

SECTION 4 - FUEL SYSTEM

MERCURY
SNOWMOBILES

PART B - FUEL PUMP



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FUEL PUMP - MODELS 220-250

REMOVAL

1. Close fuel shut-off at tank.
2. Remove fuel lines from pump.
3. Remove screws which secure fuel pump assembly to crankcase.

DISASSEMBLY

1. Separate fuel pump components
2. Remove gaskets, diaphragm & check valve retainer screw.

CLEANING and INSPECTION

1. Wash all parts thoroughly and use compressed air to clean all parts completely.
2. Inspect each part carefully for wear or damage.
3. Replace pulsator diaphragm with new, if old diaphragms show least sign of deterioration.
4. Be sure that valve seats provide flat contact area for valve disc.
5. Tighten elbows and check valve connections firmly when replacing.
6. Do not use Permatex on valve retainer gasket.
7. Check valves after reassembling fuel pump cover by blowing thru outlet hole. Air should be drawn thru valve but should close immediately when attempting to blow thru it.
8. Check inlet valve by reverse procedure. If leakage is encountered, check for free operation and accurate setting of valves.
9. Worn or slightly warped valve will cause leakage. Replace with new valves for more accurate setting.

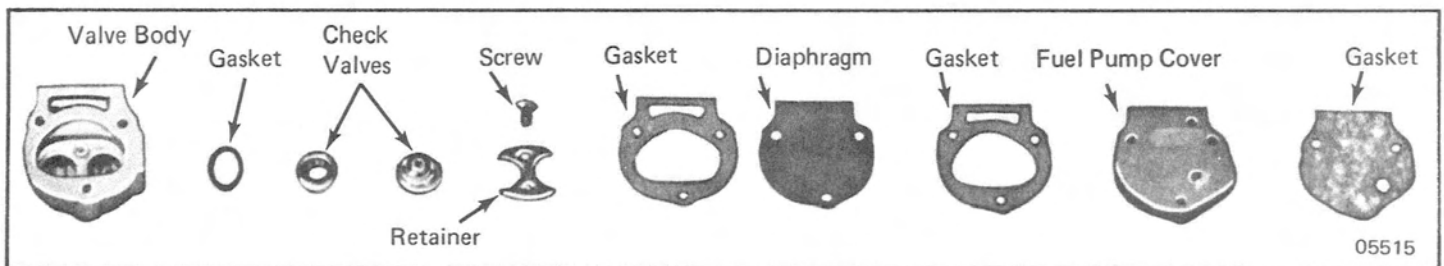
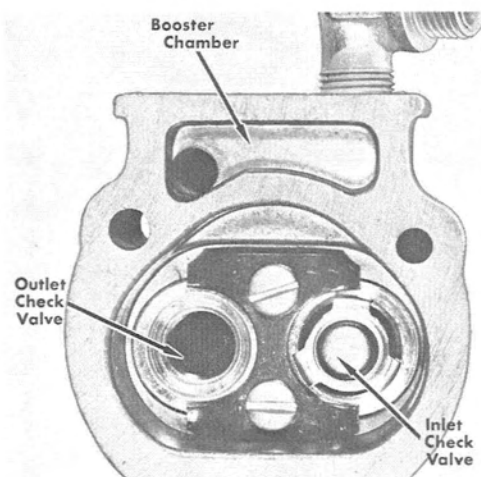


Figure 1. Fuel Pump Components

REASSEMBLY

1. First, inspect all parts, making certain that all are usable, clean and ready for reassembly. (Figure 1)
2. Place new check valve gaskets in seats and set check valve discs in position. Inlet check valve seat is identified by its protruding tip in casting.
3. Flat side of check valve seats over this tip. Outlet check valve is set in opposite (flat end up) so tension is against valves. (Figure 2)
4. Position retainer on check valves in housing and secure with 2 screws.
5. Place new gasket on pump body, followed by neoprene diaphragm, another gasket and fuel pump cover.

Figure 2. Check Valve Location



INSTALLATION

1. Position fuel pump on crankcase and secure with screws.
2. Connect fuel lines and open fuel shut-off.

FUEL PUMP - 200, ROCKET (339cc) and LIGHTNING (398cc)

REMOVAL

NOTE: Fuel pump is part of carburetor.

1. Close fuel shut-off at tank.
2. Remove fuel line from pump (located on bottom of carburetor).

NOTE: Carburetor may be removed for ease of disassembly and assembly.

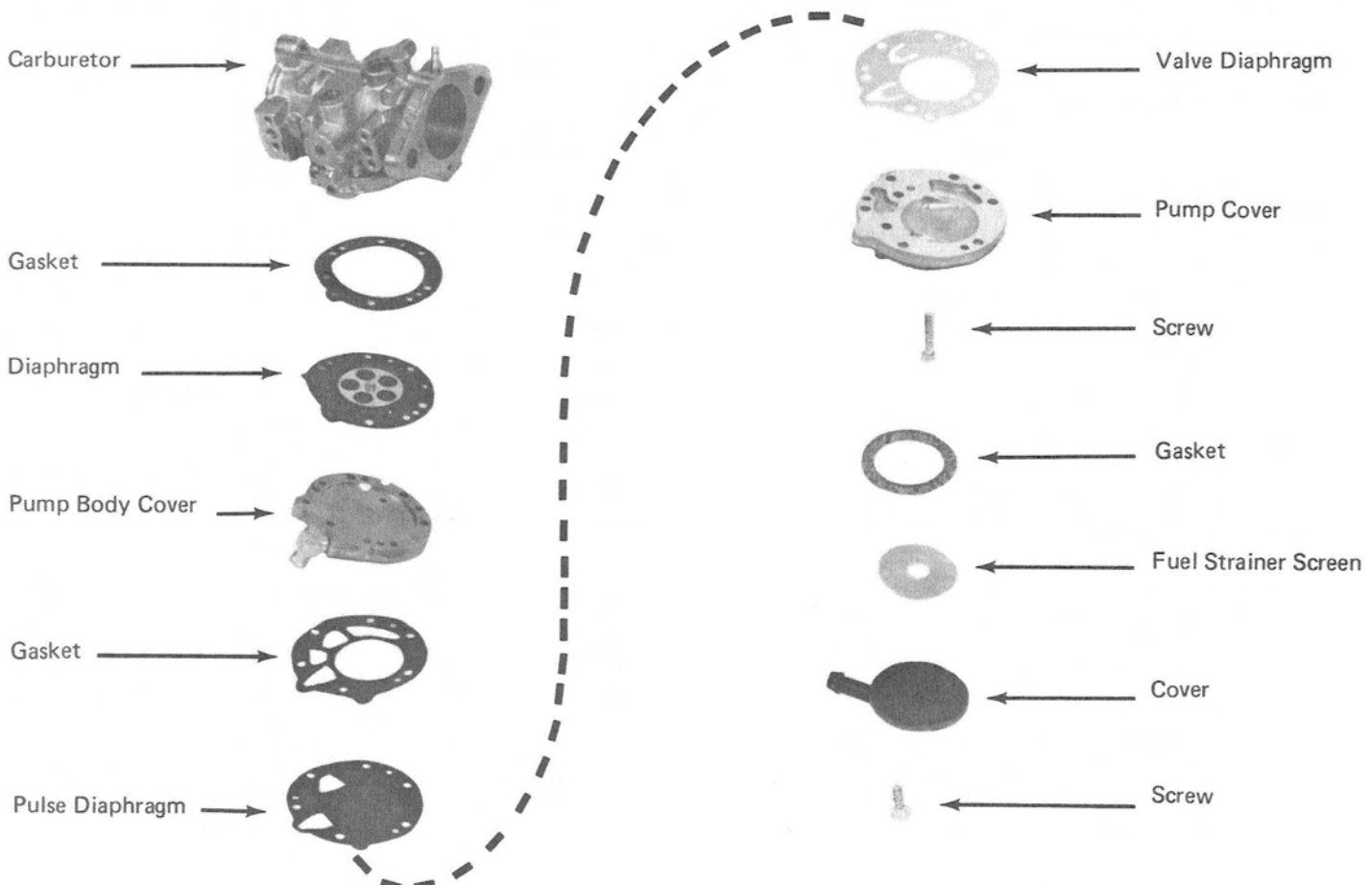
3. Remove screw, then remove filter cover, cover gasket and filter screw.
4. Index the fuel pump to carburetor casting by scratching castings.
5. Remove 6 body screws and remove fuel pump cover casting.
6. Remove and separate valve diaphragm, pulse diaphragm, gasket, pump body, diaphragm and gasket. (Figure 3)

CLEANING and INSPECTION

1. Clean filter screen by flushing with fuel or solvent and blowing with compressed air. It is advisable to replace gasket whenever filter screen is serviced. Flush all dirt from plastic cover before assembly.
2. Inspect diaphragms for holes, tears and imperfections. Replace gasket if holes or creases exist on its sealing surface.

REASSEMBLY

1. Reassemble gaskets, diaphragms and castings in correct order. (Figure 3)
2. Reassemble filter screen, gasket and screen cover to pump cover.



FUEL PUMP - HURRICANE (644cc) and MARK I (644cc) MODELS

REMOVAL

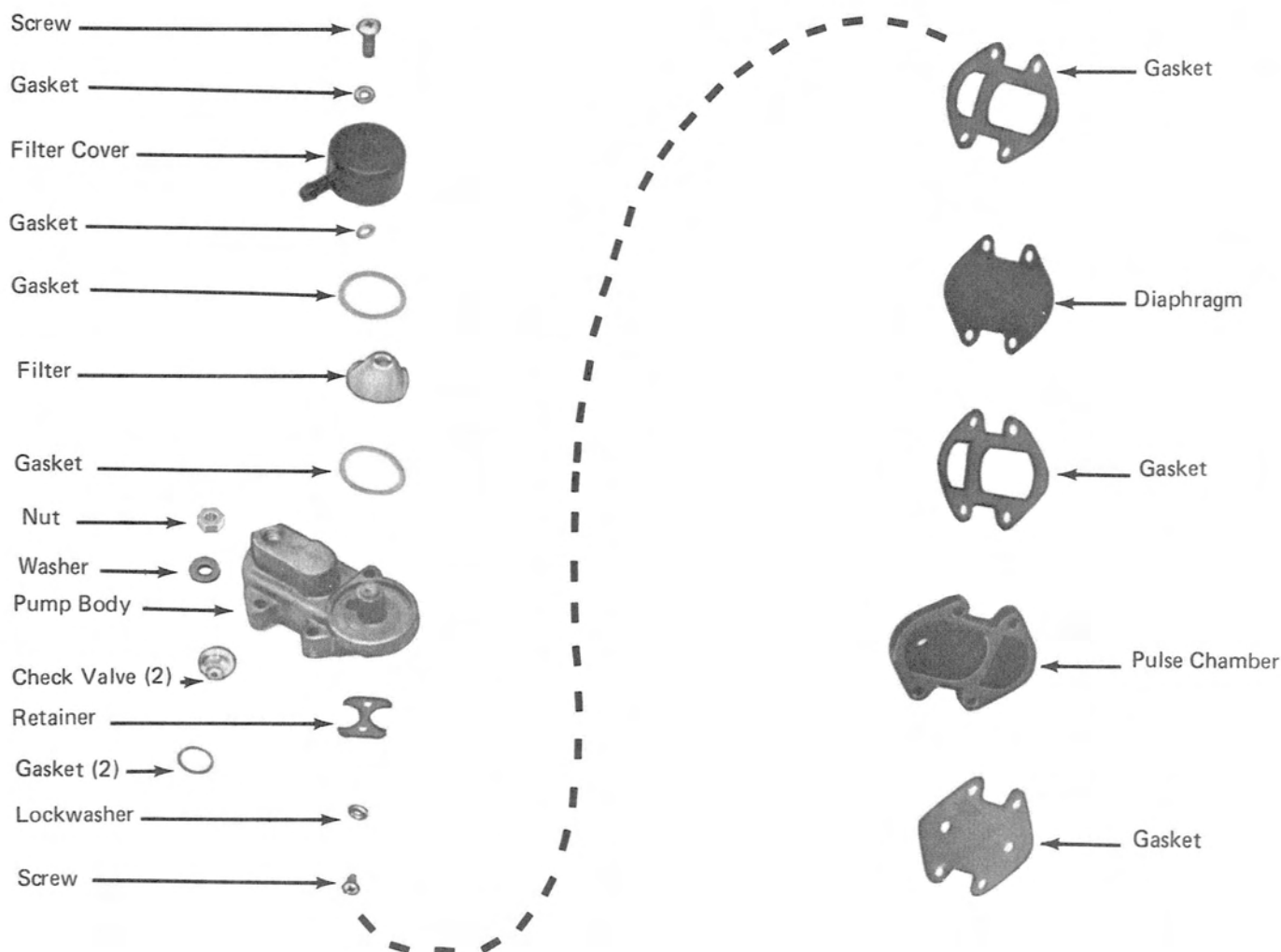
1. Remove fuel lines from fuel filter and fuel pump.
2. Remove 4 nuts which secure fuel pump assembly to crankcase and remove fuel pump assembly.

DISASSEMBLY

1. Separate fuel pump components. (Figure 4)
2. Remove gaskets, diaphragm and check valve retainer screw.
3. Remove screw from filter cover and separate filter and gaskets.

CLEANING and INSPECTION

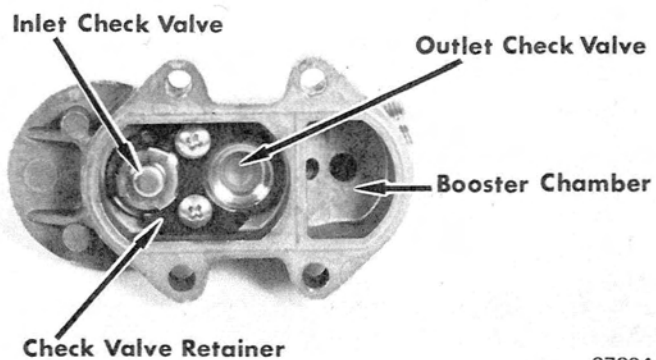
1. Wash all parts thoroughly and use compressed air to clean all parts completely.
2. Inspect each part carefully for wear or damage. (Figure 4)
3. Replace pulsator diaphragm with new, if old diaphragms show the least sign of deterioration.
4. Be sure that valve seats provide flat contact area for valve disc.
5. Tighten elbows and check valve connections firmly when replacing.
6. Do not use Permatex on valve retainer gasket.
7. Check valves after reassembling fuel pump cover by blowing thru outlet hole. Air should be drawn thru valve but should close immediately when attempting to blow thru it.
8. Check inlet valve by reverse procedure. If leakage is encountered, check for free operation and accurate setting of valves.
9. Worn or slightly warped valve will cause leakage. Replace with new valves for more accurate setting.



REASSEMBLY

1. Install check valves as shown in Figure 5.
2. Secure check valves with retainer and screws.
3. Install gaskets, filter and filter cover to fuel pump body with screw. (Figure 4)

Figure 5. Check Valve Positions



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INSTALLATION

1. Assemble gasket, pulse chamber, gasket, diaphragm, gasket and pump body on the crankcase.
2. Secure with 4 nuts and washers.

FUEL PUMP

440 MAX (Chassis Serial No. 3447382 and Below) and MARK II (Chassis Serial No. 3591478 and Below) MODELS REMOVAL

NOTE: Fuel pump and fuel filter are an integral part of carburetor.

1. Remove pulse hose and main fuel line from carburetor. Fuel line should be plugged or elevated if fuel is present in tank.
2. Remove filter cover, cover gasket and filter screen.

3. To aid in reassembly, index fuel pump to carburetor casting by scratching castings.
4. Remove 6 body screws and inlet cover body casting. Remove fuel pump inlet valve diaphragm and gasket.
5. Remove pump body casting, fuel pump pulse diaphragm and gasket.
6. Remove metering diaphragm cover casting, metering diaphragm and gasket.

CLEANING and INSPECTION

1. Clean and dry all castings and diaphragms.
2. Clean filter screen by flushing with fuel or solvent and blowing with compressed air. Replace cover gasket whenever filter screen is serviced. Flush all dirt from plastic cover before reassembly.
3. Inspect diaphragms and gaskets. Diaphragms MUST BE flat and free from holes and imperfections. Center plate on metering diaphragm MUST BE riveted securely to dia-

phragm. Replace gaskets if holes or creases exist on sealing surfaces.

4. Inspect castings for nicks, dents and cracks which may interfere with operation.
5. Refer to this section, Part A, "HD Carburetor - Reassembly." and check inlet control lever setting. Readjust as necessary.

REASSEMBLY

1. Using index mark made during "Removal", reassemble gaskets, diaphragms and castings in correct order. (Figure 6)

NOTE: When properly assembled, square tabs on castings will be toward throat (intake side) of carburetor.

2. Reassemble filter screen, cover gasket and filter cover.
3. Attach pulse hose and main fuel line to carburetor.

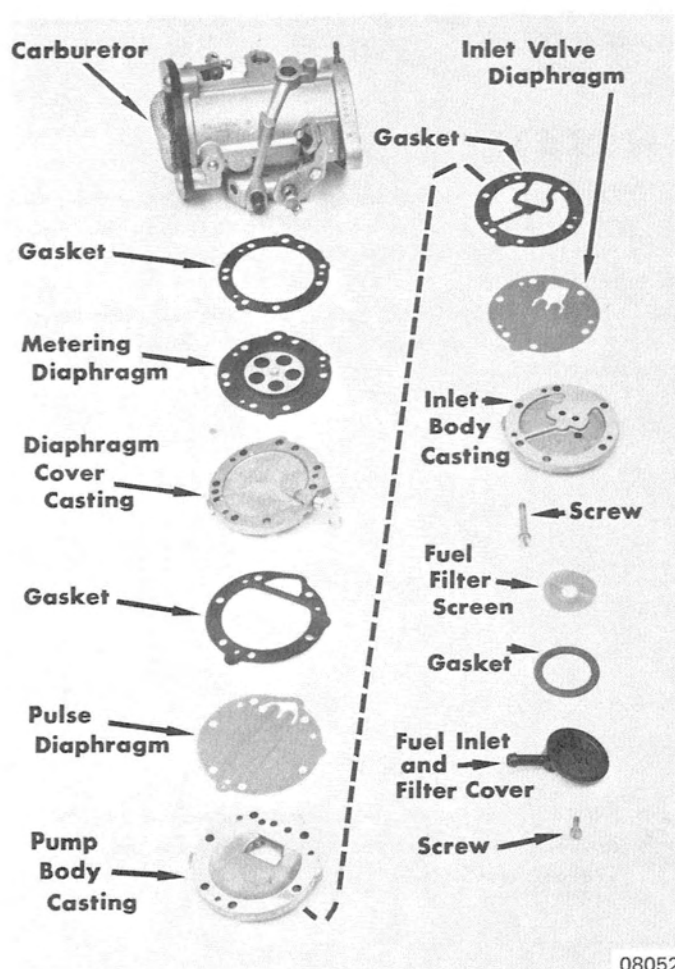


Figure 6. 440 MAX (438cc) and Mark II (644cc) Fuel Pump

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FUEL PUMP

340 S/R, 440 S/R, 440 M/X, 440 MAX (Chassis Serial No. 3709838 and Above) and MARK II (Chassis Serial No. 3787640 and Above)

REMOVAL and DISASSEMBLY

NOTE: Fuel pump and fuel filter are an integral part of the carburetor.

1. Remove pulse hose, fuel return hose and main fuel hose from carburetor. Main fuel hose should be plugged or elevated if fuel is present in tank.

NOTE: To aid in reassembly, index fuel pump to carburetor casting by scratching castings.

2. Remove 4 cover screws from bottom of carburetor.

3. Remove fuel inlet cover plate, inlet gasket and filter screen.
4. Remove filter plate, check valve diaphragm and check valve gasket.
5. Remove fuel pump plate, fuel pump diaphragm and fuel pump gasket.
6. Remove 3 check valve springs and fuel pump leaf spring from metering diaphragm plate.
7. Remove metering diaphragm plate and metering diaphragm from carburetor.

CLEANING and INSPECTION

1. Clean and dry all castings, gaskets and diaphragms.

CAUTION: DO NOT blow off diaphragms with compressed air.

2. Clean filter screen by flushing with fuel or solvent and blowing with compressed air.
3. Inspect diaphragms and gaskets. Diaphragms MUST BE flat

and free from holes and imperfections. Center plate on metering diaphragm MUST BE riveted securely to diaphragm. Replace gaskets if holes or creases are present on sealing surfaces.

4. Inspect castings for nicks, dents and cracks which may interfere with operation.
5. Refer to this section, Part A, "WDA Carburetor - Reassembly", and check metering lever setting. Readjust as necessary.

REASSEMBLY and INSTALLATION

1. Using index mark made during "Removal", reassemble fuel pump gaskets, diaphragms, plates, springs and filter screen, as shown in Figure 7. Parts fit one way only. Secure with 4 screws.
2. Connect main fuel hose, fuel return hose and pulse hose to proper carburetor fitting. Clamp each hose securely at carburetor fitting.

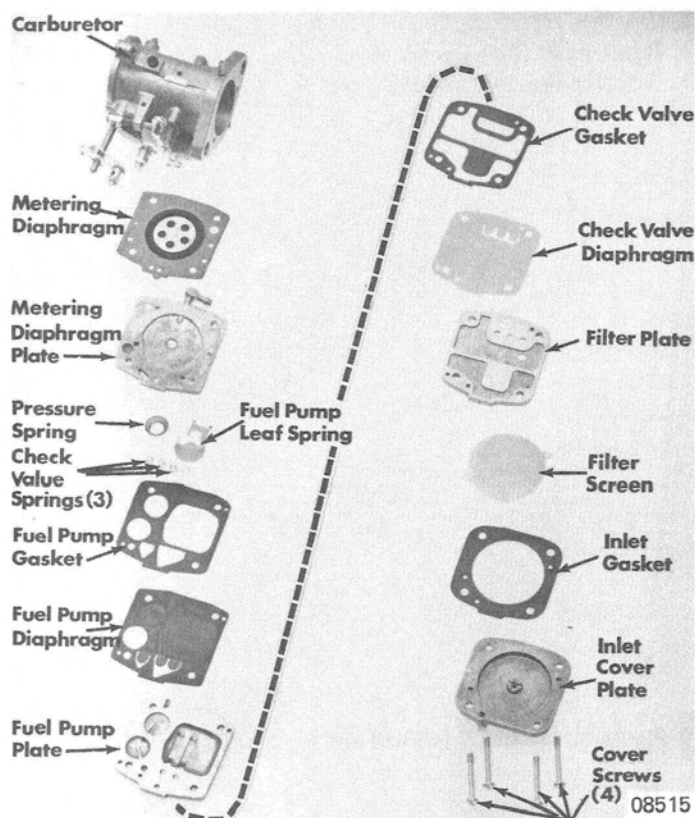


Figure 7. 440 S/R, 440 MAX (Chassis Serial No. 3709838 and Above) and Mark II (Chassis Serial No. 3787640 and Above)

FUEL PUMP

340 S/T, 400 S/T, 440 S/T, 340 T/T and 440 T/T

REMOVAL and DISASSEMBLY

1. Close fuel shut-off valve at fuel tank.
2. Remove attaching bolts and lift fuel pump from chassis.
3. Disconnect pulse hose and 3 fuel hoses (one from each carburetor, one from fuel tank) from fuel pump.
4. To aid in reassembly, index fuel pump castings by scratching castings.
5. Remove fuel pump body screws and separate fuel pump castings, gaskets and diaphragm.

CLEANING and INSPECTION

IMPORTANT: Fuel pump is sold as a complete assembly only. If inspection reveals that fuel pump components are damaged or worn, install a new fuel pump assembly.

CAUTION: DO NOT blow off diaphragms with compressed air.

1. Clean and dry castings, gaskets and diaphragm.
2. Inspect diaphragm and gaskets. Diaphragm **MUST BE** flat and free from holes and imperfections. Gaskets must not have holes or creases on sealing surfaces.
3. Inspect castings for nicks, dents, and cracks which may interfere with operation.

REASSEMBLY and INSTALLATION

1. Using index mark made during "Removal", reassemble fuel pump gaskets, diaphragm and castings. Secure parts with fuel pump body screws.
2. Connect pulse hose, 2 carburetor fuel hoses and fuel tank hose to proper fuel pump fittings. Clamp hoses securely.

NOTE: Direction of fuel flow is indicated by arrows on fuel pump casting.

3. Secure fuel pump assembly to chassis with bolts, spacers and locknuts.
4. Open fuel shut-off valve at fuel tank.