



Duel Fuel Pump Kit for DFI Z Master® Mowers

Model No. 115-7490

Form No. 3362-988 Rev A

Installation Instructions

Note: Determine the left and right sides of the machine from the normal operating position.

Installation

Loose Parts

Use the chart below to verify that all parts have been shipped.

Procedure	Description	Qty.	Use
1	No parts required	–	Prepare the mower.
2	Fuel selector valve with hoses and wire harness Hose clamp Fuel selector bracket Switch	1 2 1 1	Changing the fuel hoses.
3	Fuel pump Carriage bolt (1/4 x 3/4 inch) Carriage bolt (1/4 x 5/8 inch) Washer (1/4 inch) Nut (1/4 inch) Plastic tie Cover plate Fuel pump bracket Left hand fuel pump bracket Bolt (3/8 x 2-1/4 inch) Curved washer Spacer Bolt (3/8 x 7/8 inch) Flat washer (3/8 inch) Short fuel hose (3 inch (7.6 cm)) Long fuel hose Hose clamp	1 2 2 4 4 4 1 1 1 2 2 2 2 2 2 1 10	Install the fuel pumps.

1

Preparing the Mower

No Parts Required

Procedure

1. Thoroughly clean mower. All debris must be removed to ensure the kit will fit properly.

2. Repair all bent or damaged areas and replace any missing parts.
3. Drain the fuel from both fuel tanks.

2

Changing the Fuel Hoses

Parts needed for this procedure:

1	Fuel selector valve with hoses and wire harness
2	Hose clamp
1	Fuel selector bracket
1	Switch

Procedure

1. Loosen both the left hand and right hand lower fuel tank fittings and rotate them forward. Keep them loose for ease of assembly.
2. Remove both fuel hoses on the right hand fuel tank (Figure 1).

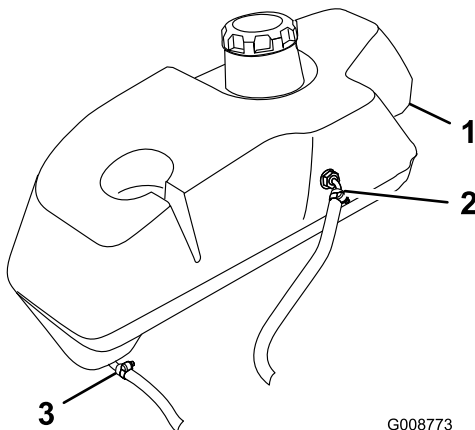
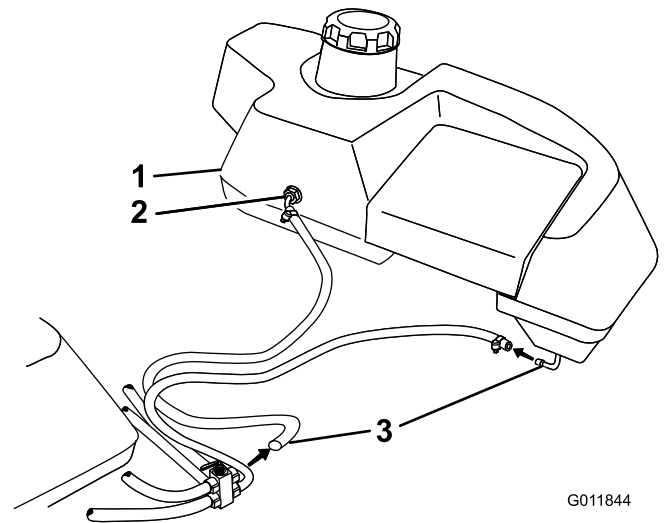


Figure 1

Right hand tank shown

1. Right hand fuel tank
2. Upper fuel tank connection
3. Lower fuel tank connection

3. Remove the lower fuel hose on the left hand fuel tank. Do NOT remove the top fuel hose on the left hand fuel tank (Figure 2).



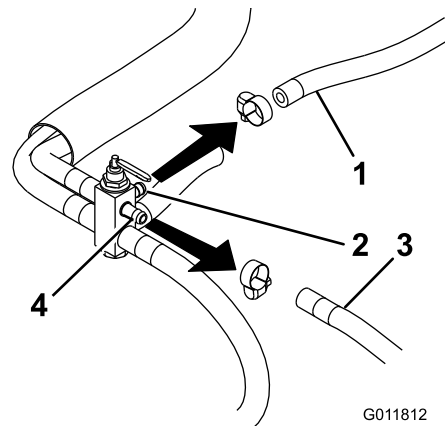
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Figure 2

Left hand tank shown

1. Left hand fuel tank
2. Upper fuel tank connection (Do not remove hose here)
3. Remove hose here

4. Disconnect the return hose from the engine at the fuel selector valve. This is located at the center top port (Figure 3).
5. Disconnect the left hand top fuel hose at the fuel selector valve. This is located at the left hand top port (Figure 3).



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Figure 3

1. Return hose from the engine
2. Center top port
3. Left hand top fuel hose
4. Left hand top port

6. Remove the existing fuel selector valve and the fuel selector valve bracket. Save the nut and bolt.
7. Remove the fuel hose from the fuel selector valve to fuel filter (Figure 4).
8. Remove the fuel hose from the fuel filter to the fuel pump (Figure 4).
9. Remove the fuel hose from the fuel pump to the engine (Figure 4).

10. Disconnect the fuel pump from the wire harness.
Remember this connection because the new wire harness will connect here (Figure 4).
11. Remove fuel pump and set aside for installation later (Figure 4).

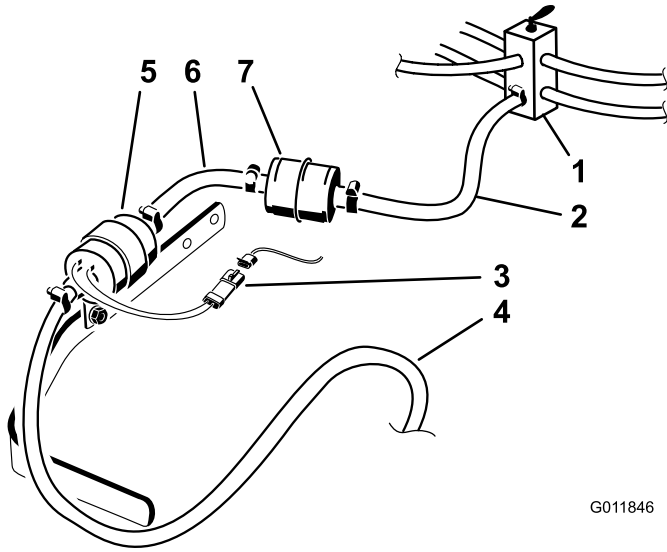


Figure 4

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|---|---|
| 1. Selector valve | 5. Fuel pump |
| 2. Hose from the fuel selector valve to fuel filter | 6. Hose from the fuel filter to fuel pump |
| 3. Wire harness connection | 7. Fuel filter |
| 4. Hose from the fuel pump to the engine | |

12. Install the fuel hose from the top left hand fuel tank to the new selector valve at the left hand top port with a new hose clamp. Ensure the clamp is tight (Figure 5).
13. Install the return fuel hose from the engine to the new selector valve at the center top port with a new hose clamp. Ensure the clamp is tight (Figure 5).

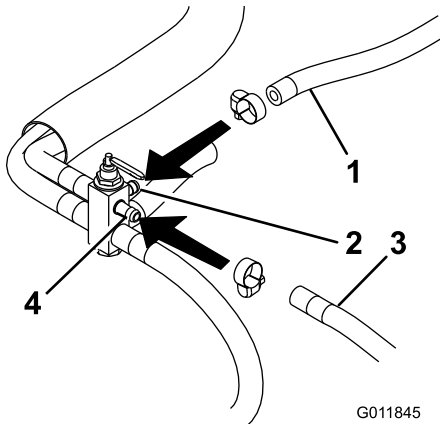


Figure 5

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|--------------------------------|----------------------------|
| 1. Return hose from the engine | 3. Left hand top fuel hose |
| 2. Center top port | 4. Left hand top port |

14. Route the fuel lines as shown in Figure 7.
15. Locate the longer of the two new right hand fuel hoses attached to the fuel selector valve assembly and connect it to the upper right hand tank fitting (Figure 7).
16. Install the switch into the bracket ensuring the locating pin on the bottom of the switch is on the left side of the unit (Figure 6).

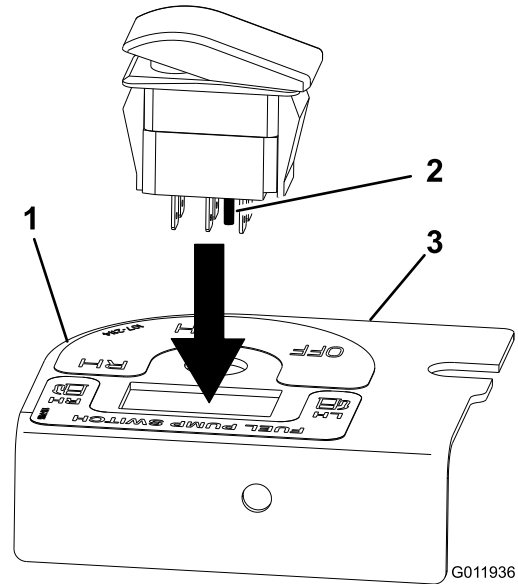


Figure 6

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|--------------------|-------------------|
| 1. Right hand side | 3. Left hand side |
| 2. Locating pin | |

17. Install the new fuel selector valve to the new bracket and connect the wire harness to the switch.
18. Install the new bracket to the machine using the existing bolt and nut (Figure 7).

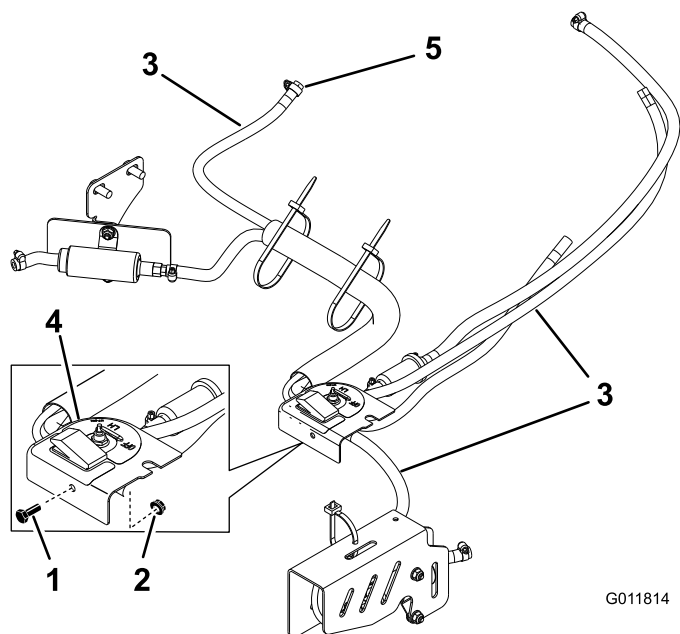


Figure 7

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|--------------------|--|
| 1. Existing bolt | 4. New fuel selector valve |
| 2. Existing nut | 5. Upper right hand fuel tank connection |
| 3. Route the hoses | |

3

Installing the Fuel Pumps and Wire Harness

Parts needed for this procedure:

1	Fuel pump
2	Carriage bolt (1/4 x 3/4 inch)
2	Carriage bolt (1/4 x 5/8 inch)
4	Washer (1/4 inch)
4	Nut (1/4 inch)
4	Plastic tie
1	Cover plate
1	Fuel pump bracket
1	Left hand fuel pump bracket
2	Bolt (3/8 x 2-1/4 inch)
2	Curved washer
2	Spacer
2	Bolt (3/8 x 7/8 inch)
2	Flat washer (3/8 inch)
2	Short fuel hose (3 inch (7.6 cm))
1	Long fuel hose
10	Hose clamp

Procedure

1. Assemble the new fuel pump to the cover plate and right hand fuel pump bracket with 2 carriage bolts (1/4 x 3/4 inches), 2 washers (1/4 inch) and 2 lock nuts (1/4 inch) (Figure 8).

Note: The fuel pump must be assembled as shown in Figure 8 with the wires on the right side.

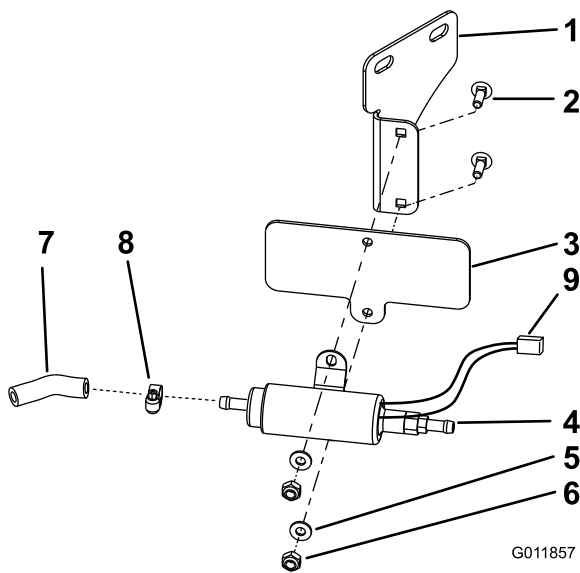


Figure 8

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|-----------------------------------|----------------------------------|
| 1. Right hand fuel pump bracket | 6. Lock nut (1/4 inch) |
| 2. Carriage bolt (1/4 x 3/4 inch) | 7. Fuel hose (3 inch (7.6 cm)) |
| 3. Cover plate | 8. Hose clamp |
| 4. New fuel pump | 9. Wires coming out of fuel pump |
| 5. Washer (1/4 inch) | |

2. Install a short fuel hose to the fuel pump with a hose clamp on the side that the wires **do not** come out of the pump.

Note: Ensure the small fuel hose is installed on the end of the fuel pump that does **NOT** have wires coming out of it.

3. Raise up the right hand side of the machine and lower it onto a jack stand. Remove right hand tire.
4. Remove bolts and nuts holding the right hand brake cross shaft bearing to the frame.

Note: Temporarily release the brakes to ease the removal of the bolts and nuts holding the cross shaft.

5. Connect the new fuel hose from the fuel selector valve to the wire side of the fuel pump with a hose clamp and tighten the clamp.
6. Install new fuel pump and bracket assembly using the nuts previously removed and new bolts (3/8 x 7/8 inch) and flat washers (3/8 inch) (Figure 9). Don't tighten the fasteners.

Before tightening the fasteners, connect the short fuel hose on the fuel pump and to the fitting on the bottom of the fuel tank with a hose clamp and tighten the clamp. Ensure the fuel line is not kinked once everything is tightened.

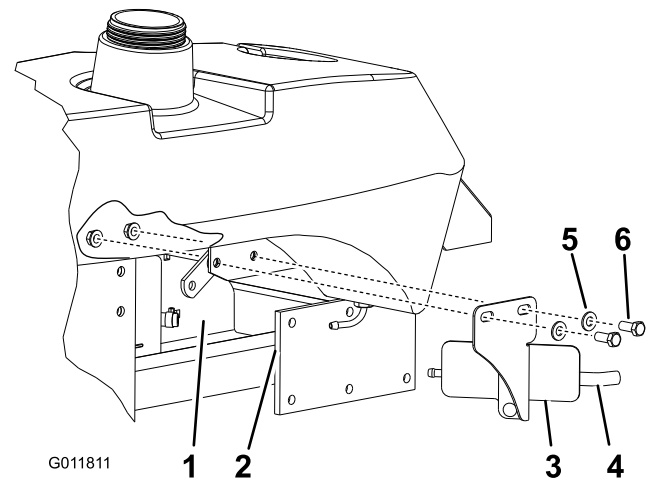


Figure 9

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|---------------------------|------------------------------|
| 1. Existing nut | 4. Short fuel hose installed |
| 2. Right side of machine | 5. Washer (3/8 inch) |
| 3. New fuel pump assembly | 6. Bolt (3/8 x 7/8 inches) |

7. Engage the parking brake.
8. On the left hand side of the machine, remove the upper front two front carrier frame bolts.
9. Install left hand pump bracket with 2 spacers between the carrier frame and bracket using the nuts previously removed and 2 new bolts (3/8 x 2-1/4 inches) and 2 new curved washers (3/8 inch) (Figure 10).

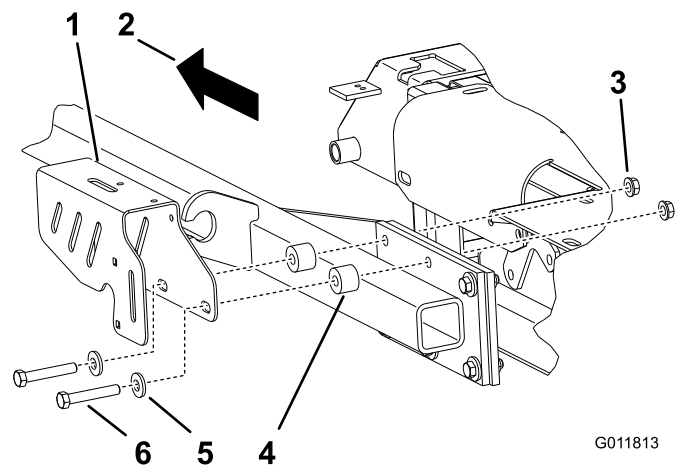


Figure 10

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|---------------------------|------------------------------|
| 1. Left hand pump bracket | 4. Spacer |
| 2. Front of machine | 5. Washer (3/8 inch) |
| 3. Nut (3/8 inch) | 6. Bolt (3/8 x 2-1/4 inches) |

10. Install a short fuel hose to fuel pump removed earlier with a hose clamp and tighten the clamp (Figure 11).

Note: Install the small fuel hose on the end of the fuel pump that does **NOT** have wires coming out of it.

11. Route the new fuel hose from the fuel selector valve through the frame and bracket as shown in Figure 12

and Figure 13 and connect it to the wire side of the fuel pump with a hose clamp. Tighten the clamp.

12. Position the fuel pump into place and connect the short fuel hose (3 inch (7.6 cm)) to the fitting on the bottom of the left fuel tank with a hose clamp and tighten the clamp. Ensure the fuel line is not kinked once everything is tightened (Figure 11).
13. Assemble the fuel pump to the left hand fuel pump bracket with 2 carriage bolts (1/4 x 5/8 inch), 2 nuts (1/4 inch) , and 2 washers (1/4 inch) (Figure 11).
14. Install fuel filter removed previously to the 3 inch hose attached to the bottom center port of the selector valve with a hose clamp.

Note: The fuel filter must be installed as shown, with larger part of the filter toward the rear of the unit.

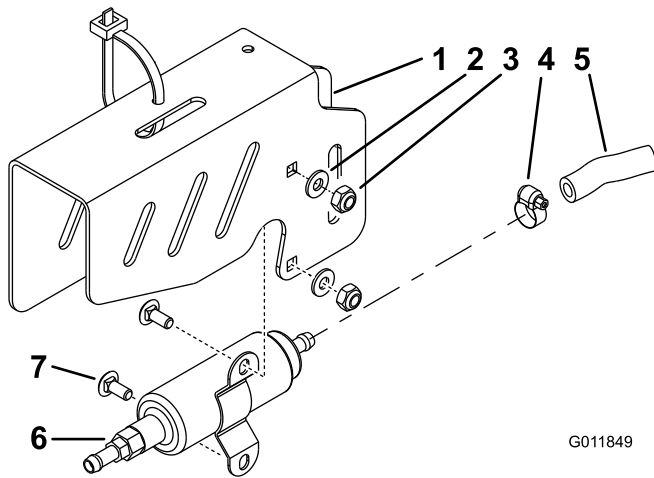


Figure 11

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|--------------------------------|-----------------------------------|
| 1. Left hand fuel pump bracket | 5. Fuel hose (3 inch (7.6 cm)) |
| 2. Washer (1/4 inch) | 6. Existing fuel pump |
| 3. Lock nut (1/4 inch) | 7. Carriage bolt (1/4 x 5/8 inch) |
| 4. Hose clamp | |

15. Connect the new long fuel hose to the filter and the engine using 2 new hose clamps. Ensure the hose is routed the same as the one previously removed.
16. Check and tighten all bolts and all fuel hose clamps.
17. Tighten both lower fuel tank fittings.
18. Install the right hand tire. Remove the jack stand.
19. Route the new wire harness to the left hand fuel pump through the frame following the path of the fuel line and connect it to the fuel pump. Keep the fuel pump wires inside the left hand fuel pump bracket. Pull them towards the rear and connect the new wire harness (Figure 12).

20. Connect new wire harness to the right hand fuel pump and fold any extra wire and use a plastic tie to secure the folded wire (Figure 12).
21. Plug the new wire harness to main wire harness on unit. This is the same connection that was used for the existing fuel pump (Figure 12).

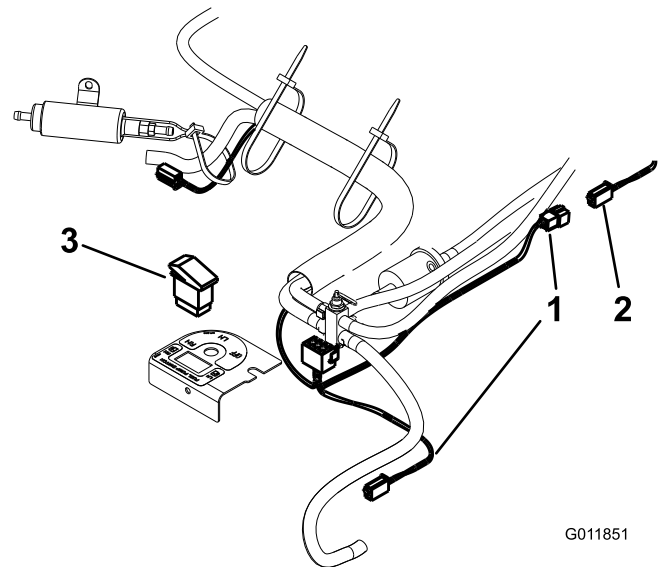
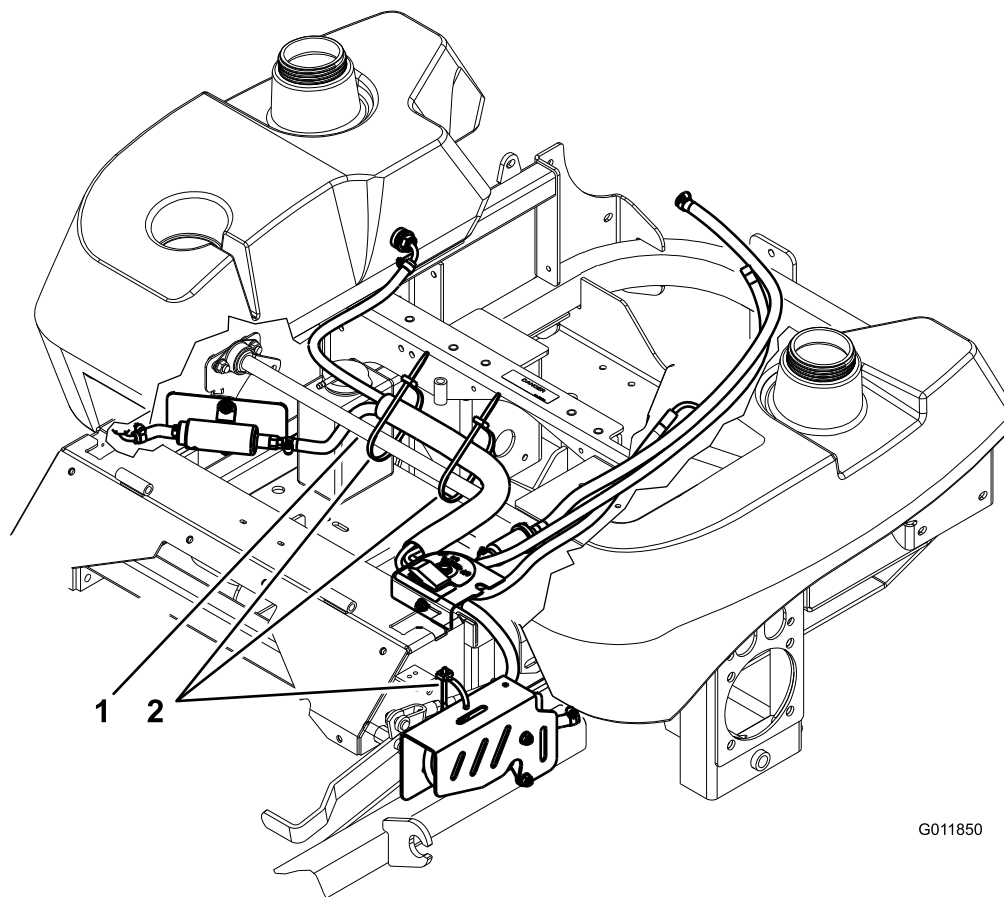


Figure 12

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|-----------------------------|-----------|
| 1. New harness | 3. Switch |
| 2. Existing machine harness | |

22. Loosely install the fuel hose assembly to the brake cross shaft as shown with 2 plastic ties (Figure 13).
23. Use a plastic tie to secure the fuel hose through the center holes in the left hand fuel pump bracket (Figure 13).



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Figure 13

1. Brake cross shaft

2. Plastic ties

24. Fill each tank with a gallon of fuel.

25. Before operating the machine check for leaks at all hose connections. Ensure no fuel leaks occur when the machine is first run.

Operation

Using the Fuel Selector Valve and Switch

Note: Determine the left and right sides of the machine from the normal operating position.

The electrical switch must be set to the same fuel tank as the mechanical fuel selector valve.

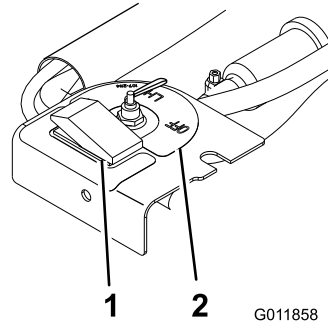


Figure 14

1. Switch

2. Mechanical fuel selector valve