



FUEL SYSTEM

Section 3A - Fuel Pump

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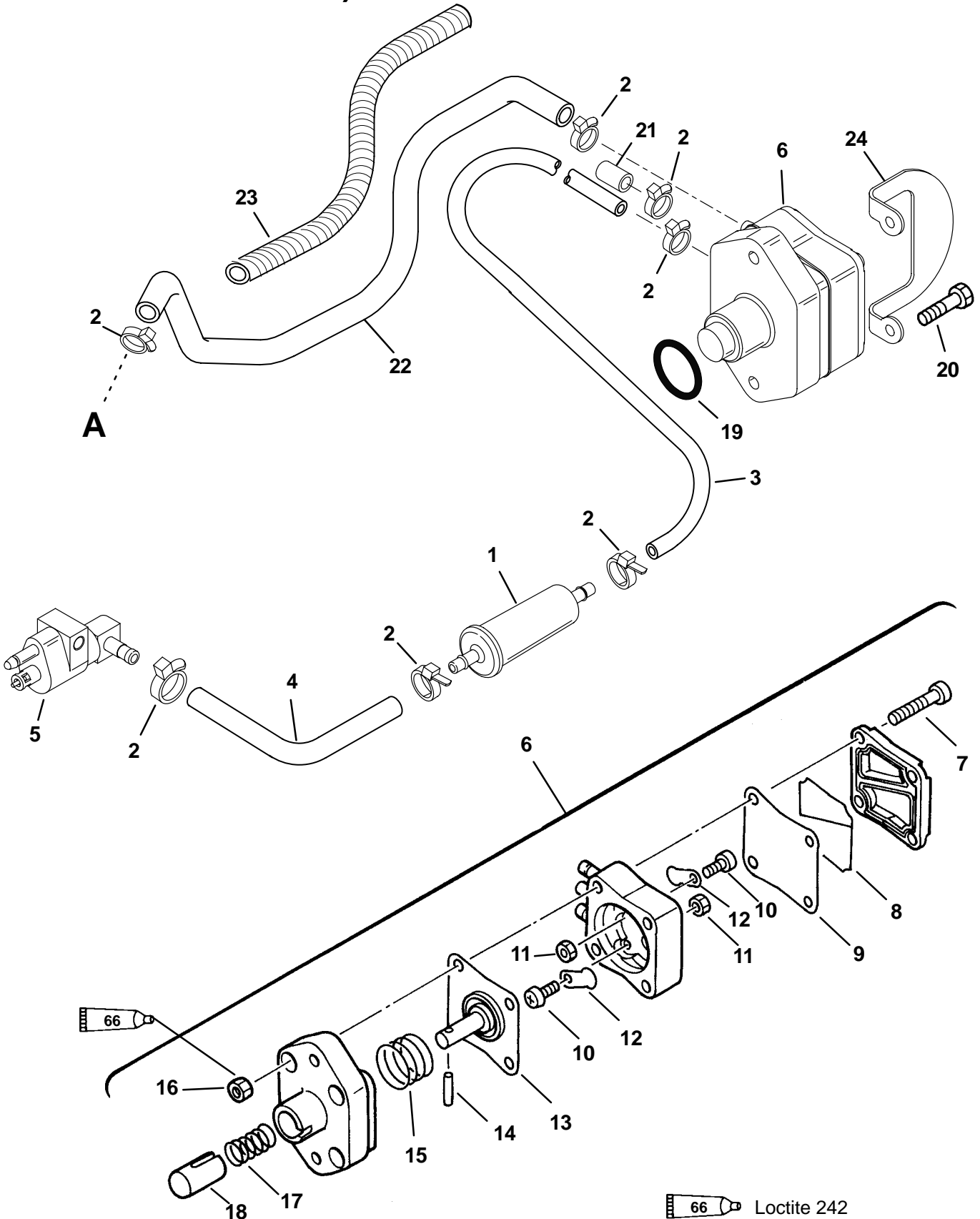


Specifications

FUEL SYSTEM	Fuel Pump Type Fuel Pump: Pressure Plunger Stroke Fuel Tank Capacity	External (Plunger/Diaphragm) 3-6 PSI 0.23 - 0.38 in. (5.85 - 9.65 mm) Accessory
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FUEL PUMP (USA S/N 0T408999 and Below, Belgium S/N 0P153499 and Below)



A = TO FLOAT BOWL

66 Loctite 242

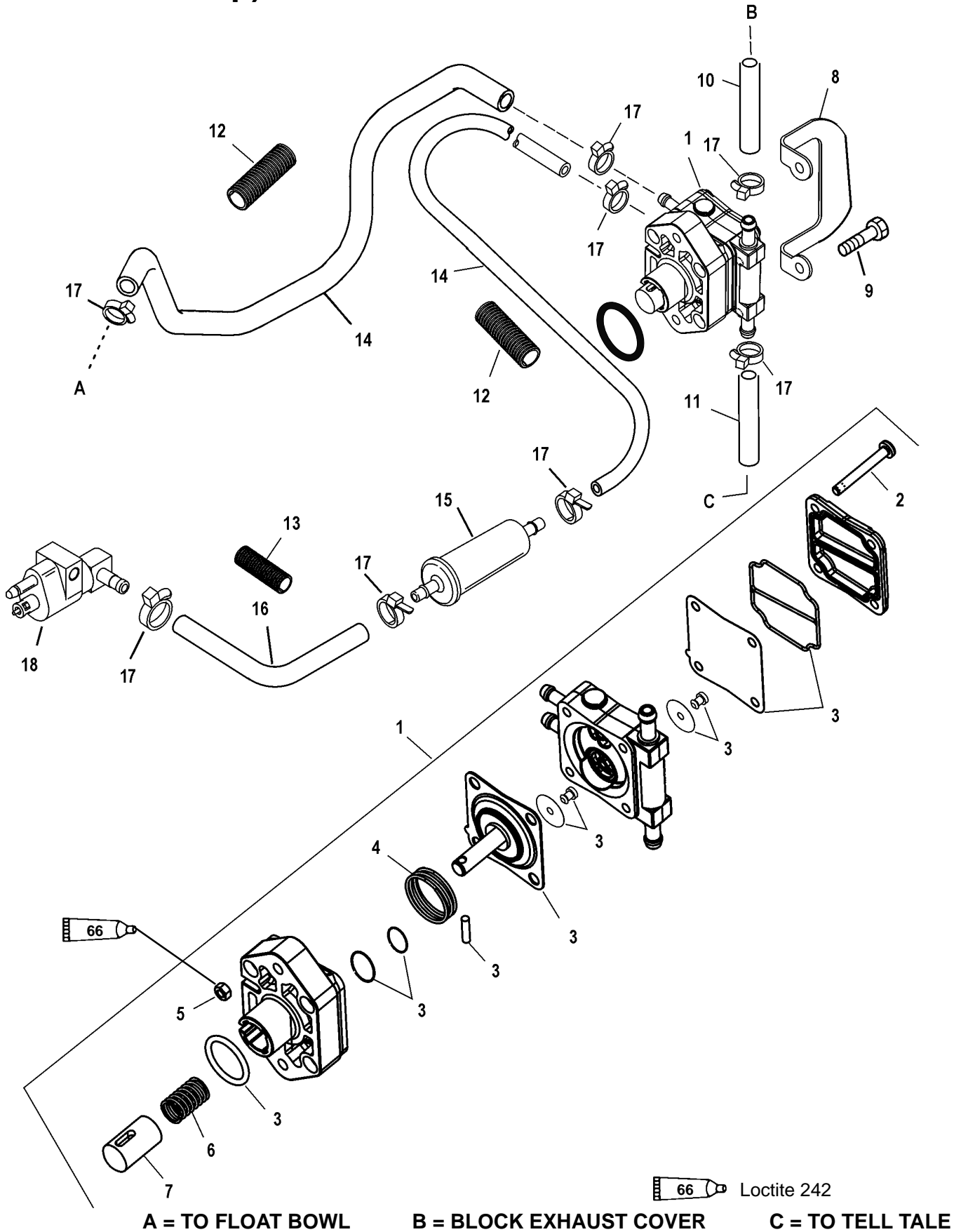


FUEL PUMP (USA S/N 0T408999 and Below, Belgium S/N 0P153499 and Below)

REF. NO.	QTY.	DESCRIPTION	TORQUE		
			lb. in.	lb. ft.	N·m
1	1	FUEL FILTER			
2	7	STA-STRAP			
3	1	TUBING (16 IN.)			
4	1	TUBING (19 IN.)			
5	1	FUEL CONNECTOR			
-	1	O RING			
6	1	FUEL PUMP			
7	4	SCREW			Drive Tight
8	1	COVER			
9	1	DIAPHRAGM			
10	2	SCREW			Drive Tight
11	2	NUT			
12	2	CHECK VALVE			
13	1	DIAPHRAGM			
14	1	PIN			
15	1	SPRING			
16	4	NUT			
17	1	SPRING			
18	1	PLUNGER			
19	1	O RING			
20	2	SCREW (M6 x 30)	75		8.5
21	1	PLUG			
22	1	HOSE			
23	1	CONDUIT (ELECTRIC)			
24	1	COWL DEFLECTOR			



FUEL PUMP (USA S/N 0T409000 and Up, Belgium S/N 0P153500 and Up)





FUEL PUMP (USA S/N 0T409000 and Up, Belgium S/N 0P153500 and Up)

REF. NO.	QTY.	DESCRIPTION	TORQUE		
			lb. in.	lb. ft.	N-m
1	1	FUEL PUMP			
2	4	SCREW			
3	1	DIAPHRAGM/O RING KIT			
4	1	SPRING			
5	4	NUT			
6	1	SPRING			
7	1	CAP			
8	1	COWL DEFLECTOR			
9	2	SCREW (M6 x 30)			
10	1	TUBING (13 in.)			
11	1	TUBING (6 IN.)			
12	2	CONDUIT (13 IN.)			
13	1	CONDUIT (6 IN.)			
14	2	TUBING (19 IN.)			
15	1	FUEL FILTER			
16	1	TUBING (7 IN.)			
17	AR	STA STRAP			
18	1	FUEL CONNECTOR			
19	1	O RING			



Fuel Pump

Fuel Pump USA S/N 0T408999 and Below

Fuel Pump Belgium S/N 0P153499 and Below

Operation

1. The fuel pump is a diaphragm pump which is mechanically driven off of the rocker arm.
2. The black mounting block (insulator) helps prevent vapor lock.
3. If the engine runs out of fuel, or has a restriction preventing adequate fuel flow, the pump will make a "clicking" noise.

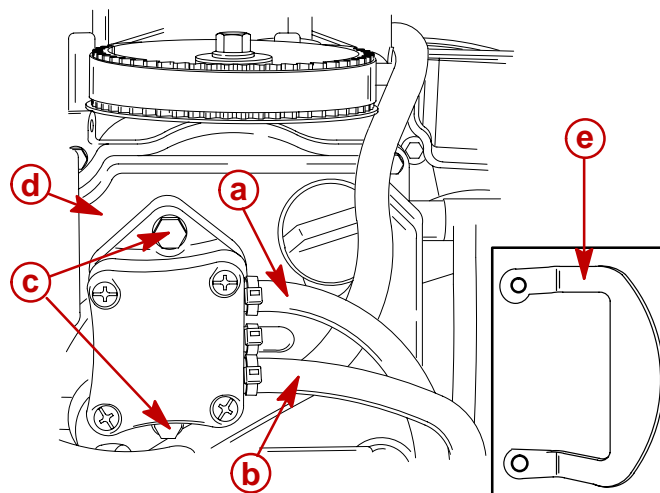
⚠ WARNING

FIRE AND EXPLOSION HAZARD. Observe fire prevention rules, particularly **NO SMOKING**. Before servicing any part of the fuel system, disconnect electrical system at the battery. Drain the fuel system completely. Use an approved container to collect and store fuel. Wipe up any spillage immediately. Materials used to contain spillage must be disposed of in an approved receptacle. Any fuel system service must be performed in a well ventilated area.

FUEL LEAKAGE FROM ANY PART OF THE FUEL SYSTEM CAN BE A FIRE AND EXPLOSION HAZARD WHICH CAN CAUSE SERIOUS BODILY INJURY OR DEATH. Careful periodic inspection of the entire fuel system is mandatory, particularly after engine storage. All fuel components, including fuel tanks (plastic, metal, or fiberglass), fuel lines, primer bulbs and fittings, must be inspected for cracks, swelling, and/or corrosion. Any sign of leakage or deterioration necessitates replacement before further engine operation.

Removal

1. Cut sta-straps and remove inlet and outlet hoses.
2. Remove fuel pump screws.
3. Separate fuel pump from cylinder head cover.



- a** - Outlet Fuel Hose
- b** - Inlet Fuel Hose
- c** - Mounting Screws
- d** - Cylinder Head Cover
- e** - Cowl Deflector

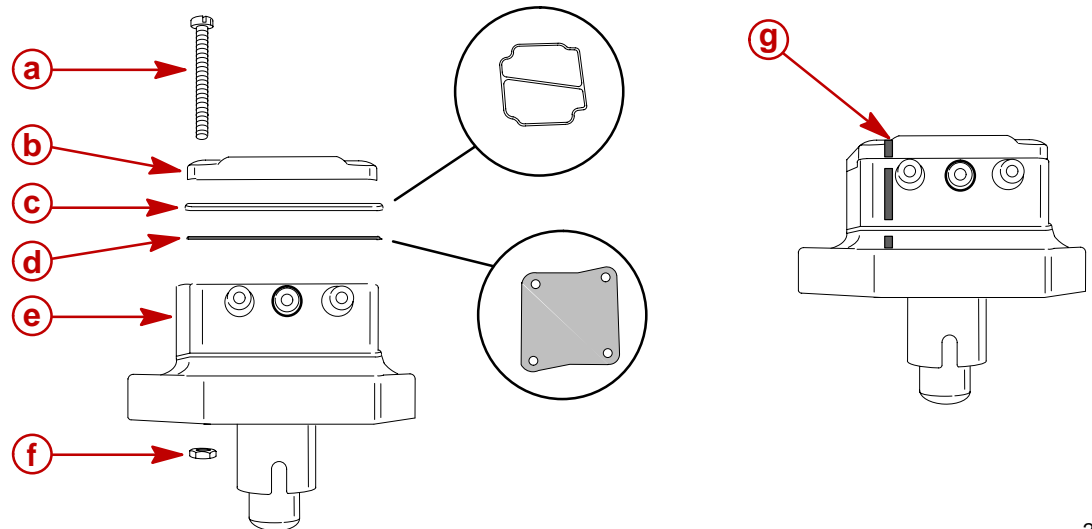
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Disassembly

IMPORTANT: Before separating fuel pump components mark each component with an awl or marker. This will ensure the components are oriented correctly during reassembly.

1. Remove screws to separate pump cover, cover seal, and diaphragm, from pump body.

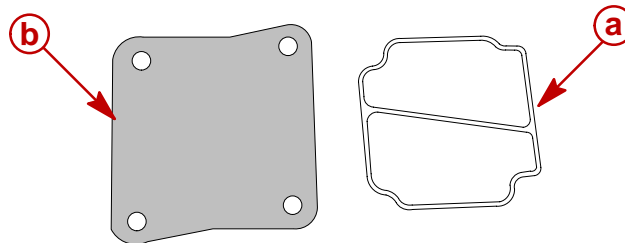


- a - Screws (4)
- b - Pump Cover
- c - Cover Seal
- d - Diaphragm

- e - Pump Body
- f - Nuts (4)
- g - I.D. Marks (Create These)

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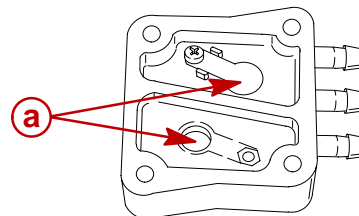
2. Inspect cover seal and diaphragm. Replace if damaged.



- a - Cover Seal
- b - Diaphragm

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3. Inspect check valves. Replace if damaged.

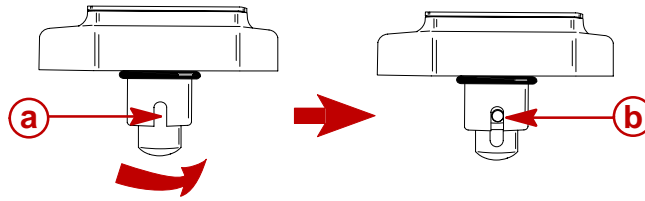


- a - Check Valves

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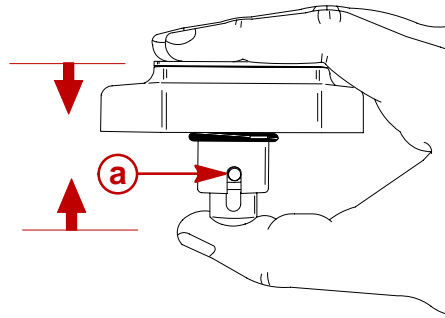
4. Rotate plunger to line up slots.



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- a** - Slots Offset
- b** - Slots Aligned

5. Compress pump assembly to free spring load on pin.
6. Tilt assembly to allow pin to slide out.

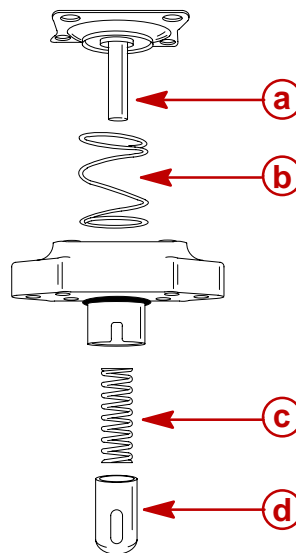


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- a** - Pin

Inspection

1. Inspect diaphragm, diaphragm spring, and spring. Replace if damaged.



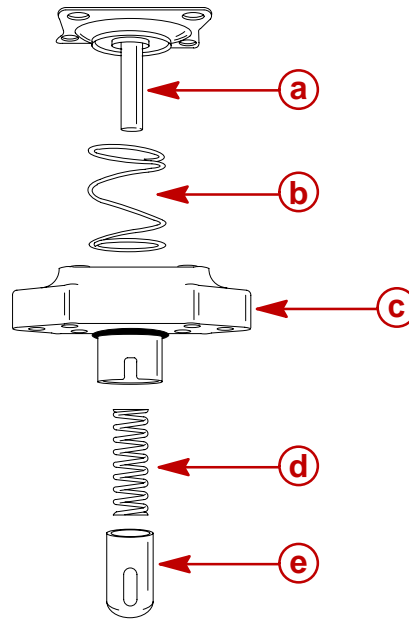
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- a** - Diaphragm
- b** - Diaphragm Spring
- c** - Spring
- d** - Plunger



Reassembly

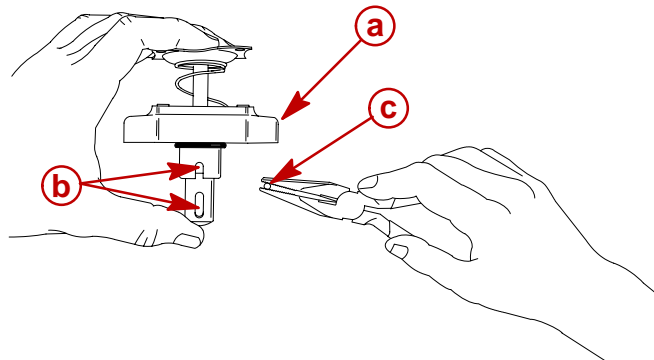
1. Assemble springs, diaphragm, and plunger onto pump body.



53618

- a** - Diaphragm
- b** - Diaphragm Spring
- c** - Pump Body
- d** - Spring
- e** - Plunger

2. Line up slots and compress assembly.
3. Insert pin into hole.

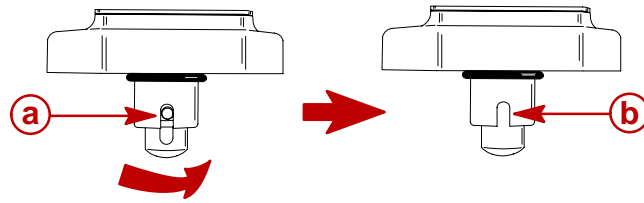


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- a** - Pump Body
- b** - Slots
- c** - Pin



4. Rotate plunger 90° to offset slots.

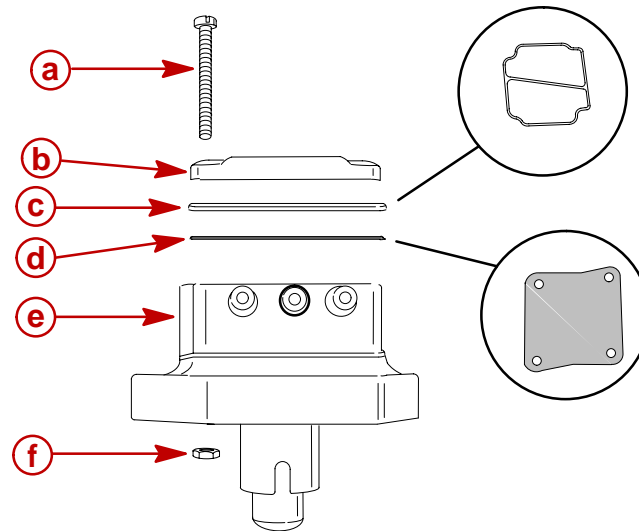


53615

- a - Slots Aligned
- b - Slots Offset

5. Assemble diaphragm, seal, and cover, onto pump body. Secure with screws and nuts.

NOTE: Seal installs in one direction only.

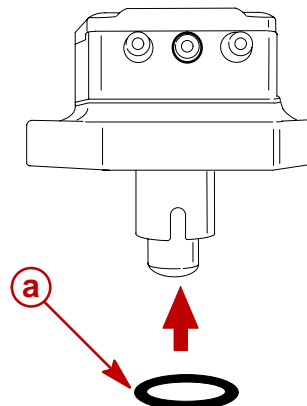


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- a - Screws (4)
- b - Cover
- c - Cover Seal
- d - Diaphragm
- e - Pump Body
- f - Nuts (4)

6. Install a new O-ring onto the pump assembly.

NOTE: Always install a new O-ring.



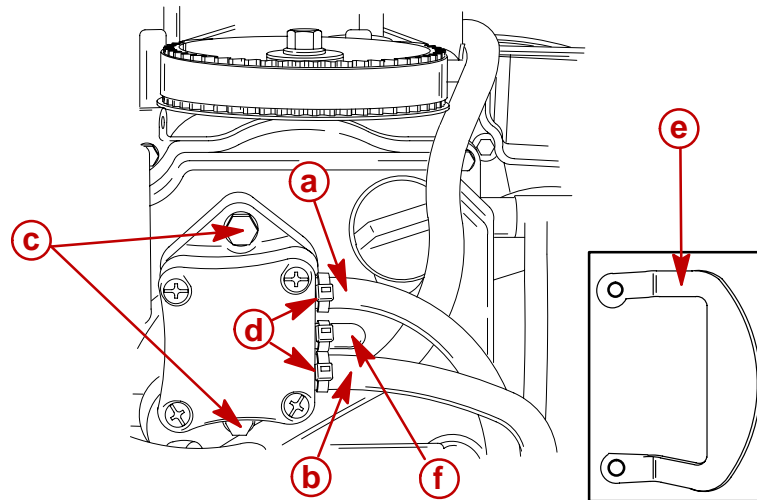
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- a - O-ring



Installation

1. Secure fuel pump (and cowl deflector if equipped) to cylinder head cover with 2 screws.
2. Connect fuel lines to pump and secure with sta-straps.



- a** - Outlet Fuel Hose
- b** - Inlet Fuel Hose
- c** - Mounting Screws
- d** - Sta-Straps
- e** - Cowl Deflector (if equipped)
- f** - Cap/Sta-Strap

55780

Fuel Pump Mounting Screw Torque

75 lb. in. (8.5 N·m)



Fuel Pump

Fuel Pump USA S/N 0T409000 and Up

Fuel Pump Belgium S/N 0P153500 and Up

Operation

1. The fuel pump is a diaphragm pump which is mechanically driven off of the rocker arm.
2. The black mounting block (insulator) and the water cooling lines helps prevent vapor lock.
3. If the engine runs out of fuel, or has a restriction preventing adequate fuel flow, the pump will make a “clicking” noise.

WARNING

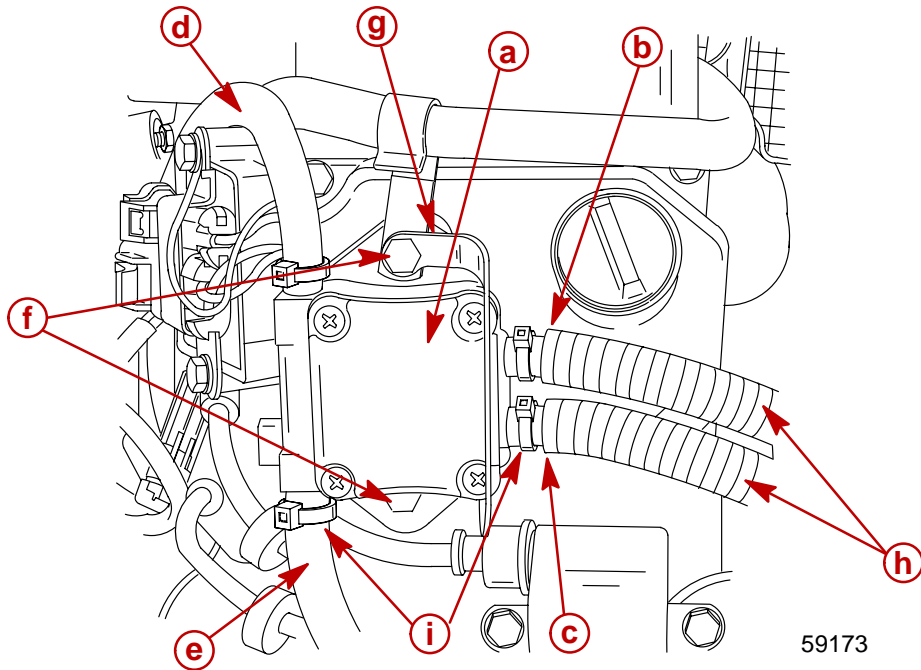
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Removal

1. Cut sta-straps. Remove fuel inlet and outlet hoses, and fuel cooler water inlet and outlet hoses.
2. Remove fuel pump screws.
3. Separate fuel pump from cylinder head cover.



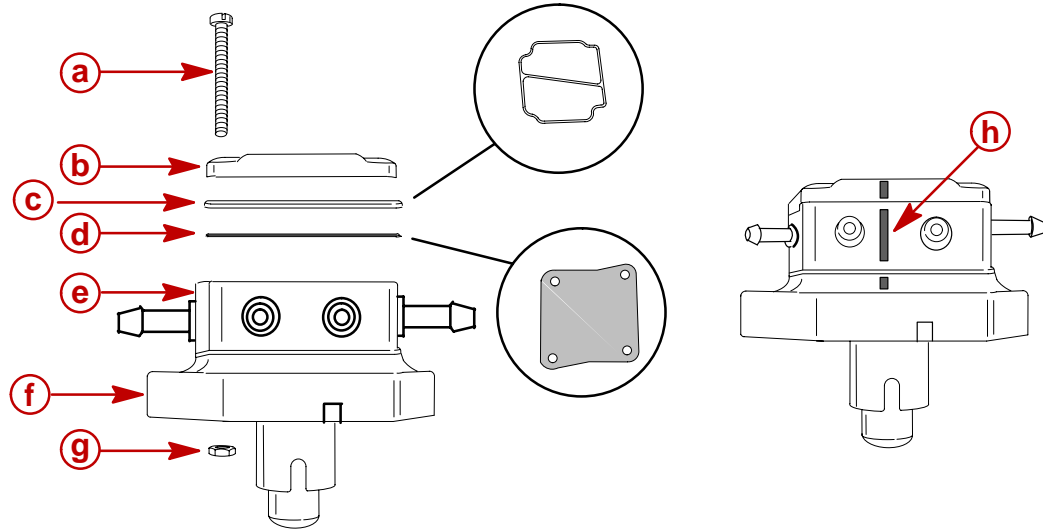
- a** - Fuel Pump
- b** - Outlet Fuel Hose
- c** - Inlet Fuel Hose
- d** - Fuel Cooler Water Inlet Hose
- e** - Fuel Cooler Water Outlet Hose (Tell Tale Hose)
- f** - Mounting Screws
- g** - Cowl Deflector
- h** - Conduit
- i** - Sta-Strap (4)



Disassembly

IMPORTANT: Before separating fuel pump components mark each component with an awl or marker. This will ensure the components are oriented correctly during reassembly.

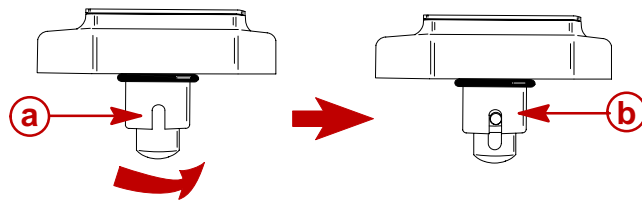
1. Remove screws to separate pump cover, cover seal, diaphragm and valve body from pump base.



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- | | |
|-----------------------|--------------------------------------|
| a - Screws (4) | e - Valve Body |
| b - Pump Cover | f - Pump Base |
| c - Cover Seal | g - Nuts (4) |
| d - Diaphragm | h - I.D. Marks (Create These) |

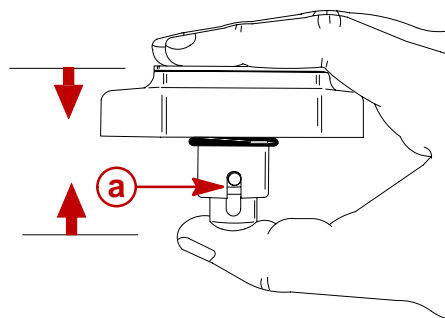
2. Rotate plunger to line up slots.



53615

- | |
|--------------------------|
| a - Slots Offset |
| b - Slots Aligned |

3. Compress pump assembly to free spring load on pin.
4. Tilt assembly to allow pin to slide out.



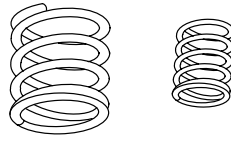
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- | |
|----------------|
| a - Pin |
|----------------|

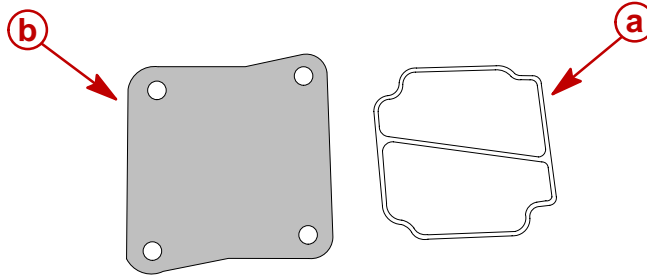


Cleaning/Inspection/Repair

1. Inspect springs for damage. Replace if necessary.



2. Inspect cover seal and diaphragm. Replace if damaged.



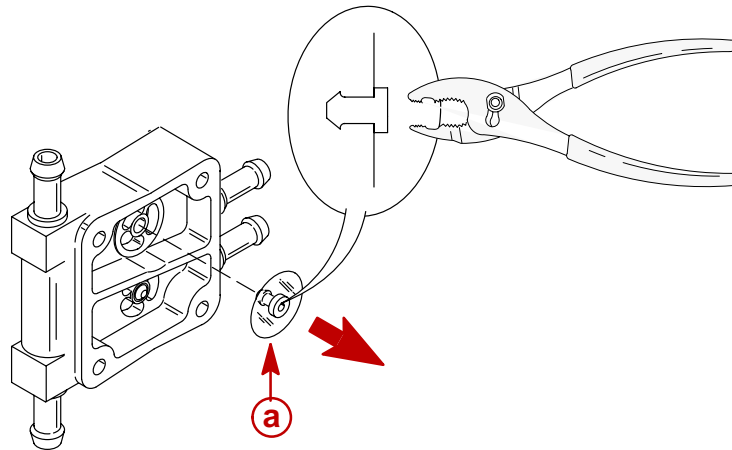
- a - Cover Seal
- b - Diaphragm

Check Valve Inspection/Replacement

1. Inspect the check valves for damage. Replace if necessary.

REMOVAL

2. If replacement is needed remove old check valves by grabbing the seal and pulling.



- a - Check Valve/Seal Assembly (2)

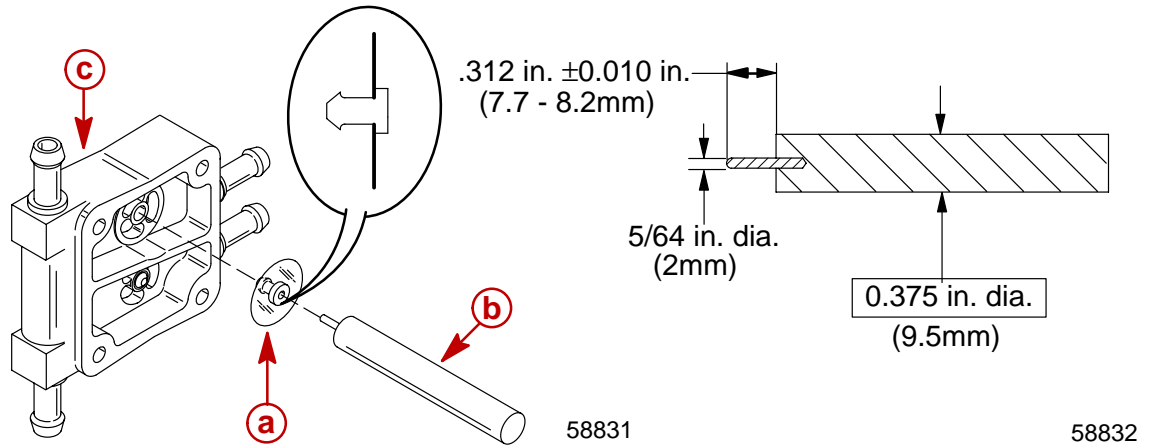
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INSTALLATION

1. Fabricate an installation tool to the dimensions specified.
2. Lubricate the end of the seal with light oil, and push the assembly into the valve body.

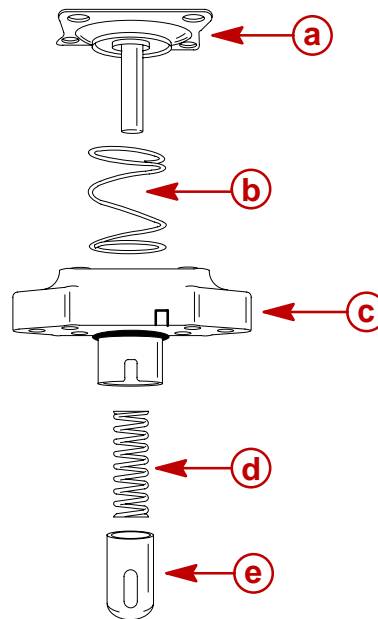
NOTE: Drill into the handle using a 5/64 in. (2mm) drill bit. Insert the peg into the drilled hole until 0.312 in. (8mm) remains exposed.



- a** - Check Valve/Seal Assembly (2)
- b** - Installation Tool (make yourself)
- c** - Valve Body

Assembly

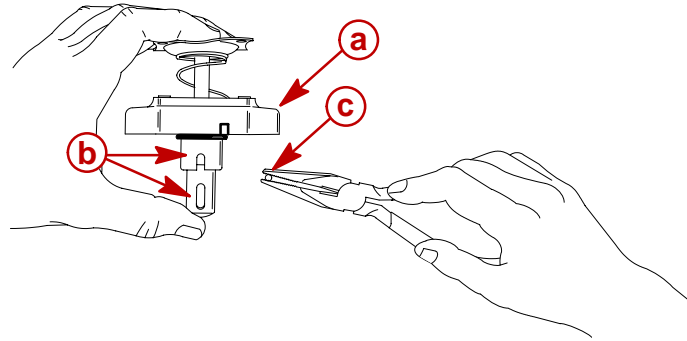
1. Assemble springs, diaphragm, and plunger onto pump base.



- a** - Diaphragm
- b** - Diaphragm Spring
- c** - Pump Body
- d** - Spring
- e** - Plunger

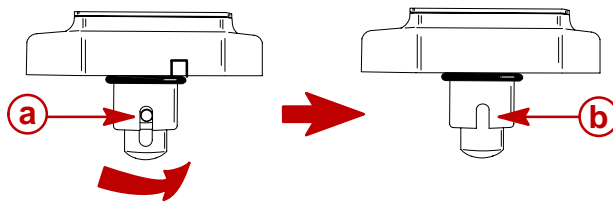


- Line up slots and compress assembly.
- Insert pin into hole.



- a - Pump Body
- b - Slots
- c - Pin

- Rotate plunger 90° to offset slots.

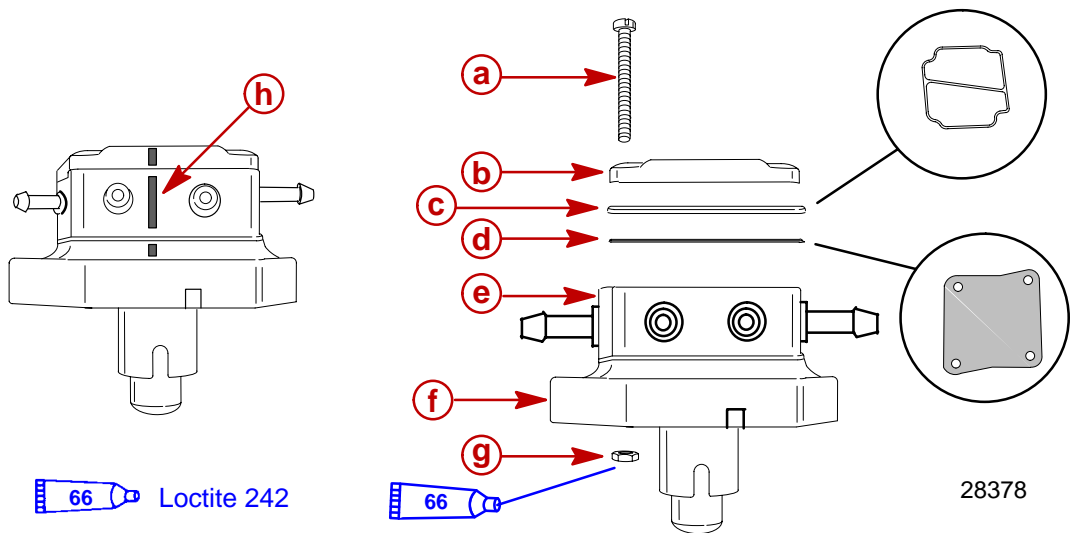


- a - Slots Aligned
- b - Slots Offset

53615

- Assemble valve body, diaphragm, seal, and cover to pump base. **Be sure to line up I.D. marks that were made before disassembly.** Apply Loctite 242 to screws and secure with nuts.

NOTE: Seal installs in one direction only.



- a - Screws (4) M5 x 40
- b - Pump Cover
- c - Cover Seal
- d - Diaphragm
- e - Valve Body
- f - Pump Base
- g - Nuts (4)
- h - I.D. Marks

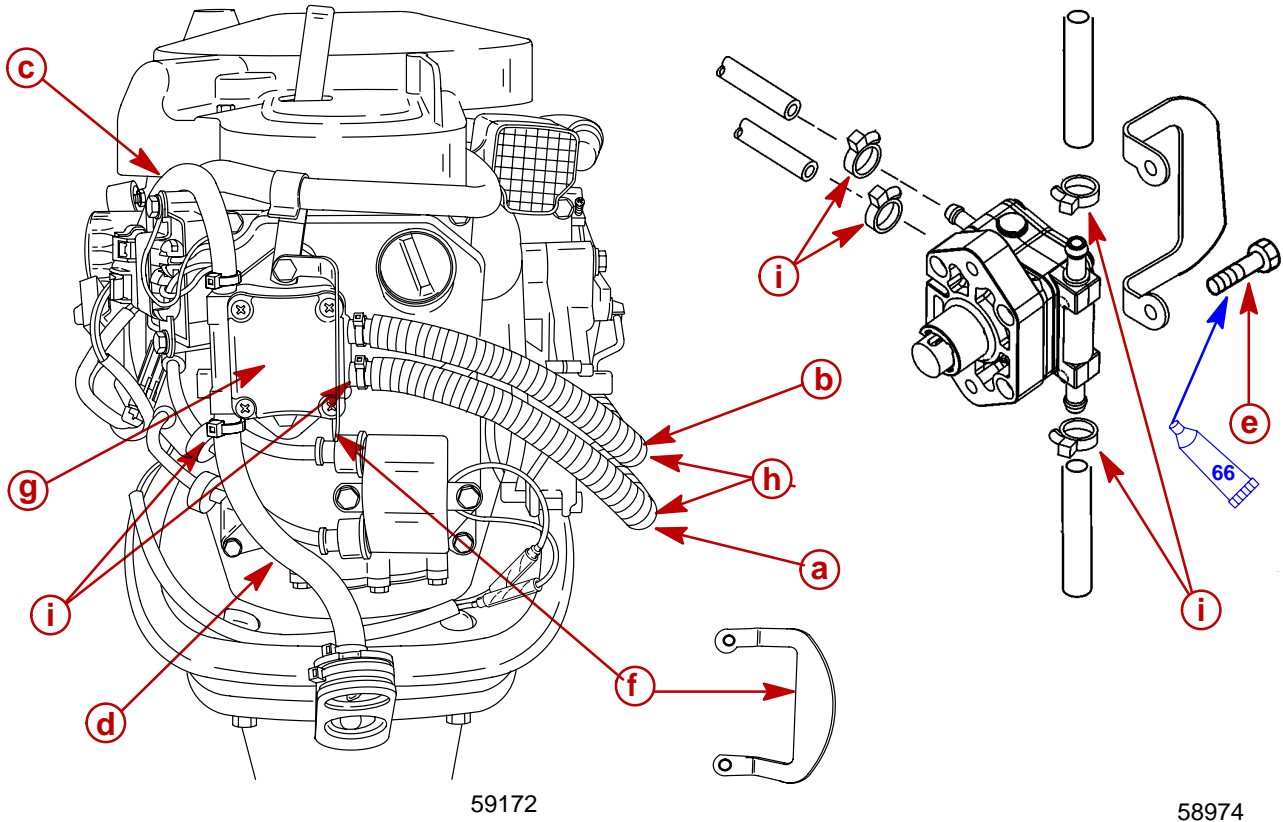
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Fuel Pump Cover Screw Torque
30 lb. in. (3.5 N·m)



Installation

1. Secure fuel pump and cowl deflector to cylinder head cover with screws. Tighten to specified torque.
2. Connect fuel lines to pump and secure with new sta-straps.
3. Connect fuel cooler water lines to pump and secure with new sta-straps.



Loctite 242

- a** - Inlet Fuel Hose (from fuel filter)
- b** - Outlet Fuel Hose
- c** - Fuel Cooler Water Inlet Hose
- d** - Fuel Cooler Water Outlet Hose (to tell-tale outlet)
- e** - Mounting Screw (2) M6 x 30
- f** - Cowl Deflector
- g** - Fuel Pump
- h** - Conduit (2)
- i** - Sta-strap (4)

Fuel Pump Mounting Screw Torque
75 lb. in. (8.5 N·m)