



Heater Kit

Liquid-Cooled Workman® MD/HD Utility Vehicle

Model No. 07349—Serial No. 315000001 and Up

Model No. 07349—Serial No. 316000001 and Up

Model No. 07349—Serial No. 400000000 and Up

Installation Instructions

Loose Parts

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

Description	Qty.	Use
Heater-mount assembly	1	Install the heater kit (for HDX, HDX-D, and HDX-Auto Vehicles).
Heater assembly	1	
Straight fitting (3/8 inch)	1	
U-bolt (3/8 inch)	2	
Locknut (3/8 inch)	4	
Hose channel	1	
Heater-control mount	1	
Heater-control panel	1	
Self-tapping screw (#12 x 1/2 inch)	4	
90° heater hose	1	
Heater valve	1	
R-clamp	1	
Tee fitting (5/8 inch)	1	
Gasket	1	
Cap fitting (3/4 inch)	1	
Tee fitting (1 inch)	1	
Adapter fitting	1	
Heater-control mount	1	
Hose clamp (1/2 inch)	8	
Hose clamp (7/8 inch)	2	
Hose clamp (3/4 inch)	2	
Coolant hose (3/8 x 12 inches)	1	
Coolant hose (5/8 x 124 inches)	2	
Heater-cable control (36 inches)	1	
Corrugated conduit (7/8 x 96 inches)	2	
Wire harness	1	
Flange-head bolt (5/16 x 3/4 inch)	1	
Flange nut (5/16 inch)	3	
Self-tapping screw (5/16 x 3/4 inch)	6	
Fuse block	1	
Fuse (20 A)	1	
Flange-head bolt (1/4 x 3/4 inch)	2	
Locknut (1/4 inch)	2	
Flange-head bolt (5/16 x 3/4 inch)	2	



Description	Qty.	Use
Heater-mount assembly	1	Install the heater kit (for the MDX-D Vehicle).
Heater assembly	1	
Straight fitting (3/8 inch)	1	
U-bolt (3/8 inch)	2	
Locknut (3/8 inch)	4	
Hose channel	1	
Heater-control mount	1	
Heater-control panel	1	
Self-tapping screw (#12 x 1/2 inch)	4	
90° heater hose	1	
Heater valve	1	
R-clamp	1	
Gasket	1	
Cap fitting (3/4 inch)	1	
Tee fitting (1 inch)	1	
Heater-control mount	1	
Hose clamp (1/2 inch)	8	
Hose clamp (7/8 inch)	2	
Hose clamp (3/4 inch)	2	
Coolant hose (3/8 x 12 inches)	1	
Coolant hose (5/8 x 124 inches)	2	
Heater-cable control (36 inches)	1	
Corrugated conduit (7/8 x 96 inches)	2	
Wire harness	1	
Flange-head bolt (5/16 x 3/4 inch)	1	
Flange nut (5/16 inch)	3	
Self-tapping screw (5/16 x 3/4 inch)	6	
Fuse block	1	
Fuse (20 A)	1	
Flange-head bolt (1/4 x 3/4 inch)	2	
Locknut (1/4 inch)	2	
Flange-head bolt (5/16 x 3/4 inch)	2	

For HDX, HDX-D, and HDX-Auto Vehicles

Preparing the Machine

1. Park the machine on a level surface.
2. Engage the parking brake.
3. Shut off the engine and remove the key.
4. Raise the bed and insert the safety bar.
5. Remove the battery cover and disconnect the positive battery cable.
6. Drain the engine coolant; refer to the *Operator's Manual*.
7. Remove the hood; refer to the *Operator's Manual*.
8. Remove the shield covering the hydraulic lines under the front, center of the machine (Figure 1).

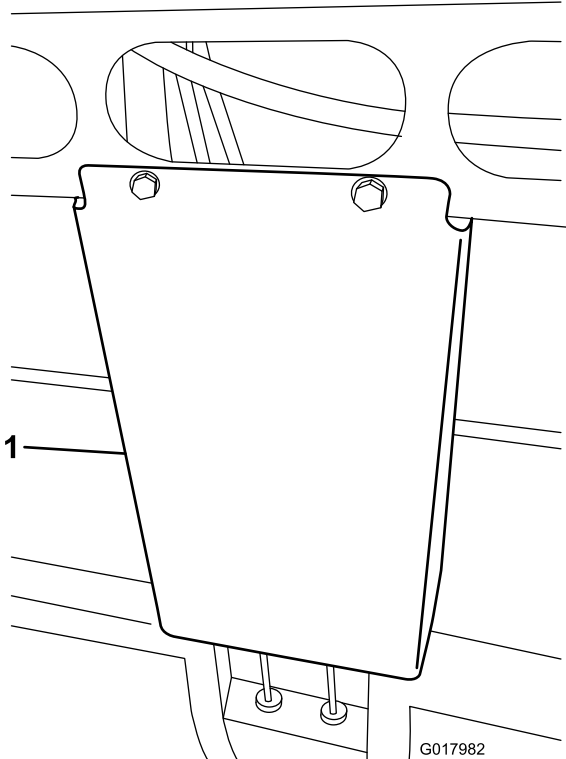


Figure 1

1. Hydraulic shield

Assembling the Heater

1. Loosely attach the elbow hose to the bottom fitting of the heater assembly with a hose clamp (Figure 2).

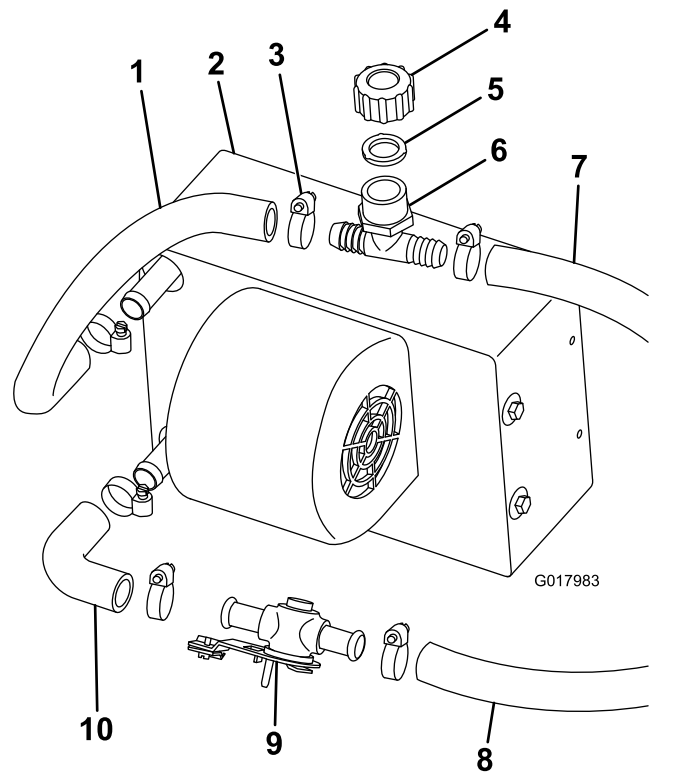


Figure 2

- | | |
|---------------------|-------------------|
| 1. Hose (12 inches) | 6. White fill tee |
| 2. Heater | 7. Short hose |
| 3. Hose clamp | 8. Long hose |
| 4. Fill tee cap | 9. Heater valve |
| 5. Gasket | 10. Elbow hose |
2. Connect the heater valve to the elbow hose with a hose clamp (Figure 2).
 3. Cut a 31 cm or 12 inches piece of hose (5/8 inch) and attach it to the top fitting of the heater assembly with a hose clamp (Figure 2).
 4. Connect the white fill tee, gasket, and cap to the upper heater hose with a hose clamp (Figure 2).

Installing the Heater and Heater Control

1. Attach the heater bracket to the heater using the screws supplied with the heater ([Figure 3](#)).

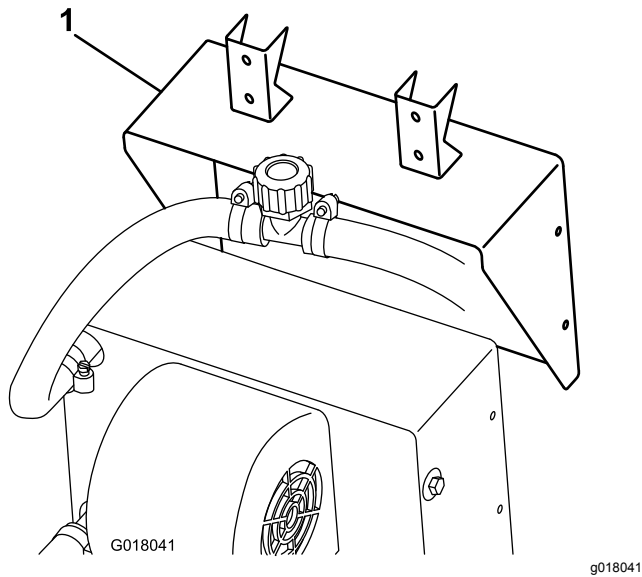


Figure 3

1. Heater bracket

2. Attach the heater and bracket assembly onto the front frame tube using the U-bolts and flange nuts ([Figure 4](#)).

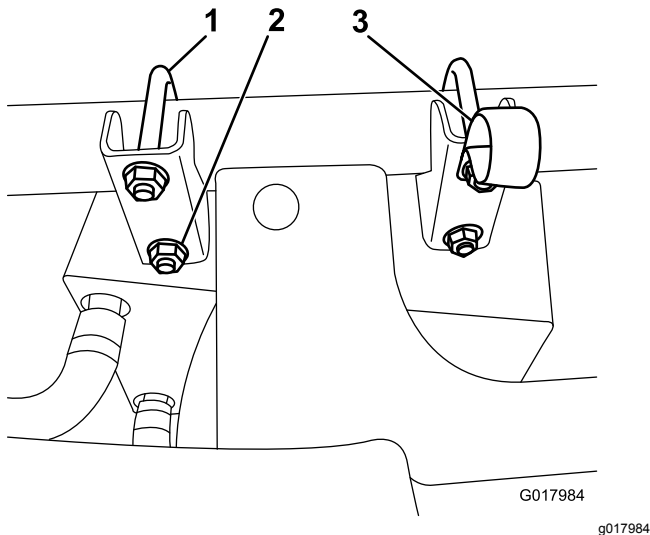


Figure 4

1. U-bolt
2. Flange nut
3. R-clamp

3. Attach the R-clamp under the top nut closest to the center of the machine ([Figure 4](#)).
4. Attach the heater control to the heater control mount using 4 sheet metal screws ([Figure 5](#)).

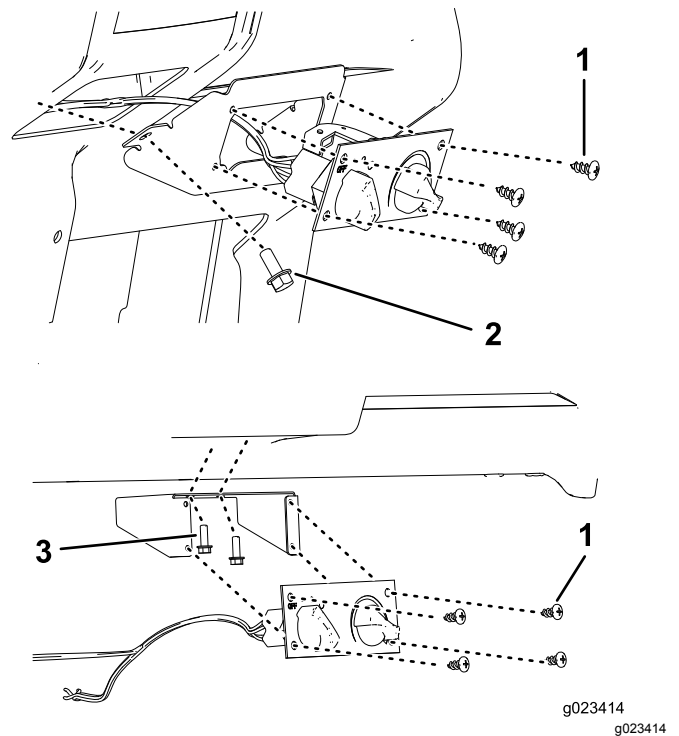


Figure 5

1. Self-tapping screw (#12 x 1/2 inch)
2. Flange-head bolt (5/16 x 3/4 inch)
3. Flange-head bolt (1/4 x 3/4 inch)
5. Connect the heater-control cable and black wire-harness connector to the heater control and the white wire-harness connector to the heater ([Figure 5](#)).
6. Align the bracket with the cutout in the dash, mark the area where the holes need to be drilled, and drill the holes.
7. Secure using 4 flange-head bolts (5/16 x 3/4 inch) in the front of the heater control mount and either 2 bolts (5/16 inch for the HD vehicles) on the side of the mount or 2 bolts (1/4 inch for the MD vehicles) on the inside top of the mount, depending on which model you have ([Figure 5](#)).
8. Route and connect the heater-control cable to the heater valve ([Figure 6](#)).

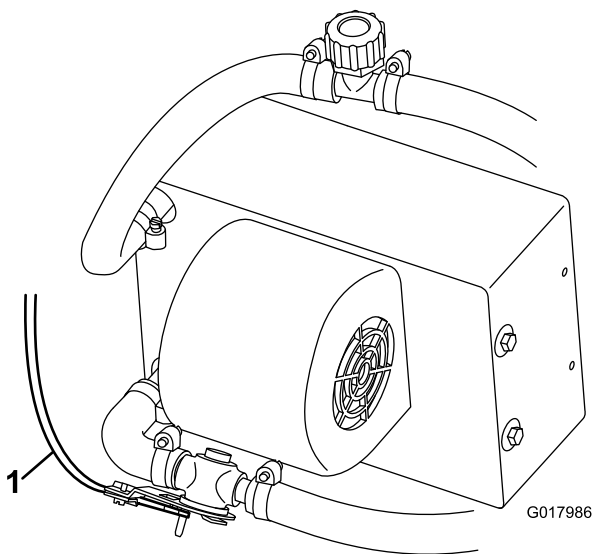


Figure 6

1. Heater-control cable

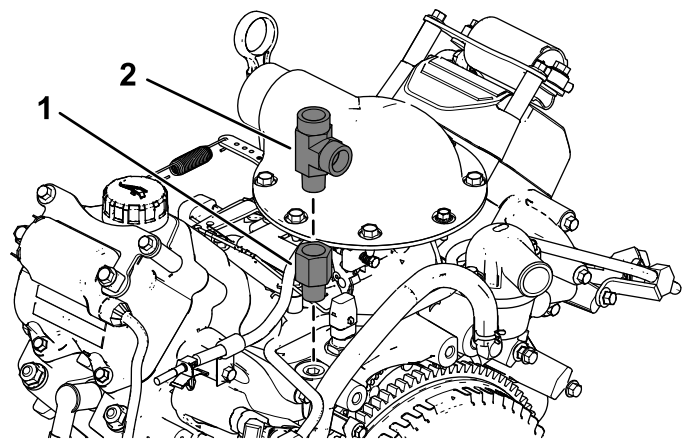


Figure 8

1. Adapter fitting
2. Tee fitting

3. Install the temperature switch and the hose (3/8 inch) and adapter fitting (5/8 inch) with hose clamps as shown in [Figure 9](#).

Installing the Hoses for the HDX-Auto

1. Remove the temperature switch from the thermostat housing ([Figure 7](#)).

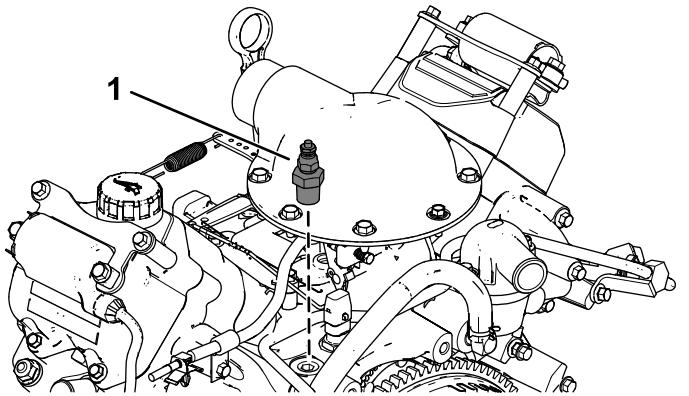


Figure 7

1. Temperature switch

2. Install the adapter and tee fitting ([Figure 8](#)).

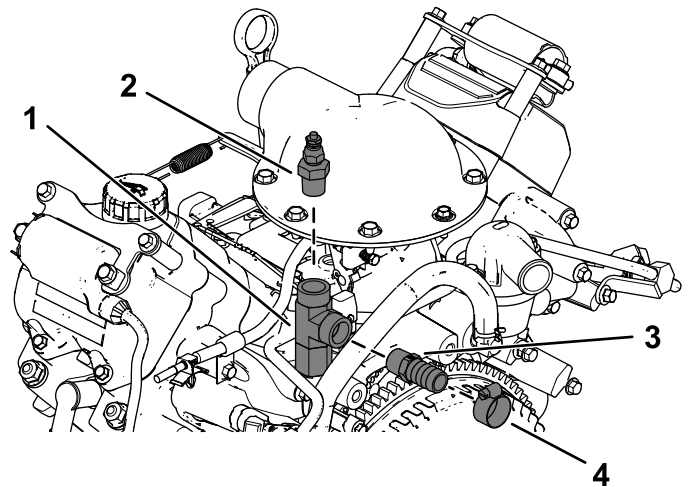


Figure 9

1. Tee fitting
2. Temperature switch
3. Adapter fitting
4. Hose clamp

4. Cut the lower radiator hose and connect the tee fitting to each newly cut end of the lower radiator hose with the 2 wide hose clamps ([Figure 10](#)).

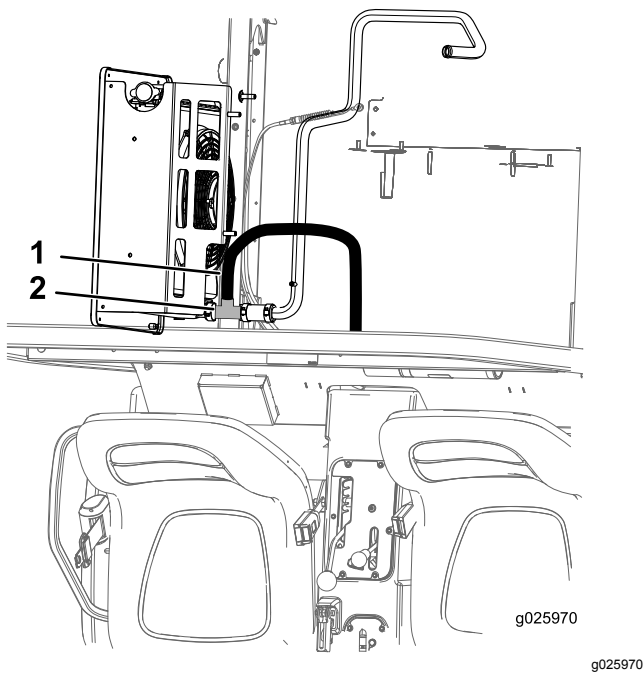


Figure 10

1. Short hose
2. Tee fitting

5. Cover the hoses (5/8 inch) with split corrugated tubing.
6. Connect the long hose to the heater valve with a hose clamp, and route it under the machine, over the axel, and to the straight fitting (Figure 11).

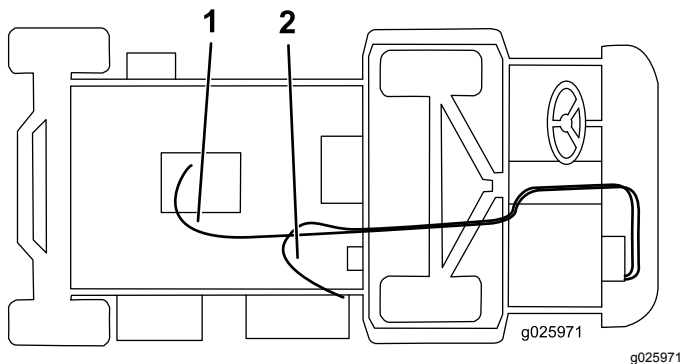


Figure 11

1. Long hose
2. Short hose

7. Connect the shorter hose to the white fill tee with a hose clamp, route it through the R-clamp on the heater bracket, and connect it to the tee fitting in the lower radiator hose with a hose clamp (Figure 11).

Installing the Hoses for the HDX and HDX-D

1. Remove the plug or temperature switch depending on the type of engine.

For gasoline engines:

- A. Remove the plug in the thermostat housing (Figure 12).

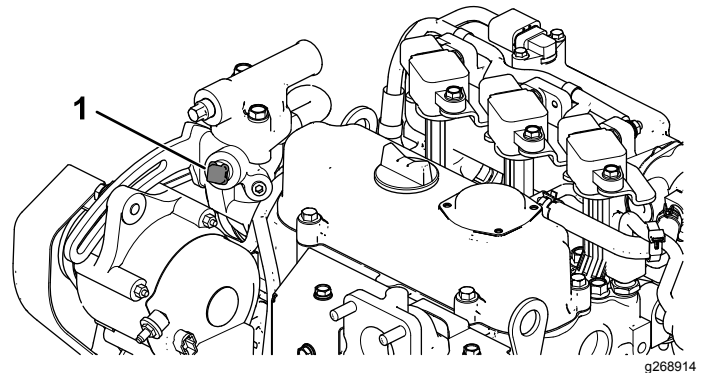


Figure 12

1. Plug

- B. Install the straight fitting (5/8 inch) with a hose clamp (Figure 13).

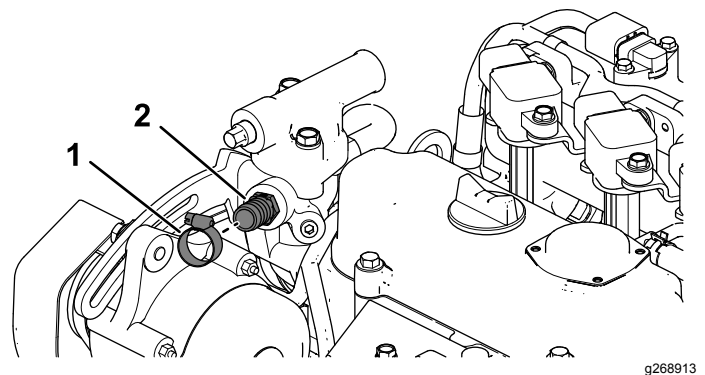


Figure 13

1. Hose clamp
2. Straight fitting (5/8 inch)

For diesel engines:

- A. Remove the temperature switch from the thermostat housing (Figure 14).

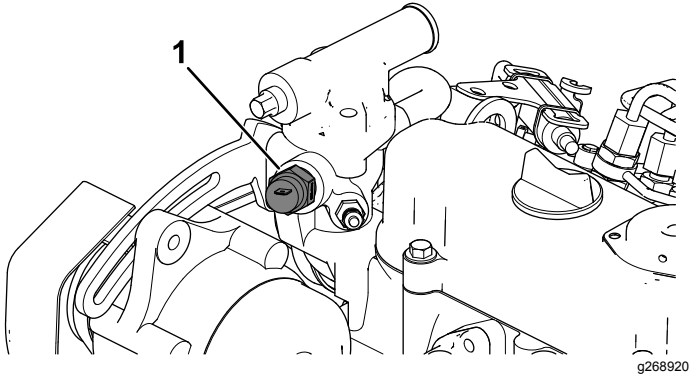


Figure 14

1. Temperature switch

- B. Install a tee fitting (Figure 15).
C. Install the temperature switch (Figure 15).

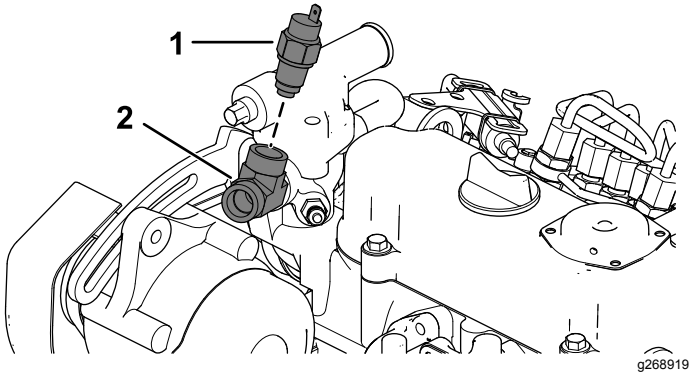


Figure 15

1. Temperature switch 2. Tee fitting

- D. Install the hose (3/8 inch) and adapter fitting (5/8 inch) with hose clamps (Figure 16).

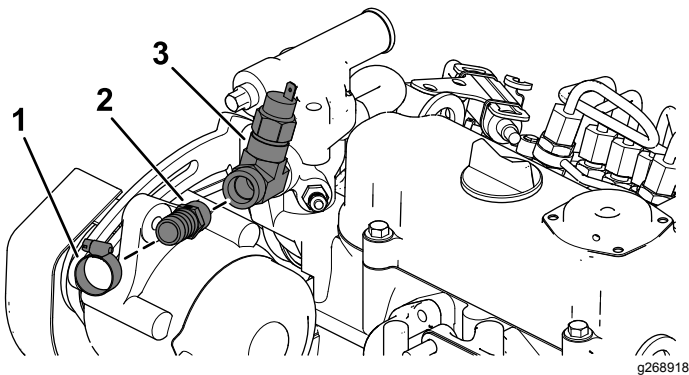


Figure 16

1. Hose clamp 3. Temperature switch and tee fitting
2. Straight fitting (5/8 inch)

2. Cut the lower radiator hose approximately 89 mm or 3-1/2 inches from the center line of the hose at the 90° bend (Figure 17).

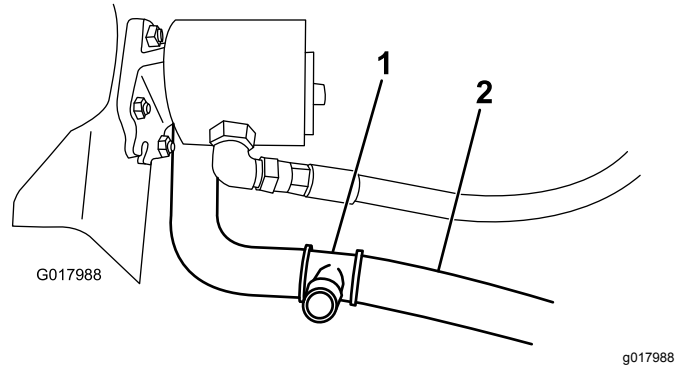


Figure 17

1. Tee fitting 2. Lower radiator hose

3. Connect the tee fitting to each newly cut end of the lower radiator hose with the 2 wide hose clamps (Figure 17).
4. Cover the hoses (5/8 inch) with split corrugated tubing.
5. Connect the long hose to the heater valve with a hose clamp, and route it under the machine, over the axle, and to the straight fitting (Figure 18). Cut any excess hose to fit.

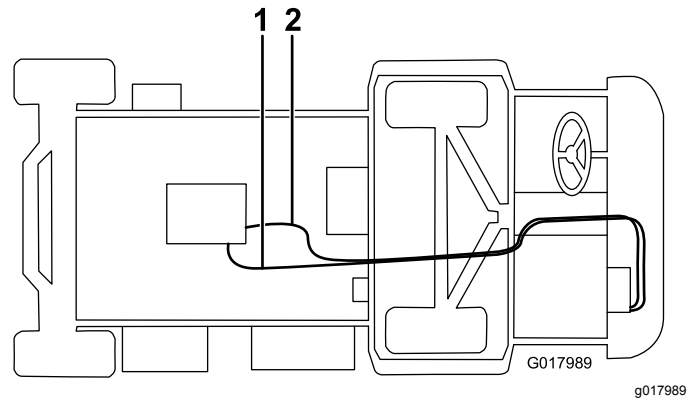


Figure 18

1. Long hose 2. Short hose

6. Connect the shorter hose to the white fill tee with a hose clamp, route it through the R-clamp on the heater bracket, and connect it to the tee fitting in the lower radiator hose with a hose clamp (Figure 18). Cut any excess hose to fit.

Connecting the Wiring

1. Connect the pink wire from the heater wire harness to an open lead on the fuse block.
If there is not an open fuse slot, install a new fuse block. Install the fuse in the open slot corresponding to the power lead you use.
2. Connect the black wire from the heater wire harness to the ground block.

Finishing and Checking the Installation

1. Tie all the hoses and wires away from sharp edges and moving parts.
2. Install the previously removed hydraulic shield over the hoses. Install the battery cable and battery cover.
3. Remove the radiator cap and fill the radiator with coolant; refer to the *Operator's Manual*.
4. Remove the cap on the white tee near the heater assembly and fill with coolant. Install the cap. Install the hood.
5. Remove the radiator cap.
6. Start the engine and open the bleed screw on the thermostat cover until a steady stream of coolant comes out.
7. Close the bleed screw.
8. Shut off the engine.
9. Top off the radiator and install the cap.
10. After running the engine up to full temperature and letting it cool down, check the coolant level again and fill it, if needed.

For the MDX-D Vehicle

Preparing the Machine

1. Park the machine on a level surface.
2. Engage the parking brake.
3. Shut off the engine and remove the key.
4. Raise the bed and engage the prop rod.
5. Remove the battery cover and the positive battery cable.
6. Drain the coolant; refer to the *Operator's Manual*.
7. Open the hood.

Assembling the Heater

1. Attach the elbow hose to the bottom fitting of the heater assembly with a hose clamp (Figure 19).

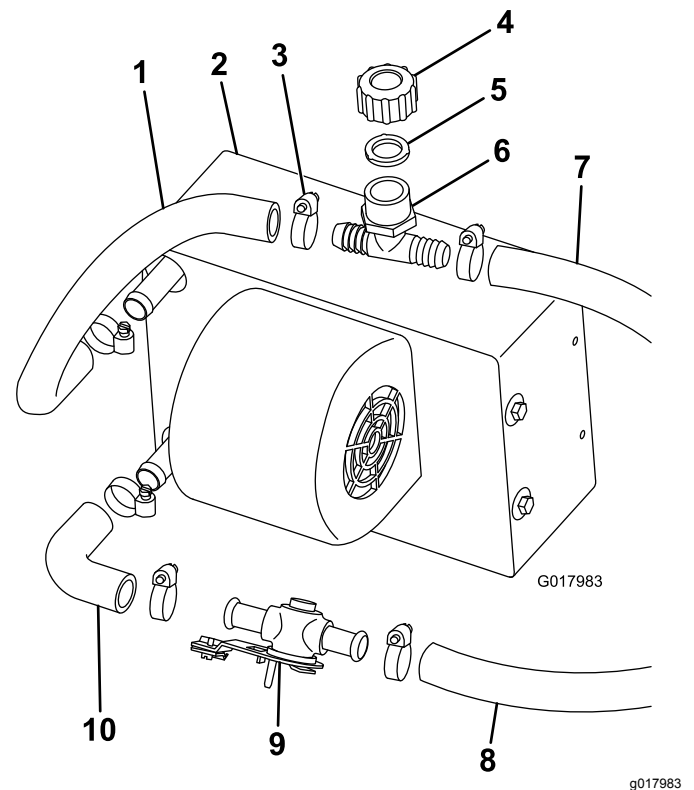


Figure 19

- | | |
|---------------------|-------------------|
| 1. Hose (14 inches) | 6. White fill tee |
| 2. Heater | 7. Short hose |
| 3. Hose clamp | 8. Long hose |
| 4. Fill tee cap | 9. Heater valve |
| 5. Gasket | 10. Elbow hose |

2. Connect the heater valve to the elbow hose with a hose clamp (Figure 19).
3. Cut a 36 cm or 14 inch piece of hose (5/8 inch) and attach it to the top fitting of the heater assembly with a hose clamp (Figure 19).

4. Connect the white fill tee, gasket, and cap to the upper heater hose with a hose clamp ([Figure 19](#)).

Installing the Heater and Heater Control

1. Drill a hole (5/16 inch) in the glove box 216 mm or 8-1/2 inches from the left and 38 mm or 1-1/2 inches from the bottom ([Figure 20](#)).

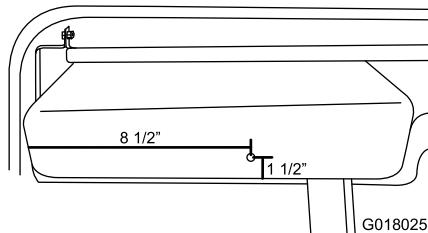


Figure 20

2. Attach the heater bracket to the heater using the screws supplied with the heater ([Figure 21](#)).

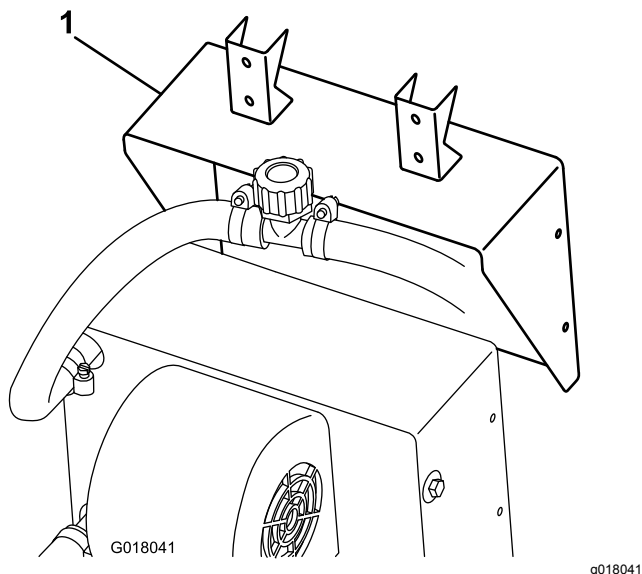


Figure 21

1. Heater bracket

3. Attach the heater and bracket assembly onto the front frame tube, snug against the U-frame, using the U-bolts and flange nuts provided ([Figure 22](#)).

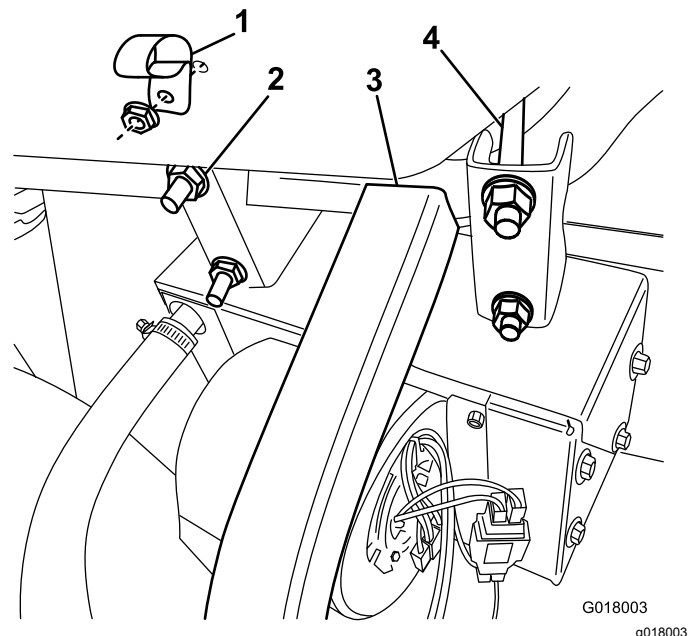


Figure 22

1. R-clamp
2. Flange nut
3. U-frame
4. U-bolt
4. Attach the R-clamp to the glove box with a flange-head bolt and nut ([Figure 22](#)).
5. Attach the heater-control mount to the dash under the cup holders with 2 flange-head bolts and nuts ([Figure 23](#)).

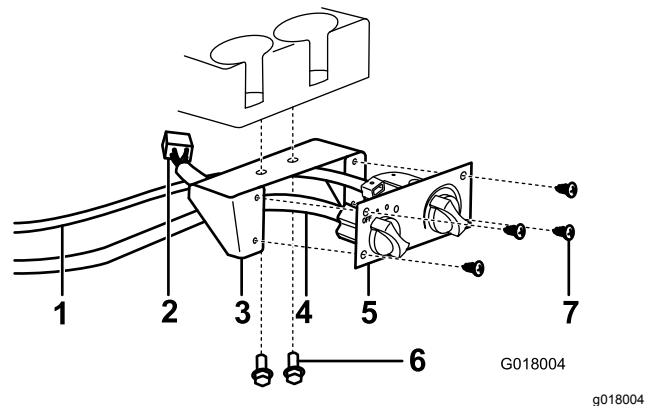


Figure 23

1. Heater-control cable
2. White wire-harness connector
3. Heater-control mount
4. Black wire-harness connector
5. Heater control
6. Flange-head bolt
7. Sheet metal screw
6. Connect the heater-control cable and black wire-harness connector to the heater control and the white wire-harness connector to the heater ([Figure 23](#)).
7. Attach the heater control to the heater-control mount using 4 sheet metal screws ([Figure 23](#)).

8. Route and connect the heater-control cable to the heater valve ([Figure 24](#)).

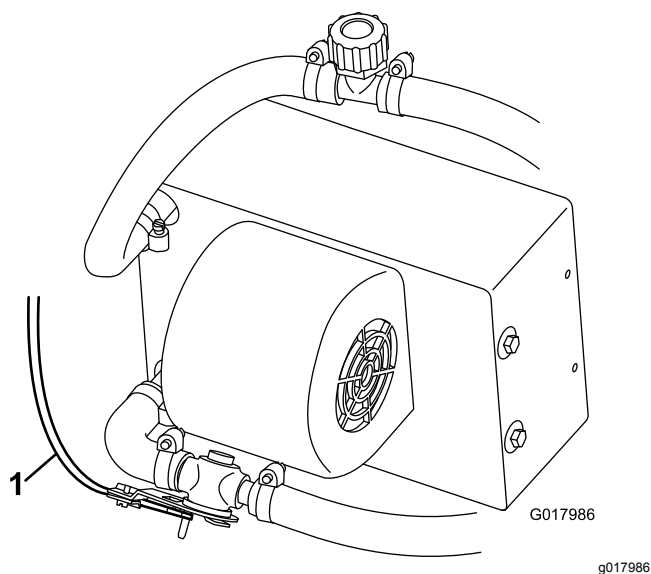


Figure 24

1. Heater-control cable

Installing the Hoses

1. Mark and drill 2 holes in the seatbase using a hole saw (1 inch) as shown in [Figure 25](#).

Ensure that you drill through both layers of plastic.

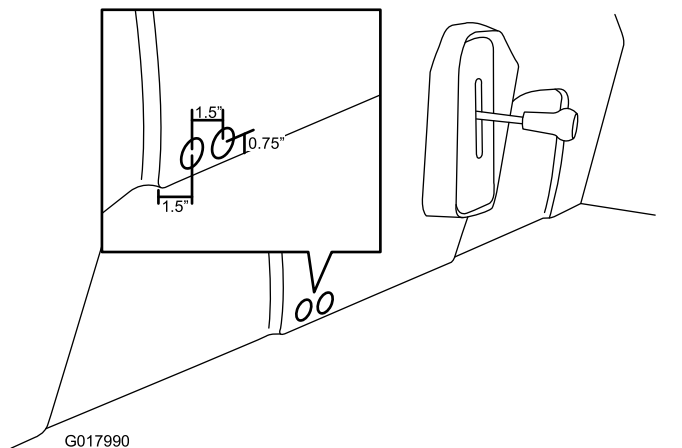


Figure 25

2. Put down a drip pan. Remove the plug under and to the front of the thermostat housing, apply pipe sealant to the threads on the straight fitting (5/8 inch), and install it on the machine ([Figure 26](#)).

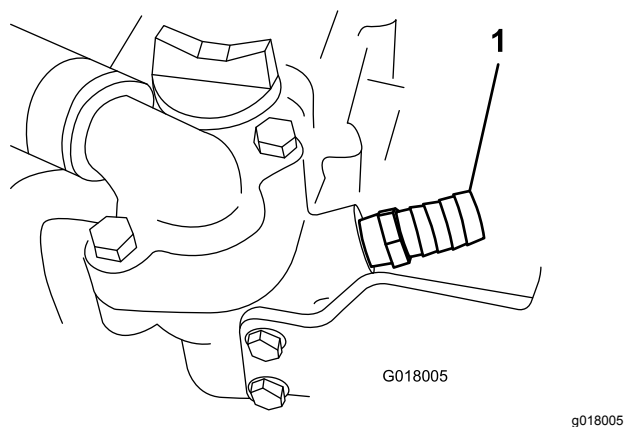


Figure 26

1. Straight fitting (5/8 inch)

- Cut the lower radiator hose about 54 mm or 2-1/8 inches from the end of the hose going into the radiator (Figure 27).

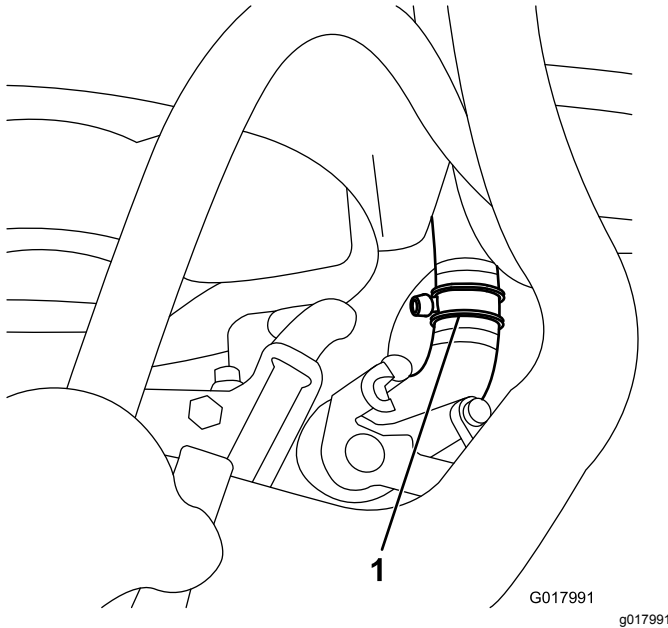


Figure 27

- Tee fitting in the lower radiator hose

- Connect the tee fitting to each newly cut end of the lower radiator hose with the 2 wide hose clamps (Figure 27).
- Connect the long hose to the heater valve with a hose clamp, and route it through the hole in the seat base, the hole in the bed frame, and to the straight fitting with a hose clamp (Figure 28). Cut any excess hose to fit.

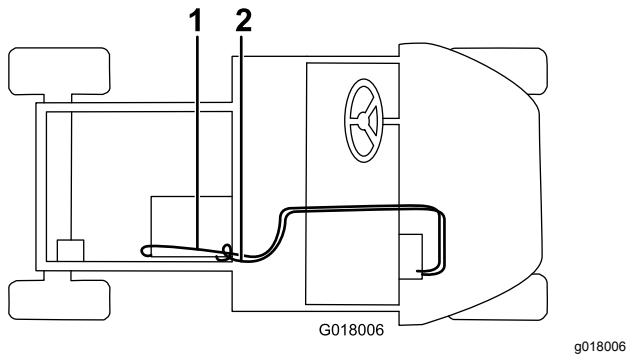


Figure 28

- Short hose
- Long hose

- Connect the shorter hose to the white fill tee with a hose clamp, route it through the R-clamp on the glove box, through the hole in the seat base, and connect it to the tee fitting in the lower radiator hose with a hose clamp (Figure 28). Cut any excess hose to fit.

Connecting the Wiring

- Connect the pink wire from the heater wire harness to an open lead on the fuse block.
If there is not an open fuse slot, install a new fuse block. Install the fuse in the open slot corresponding to the power lead you use.
- Connect the black wire from the heater wire harness to the ground block.

Finishing and Checking the Installation

- Cover the exposed hoses (5/8 inch) with split corrugated tubing.
- Tie all the hoses and wires away from sharp edges and moving parts.
- Place the hose channel over the hoses on the floorboard and line up the forward edge with the front edge of the floorboard. Mark and drill holes in the floorboard and install the self-tapping screws (Figure 29).

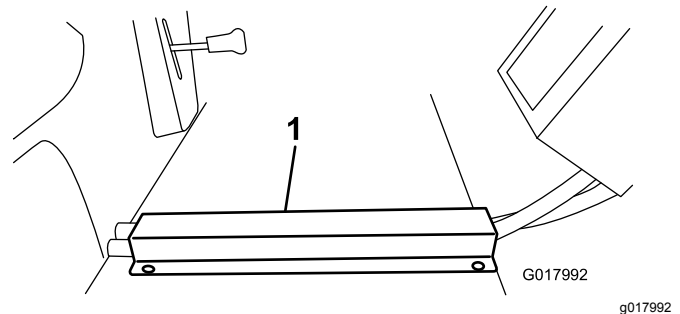


Figure 29

- Hose channel

- Install the previously removed battery cable and battery cover.
- Remove the radiator cap and fill the radiator with coolant; refer to the *Operator's Manual*.

Important: When filling the coolant system, do not leave the pressurized recovery tank open when filling at another point in the system. This can result in overfilling the tank. It is important to have an air gap at the top of the tank. Do not have more than 1 system cap off at a time.

- Remove the cap on the white tee near the heater assembly and fill with coolant. Install the cap.
- Remove the cap from the pressurized recovery tank and fill it up to the bottom of the down-tube.
- After running the engine up to full temperature and letting it cool down, check the coolant level again at the pressurized recovery tank, and fill it up to the bottom of the down-tube if needed.

Notes:

Notes:

Declaration of Incorporation

Model No.	Serial No.	Product Description	Invoice Description	General Description	Directive
07349	315000001 and Up, 316000001 and Up, and 400000000 and Up and Up	Heater Kit, Liquid-Cooled Workman MD/HD Utility Vehicle	MD/HD HEATER KIT-LIQUID COOLED ENGINES	Utility Vehicle Accessory	2006/42/EC, 2000/14/EC

Relevant technical documentation has been compiled as required per Part B of Annex VII of 2006/42/EC.

We will undertake to transmit, in response to requests by national authorities, relevant information on this partly completed machinery. The method of transmission shall be electronic transmittal.

This machinery shall not be put into service until incorporated into approved Toro models as indicated on the associated Declaration of Conformity and in accordance with all instructions, whereby it can be declared in conformity with all relevant Directives.

Certified:



John Heckel
Sr. Engineering Manager
8111 Lyndale Ave. South
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September 24, 2018

Authorized Representative:

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EEA/UK Privacy Notice

Toro's Use of Your Personal Information

The Toro Company ("Toro") respects your privacy. When you purchase our products, we may collect certain personal information about you, either directly from you or through your local Toro company or dealer. Toro uses this information to fulfil contractual obligations - such as to register your warranty, process your warranty claim or to contact you in the event of a product recall - and for legitimate business purposes - such as to gauge customer satisfaction, improve our products or provide you with product information which may be of interest. Toro may share your information with our subsidiaries, affiliates, dealers or other business partners in connection these activities. We may also disclose personal information when required by law or in connection with the sale, purchase or merger of a business. We will never sell your personal information to any other company for marketing purposes.

Retention of your Personal Information

Toro will keep your personal information as long as it is relevant for the above purposes and in accordance with legal requirements. For more information about applicable retention periods please contact legal@toro.com.

Toro's Commitment to Security

Your personal information may be processed in the US or another country which may have less strict data protection laws than your country of residence. Whenever we transfer your information outside of your country of residence, we will take legally required steps to ensure that appropriate safeguards are in place to protect your information and to make sure it is treated securely.

Access and Correction

You may have the right to correct or review your personal data, or object to or restrict the processing of your data. To do so, please contact us by email at legal@toro.com. If you have concerns about the way in which Toro has handled your information, we encourage you to raise this directly with us. Please note that European residents have the right to complain to your Data Protection Authority.



The Toro Warranty

A Two-Year Limited Warranty

Conditions and Products Covered

The Toro Company and its affiliate, Toro Warranty Company, pursuant to an agreement between them, jointly warrant your Toro Commercial product ("Product") to be free from defects in materials or workmanship for two years or 1500 operational hours*, whichever occurs first. This warranty is applicable to all products with the exception of Aerators (refer to separate warranty statements for these products). Where a warrantable condition exists, we will repair the Product at no cost to you including diagnostics, labor, parts, and transportation. This warranty begins on the date the Product is delivered to the original retail purchaser.

* Product equipped with an hour meter.

Instructions for Obtaining Warranty Service

You are responsible for notifying the Commercial Products Distributor or Authorized Commercial Products Dealer from whom you purchased the Product as soon as you believe a warrantable condition exists. If you need help locating a Commercial Products Distributor or Authorized Dealer, or if you have questions regarding your warranty rights or responsibilities, you may contact us at:

Toro Commercial Products Service Department
Toro Warranty Company
8111 Lyndale Avenue South
Bloomington, MN 55420-1196

952-888-8801 or 800-952-2740
E-mail: commercial.warranty@toro.com

Owner Responsibilities

As the Product owner, you are responsible for required maintenance and adjustments stated in your *Operator's Manual*. Failure to perform required maintenance and adjustments can be grounds for disallowing a warranty claim.

Items and Conditions Not Covered

Not all product failures or malfunctions that occur during the warranty period are defects in materials or workmanship. This warranty does not cover the following:

- Product failures which result from the use of non-Toro replacement parts, or from installation and use of add-on, or modified non-Toro branded accessories and products. A separate warranty may be provided by the manufacturer of these items.
- Product failures which result from failure to perform recommended maintenance and/or adjustments. Failure to properly maintain your Toro product per the Recommended Maintenance listed in the *Operator's Manual* can result in claims for warranty being denied.
- Product failures which result from operating the Product in an abusive, negligent, or reckless manner.
- Parts subject to consumption through use unless found to be defective. Examples of parts which are consumed, or used up, during normal Product operation include, but are not limited to, brake pads and linings, clutch linings, blades, reels, rollers and bearings (sealed or greasable), bed knives, spark plugs, castor wheels and bearings, tires, filters, belts, and certain sprayer components such as diaphragms, nozzles, and check valves, etc.
- Failures caused by outside influence. Conditions considered to be outside influence include, but are not limited to, weather, storage practices, contamination, use of unapproved fuels, coolants, lubricants, additives, fertilizers, water, or chemicals, etc.
- Failure or performance issues due to the use of fuels (e.g. gasoline, diesel, or biodiesel) that do not conform to their respective industry standards.

- Normal noise, vibration, wear and tear, and deterioration.
- Normal "wear and tear" includes, but is not limited to, damage to seats due to wear or abrasion, worn painted surfaces, scratched decals or windows, etc.

Parts

Parts scheduled for replacement as required maintenance are warranted for the period of time up to the scheduled replacement time for that part. Parts replaced under this warranty are covered for the duration of the original product warranty and become the property of Toro. Toro will make the final decision whether to repair any existing part or assembly or replace it. Toro may use remanufactured parts for warranty repairs.

Deep Cycle and Lithium-Ion Battery Warranty:

Deep cycle and Lithium-Ion batteries have a specified total number of kilowatt-hours they can deliver during their lifetime. Operating, recharging, and maintenance techniques can extend or reduce total battery life. As the batteries in this product are consumed, the amount of useful work between charging intervals will slowly decrease until the battery is completely worn out. Replacement of worn out batteries, due to normal consumption, is the responsibility of the product owner. Battery replacement may be required during the normal product warranty period at owner's expense. Note: (Lithium-Ion battery only): A Lithium-Ion battery has a part only prorated warranty beginning year 3 through year 5 based on the time in service and kilowatt hours used. Refer to the *Operator's Manual* for additional information.

Maintenance is at Owner's Expense

Engine tune-up, lubrication, cleaning and polishing, replacement of filters, coolant, and completing recommended maintenance are some of the normal services Toro products require that are at the owner's expense.

General Conditions

Repair by an Authorized Toro Distributor or Dealer is your sole remedy under this warranty.

Neither The Toro Company nor Toro Warranty Company is liable for indirect, incidental or consequential damages in connection with the use of the Toro Products covered by this warranty, including any cost or expense of providing substitute equipment or service during reasonable periods of malfunction or non-use pending completion of repairs under this warranty. Except for the Emissions warranty referenced below, if applicable, there is no other express warranty. All implied warranties of merchantability and fitness for use are limited to the duration of this express warranty.

Some states do not allow exclusions of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions and limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Note regarding engine warranty:

The Emissions Control System on your Product may be covered by a separate warranty meeting requirements established by the U.S. Environmental Protection Agency (EPA) and/or the California Air Resources Board (CARB). The hour limitations set forth above do not apply to the Emissions Control System Warranty. Refer to the Engine Emission Control Warranty Statement supplied with your product or contained in the engine manufacturer's documentation for details.

Countries Other than the United States or Canada

Customers who have purchased Toro products exported from the United States or Canada should contact their Toro Distributor (Dealer) to obtain guarantee policies for your country, province, or state. If for any reason you are dissatisfied with your Distributor's service or have difficulty obtaining guarantee information, contact the Toro importer.