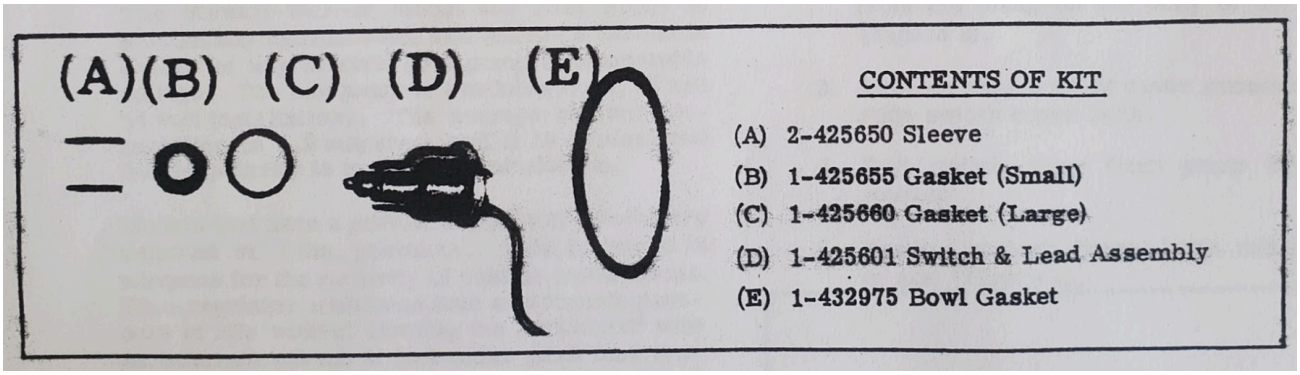
SERVICE INSTRUCTIONS

240 Series Electric Fuel Pump
Switch Kit No. 426944



After the switch has been removed, it will be necessary to partially disassemble the pump before the switch can be replaced.

Failure to follow these instructions will result in damaging the actuator arm bushing. Correct procedure is as follows:

1. Install the switch contact sleeves onto the coil terminals.
2. Unscrew bail nut at bottom of pump and swing bail to one side.
3. Remove sediment bowl, gasket, filter, filter base, and spring.
4. Using a suitable wrench, remove intake valve assembly by turning counter-clockwise.
5. Trip actuator arm of switch upward. (Figure 1).

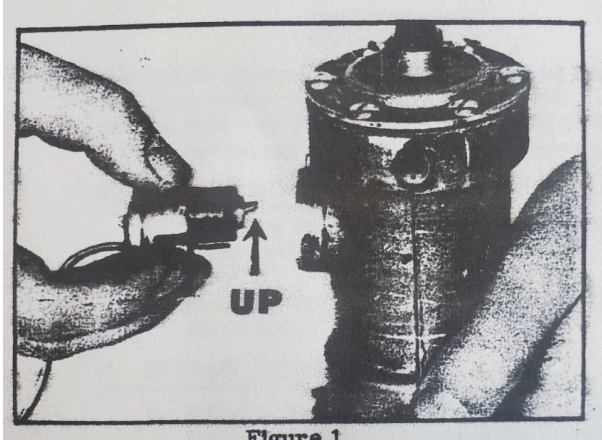


Figure 1.

6. With finger pressure hold piston to its upper most position, then release piston approximately ⅛". THIS IS THE ONLY POSITION OF THE PISTON THAT THE SWITCH CAN BE REINSTALLED.

IMPORTANT: Always use new gaskets and seal rings during reassembly.

7. With gaskets in place, press switch into pump body making certain the switch contacts engage with the contact sleeves. Due to alignment slot on switch, it can only be installed one way.
8. Replace switch cover and secure. Note: Vent hole in cover must face downward.
9. Be certain the "O" ring and the washer are in place at the protruding portion of the piston tube.
10. Insert power spring after the piston. Replace intake valve, tightening clockwise until it is snug. Over-tightening will cause the piston tube to collapse. When properly assembled there will be a space between the valve and coil base.

11. After inspection or cleaning of sediment bowl, assemble filter as shown in Fig. 2.

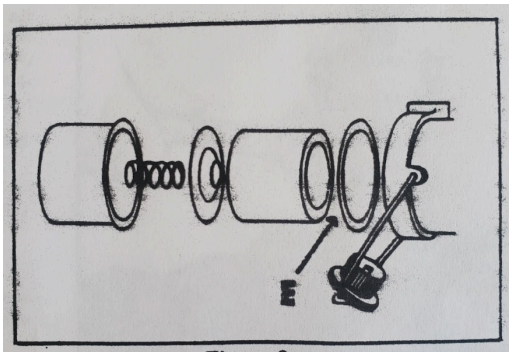


Figure 2.

12. Check operation of pump before installation

For more detailed information see SER-SW 4745

The Stewart-Warner Model 240 Fuel Pump is electrically operated and will deliver a volume in excess of any electric fuel pump of comparable voltage. The fuel pump is available for 6, 12, and 24-volt installations. The average current consumption is 1.5 amperes, and it is so designed that no polarity is involved at installation.

Models that have a pressure regulator are factory-adjusted at 4 lbs. pressure. This pressure is adequate for the majority of vehicle installations. This regulator maintains both an adequate pressure at idle without flooding the carburetor with an adequate volume of fuel under peak load conditions. If more or less pressure is required at the carburetor, the pressure regulator can be adjusted - BUT ONLY AFTER THE PUMP IS INSTALLED ON THE VEHICLE (See Section C, page 6 under “Regulating Pressure”).

PREPARATION

TOOLS REQUIRED:

- T-281843 Socket Wrench for coil base
- T-308430 Restaking Tool
- 12 x ½” Rod to use with T-281843
- 1-⅛” Socket Wrench
- ⅞” End Wrench
- Screwdriver
- Long-nosed Pliers

Unit replacement kits are available for servicing the switch, coil, piston and valve, and the regulator assemblies. These kits contain the parts and essential gaskets necessary to make the repairs.

DISASSEMBLY

CAUTION: Before dismantling pump be sure all fuel has been completely drained out. Avoid getting fuel into the switch. If the coil gets wet, it must be thoroughly dried out before reinstalling.

A. FILTER BOWL

1. Unscrew bail nut at bottom of pump and swing bail to one side.
2. Remove sediment bowl, gasket, filter, filter base, and spring

B. INTAKE VALVE

1. Using a 1-⅛” open-end wrench, remove intake valve by turning counter-clockwise (A, Figure 3).

C. SWITCH

1. Remove red seal with a small pin punch.
2. Using a ⅞” wrench, turn switch cover counter-clockwise until cover disengages from the studs on the body of the pump (Figure 2).
3. Moisten wire lead at cover grommet and slide switch cover back.
4. Pull switch away from pump body to remove.
5. Remove contact sleeves from switch and/or coil (Figure 4).

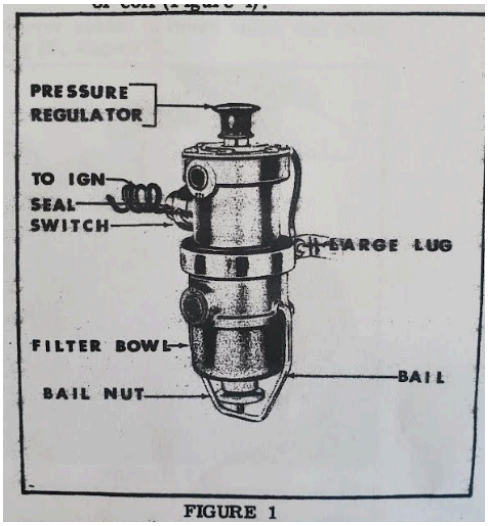
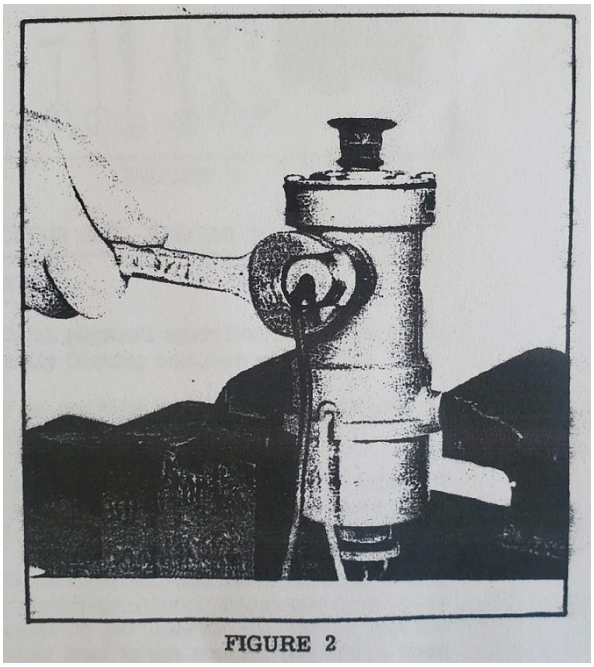


FIGURE 1


FIGURE 2

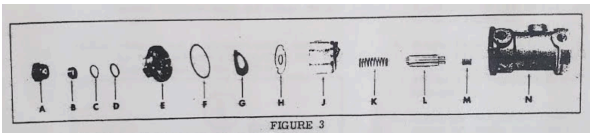
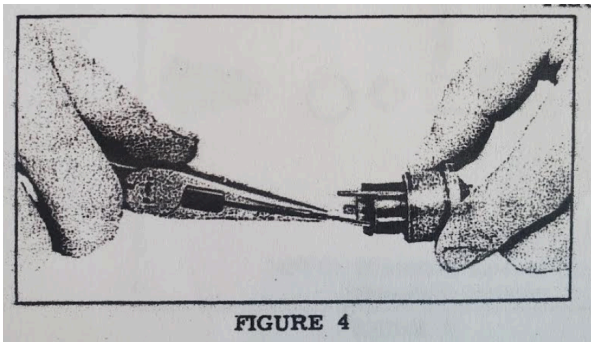
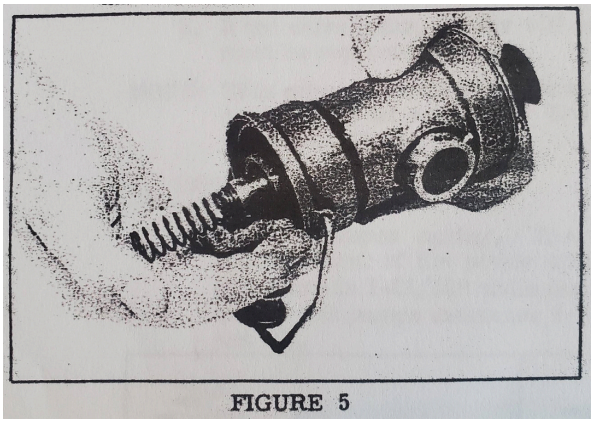


FIGURE 3


FIGURE 4

D. PISTON

a. Turn pump right side up; the power spring and piston should fall into the hand (Figure 5). If piston sticks, tap pump body on hard surface.


FIGURE 5

E. COIL

1. Place pump, bottom end up in a vise with the switch opening against one of the jaws of the vise (Figure 6).
2. Using Tool No. T-281843 remove coil base (E, Figure 3) by turning counter-clockwise. Washer (C, Figure 3) will fall out.
3. Remove “O” ring from center opening of coil base (D, Figure 3).
4. Remove coil tension washer (G, Figure 3).
5. Gently tap pump body on flat surface. Coil and gasket (F & J, Figure 3) will fall out.

F. REGULATOR AND VALVE

1. Removal of the six screws at top of pump releases the pressure regulator cover.
2. Remove pressure regulator spring (E, Figure 7), regulator button (F, Figure 7), diaphragm (G, Figure 7), and gasket (H, Figure 7).
3. With 1-⅛" wrench remove the regulator valve assembly by turning counter-clockwise (J, Figure 7).
4. Remove gasket between valve and pump body (K, Figure 7).

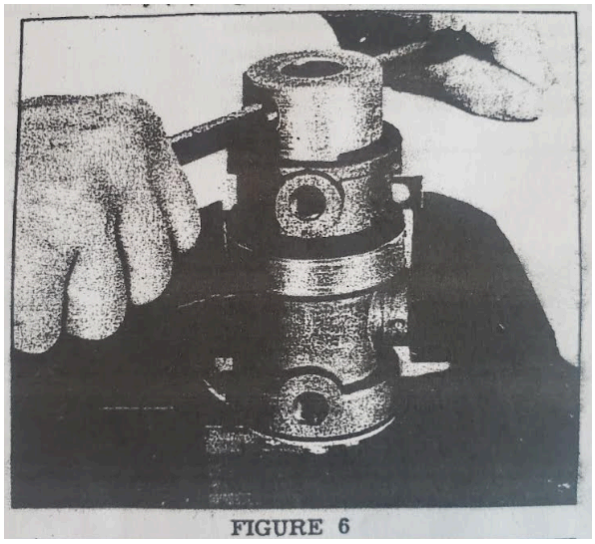


FIGURE 6

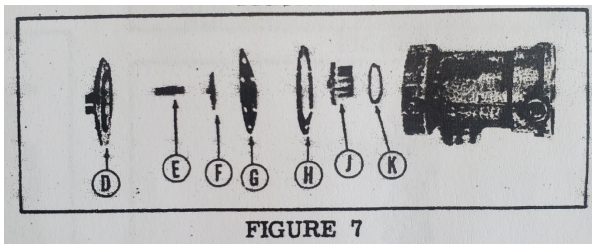


FIGURE 7

CHECKING AND REPAIR PROCEDURES

A. SWITCH

1. Check physical operation of the switch by gently flicking actuator arm up and down.
2. If no positive snapping action is experienced, replace the switch.
3. Check to see if contact pins are tight. If any evidence of looseness is present, replace switch.
4. Check continuity and switch action by using a continuity tester. Place one lead of the tester on the body of the switch and the other lead to the contact pin which does not have the switch lead wire attached. Flick actuator arm of the switch, circuit should indicate open and closed on the meter.

NOTE: This switch is not serviceable, and is to be replaced as an assembly. Use Unit Replacement Kit No. 426944.

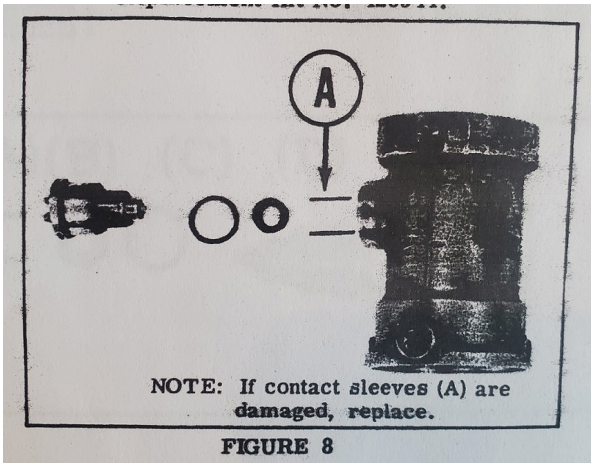


FIGURE 8

B. INTAKE VALVE

1. This unit can be checked by placing the threaded portion to your lips and forcing air into the valve.
2. If the valve leaks, the air will escape and must be replaced.

NOTE: This valve is not serviceable and is to be replaced as an assembly. Use Unit Replacement Kit No. 426946

C. PISTON

1. Inspect bumper spring. The minimum measurement of the power spring of a 6 volt pump is 1-21/32" while that of the 12 and 24-volt pumps measures 1-⅞" (Figure 10).

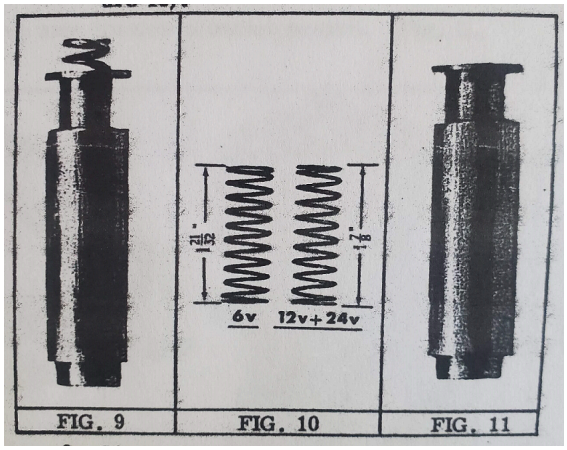
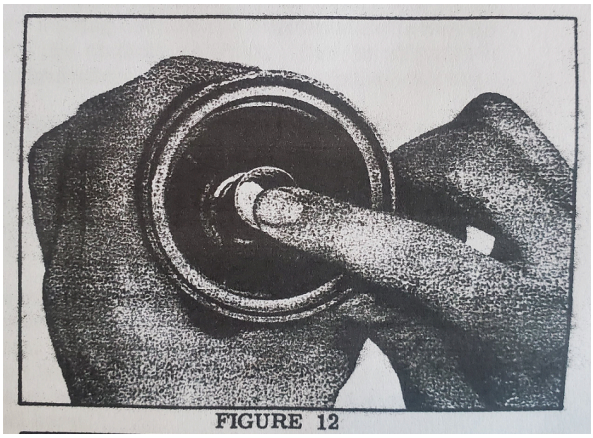
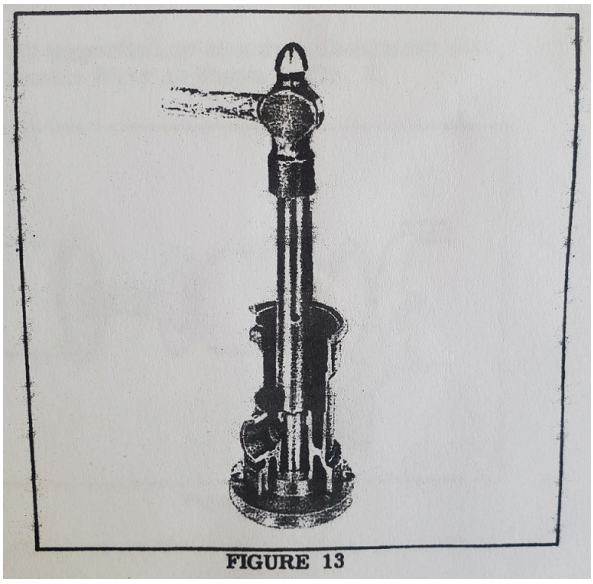


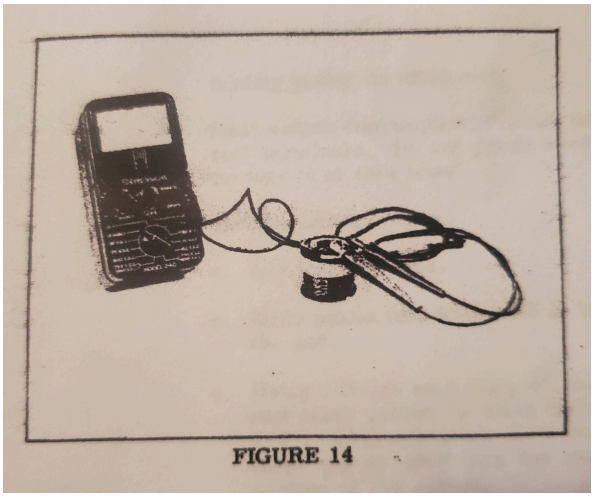
FIG. 9 FIG. 10 FIG. 11

2. Place the bumper spring opening of the piston to the lips and force air to the piston check valve. If air escapes, replace the piston.
3. Light score marks will be present after piston has been in use and in no way affects the performance of the pump. The normal appearance of the piston after use is shown in Figure 11.
4. Inspect the piston tube for nicks or scars. A tube which indicates normal wear will have a slight ring at the lower end. This will be felt by running the finger inside the tube opening.
5. Check whether piston tube is properly sealed by placing index finger on end of the tube and, without force, attempt to wiggle (Figure 12). There should be no movement of the piston tube.

IMPORTANT: To properly rebuild the pump and ensure against leakage, the piston tube must be re-staked. Use Tool No. T-308430 (Figure 13). The re-staking tool consists of two parts; base and piston tube guild and a staking punch. To use this tool, place the pump casting over the base. The piston tube guide will automatically center both the casting and the piston tube. Place the restaking punch over the piston tube. Using a 1-½ pound hammer, strike the punch sharply one or two blows.


FIGURE 12


FIGURE 13


FIGURE 14

D. COIL

1. Using a continuity tester, connect the leads to the coil plate contacts as shown in Figure 14.
2. If continuity is positive and a visual inspection uncovers no problem, the coil may be considered satisfactory.

NOTE: This coil is not serviceable and should be replaced with a Unit Replacement Kit of the proper voltage.

E. REGULATOR AND VALVE

1. Repeat test procedure outlined under "Intake Valve". If air escapes replace valve.
2. Check for broken or distorted regulator spring (E, Figure 7). The normal length is 7/8".
3. Inspect the diaphragm for cracks or wear.

NOTE: This valve is not serviceable and should be replaced using Unit Replacement Kit No. 426946.

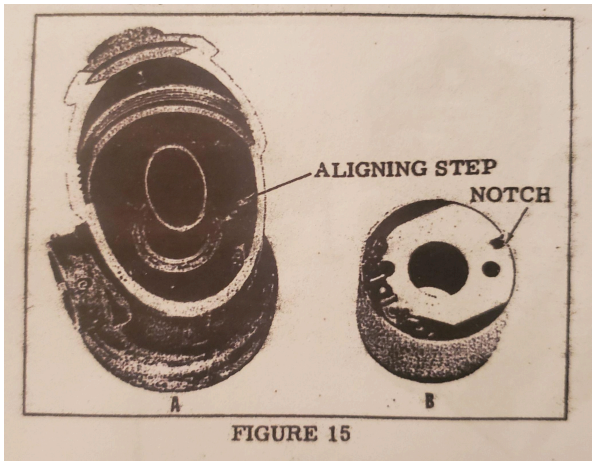


FIGURE 15

ASSEMBLING

Whenever a pump is disassembled, always replace all gaskets to assure a perfect seal. Gasket Kit No. 812108 includes all necessary gaskets, etc.

A. REGULATOR AND VALVE

1. Insert gasket between valve and pump body.
2. With a 1-1/8" wrench, tighten the pressure regulator valve by turning clockwise. The regulator valve should be tightened to 25 foot pounds of pressure or as tight as possible without putting housing in vise.
3. Install gasket (K, Figure 7), diaphragm (G, Figure 7), button (F, Figure 7), and regulator spring (E, Figure 7). Make sure the spring is perpendicular and can move freely in the adjustment screw before tightening pressure cover with six screws at top of pump.

B. COIL

1. Insert pump housing in vise, bottom end up, with the switch opening against one jaw of the vise (Figure 6).
2. Looking into the bottom of the pump body, note that the rib directly opposite the switch opening (A, Figure 15) has an aligning step on it. The notch in the top of the coil (B, Figure 15) should rest on this aligning step when the coil is properly seated.

The coil is seated when the side of the coil body is visible at the switch opening (Figure 16).

3. Place fiber insulator over base of coil.
4. Replace coil tension washer curved side toward the coil base (G, Figure 3).
5. Using Tool No. 281843 with a one-foot rod install the coil base and tighten with approximately 75-foot pounds torque or as tight as possible using the one-foot rod.

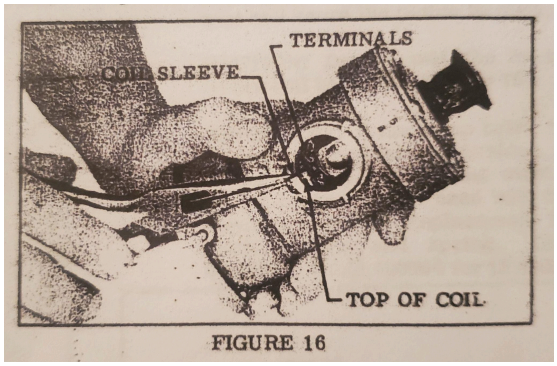


FIGURE 16

C. SWITCH AND PISTON

1. Install contact sleeves into the coil terminals (Figure 16).
2. Trip actuator of switch upward (Figure 17).
3. Slide new sponge rubber gasket (Figure 17) on the barrel of the switch housing and sealing gasket on other end.
4. Slide switch contact pins partially into the coil terminals. Do not press switch all the way in at this time.
5. Install pistons.

a. Lay pump on side.
b. Slide piston into tube until it touches the end.
c. Using a finger as a stop, tilt the pump and allow piston to slide back about ¼". This will allow the switch actuator pin to slide into the cut-away section of the piston.

6. Press switch all the way into the housing.
7. With gaskets in place, press switch into pump body, making certain the switch contacts engage with the contact sleeves. Due to the alignment slot on the switch, it can only be installed one way.
8. Secure switch cover by engaging cover with studs on the pump body and turn clockwise using a ⅞" wrench. Make certain the small hole in the switch cover faces the bottom of the pump.
9. On later model pumps line up the seal hole in the switch cover with the hold in the pump body and tap a new switch seal into place.

IMPORTANT: Although the switch can be removed without partial disassembly of the piston assembly, it cannot be reinstalled in the same manner. Failure to lower the piston when reinstalling the switch will result in damage to the actuator arm and bushing.

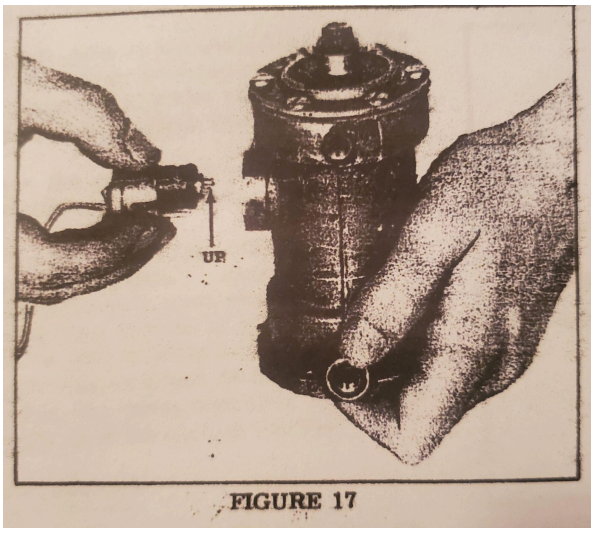


FIGURE 17

D. INTAKE VALVE

1. Place "O" ring (D, Figure 3) in place and if necessary push down with a small screwdriver so that it clears the end of the piston tube.

CAUTION: Do not damage "O" ring

2. Place washer (C, Figure 3) on top of "O" ring. Do not allow washer to hang up on the end of the piston tube as it will damage the tube when the intake valve (A, Figure 3) is tightened down.

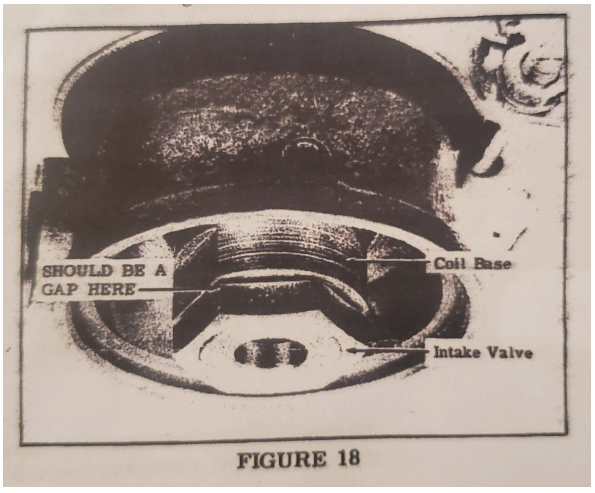


FIGURE 18

1. Insert power spring (K, Figure 3).
2. Place bumper bushing (B, Figure 3) in intake valve (A, Figure 3) so the narrow edge seats on the bottom feet of the spider. The top of the bushing will then be approximately 7/32" from the top of the valve (Figure 19).
3. With bushing in place insert intake valve. Tighten valve finger tight plus ¼ of the turn with a ⅞" wrench (approximately 8 foot pounds of torque). Take care not to overtighten as this may distort piston tube and cause the piston to stick.

CAUTION: Do not seat the intake valve on the coil base (See Figure 18).

IMPORTANT: If the pump being repaired did not include a bumper bushing, be sure to install one. The spring must be replaced because when used with bushings they are shorter. Replacement Kits include bushing and spring. They are 430083 for 6 and 430084 for 12 and 24 volt.

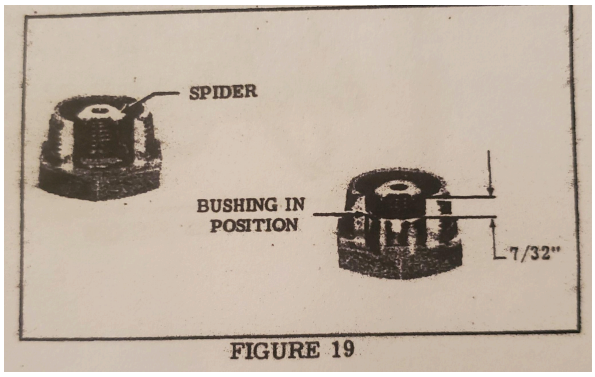
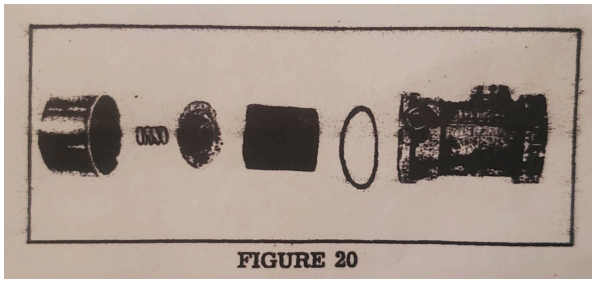


FIGURE 19


FIGURE 20

E. FILTER BOWL ASSEMBLY

1. After inspection or cleaning of sediment bowl, always use a new bowl gasket (Figure 20).
2. Place spring inside sediment bowl (Figure 20).
3. Place filter base on top of spring as shown (Figure 20).
4. Place filter on top of filter base (Figure 20).
5. Place gasket on top of sediment bowl (Figure 20).

PERFORMANCE

A. Establishing Standard Load Test

1. All tests should be made using 5/16" O.D. tubing on both the inlet and discharge side of the pump. The pump shall also be tested in a vertical position with the inlet part approximately 12" and not exceeding 24" above the level of the fuel supply. These checks can be made either on the vehicle or at a bench test.

B. Pressure

1. Place fuel pump on a 650-B Test Fixture (Figure 22) or other suitable fixture if available. With the lower or intake part connected to a fuel supply, connect a pressure gauge and a bleeder valve to the discharge or top part of the pump.
2. If a test fixture is not available, test the pump while it is mounted on the vehicle, place gauge and bleeder valve at the carburetor end of the fuel line (Figure 21).
3. Connect the pump to a power supply of proper voltage and operate.
4. With the bleeder valve wide open, allow the pump to prime. Slowly close the bleeder valve to a point where it will only permit a fine trickle of fuel. This flow should be just a little more than a drip. The pump has reached its regulated pressure when the pump operation slows and the gauge is at its highest reading.

C. Regulating Pressure

1. Remove rubber dust cover at top of pump.

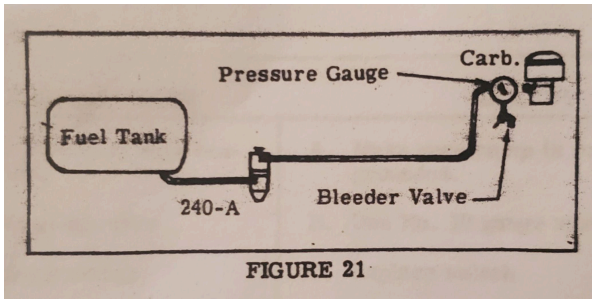


FIGURE 21

2. To increase pressure, loosen the regulator lock nut (⅝" open end or box wrench), and using a screwdriver, turn the regulator adjusting screw clockwise (Figure 22).
3. To decrease pressure, turn regulator adjusting screw counter-clockwise (Figure 22).
4. In order to ensure an accurate adjustment it is necessary to open the bleeder valve each time the pressure regulator adjustment is moved.
5. After the desired pressure is obtained (4 pounds per square inch is normal) tighten the regulator lock nut.

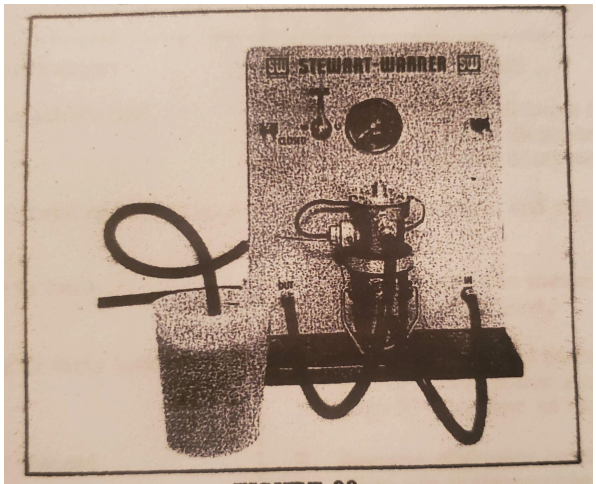


FIGURE 22

D. Volume

1. With the pump connected to a fuel supply, and the desired pressure has been maintained, operate the pump.
2. Observe the time required to expel one pint of fuel into a suitable container as illustrated in Figure 22.
3. It should be 30 seconds or less for a 6-volt pump, 25 seconds or less for a 12-volt pump.
4. If pump fails on either the pressure or volume test, refer to the Diagnosis Chart.

NOTE: All performance checks should not be made unless the full power supply is available.

TROUBLESHOOTING

	CONDITION	PROBABLE CAUSE	REMEDY
1	Pump stalls and is hot to touch or pump operates intermittently, delivers little or no fuel	A. Poor ground or wire connections.	A. Make sure pump is properly grounded
		B. Wrong gauge wire	B. Use No. 10 gauge wire
		C. Damaged switch	C. Replace switch
		D. Damaged piston tube binding on the piston	D. Replace pump body
2	Pump does not operate	A. Open circuit in switch	A. Replace switch
		B. Open circuit in coil	B. Replace Coil
		C. No ground or break in wiring	C. Connect ground wire. Solder all wire connections, replacing broken or worn wiring
3	Pump operates intermittently or delivers little or no fuel	A. Bad connection of wire lead	A. Check all pump wiring and connections
		B. Bad ground connection	B. Using a jumper wire, hold one end to pump body and ground the other. If pump operates, make a permanent ground connection
		C. Intake line clogged	C. Disconnect line from pump inlet port. If pump operates, remove intake line, clean and drain fuel tank.

		D. Sediment Bowl clogged	D. Remove sediment bowl and filter. Clean thoroughly and replace using new bowl gasket
		E. Broken or damaged spring in contact switch	E. Remove switch and check pysical operation
		F. Nylon bushing pushed back on switch actuating arm	F. Replace switch
		G. Damaged piston tube binding on piston	G. Replace pump body

4	Pump races or delivers little or no fuel	A. Fuel tank empty	A. Check fuel supply
		B. Leak in intake line	B. Check line and fittings for leak at intake port. Replace fittings using a sealing compound
		C. Leak around sediment bowl	C. Replace gasket and tighten bail nut
		D. Vapor in lines	D. See that pump is mounted away from extreme heat
		E. Faulty or dirty intake valve	E. Inspect intake and piston check valves. See Piston Assembly, Page. Replace as necessary
		F. Filter clogged	F. Remove sediment bowl and clean parts thoroughly. Reassemble using new bowl gasket

5	Uncontrollable discharge pressure	A. Damaged regulator spring or faulty regulator valve	A. Replace parts
		B. Air leak on the intake side of the pump	B. Tighten all fittings. Install new bowl gasket
6	Fuel leaks at top of pump	A. Broken diaphragm	A. Replace diaphragm
		B. Cover screws loose	B. Tighten cover screws
7	Fuel leaks at switch assembly	A. Poor seal between small switch gasket and pump body	A. Replace switch and gaskets
		B. Damaged switch	B. Replace switch using new gaskets
		C. Damaged "O" ring and washer	C. Replace Seat "O" ring and washer before tightening
		D. Damaged coil gasket	D. Replace Seat gasket before tightening
		E. Loose piston tube	E. Restake piston tube. (Use special Restaking Tool T-308430)
8	Fuel leaks at carburetor	A. Carburetor clogged or connections loose	A. Check the carburetor and connections