Form No. 3373-396 Rev B

Hydraulic System Cooling Kit

GrandStand® Mower

Model No. 121-7480

Installation Instructions

Installation

Loose Parts

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

Procedure	Description	Qty.	Use
1	No parts required	–	Preparing the unit.
2	No parts required	–	Removing the low pressure hoses.
3	Hydraulic system cooling assembly Bolt (5/16 x 3/4 inch) Nut (5/16 inch)	1 2 2	Installing the hydraulic system cooling assembly.
4	61 cm (24 inch) hose Hose assembly with the T-connector Cable tie Hose clamps	1 1 2 5	Installing the low pressure hoses.
5	Wire harness Cable tie	1 10	Routing the wire harness.
6	No parts required	–	Bleeding the hydraulic system.

8111 Lyndale Avenue South
Bloomington, MN 55420

Register at www.Toro.com.

Original Instructions (EN)
Printed in the USA.

3373-396 B

1

Preparing the Unit

No Parts Required

Procedure

⚠ WARNING

Hydraulic fluid escaping under pressure can penetrate skin and cause injury.

- **Make sure all hydraulic fluid hoses and lines are in good condition and all hydraulic connections and fittings are tight before applying pressure to the hydraulic system.**
- **Keep your body and hands away from pin hole leaks or nozzles that eject high pressure hydraulic fluid.**
- **Use cardboard or paper to find hydraulic leaks.**
- **Safely relieve all pressure in the hydraulic system before performing any work on the hydraulic system.**
- **Seek immediate medical attention if fluid is injected into skin.**

1. Position machine on a level surface.
2. Disengage the power take off (PTO) and set the parking brake.
3. Stop the engine and wait for all moving parts to stop before leaving the operating position.
4. Remove the key.
5. Remove the battery cover (Figure 33).
6. Remove the negative battery cable from the battery.
7. Lower the mower deck to the lowest height-of-cut setting.
8. Lower the platform (Figure 1).

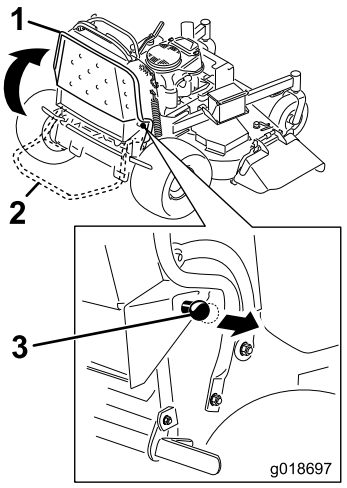

Figure 1

1. Platform up
2. Platform down
3. Pull the knob out to release the platform

9. Remove the hairpin cotter securing the rear cushion bracket (Figure 2).
10. Slide the bushing next to the machine (Figure 2).
11. Lower the rear cushion bracket onto the platform (Figure 1 and Figure 2).

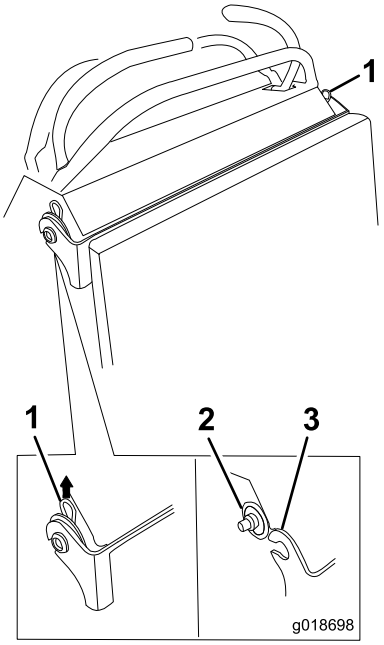

Figure 2

1. Hairpin cotter
2. Bushing
3. Rear cushion bracket

2

Removing the Low Pressure Hoses

No Parts Required

Procedure

1. Remove the bolt, nut, and R-clamp securing the hose connecting the right-hand pump to the hydraulic reservoir bracket (Figure 3).

   Note: Discard the R-clamp.

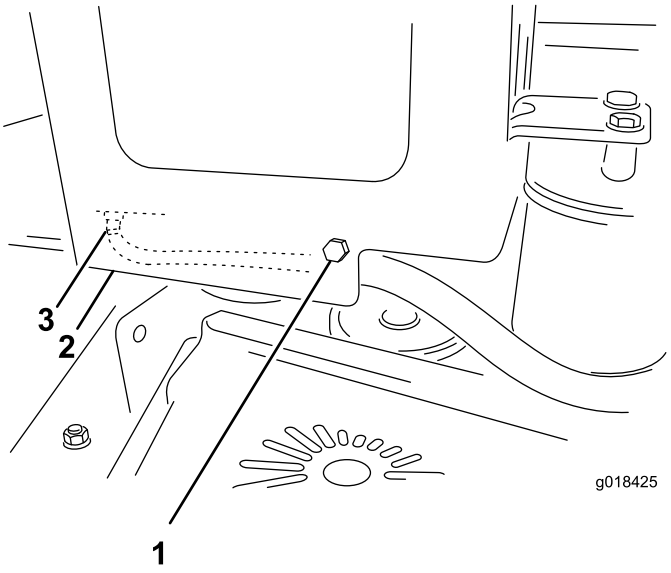

Figure 3

1. Bolt securing the hose
2. Hydraulic reservoir bracket
3. Front connector on hydraulic reservoir tank

2. Remove the low pressure hose from the front fitting under the hydraulic reservoir tank (Figure 3).

   Note: Drain the oil into an oil pan.

3. Remove and discard the cable ties securing the low pressure hoses (Figure 4 and Figure 5).

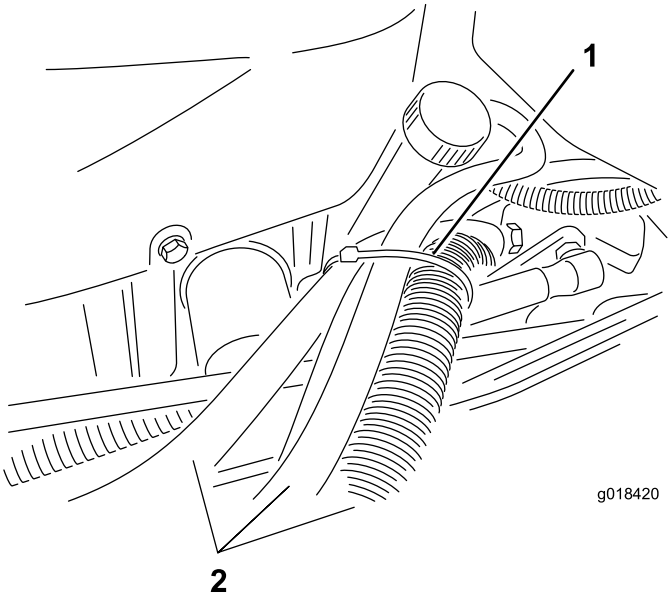

Figure 4

Your model may vary from this diagram.

1. Cable tie
2. Hoses

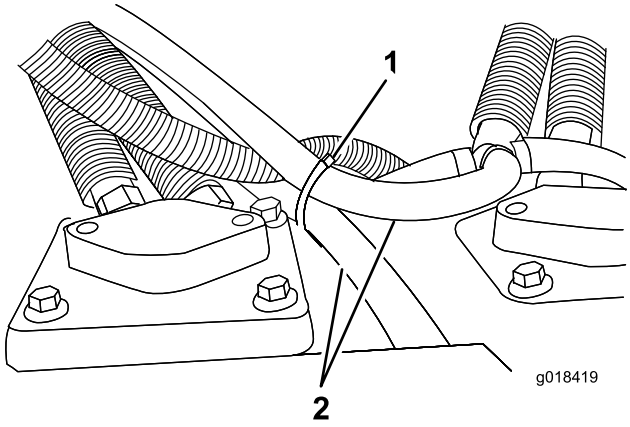

Figure 5

Your model may vary from this diagram.

1. Cable tie
2. Low pressure hoses

4. Remove the low pressure hose from the right-hand pump (Figure 6).

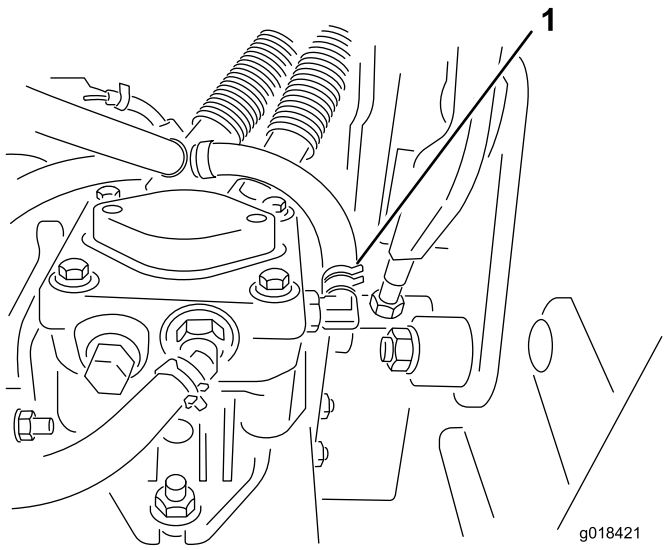

Figure 6

1. Disconnect here

5. Remove the low pressure hose from the left-hand pump (Figure 7).

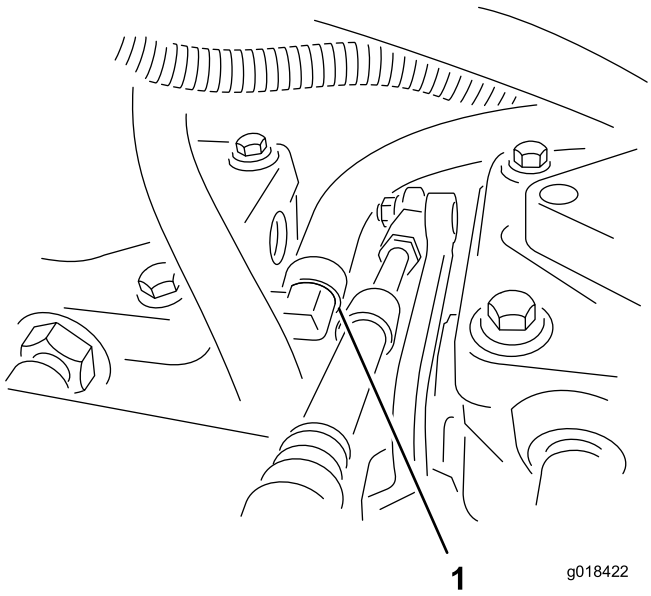

Figure 7

1. Disconnect here

6. Remove the hose from the unit (Figure 8).

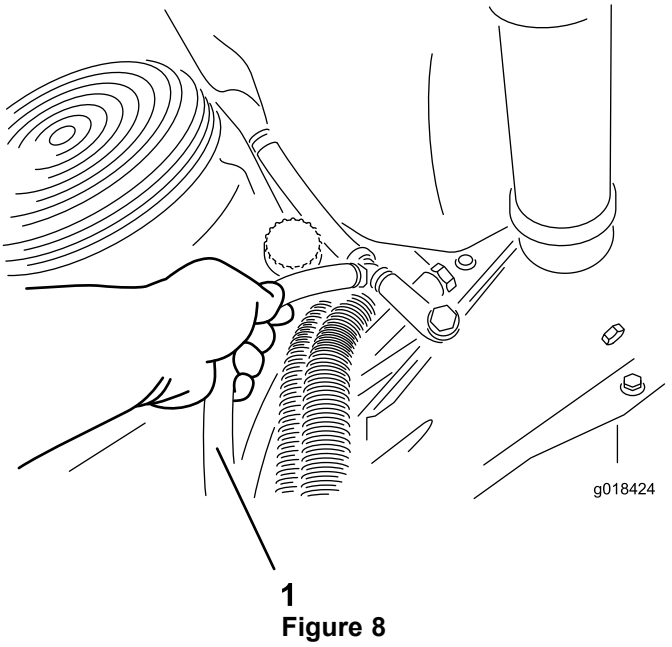

Figure 8

1. Remove hose

3

Installing the Hydraulic System Cooling Assembly

Parts needed for this procedure:

1	Hydraulic system cooling assembly
2	Bolt (5/16 x 3/4 inch)
2	Nut (5/16 inch)

Procedure

1. Using a 5/16 inch drill bit, ream the hole in the reservoir bracket (Figure 9).

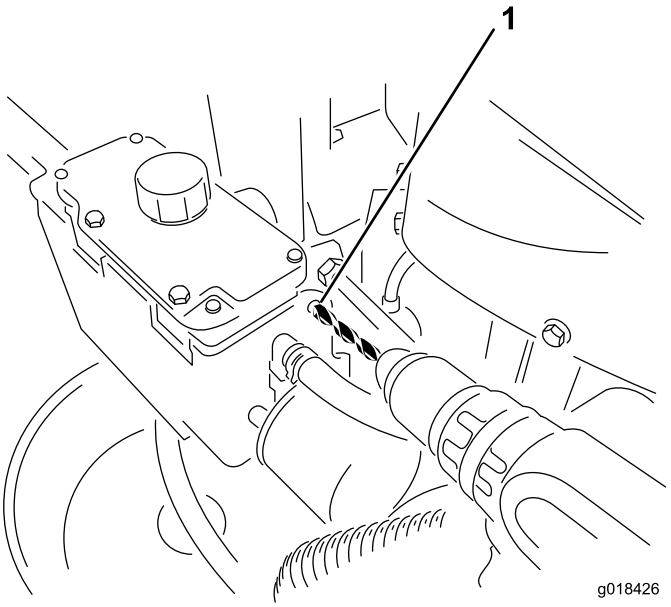

Figure 9

1. Hole

2. Locate the serial number decal.

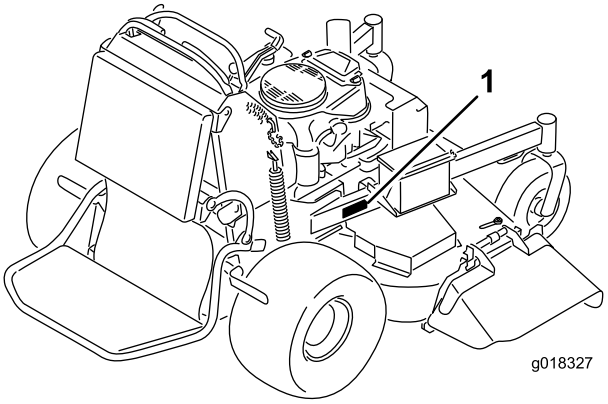

Figure 10

1. Location of the model and serial numbers

3. Determine your model year from the serial number.
   - 2009—serial number range 290000001 and up
   - 2010—serial number range 310000001 and up
   - 2011—serial number range 311000001 and up
4. Locate the mounting holes in the cooling assembly that will be required for your unit.

   Note: Use the upper set of the holes for 2011 models. Use the lower set of holes for 2009 and 2010 models.

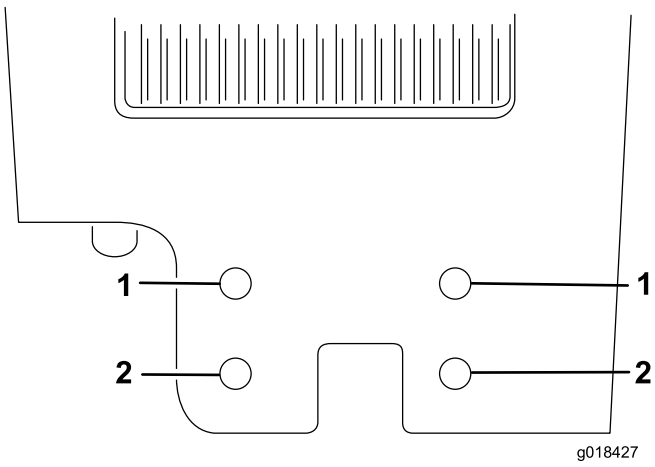

Figure 11

1. Upper set of the holes for 2011 models.
2. Lower set of holes for 2009 and 2010 models.

5. Align the cooling assembly to the reservoir bracket (Figure 12).

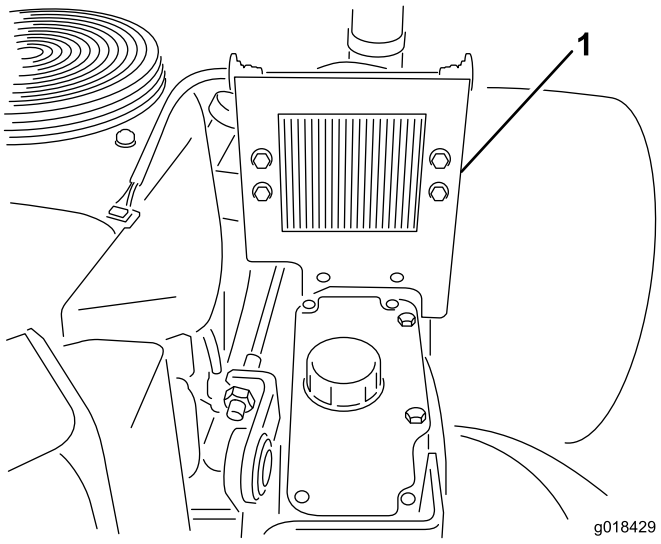

Figure 12

1. Cooling assembly

6. Using the correct set of holes for your unit, secure the right side of the cooling assembly to the hydraulic reservoir bracket using a bolt (5/16 x 1 inch) and nut (5/16 inch) (Figure 12 and Figure 13).

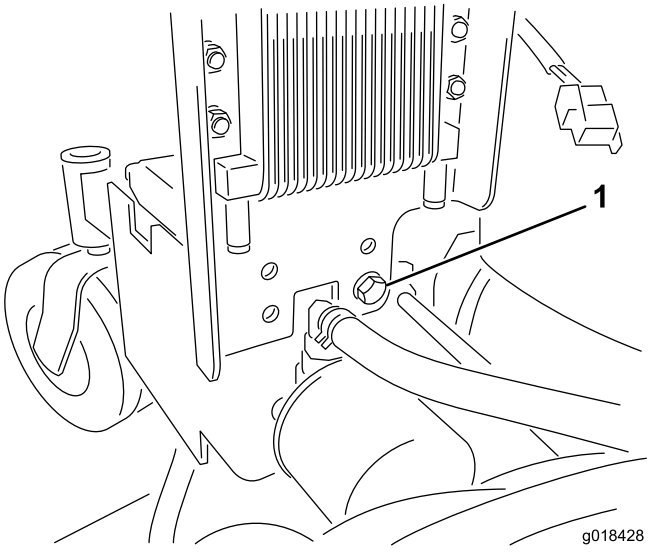

Figure 13

1. Bolt and nut

7. Using the cooler bracket as a template, drill the second 5/16 inch hole into the reservoir bracket (Figure 12, Figure 13, and Figure 14).

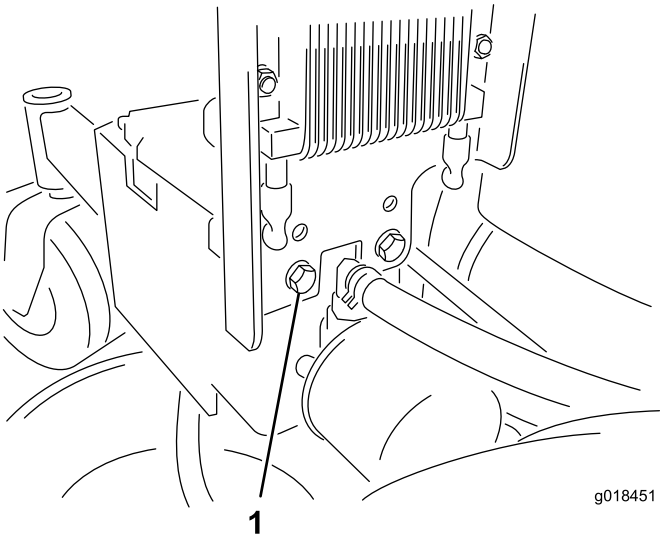

Figure 14

1. Bolt and nut

8. Secure the cooler assembly using the bolt and nut (Figure 14).

4

Installing the Low Pressure Hoses

Parts needed for this procedure:

1	61 cm (24 inch) hose
1	Hose assembly with the T-connector
2	Cable tie
5	Hose clamps

Procedure

Note: The hose from the left-hand pump connects to the radiator inlet port (Figure 15).

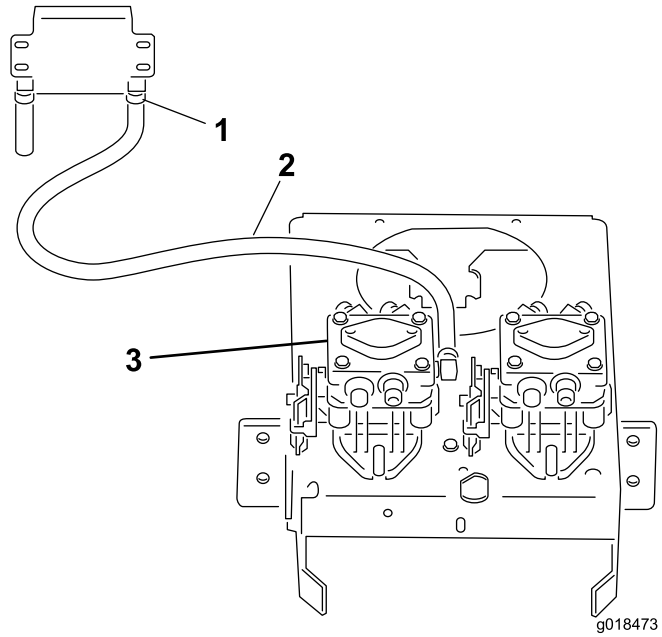

Figure 15

1. Cooling assembly inlet port
2. Hose from left-hand pump connecting to cooling assembly inlet port
3. Left-hand pump

Note: The hose from the right-hand pump connects to a T-connector. The short hose coming off the T-connector goes to the radiator exit port. The other hose connects to the hydraulic reservoir tank

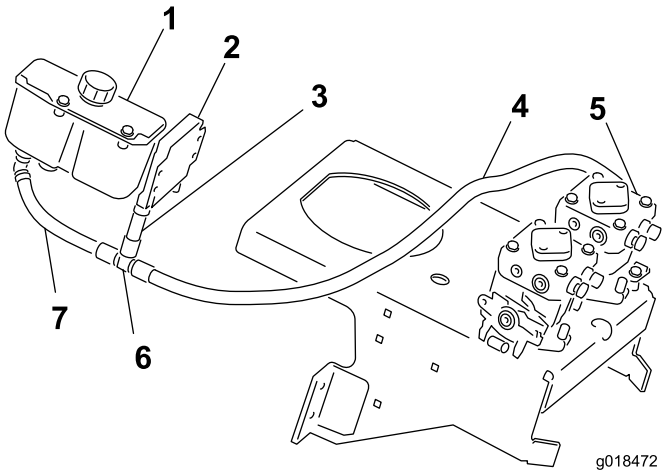

Figure 16

1. Hydraulic reservoir tank
2. Cooling assembly
3. Short hose
4. Hose from the right-hand pump connecting to the T-connector
5. Right-hand pump
6. T-connector
7. Hose connecting to the hydraulic reservoir

1. Install the 61 cm (24 inch) hose to left-hand pump (Figure 17.

Note: Secure the hose with a hose clamp so that the tabs of the clamp are pointing downward as shown.

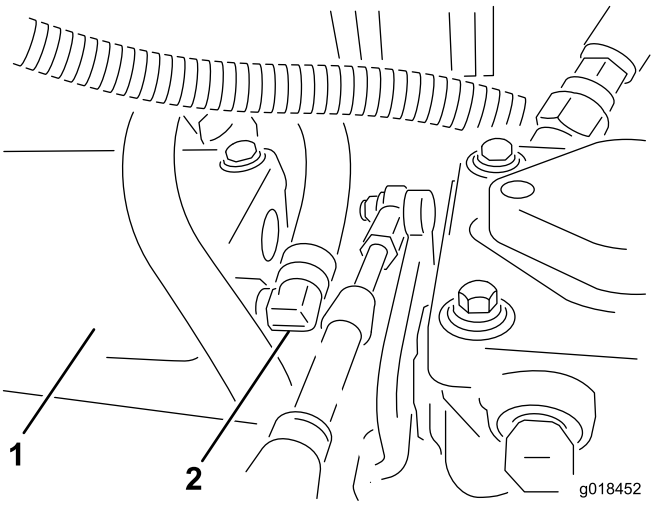

Figure 17

1. Left-hand pump
2. Return port

2. Route the hose and install the other end to the cooling assembly inlet.

Note: Rotate tabs on hose clamp as shown in Figure 18.

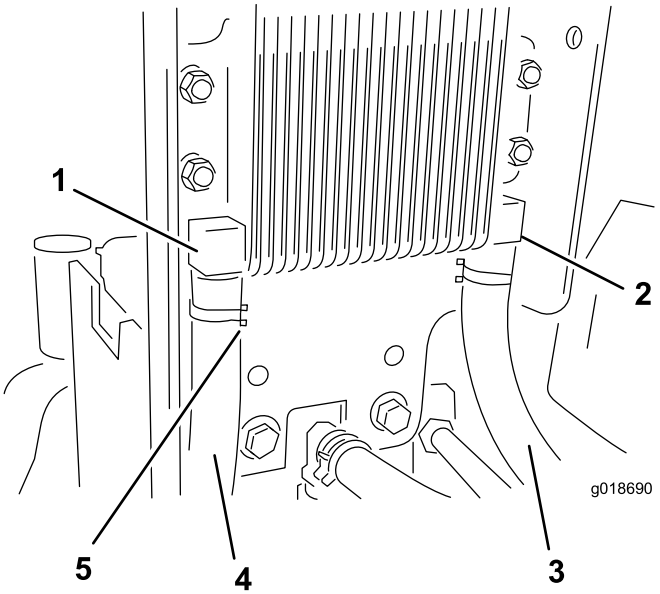

Figure 18

1. Cooling Assembly outlet
2. Cooling Assembly Inlet
3. Hose coming from the left-hand pump
4. Hose going to the T-connector
5. Tabs on clamp

3. Install the hose connecting the T-connector to the cooling assembly outlet (Figure 16 and Figure 19).

Note: Rotate tabs on hose clamp as shown in Figure 18.

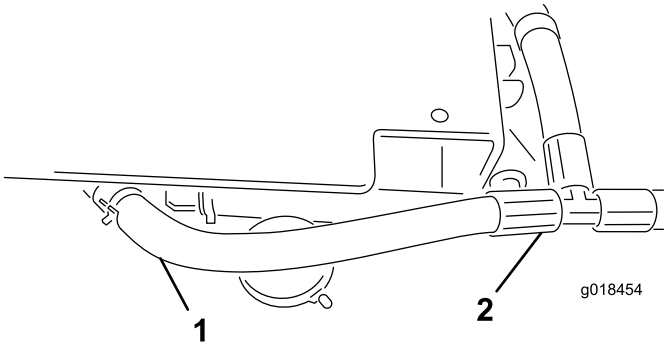

Figure 19

1. Hose going to the hydraulic reservoir tank
2. T-connector

4. Install the hose connecting the T-connector to the right-hand pump (Figure 16 and Figure 20).

   Note: Rotate the tabs of the hose clamp so they are pointing downward.

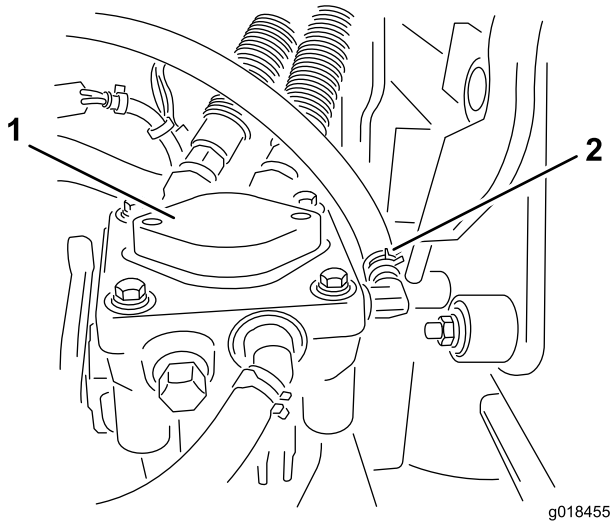

Figure 20

1. Right-hand pump
2. Hose clamp

5. Secure the hoses using 2 cable ties (Figure 21 and Figure 22).

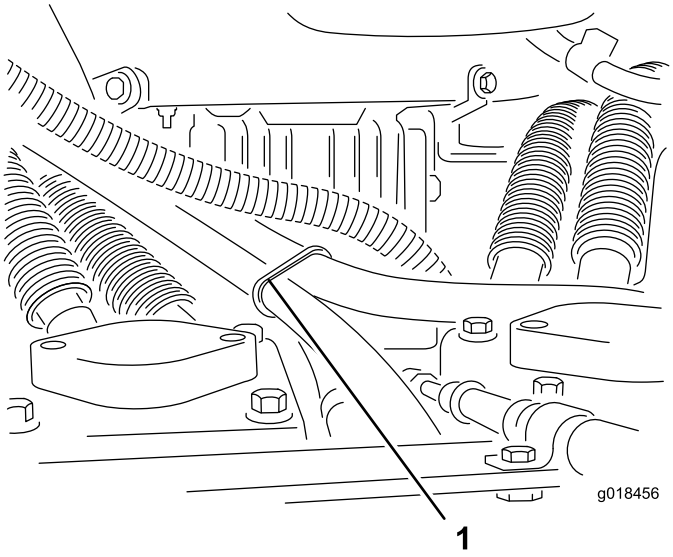

Figure 21

1. Cable tie

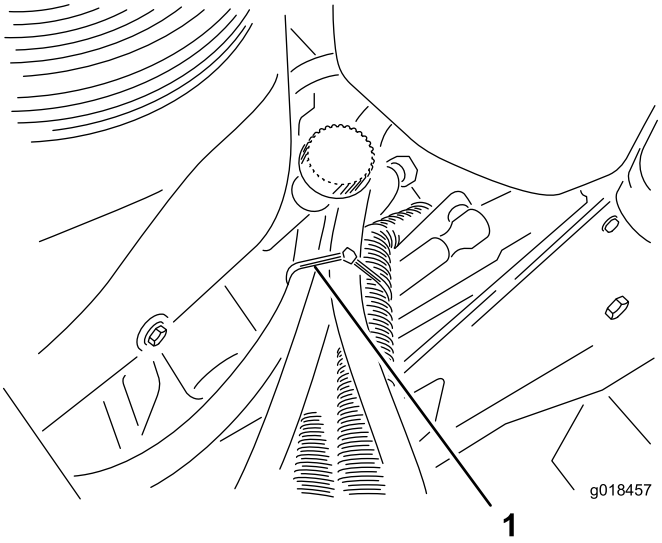

Figure 22

1. Cable tie

6. Move the deck from the highest height of cut to the lowest height of cut.
   - Repeat this step while observing the hoses.
   - Verify that the hoses do not contact hot surfaces, sharp edges, or moving controls linkage.
   - Adjust the cable ties and hose routing if needed to avoid contact for all height of cut positions.

5

Routing the Wire Harness

Parts needed for this procedure:

1	Wire harness
10	Cable tie

Procedure

1. Before starting this procedure, observe how you will route the wire harness.

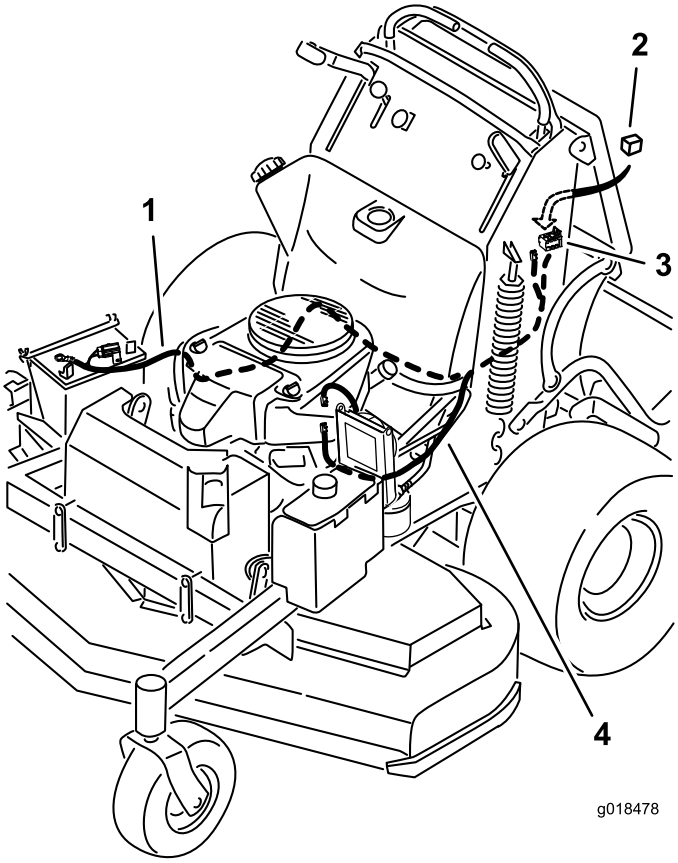

Figure 23

1. Routing the wire harness to the battery
2. Relay
3. Relay socket
4. Wire harness to the cooling assembly

2. Connect the cooling assembly connector to the wire harness (Figure 24).

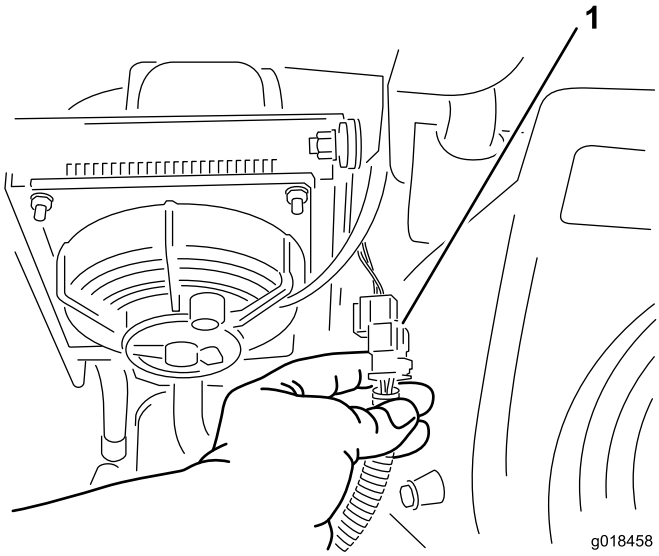

Figure 24

1. Cooling assembly connector

3. Route the cooling assembly wire harness underneath all the hoses and through the pump compartment (Figure 25).

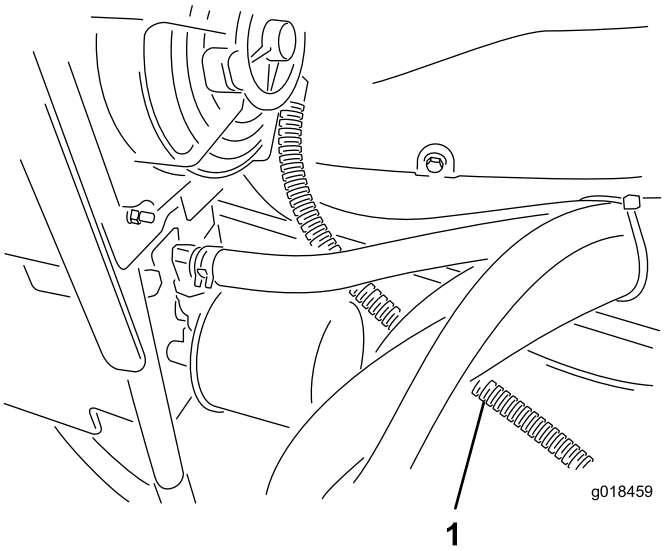

Figure 25

1. Cooling assembly wire harness

4. Continue routing the cooling assembly wire harness between the brake rod and frame (Figure 26).

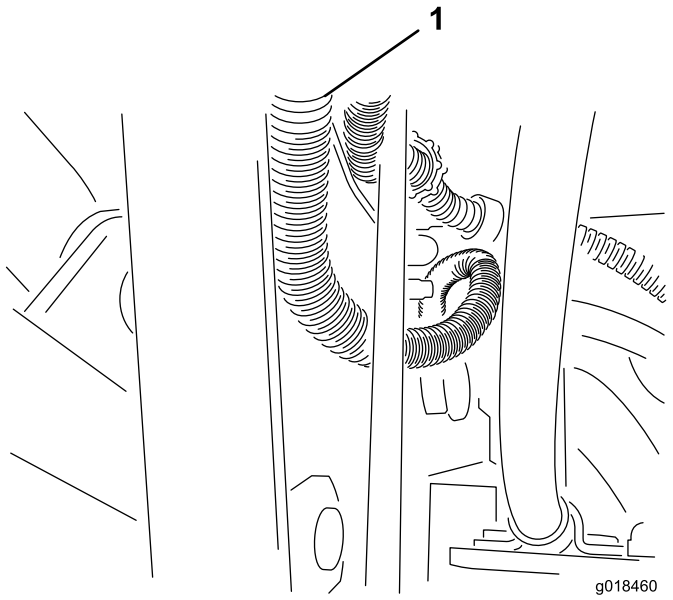

Figure 26

1. Cooling assembly wire harness

5. Remove the relay from the wire harness relay socket (if installed).
6. Install the relay socket to the frame cross brace.
   - For 2011 models secure the relay socket to the cross brace using a nut and bolt (Figure 27).
   - For 2009 and 2010 models secure the relay socket to the cross brace and/or wire harness, using a cable tie.

   Note: There is no hole in the cross brace on 2009 and 2010 models for securing the relay socket to the cross brace.

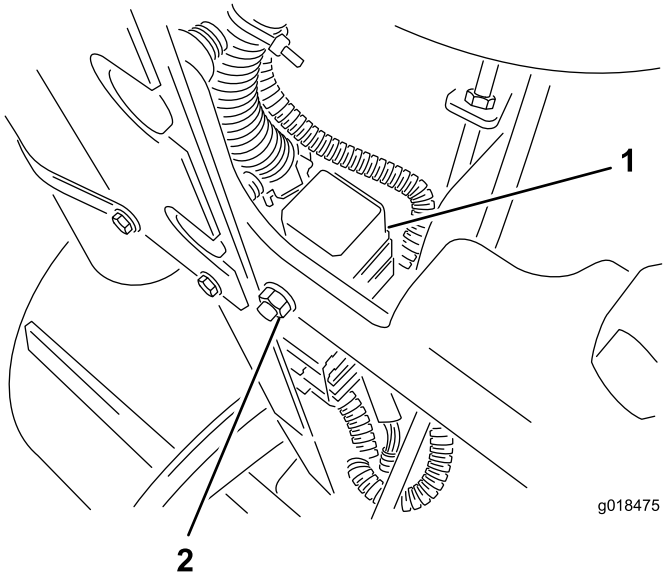

Figure 27
2011 model shown

1. Relay socket
2. Nut

7. Install the relay into the relay socket.
8. Remove and discard the protective cap from the end of the AUX connector on the wire harness near the fuse box.
9. Connect the cooling assembly wire harness to the wire harness AUX connector located at the fuse block (Figure 28).

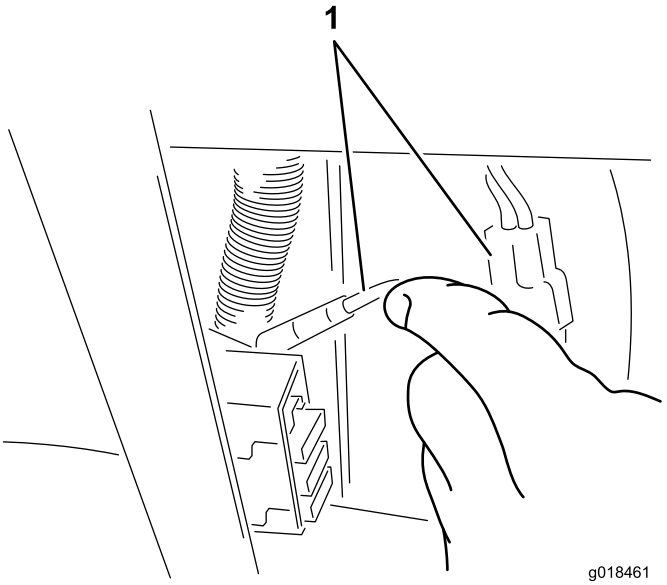

Figure 28

1. Wire harnesses

10. Secure the wire harness to the hose going to the cooling assembly inlet with a cable tie (Figure 29).

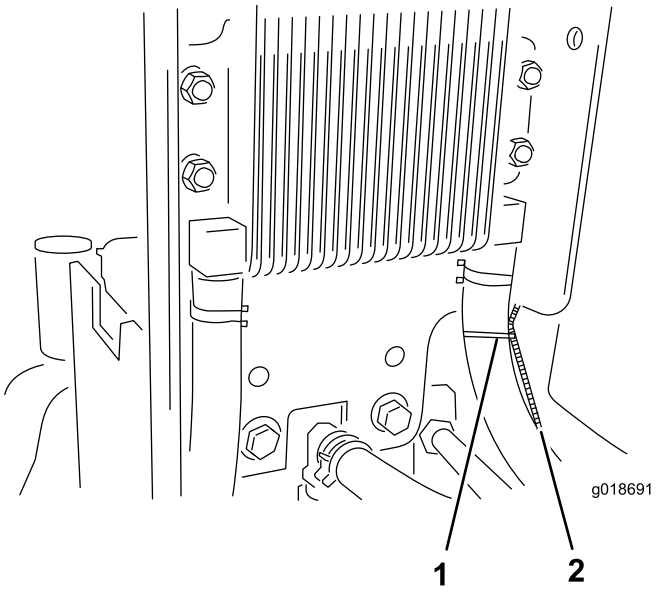

Figure 29

1. Cable tie
2. Wire harness

11. Secure the clip attached to the wire harness to the frame (Figure 30).

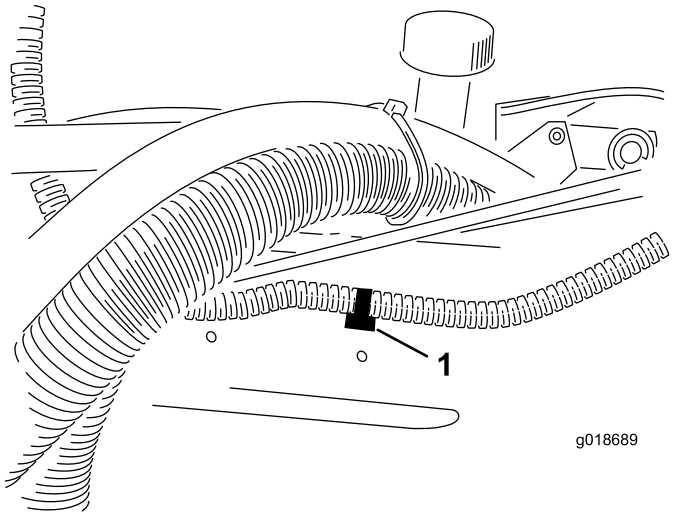

Figure 30

1. Attach the clip on the wire harness to the frame

12. Secure the cooling assembly wire harness to the R-clamp located in the lower left front corner of the control tower, using a cable tie (Figure 31).

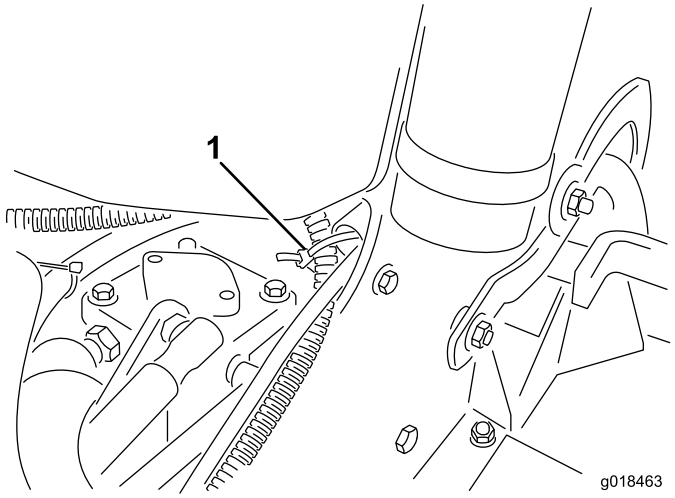

Figure 31

1. Cable tie

13. Remove the slack from the wire harness where it passes through the pump compartment.
14. Secure the cooling assembly wire harness to the main wire harness using a cable tie (Figure 32).

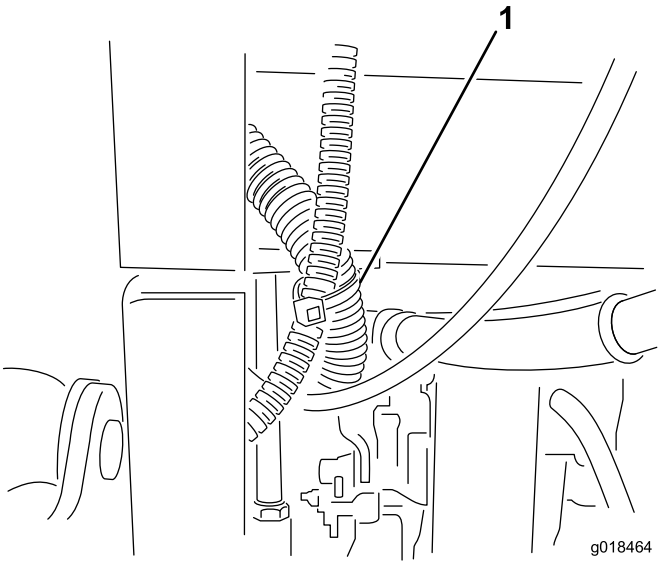

Figure 32

1. Cable tie

15. Route the other end of the wire harness to the battery (Figure 23) and (Figure 33).

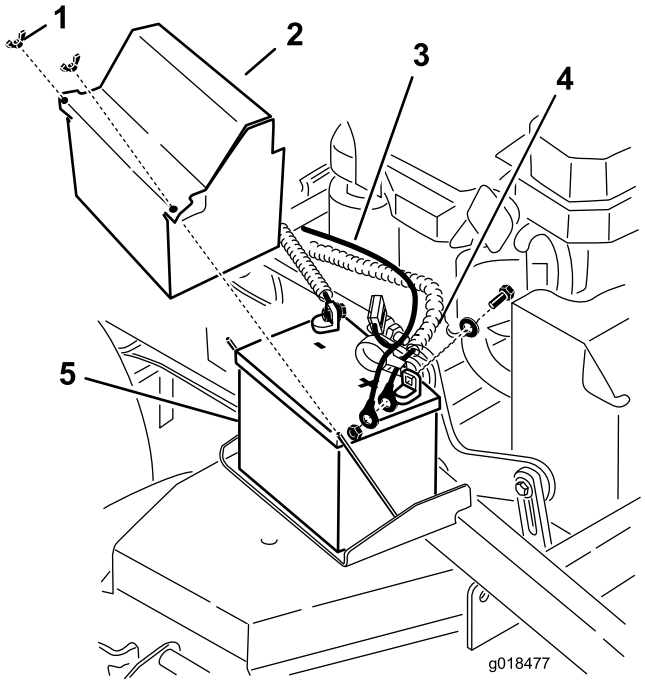

Figure 33

1. Wing nut
2. Battery cover
3. Wire harness to the positive battery terminal
4. Positive battery connection
5. Battery

16. Open the red cap covering the positive battery terminal.
17. Install the connector on the cooling assembly wire harness to the positive battery terminal (Figure 33).
18. Install the red cap.
19. Install the negative battery cable to the battery.

20. Secure the path of the cooling assembly wire harness using the cable ties.
21. Install the battery cover.
22. Install the 15 amp fuse into the fuse block (Figure 34).

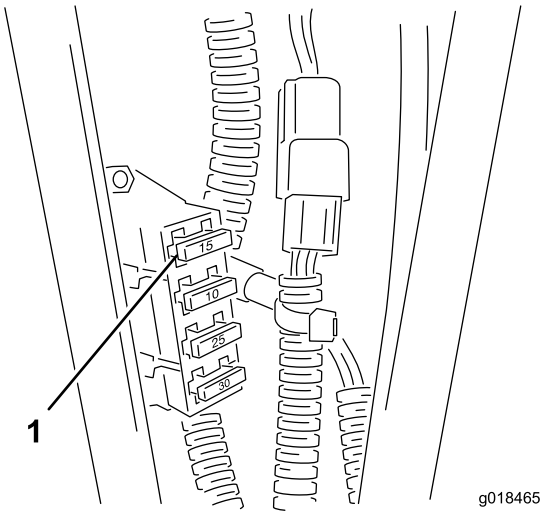

Figure 34

1. Fuse

23. Turn the key to the Run position and verify the electric fan is running, then turn the key to the stop position.
24. Install the rear cushion bracket (Figure 2).

6

Bleeding the Hydraulic System

No Parts Required

Procedure

Note: Hydraulic Oil Type: Toro® HYPR-OIL™ 500 hydraulic oil or Mobil® 1 15W-50 synthetic motor oil.

1. Clean area around cap and filler neck of hydraulic tank (Figure 35).

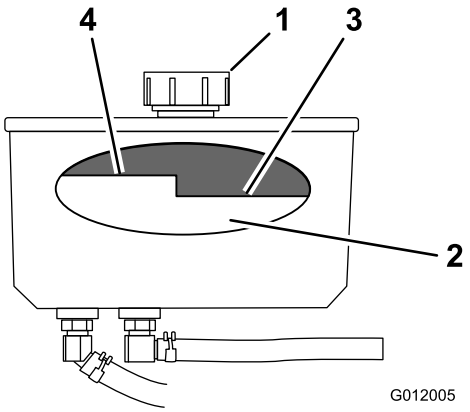

Figure 35

1. Cap
2. Baffle
3. Cold fluid level-full
4. Hot fluid level-full

2. Remove cap from filler neck. (Figure 35).
3. Add fluid to the reservoir until it reaches the cold level of the baffle (Figure 35).
4. Raise the rear of the machine up onto jack stands high enough to raise the drive wheels off the ground.
5. Disengage the parking brake.
6. Start the engine and move the throttle control to idle position.

   Note: If the drive wheel does not rotate, it is possible to assist the purging of the system by carefully rotating the tire in the forward direction.
7. Check the hydraulic fluid level as it drops add fluid as required to maintain the proper level.
8. Repeat this procedure for the opposite wheel.
9. Install the cap on the filler neck.
10. Thoroughly clean the area around each of the charge pump housings.
11. Check the cooling system connections for any leaks.