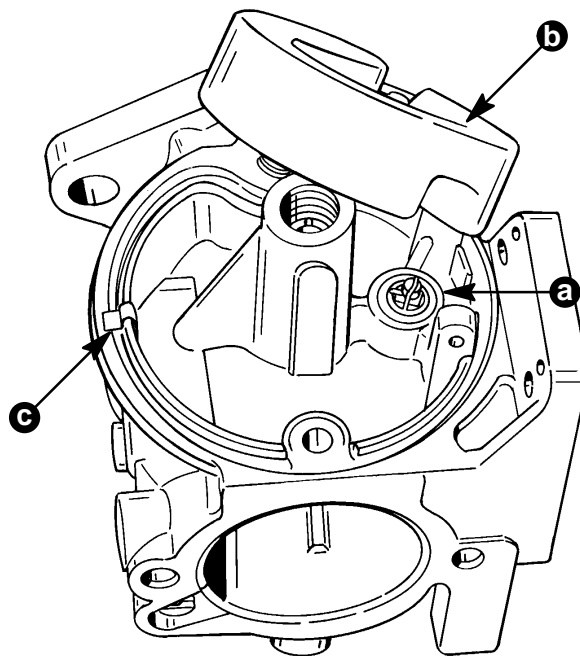
7. Install venturi into carburetor. Install main nozzle into carburetor. Tighten securely.



52015

a - Venturi
b - Main Nozzle

8. Install float needle, float and baffle plate. Secure needle to float using retaining wire on float needle.

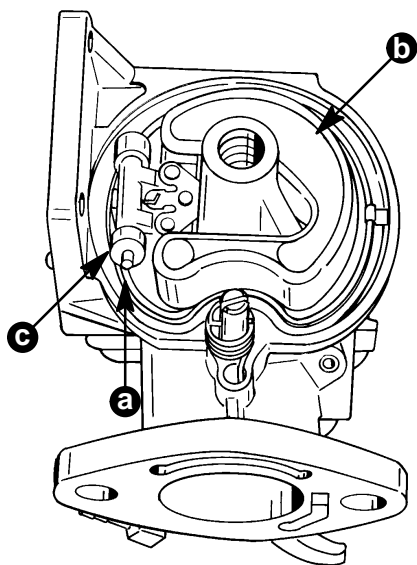


52013

a - Float Needle
b - Float
c - Baffle Plate



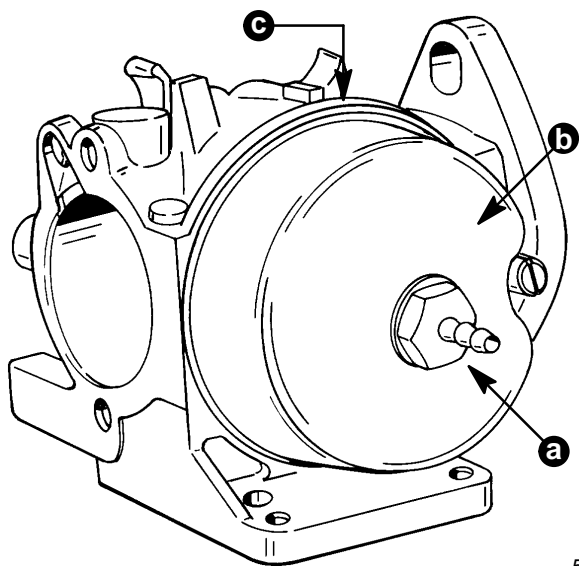
9. Install pivot pin securing float to carburetor.
10. Seat splined portion of pivot pin into carburetor post.



52013

- a - Pivot Pin
b - Float
c - Post

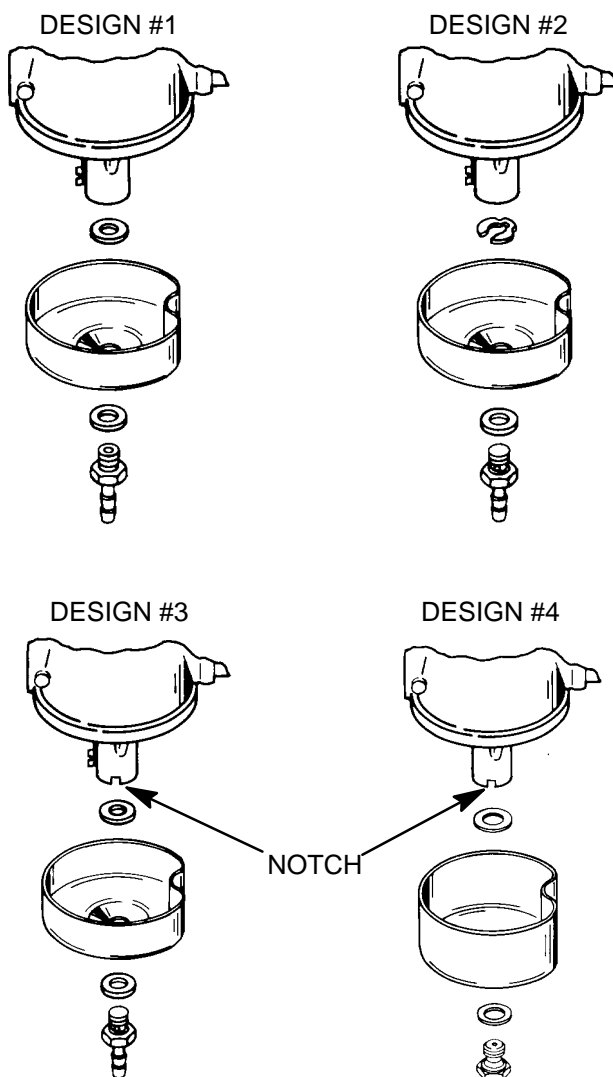
11. Install float bowl using new bowl gasket and secure to carburetor body using primer fitting. Torque fitting to 33 lb. in. (3.7 N·m). See float bowl Primer Fitting Designs following.



52012

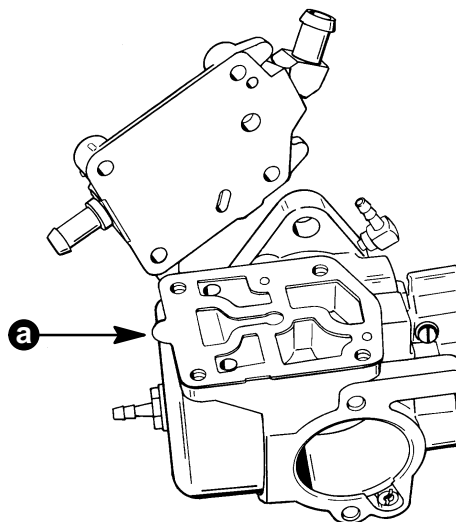
- a - Primer Fitting
b - Bowl
c - Gasket

PRIMER FITTING DESIGNS



52027

12. Install gasket and cover to carburetor.

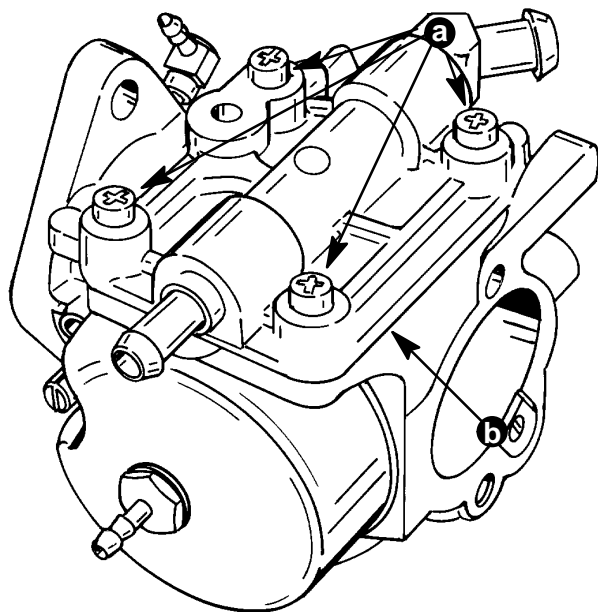


52018

- a - Gasket

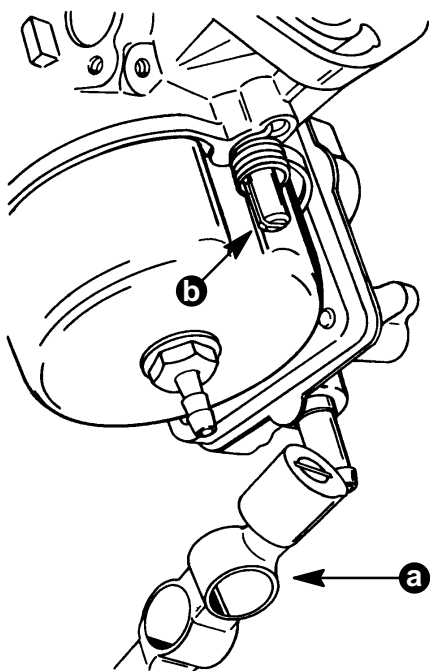


13. Torque screws to 18 lb. in. (2.0 N·m).



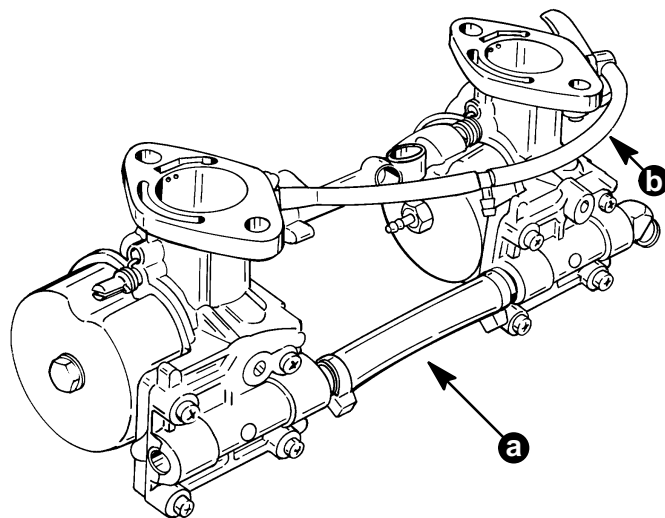
a - Screws

14. Connect throttle linkage to carburetor throttle shaft.



a - Throttle Linkage
b - Throttle Shaft

15. Connect fuel hose and primer hose to carburetor. Secure fuel hose using sta-strap.

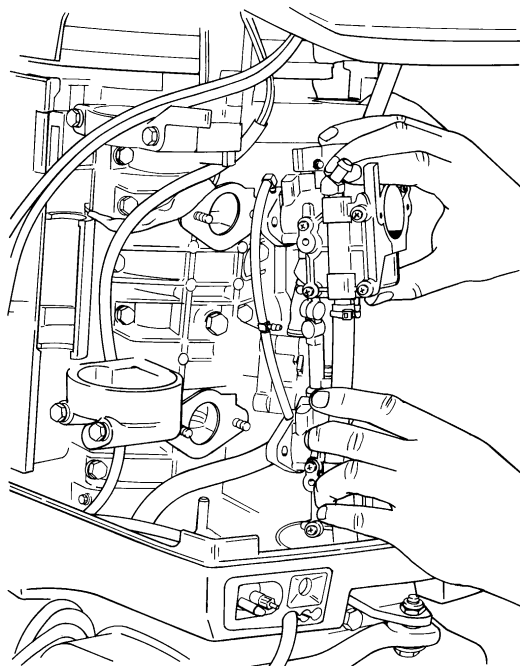


a - Fuel Hose
b - Primer Hose



Carburetor Installation

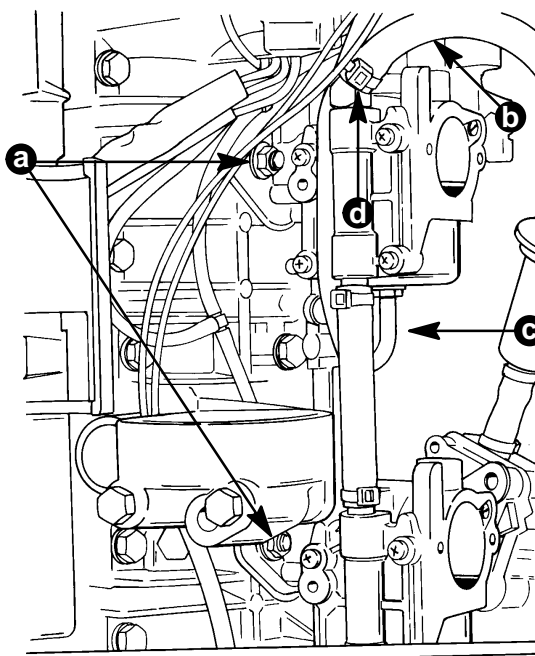
1. Install carburetors to powerhead using new gas-kets.



52021

2. Secure carburetors to engine using 4 nuts. Torque nuts to 110 lb. in. (12.4 N·m).

3. Connect fuel line and primer line. Secure fuel line using sta-strap.



52022

- a - Nuts [Torque to 110 lb. in. (12.4 N·m)]
- b - Fuel Line
- c - Primer Line
- d - Sta-strap

Reinstall oil tank. Refer to Section 8 “**Oil Injection System**”.