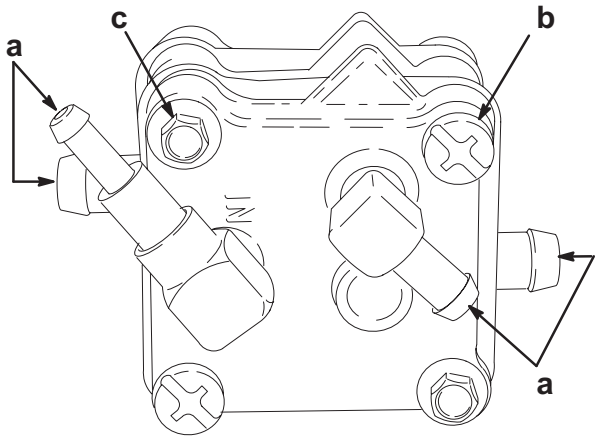
Fuel Pump Removal/Installation (Design 1)

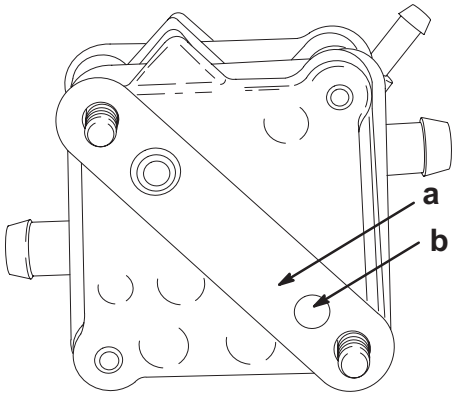
- Remove 4 hoses from fuel pump.
- Remove 2 phillips-head screws -- lift off fuel pump.
- Remove 2 hex-head bolts to disassemble fuel pump.



20427

a - Fuel Pump
b - Screws (2 Each)
c - Bolts (2 Each)

- Remove gasket from backside (fuel pump base) -- replace gasket as necessary -- check gasket in port area carefully.



20417

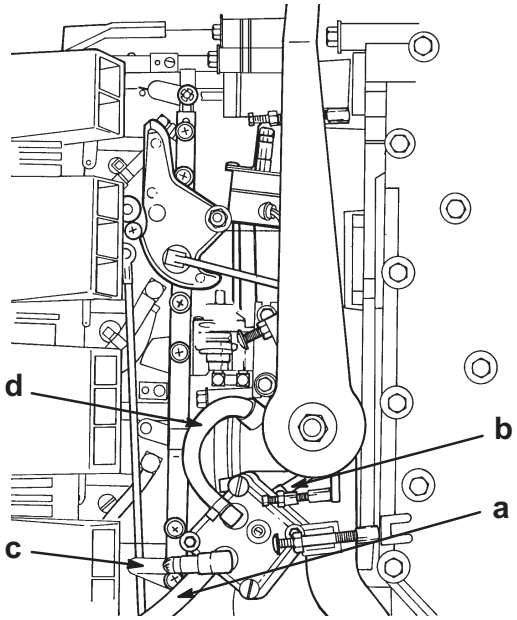
a - Gasket
b - Port Area

Reinstall Fuel Pump (Design 1)

⚠ CAUTION

After reinstalling fuel pump, ALWAYS check all fuel line connections for leaks, with engine running.

- Reinstall fuel pump to powerhead, as shown, with 2 phillips-head screws.
- Attach fuel lines (inlet and outlet).
- Attach oil injection hose.
- Attach pulse hose.
- Secure each hose connection with a sta-strap.



a - Inlet Fuel Hose
b - Outlet Fuel Hose
c - Oil Injection Hose
d - Pulse Hose

Fuel Pump Cleaning, Inspection, Disassembly and Reassembly (Design 1 and 2)

- Disassemble by removing 2 hex-head bolts; remove/disassemble fuel pump parts.

Fuel Pump – Cleaning/Inspection

Clean fuel pump housing, check valves, pulse chamber, and pump base in solvent, and dry all but check valves with compressed air.

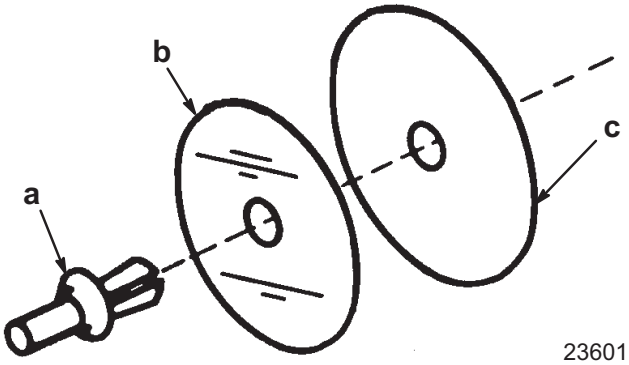
Inspect each check valve (2 ea.), for cracks and/or holes. Check each black rubber disc (2 ea.) to see that the black coating is not coming off. Unless damaged while disassembled, replacement is seldom necessary. Inspect the Check Valve Assembly on Chamber Plate (check by both pressure and suction to hose barb), to see that check ball is moving and functioning (1-3 psi required).

Inspect fittings on fuel pump housing for looseness or any signs of fuel or air leaks. Replace or tighten fitting if leak is found, or replace chamber Plate Assembly.

Check Valve Reassembly

ASSEMBLY (DESIGN I)

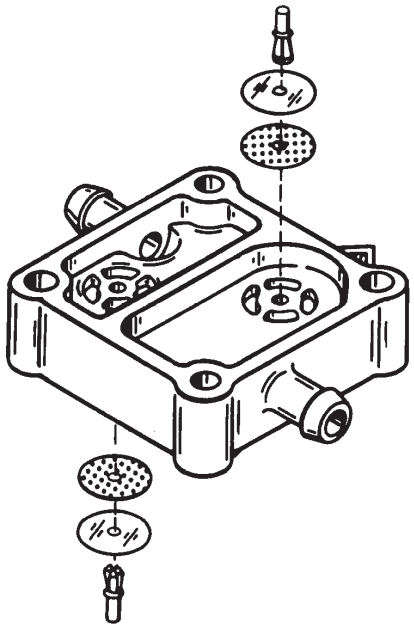
1. Insert retainer thru plastic disc and rubber check valve.



23601

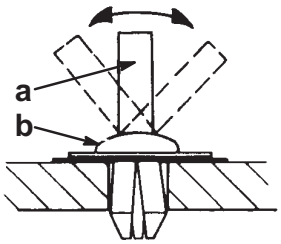
a - Retainer
b - Plastic Disc
c - Check Valve

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



24514

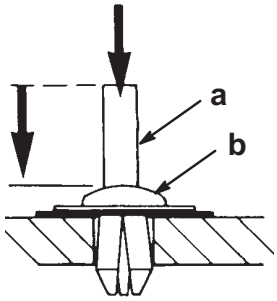
3. With retainer installed in pump body, break retainer rod from retainer by bending sideways.



23601

a - Retainer Rod
b - Retainer

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



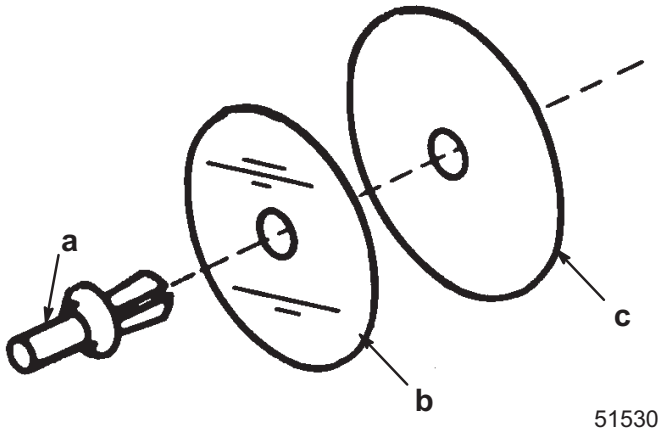
23601

a - Rod
b - Retainer Cap

Check Valve Reassembly

ASSEMBLY (DESIGN II)

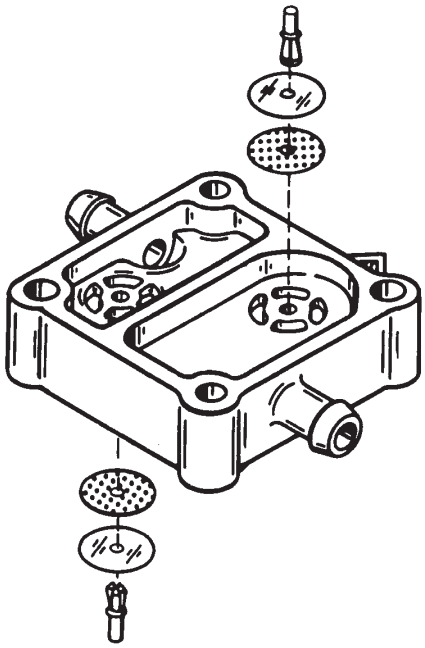
1. Insert retainer thru plastic disc and rubber check valve.



51530

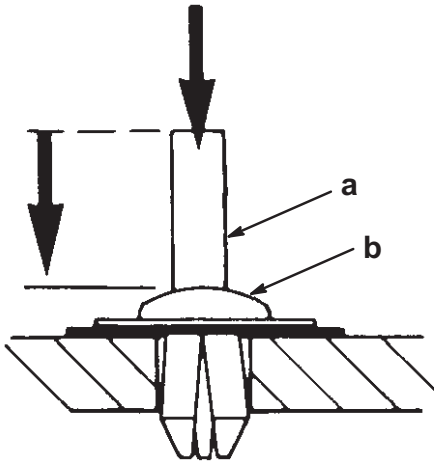
a - Retainer
b - Plastic Disc
c - Check Valve

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



51530

3. Reinstall rod into retainer cap and, use a small hammer or hammer and punch to tap rod down into retainer until flush with top of retainer.



a - Rod
b - Retainer Cap

Step-by-Step Reassembly

IMPORTANT: ALWAYS REPLACE GASKETS.

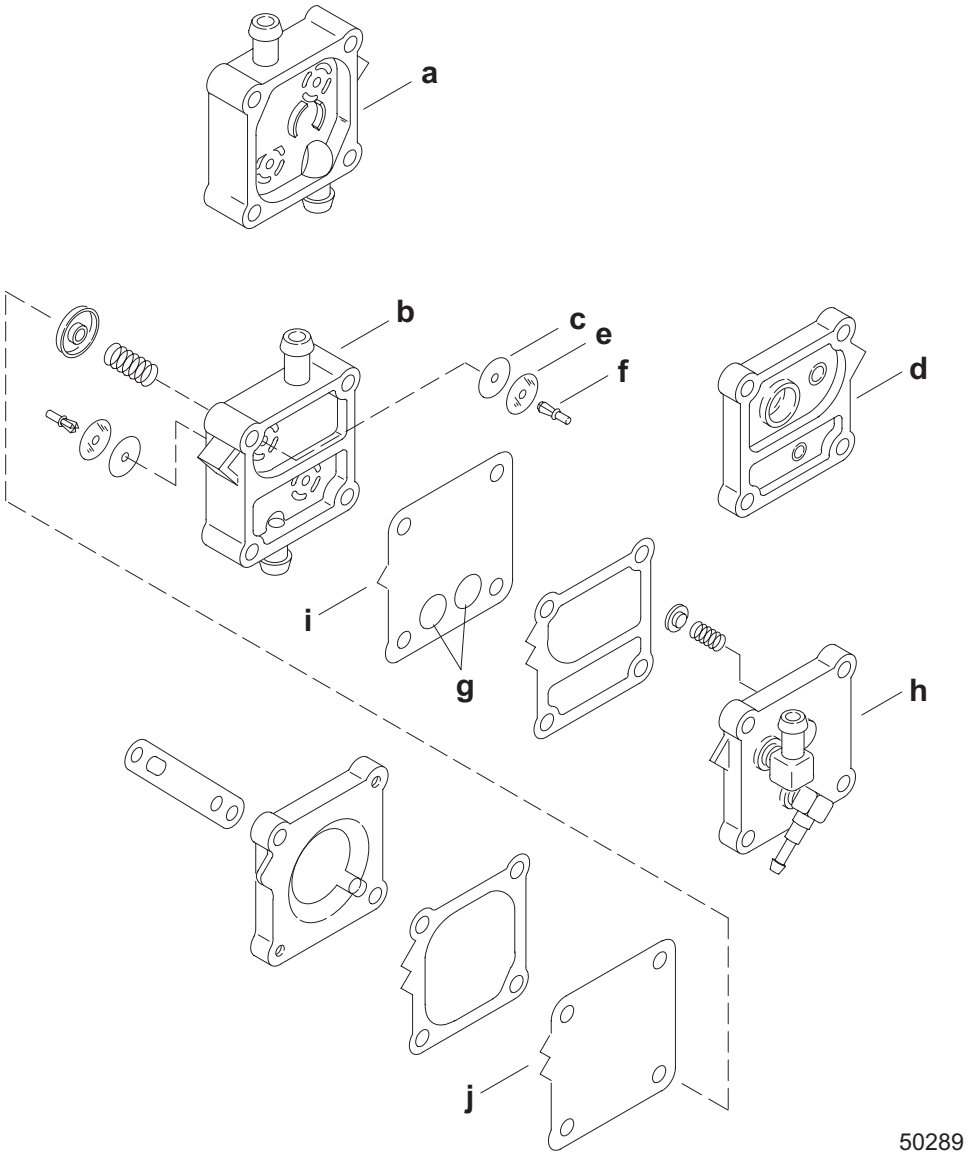
STEP-BY-STEP FUEL PUMP REASSEMBLY

After reassembling check valve in fuel pump body, using the following procedure will help insure proper reassembly:

1. Insert two 3 in. minimum length 1/4″ bolts (not the fuel pump bolts) OR 1/4″ dowels, through the opposite large holes (6mm bolt holes) in the chamber plate, as locating dowels, and turn plate upside down so that the inner side is facing up.
2. Insert coil spring and cap in place.
3. Place Boost Chamber GASKET over dowels (bolts) and lower onto Chamber Plate -- BE SURE that gasket directional alignment is correct and that “V-tabs” are aligned.
4. Place Boost DIAPHRAGM over dowels, and lower to assembly.
5. Place Fuel Pump Body over dowels, and lower to assembly.
6. Insert Coil Spring and Cap in pump body.
7. Place Fuel Pump DIAPHRAGM over dowels, and lower to assembly.
8. Place Pulse Chamber GASKET over dowels, and lower to assembly.
9. Place Fuel Pump Base over dowels, and lower to assembly.
10. Grasp assembly firmly and clamp together with hands--turn over, and insert the 5mm Fuel Pump BOLTS (hex-head); After tightening, remove dowels (1/4″ bolts) used for locators.
11. Check that the directional alignment of all parts is correct and that the “V-Tabs” are aligned.

70-75-80-90 (3 cyl.) (Design 1)

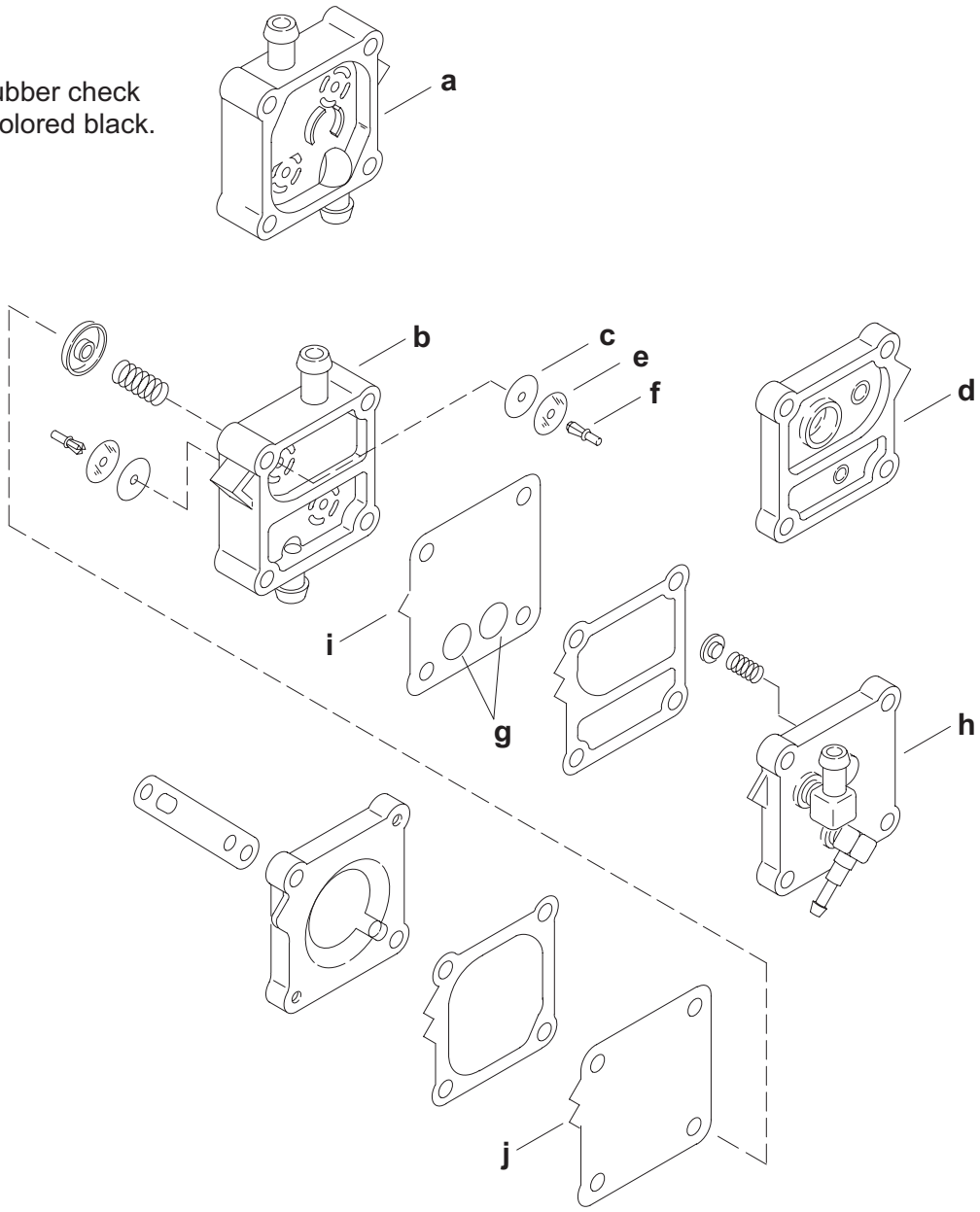
Previous body with rubber check valve retainers was colored black.



a - Body (Opposite Side View)
b - Natural Body (Off White)
c - Rubber Valve
d - Cover (Opposite Side View)
e - Plastic Disc
f - Plastic Check Valve Retainer
g - Two Oil Passage Holes
h - Cast Aluminum Cover
i - One Tab
j - Two Tabs

100-115 (4 cyl.) (Design 1)

Previous body with rubber check valve retainers was colored black.



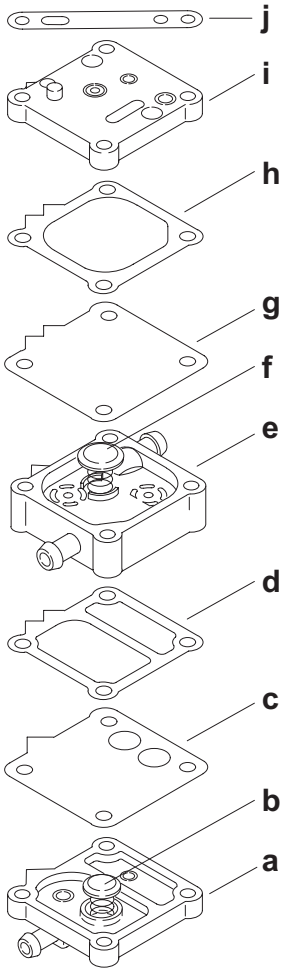
50291

a - Body (Opposite Side View)
b - Natural Body (Off White)
c - Rubber Valve
d - Cover (Opposite Side View)
e - Plastic Disc
f - Plastic Check Valve Retainer
g - Two Oil Passage Holes
h - Cast Aluminum Cover
i - One Tab
j - Two Tabs

REASSEMBLY SEQUENCE (DESIGN 1)

⚠ CAUTION

Observe position of both Pulse Chamber DIAPHRAGM and GASKET. The two larger holes allow oil injection output to enter the gas flow. Failure to reinstall as shown WILL result in extensive damage to engine.

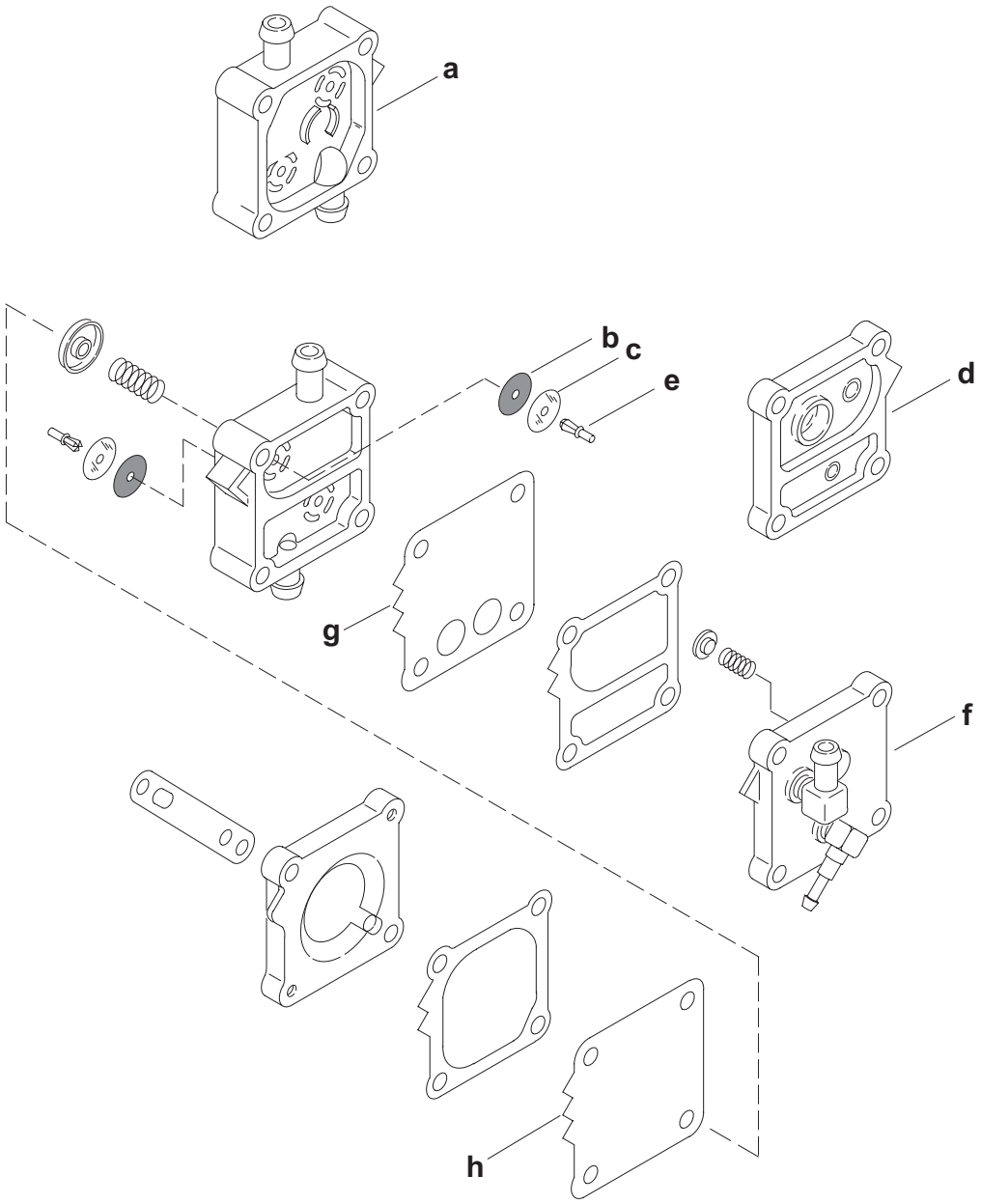


51119

a - Chamber Plate (Step 1)
b - Boost Compression Spring & Cap (Step 2)
c - Boost Chamber Gasket (Step 3)
d - Boost Diaphragm (Step 4)
e - Fuel Pump Body (Step 5)
f - Main Compression Spring & Cap (Step 6)
g - Fuel Pump Diaphragm (Step 7)
h - Pulse Chamber Gasket (Step 8)
i - Fuel Pump Base (Step 9)
j - Fuel Pump to Powerhead Gasket - Shown for Identification Purposes Only

Reinstalling Fuel Pump to Powerhead - see preceding page

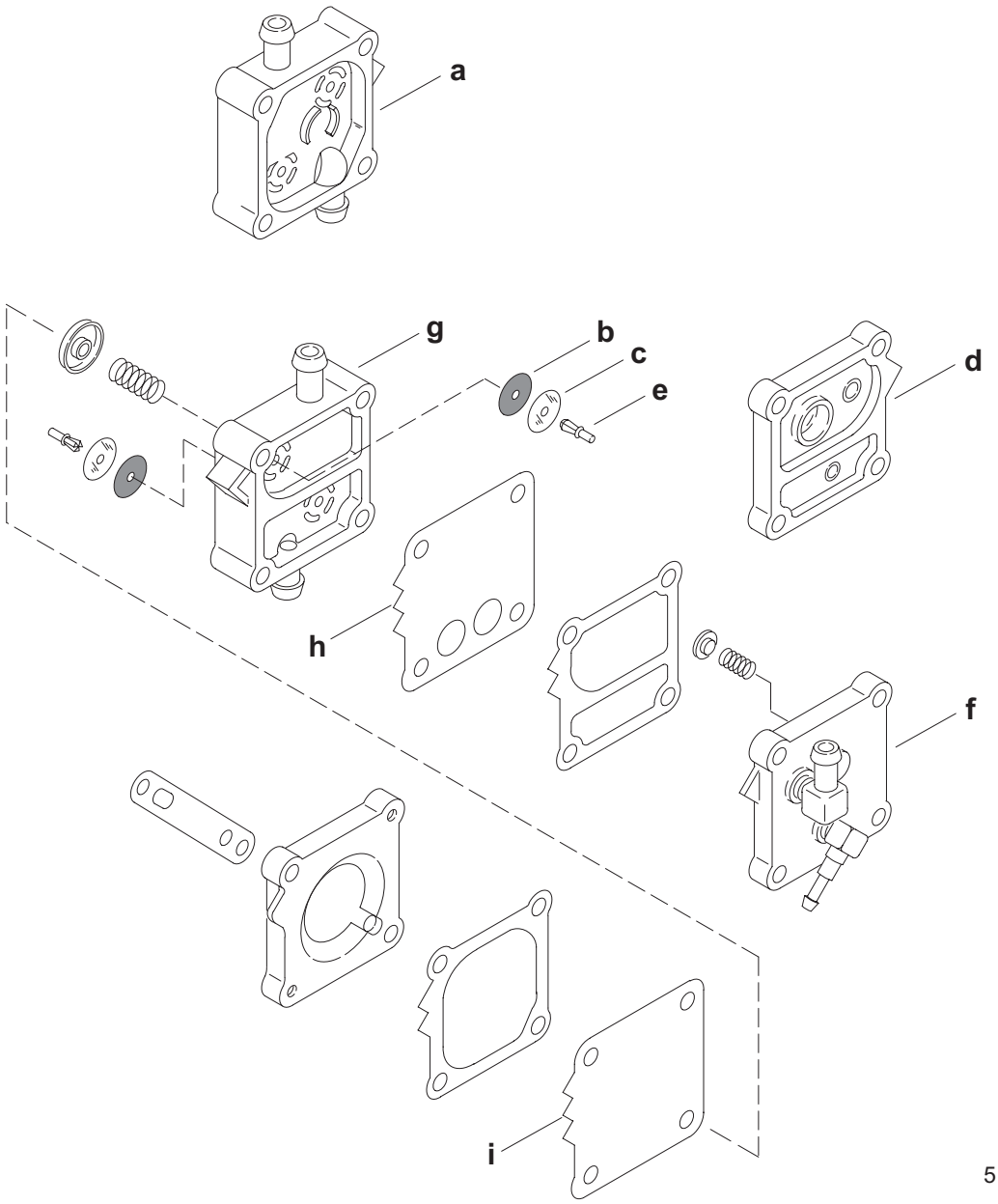
70-75-80-90 (3 cyl.)
(Design 2)



51549

a - Body (Opposite Side View)
b - Rubber Valve
c - Plastic Disc
d - Cover (Opposite Side View)
e - Plastic Check Valve Retainer
f - Cast Aluminum Cover
g - Three Tabs
h - Three Tabs

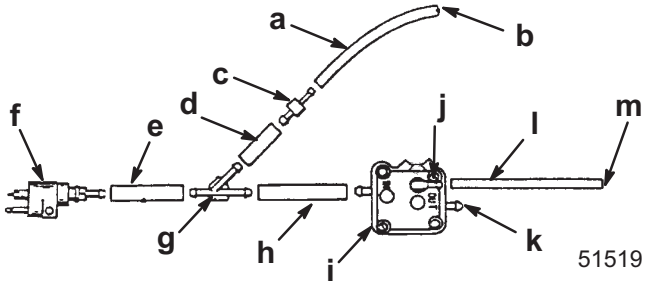
100-115 (4 cyl.)
(Design 2)



a - Body (Opposite Side View)
b - Rubber Valve
c - Plastic Disc
d - Cover (Opposite Side View)
e - Plastic Check Valve Retainer
f - Cast Aluminum Cover
g - Body
h - Three Tabs
i - Three Tabs

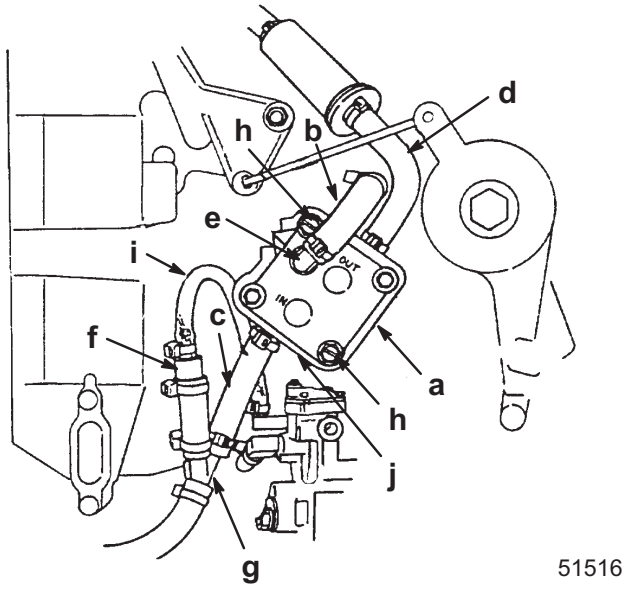
Installation of Design 2 Fuel Pump

MODEL 70, 75, 80, 90



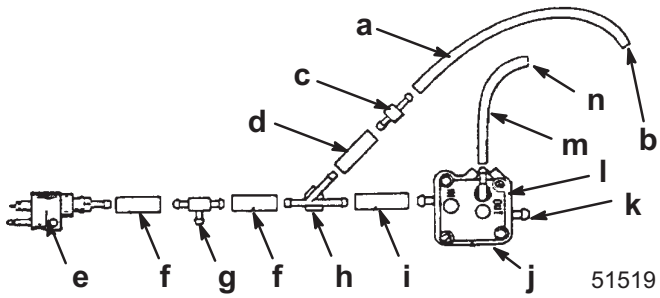
a - Clear Tube [5.5 in. (139.7mm)]
b - To Oil Pump Outlet
c - Check Valve
d - Hose [1.5 in. (38.1mm)]
e - Hose [2.5 in. (63.5mm)]
f - Fuel Line Connector
g - Y-Fitting
h - Hose [3 in. (76.2mm)]
i - Fuel Pump
j - 90 Degree Elbow
k - Fuel Outlet to Filter
l - Hose [2.5 in. (63.5mm)]
m- To Pulse Fitting on Powerhead

MODEL 70, 75, 80, 90



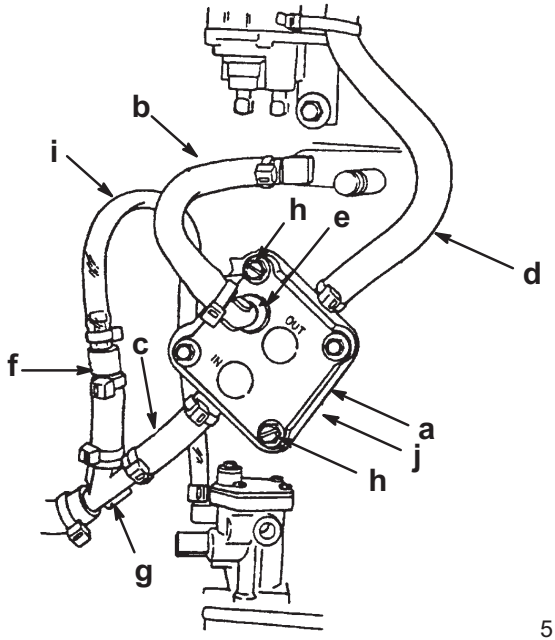
a - Fuel Pump
b - Pulse Hose
c - Inlet Hose
d - Outlet Hose (Replace with Molded Hose)
e - Elbow [Apply PERFECT SEAL (92-34227--1) to threads]
f - Check Valve
g - Y-Connector
h - Screws [Torque to 55 lb. in. (6.2 N·m)]
i - Clear Tubing [5.5 in. (139.7mm)]
j - Gasket (Cylinder Block to Fuel Pump) (HIDDEN)

MODEL 100, 115



a - Clear Tube [8 in. (203.2mm)]
b - To Oil Pump Outlet
c - Check Valve
d - Hose [1.5 in. (38.1mm)]
e - Fuel Connector
f - Hose [1.5 in. (38.1mm)]
g - T-Fitting (EXISTING)
h - Y-Fitting
i - Hose [1.75 in. (44.5mm)]
j - Fuel Pump
k - Fuel Outlet to Filter
l - 90 Degree Elbow
m- Hose [4 in. (101.6mm)]
n - To Pulse Fitting on Powerhead

MODEL 100, 115



a - Fuel Pump
b - Pulse Hose
c - Inlet Hose
d - Outlet Hose
e - Elbow [Apply PERFECT SEAL (92-34227--1) to threads]
f - Check Valve
g - Y-Connector
h - Screws [Torque to 55 lb. in. (6.2 N·m)]
i - Clear Tubing [8 in. (203.2mm)]
j - Gasket (Cylinder Block to Fuel Pump) (HIDDEN)