



# INSTRUCTION BULLETIN

No. 340743  
Machine: 6600/6650  
Published: 05-2005  
Rev. 02

**NOTE: DO NOT DISCARD the Parts List from the Instruction Bulletin. Place the Parts List in the appropriate place in the machine manual for future reference. Retaining the Parts List will make it easier to reorder individual parts and will save the cost of ordering an entire kit.**

*NOTE: Numbers in parenthesis ( ) are reference numbers for parts listed in Bill of Materials.*

Installation instructions for **kit number 9000825**

## SYNOPSIS:

This kit contains parts needed to install/replace the LPG injector, ECU controller, coolant orifice, and filter on 6600 LPG model sweepers with serial numbers between 000000 and 024999 and 6650 LPG model sweepers with serial numbers between 000000-009999 (with Zeems fuel systems). Please follow step-by-step instructions.

## SPECIAL TOOLS / CONSIDERATIONS: NONE

(Estimated time to complete: 2.5 hours)

## PREPARATION:

1. Move the machine outdoors or to a well ventilated area.

**FOR SAFETY. Keep flames and sparks away from fuel system service area. Keep area well ventilated.**

2. Park machine on a clean level surface, turn off machine, and set parking brake.

**FOR SAFETY: Before leaving or servicing machine, stop on level surface, turn off the machine, and set the parking brake.**

3. Open and lock engine compartment doors.
4. Disconnect the injector harness connector from the throttle housing. Refer to Fig. 1.

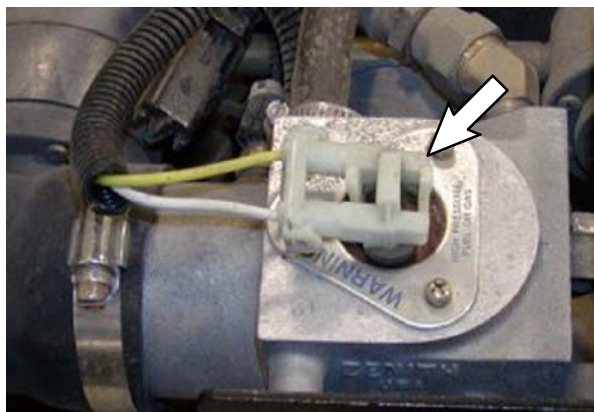


FIG. 1

5. Remove the retaining plate, injector assembly, and both o-rings from the throttle housing. Refer to Fig. 2.

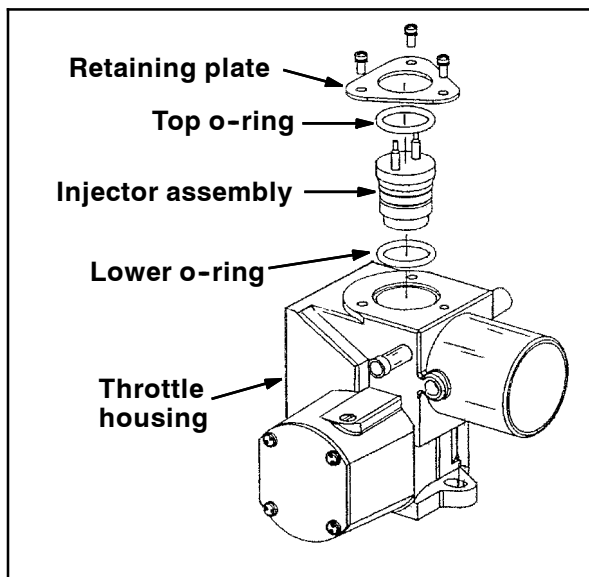


FIG. 2

6. Place a clean shop towel over the opening of the throttle housing and turn the ignition switch on, but do not start the machine. LP fuel will spray from the opening for approximately 4 seconds. **Do not** allow dirt or debris to fall into the throttle housing.
7. Remove the shop towel from the opening of the throttle housing and observe for excess oil.

8. Repeat Steps 6 and 7 several times if there is excess oil in the system. If there is still excess oil in the system after repeating Steps 6 and 7, proceed to Step 13 to drain excess oil from the vaporizer regulator and secondary regulator.
9. Use carburetor or brake cleaner to clean excess oil from the throttle housing. **Do not** use these cleaners on the o-rings since they could cause the o-rings to swell.
10. Seat the lower smaller o-ring back inside the throttle housing. Refer to Fig. 2.
11. Insert the injector assembly and top o-ring back into the throttle housing. Refer to Fig. 2.
12. Reinstall the retaining plate onto the throttle housing. Refer to Fig. 2.

*NOTE: Complete Steps 13 through 19 only if the plugs must be removed from the bottom of the vaporizer regulator and the secondary regulator to drain excess oil.*

13. Seat the lower smaller o-ring back inside the throttle housing. Refer to Fig. 2.
14. Insert the injector assembly and top o-ring back into the throttle housing. Refer to Fig. 2.
15. Reinstall the retaining plate onto the throttle housing. Refer to Fig. 2.
16. Reconnect the injector harness connector to the throttle housing. Refer to Fig. 1.
17. Run the engine until it is at operating temperature.
18. Remove the drain plugs from the bottom of the vaporizer regulator and secondary regulator, and allow the regulators to drain. Refer to Fig. 4.
19. Reinstall the drain plugs into the vaporizer regulator and the secondary regulator when through draining. Refer to Fig. 4.
20. Move machine to repair area, park machine on a clean level surface, and set parking brake.

**FOR SAFETY: Before leaving or servicing machine, stop on level surface and set the parking brake.**

21. Close the fuel tank service valve.
22. Run the engine until it stops from lack of fuel.

23. Turn off the machine and remove the key from the ignition.

**FOR SAFETY: Before leaving or servicing machine, turn off machine, and remove key.**

**FOR SAFETY: When servicing machine, allow engine to cool. Keep flames and sparks away from fuel system service area. Keep area well ventilated.**

24. Open the engine compartment doors.
25. Disconnect the battery cables from the batteries.

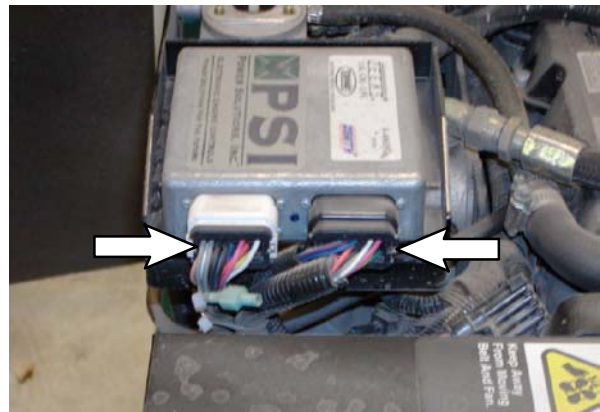


**WARNING: Always disconnect the battery cables from the machine before working on electrical components.**

26. Completely drain the coolant system.

#### **INSTALLATION:**

1. Remove the LPG hose (A) from the machine. Discard the LPG hose. Refer to Fig. 4.
2. Remove fitting (B) from the regulator assembly (C). Discard fitting (B). Refer to Fig. 4.
3. Unplug both connectors from the controller assembly. Refer to Fig. 3.



**FIG. 3**

4. Remove the controller bracket (D) from the machine. Refer to Fig. 4.
5. Remove the controller (E) from the controller bracket (D). Discard the controller (E). Refer to Fig. 4.

6. Disconnect coolant hoses (F) and (G) from the throttle housing (H). Do not completely remove these hoses from the machine. Refer to Fig. 4.

7. Remove both fittings (J) and fitting (N) from the throttle housing (H). Discard fittings (J) and (N). Refer to Fig. 4.

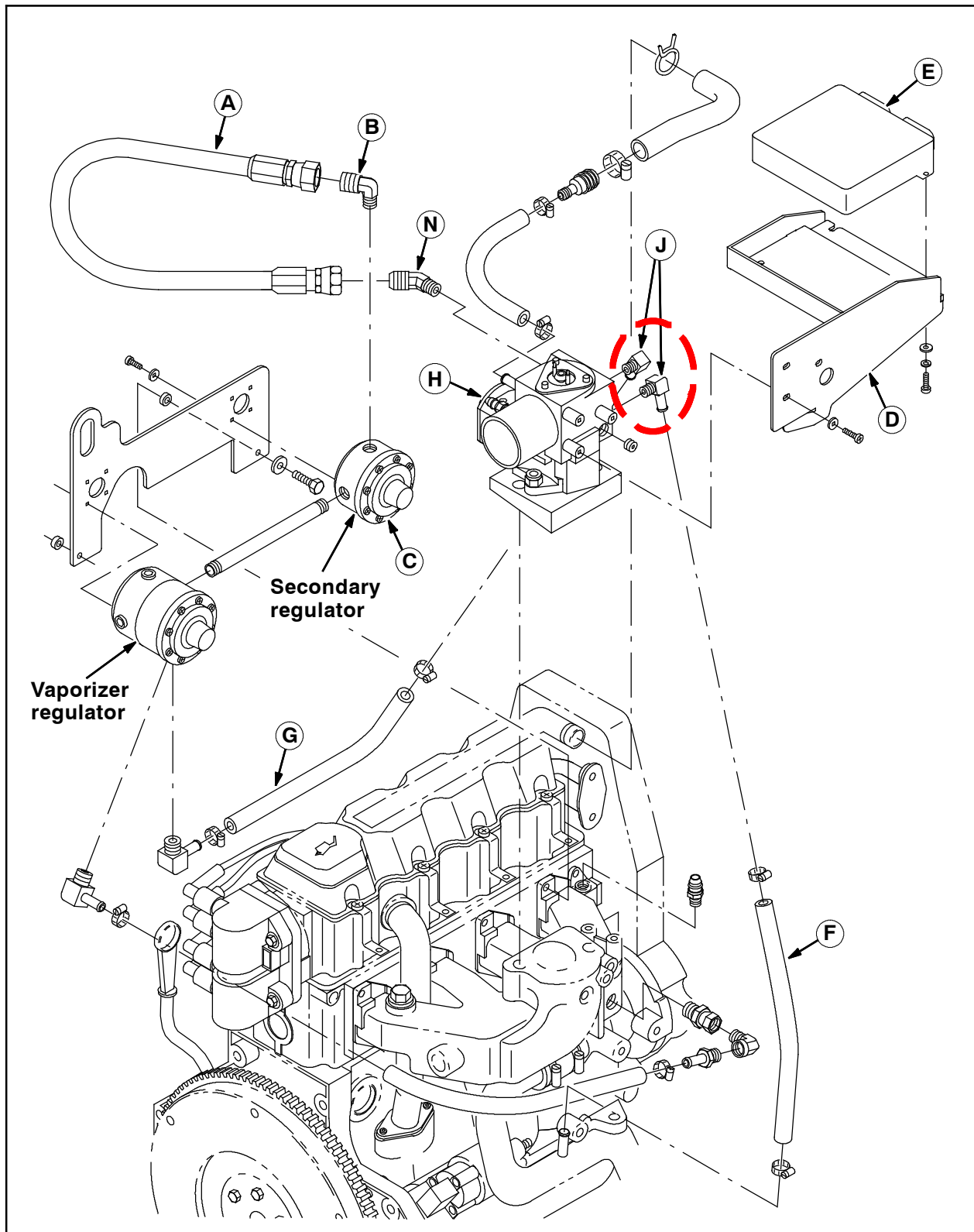


FIG. 4

8. Disconnect the injector harness connector from the throttle housing. Refer to Fig. 5.

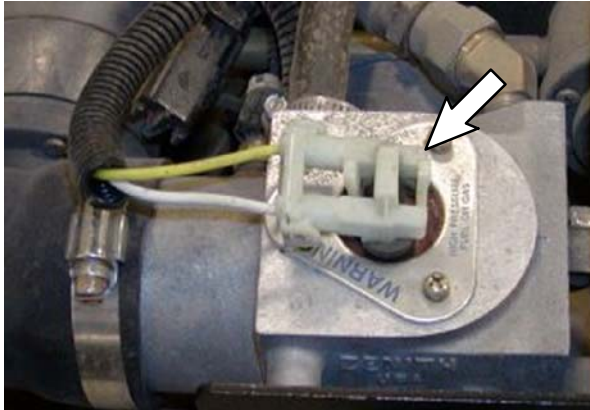


FIG. 5

9. Remove the injector retaining plate (K) from the throttle housing. Refer to Fig. 6.

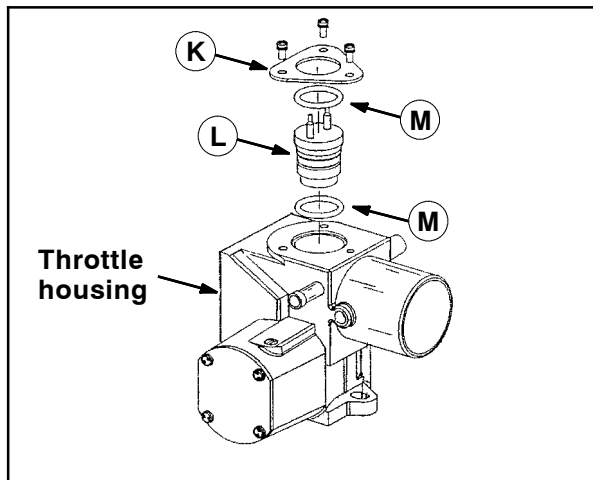


FIG. 6

10. Remove the injector assembly (L) and both o-rings (M) from inside the throttle housing. Refer to Fig. 6.
11. Apply a light coat of grease to the o-rings included with the new fuel injector (12).
12. Seat the smaller o-ring inside the throttle housing.
13. Insert the new fuel injector (12) and larger o-ring into the throttle housing. Be sure the o-rings are seated inside the throttle body.
14. Reinstall the injector retaining plate (K) onto the throttle body. Be sure the injector plate is not bent before reinstalling it onto the throttle body. Flip the retaining plate over if it is bent. Refer to Fig. 6.
15. Reconnect the injector harness connector to the new fuel injector (12). Refer to Fig. 5.

*NOTE: Refer to the schematic in Fig. 8 for additional wiring information.*

16. Remove electric tape from wiring/braiding.
17. Cut the wire in **pin #3** approximately 2" above the connector.
18. Release, but **do not** remove, the red locking cover from the white connector to dislodge the connection.
19. Strip a small portion of insulation from the end of the wire still in **pin #3**.
20. Measure and mark a point between 1 1/2" and 2" from the connector end of the wire in **pin #2**.
21. Strip 3/4" of insulation from the marked area of the wire in **pin #2**.
22. Pull and twist the wire in **pin #2** from the connector.
23. Slide the heat shrink (23) onto the wire from **pin #2**.
24. Solder the loose end of the wire in **pin #3** to the wire in **pin #2**. Solder wires as shown in Fig. 7 so the heat shrink (23) can be positioned over the solder joint for the best possible seal.

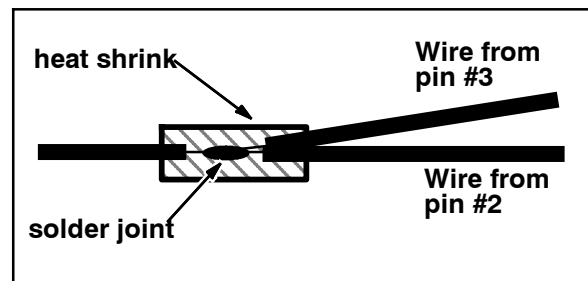


FIG. 7

25. Heat shrink the heat shrink over the solder joint and the exposed portions of both wires. Refer to Fig. 7.
26. Push the wire removed from **pin #2** back into **pin #2**. Ensure the wire is locked into place.
27. Ensure all other wires are secure in the connector.
28. Lock the red locking cover back into place.
29. Tape the unused wire from the harness against the harness. This wire is not used.

30. Slide the wires back into the braiding and tape the wiring/braiding.

31. Install red cover back into place in the white connector.

32. Ensure the red seal is properly positioned inside the white connector.

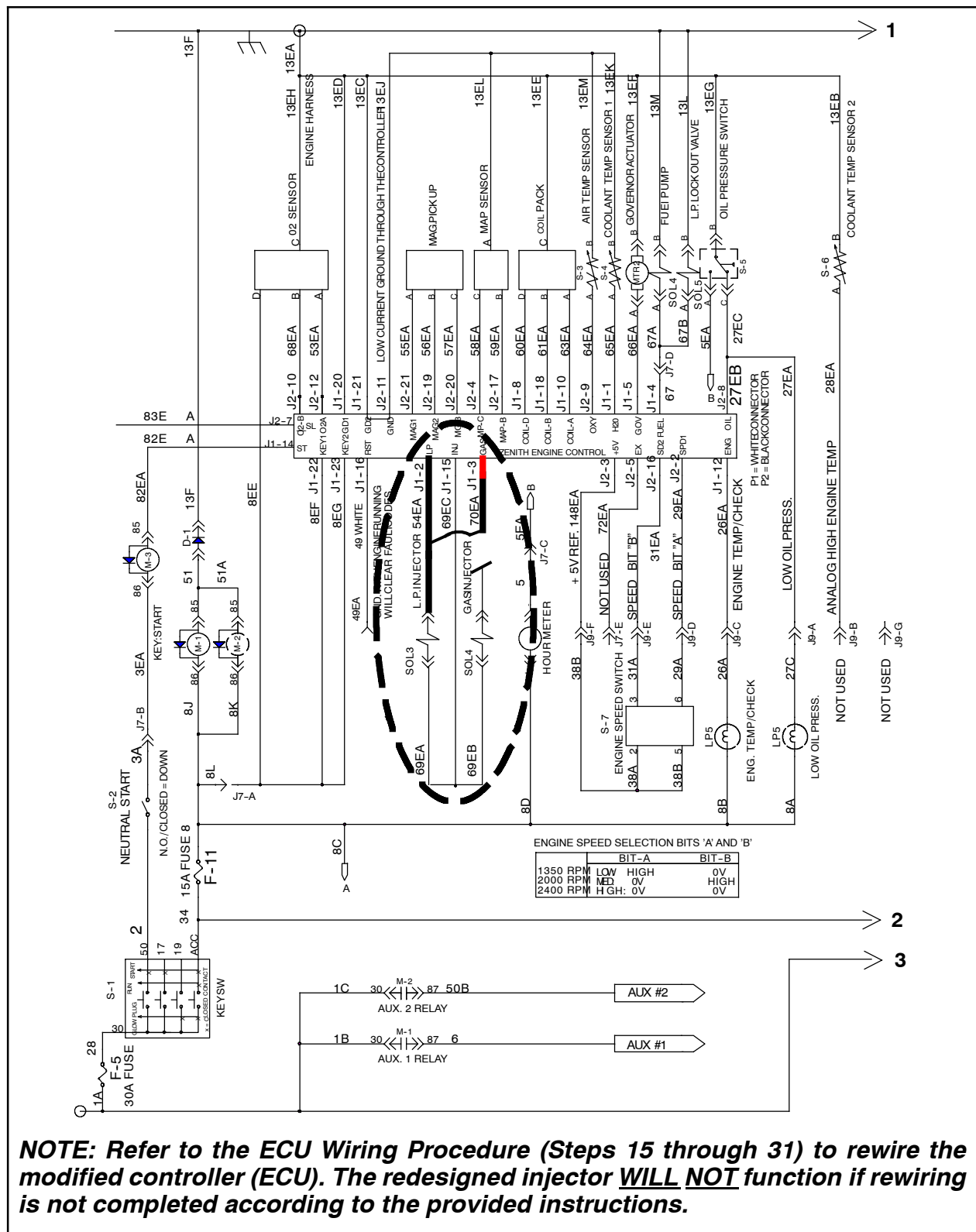
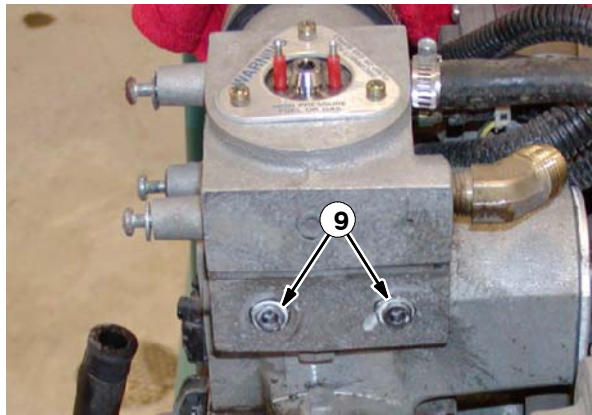


FIG. 8

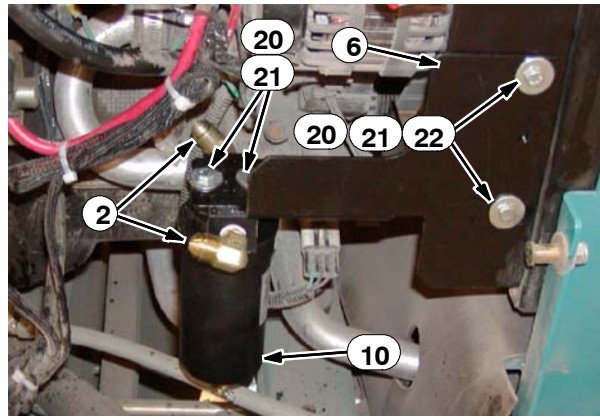


33. Apply a light coat of Loctite 567 to both plugs (9) and thread the plugs into the throttle housing. Refer to Fig. 9.



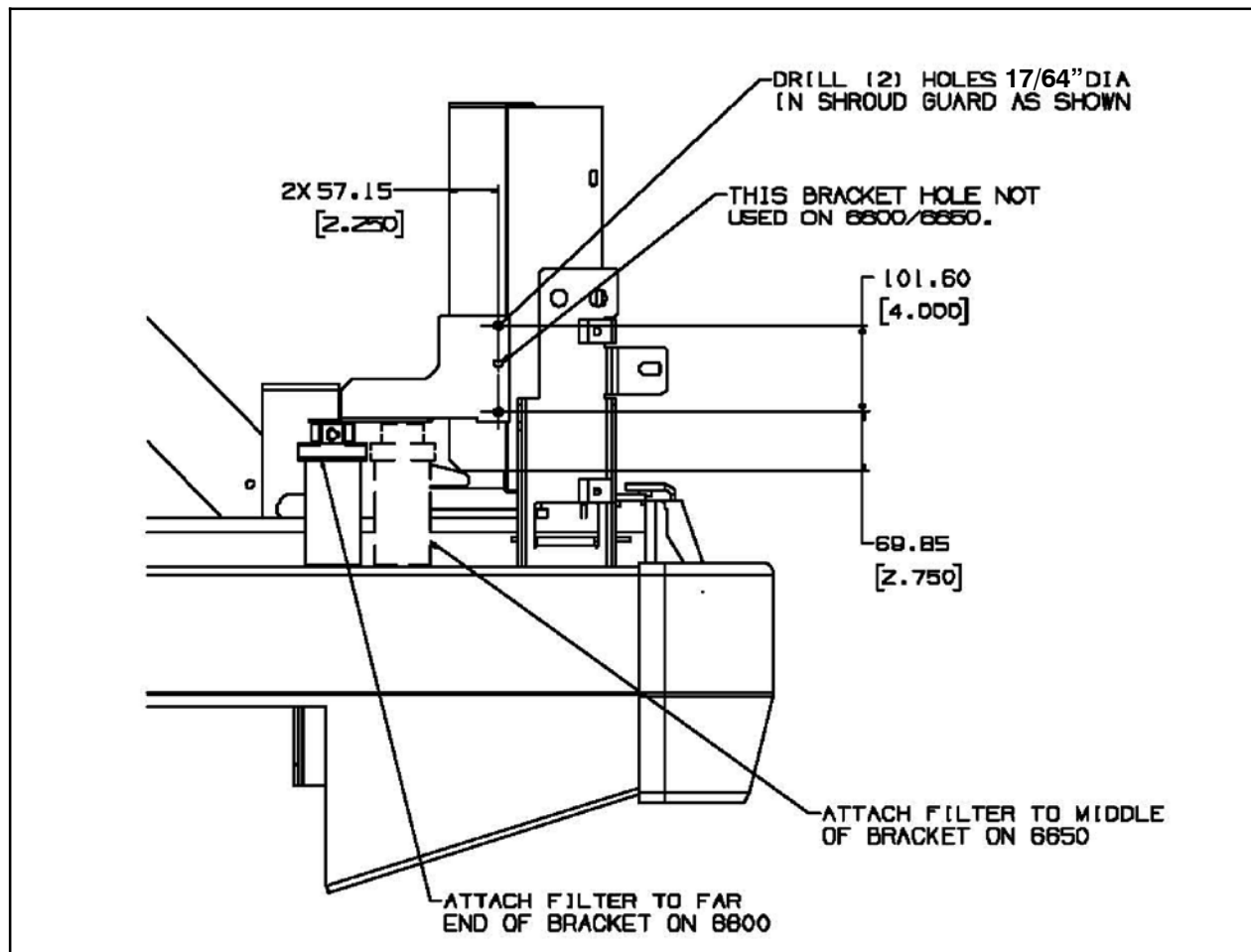
**FIG. 9**

34. Drill two 17/64" holes into the fan shroud. Refer to Fig. 11.
35. Use two hex screws (20), two flat washers (21), and two hex nuts (22) to install the filter bracket (6) onto the fan shroud. Refer to Fig. 10.



**FIG. 10**

36. Apply a light coat of Loctite 567 to both 90° fittings (2) and loosely thread the fittings into the fuel filter (10). Do not tighten the fittings. The fittings are adjusted during final adjustments. Refer to Fig. 10.
37. Use two hex screws (20) and two flat washers (21) to install the fuel filter (10) onto the filter bracket (6). Do not tighten the hex screws. The hex screws are tightened during final adjustments. Refer to Fig. 10.

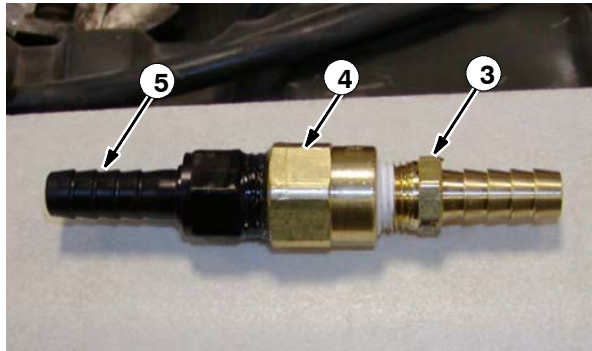


**FIG. 11**

38. Insert the stainless washer and plastic washer into the brass reducer fitting (4).

*NOTE: Apply an appropriate sealant or thread lock tape to all fittings prior to installation.*

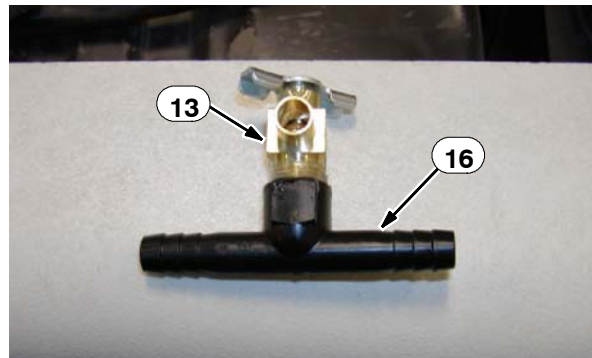
39. Carefully thread the plastic straight fitting (5) into the brass reducer fitting (4). Do not over tighten the fittings. Refer to Fig. 12.



**FIG. 12**

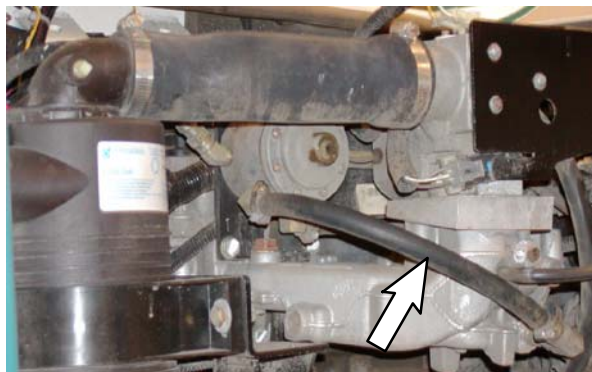
40. Thread the brass straight fitting (3) into the brass reducer fitting (4). Refer to Fig. 12.

41. Carefully thread drain cock fitting (13) into the plastic tee fitting (16). Do not over tighten fittings. Refer to Fig. 13.



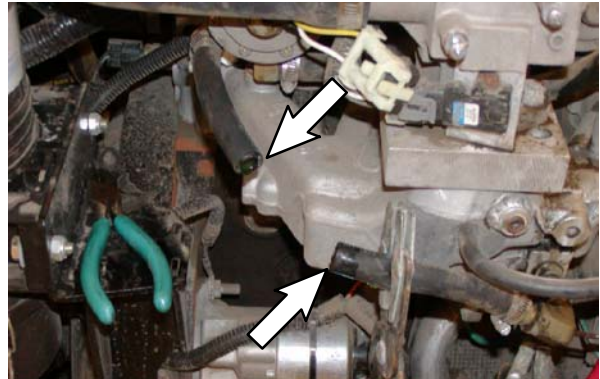
**FIG. 13**

42. Cut the hose from the vaporizer to the engine at a point near the middle of the hose. Refer to Fig. 14.



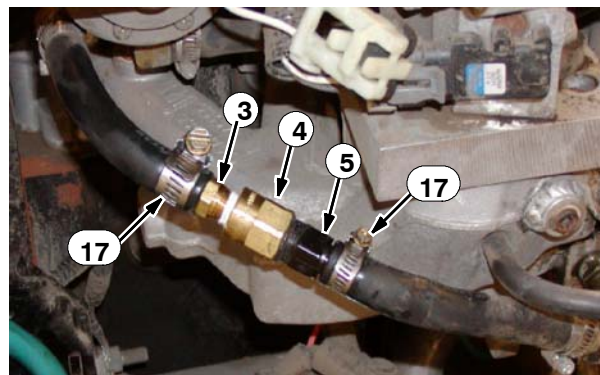
**FIG. 14**

43. Cut approximately 2" from the hose cut in the previous step. Refer to Fig. 15.



**FIG. 15**

44. Slide a hose clamp (17) onto the ends of the hose cut in the previous step. Refer to Fig. 16.

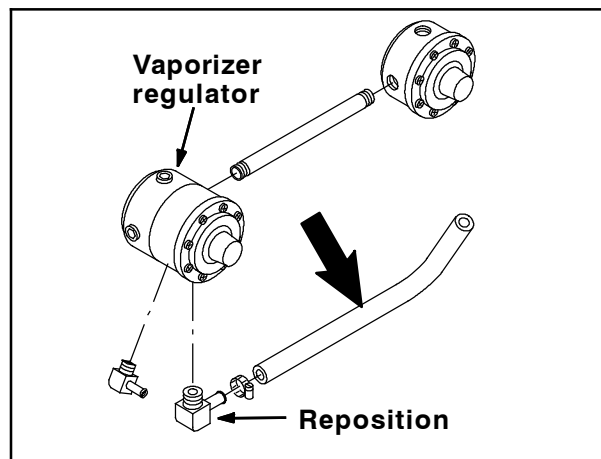


**FIG. 16**

45. Install the reducer assembly (the previously assembled plastic straight fitting (5), brass reducer fitting (4), and brass straight fitting (3)) onto the cut hoses. Refer to Fig. 16.

46. Position the hose clamps (17) as shown in Fig. 16 and tighten the hose clamps.

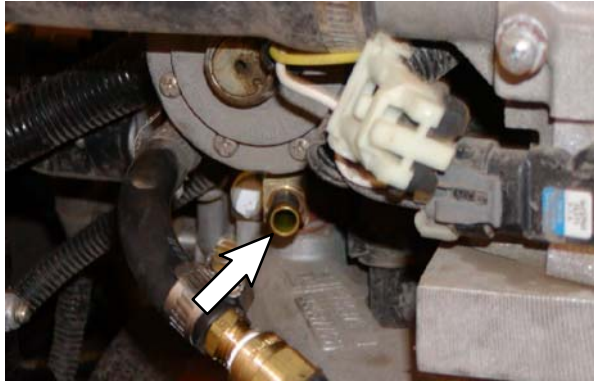
47. Remove the other hose from the regulator assembly. Refer to Fig. 17.



**FIG. 17**

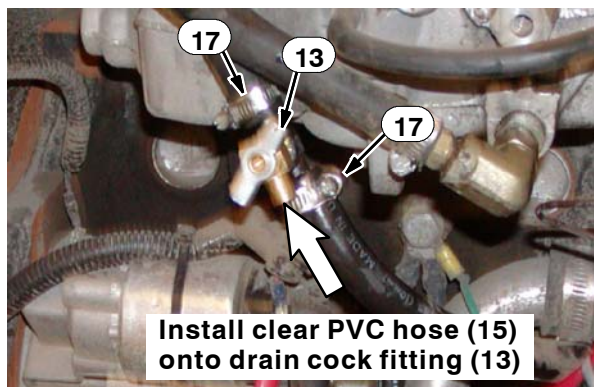


48. Reposition the fitting located underneath the vaporizer regulator as shown in Fig. 18.



**FIG. 18**

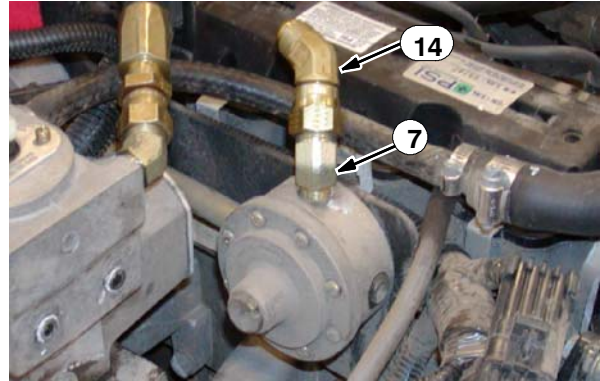
49. Reinstall the hose onto the fitting underneath the vaporizer regulator. Refer to Fig. 18.
50. Route the hose from the lower radiator (F) up to the loose end of the hose attached to the bottom vaporizer regulator. Refer to Fig. 4 for location of hose from lower radiator.
51. If necessary, cut excess hose from the ends of the two hoses.
52. Slide a hose clamp (17) onto the end of each hose. Refer to Fig. 19.



**FIG. 19**

53. Install the drain cock assembly (the plastic tee fitting (16) and the drain cock fitting (13)) onto the hose from the vaporizer regulator and the hose from the lower radiator. Refer to Fig. 19.
54. Position the hose clamps (17) as shown in Fig. 19 and tighten the hose clamps.
55. If necessary, position the drain cock fitting (13) so the drain is as shown in Fig. 19.
56. Install the clear PVC hose (15) onto the drain cock fitting (13). Refer to Fig. 19.
57. If necessary, cut the clear PVC hose (15) to the appropriate length.

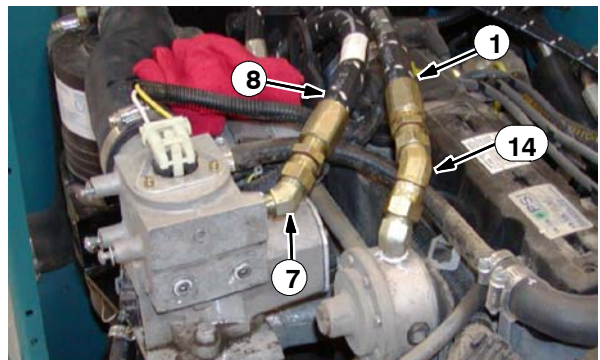
58. Thread a 45° (7) fitting into the secondary regulator. Refer to Fig. 20.



**FIG. 20**

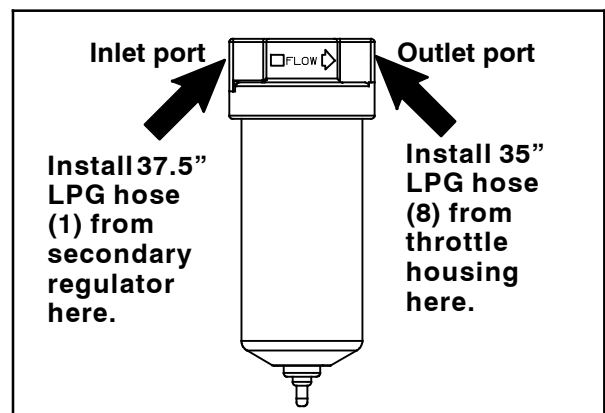
59. Thread a 45° fitting (14) into the 45° fitting (7) installed onto the secondary regulator in the previous step. Refer to Fig. 20.
60. Install the 37.5" LPG hose (1) onto the 45° fitting (14) installed in the previous step. Refer to Fig. 21.

*NOTE: Maintain a distance of at least 2" between electrical wires and fuel hoses.*



**FIG. 21**

61. Route the 37.5" LPG hose (1) down to the fuel filter (10) and thread the loose end onto the 90° fitting (2) in the inlet port of the fuel filter. If necessary, adjust position of the 90° fitting. Refer to Fig. 22 and labels on the fuel filter.



**FIG. 22**



62. Thread a 45° fitting (7) into the throttle housing. Refer to Fig. 21.

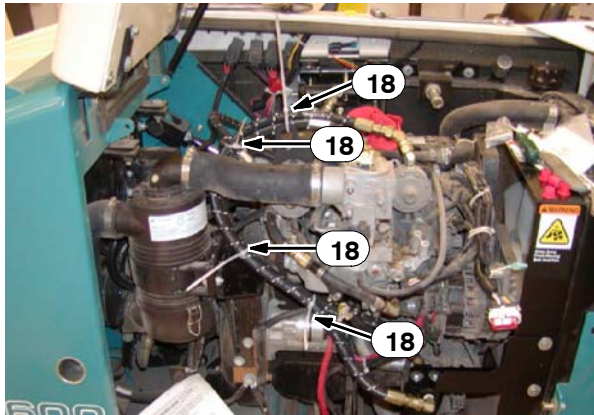
63. Install the 35" LPG hose (8) onto the 45° fitting (7) installed in the previous step. Refer to Fig. 21.

*NOTE: Maintain a distance of at least 2" between electrical wires and fuel hoses.*

64. Route the 35" LPG hose (8) down to the fuel filter (10) and thread the loose end onto the 90° fitting (2) in the outlet port of the fuel filter. If necessary, adjust position of the 90° fitting. Refer to Fig. 22 and labels on the fuel filter.

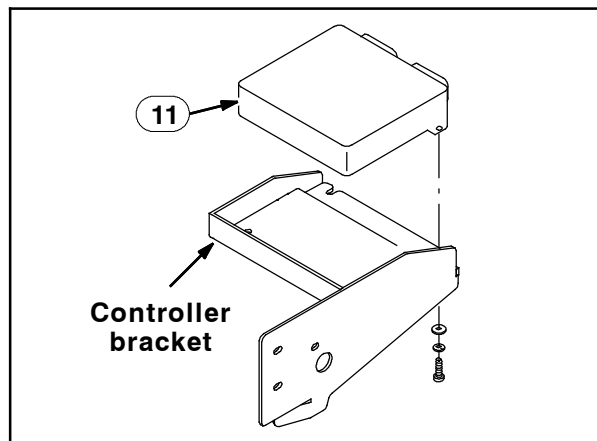
65. Adjust the fuel filter (10) on the filter bracket (6) and tighten both hex screws (20) enough to hold the fuel filter firmly onto the filter bracket.

66. Use the cable ties (18) to secure the 37.5" LPG hose (1) and the 35" LPG hose (8) to one another. Refer to Fig. 23.



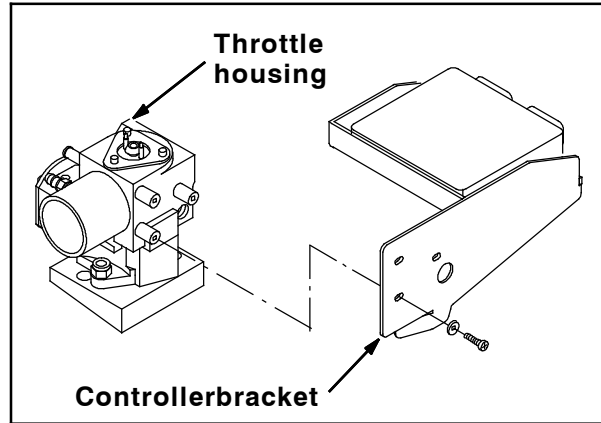
**FIG. 23**

67. Install the new controller (11) onto controller bracket. Refer to Fig. 24.



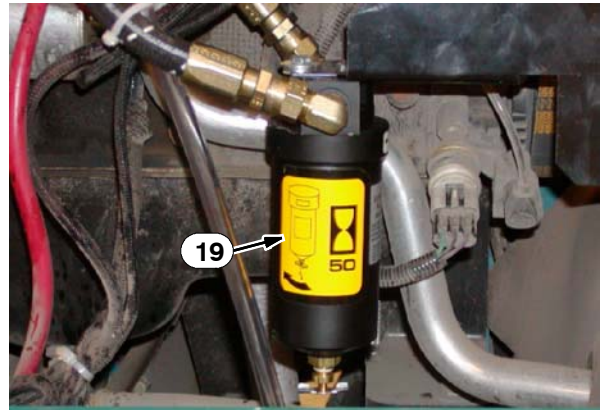
**FIG. 24**

68. Reinstall the controller bracket onto the machine. Refer to Fig. 25.



**FIG. 25**

69. Stick the instruction label (19) to the fuel filter. Position the instruction label as shown so it can easily be read when the engine compartment door is open. Refer to Fig. 26.



**FIG. 26**

70. Connect the connectors removed from the old controller to the new controller (11).

71. If necessary, open the drain cock fitting (13).

72. Refill the coolant system. Close the drain cock fitting (13) when fluid begins to run from the clear PVC hose (15). Fill the coolant system to the appropriate level. Ensure all air is purged from the coolant system.

73. Open the fuel tank service valve.

74. Reconnect the battery cables.

75. Start the machine. Observe newly installed components for leaks and/or malfunctions.

*NOTE: The ECU automatically reprograms when the engine is first started after rewiring. Allow approximately 1–2 minutes for the engine to operate properly. The machine is then ready for use.*

*NOTE: The 50–hour interval for draining the oil is only an estimate. The oil may need to be drained at different intervals depending on the amount of oil left in the system after the LP is vaporized.*

76. Use the drain cock located on the bottom of the LPG fuel filter (10) to drain oil. Draining should be performed at approximately 50–hour intervals. **Turn off** the engine **before** draining oil.

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**Bill of Material for Kit, Replmt, LPG Injector, [6600/6650] - (9000825)**

	Ref.	Tennant Part No.	Description	Qty.
▽		9000825	Kit, Replmt, LPG Injector, [6600/6650]	1
▲	1	1017477	Hose, Lpg, MED08, JF08STR/JF08STR, 37.5"	1
▲	2	1017272	Fitting, Hyd, E90, JM08/PM04	2
▲	3	150516	Fitting, Brs, Str, PM04/BM06	1
▲	4	1017239	Fitting, Brs, Str, PM04/PF04 Reducer	1
▲	5	1017598	Fitting, Plstc, Str, BM06/M.69–16	1
▲	6	1017080	Bracket, Filter, Lpg [6600]	1
▲	7	1017432	Fitting, Hyd, E45, PM08/JM04	2
▲	8	1017476	Hose, Lpg, ME08, JF08STR/JF08STR, 35.0"	1
▲	9	10552	Fitting, Pipe, Plug, PM02 Soc Head	2
▲▽	10	1017500	Filter, Fuel, Lpg Coalescent	1
▲▲		372937	Element, Filter, Fuel, LPG [Coalescent]–(Available)*	1
▲	11	9000886	Kit, Replmt, Controller F/371915	1
▲	12	1017469	Injector, Fuel, Lpg [1.6L GM] 6600/6650	1
▲	13	51305	Fitting, Draincock, .25NPT 90	1
▲	14	07797	Fitting, Hyd, E45, JF08/JM08	1
▲	15	68301	Hose, PVC, Clr, 0.38ID 0.56OD 27.00L	1
▲	16	1017197	Fitting, Plstc, Tee, BM06/PF04/BM06 Nyl	1
▲	17	11399	Clamp, Hose, Wormdrive, 0.81–1.50D	6
▲	18	130041	Tie, Cable, Nyl, 11.5L .19W	6
▲	19	1017662	Label, Instr, Filter Drain	1
▲	20	19317	Screw, Hex, .25–20 X 0.75, 5	4
▲	21	29570	Washer, Flat, 0.28B 1.00D .06, Stl	4
▲	22	19312	Nut, Hex, Std, .25–20	2
▲	23	41755	Tube, Heatshrink, .25ID 01.5L	1
▲	24	1017819	Hose, Lpg, MED08, JF08STR/JF08STR, 41"***	1

\*Part available upon request.

\*\*Used on 6650 machines only. Not used on 6600 machines.

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