



# Engine Kit

## GreensPro™ 1200 Greens Roller

Model No. 136-6189

Form No. 3414-746 Rev B

### Installation Instructions

## Loose Parts

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

Procedure	Description	Qty.	Use
<b>1</b>	No parts required	–	Prepare the machine.
<b>2</b>	No parts required	–	Remove the existing engine.
<b>3</b>	Engine	1	Transfer the oil drain valve.
<b>4</b>	Key	1	Install the collars.
	Hub	1	
	Set screw	2	
<b>5</b>	No parts required	–	Install the engine to the machine.
<b>6</b>	No parts required	–	Install the transmission cover.
<b>7</b>	No parts required	–	Complete the installation.

# 1

## Preparing the Machine

No Parts Required

### Procedure

1. Park the machine on a level surface, engage the parking brake, shut off the engine, and wait for all movement to stop.
2. Allow the engine to cool.
3. Close the fuel shutoff valve.
4. Tilt the operator's seat forward; refer the *Operator's Manual* for your machine.
5. Disconnect the spark-plug wire from the spark plug; refer to the *Operator's Manual* for your machine.

# 2

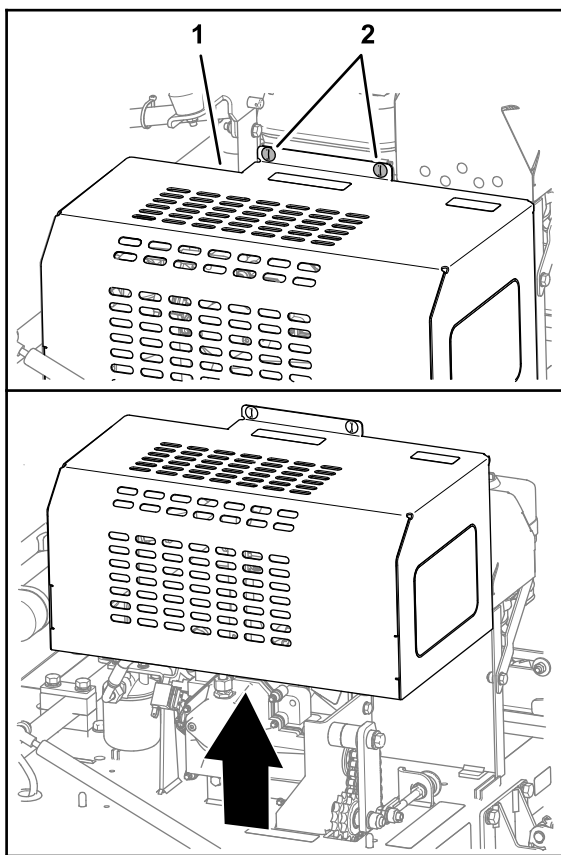
## Removing the Existing Engine

No Parts Required

### Removing the Transmission Cover (model 44912)

1. Rotate the 2 quarter-turn fastener counterclockwise to release the transmission cover ([Figure 1](#)).





**Figure 1**

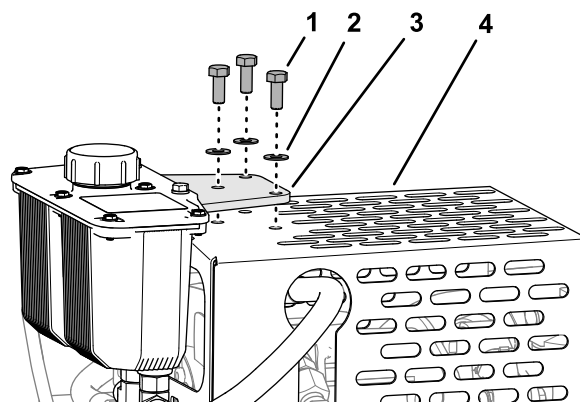
1. Transmission cover
2. Quarter-turn fastener

2. Lift the cover and remove it from the machine.

## Removing the Transmission Cover (model 44913)

1. Remove the 3 capscrews (8 x 20 mm) and 3 washers (8 mm) that secure the hydraulic-reservoir mount to the transmission cover ([Figure 2](#)).

**Note:** Support the hydraulic tank upright.

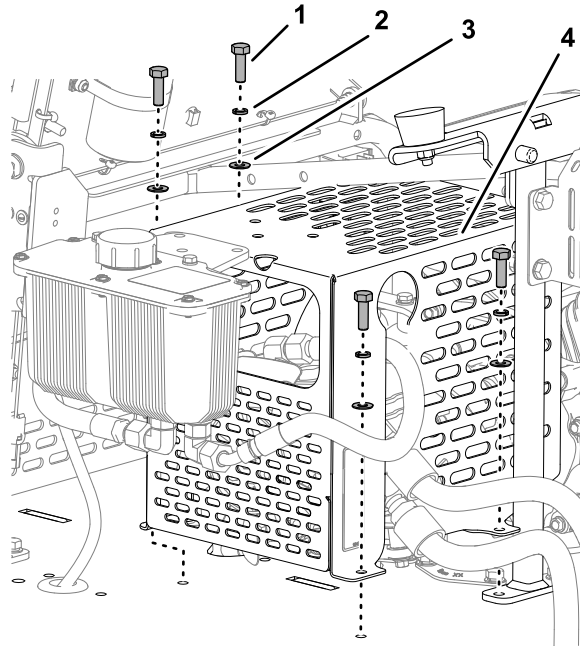


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**Figure 2**

1. Capscrew (8 x 20 mm)
2. Washer (8 mm)
3. Hydraulic-reservoir mount
4. Transmission cover

2. Remove the 4 capscrews (8 x 25 mm), 4 lock washers (8 mm), and 4 washers (8 mm) that secure the transmission cover to the chassis of the machine ([Figure 3](#)).



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**Figure 3**

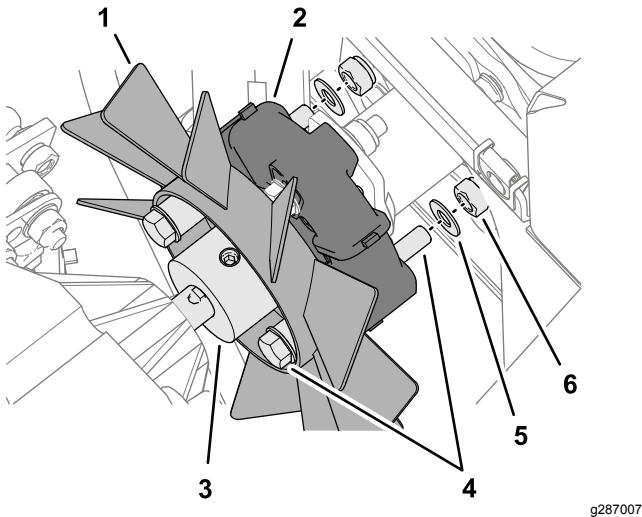
1. Capscrew (8 x 25 mm)
2. Lock washer (8 mm)
3. Washer (8 mm)
4. Transmission cover

3. Lift the cover and remove it from the machine.

## Removing the Engine (model 44912)

1. Remove the 2 locknuts (8 mm) and 2 washers (8 mm) that secure the fan and transmission hub to the coupler ([Figure 4](#)).

**Note:** Retain the nuts and washers for installation in [Assembling the Coupler to the Transmission and Fan](#) (page 9).



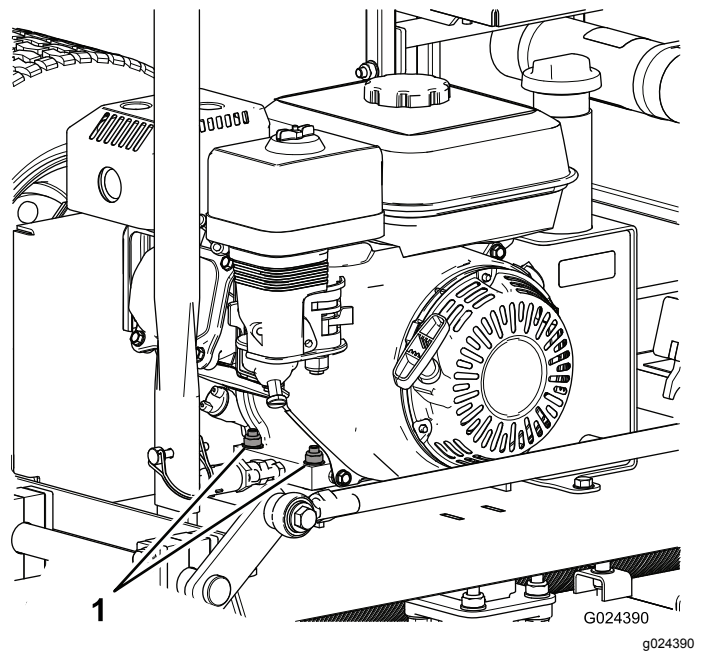
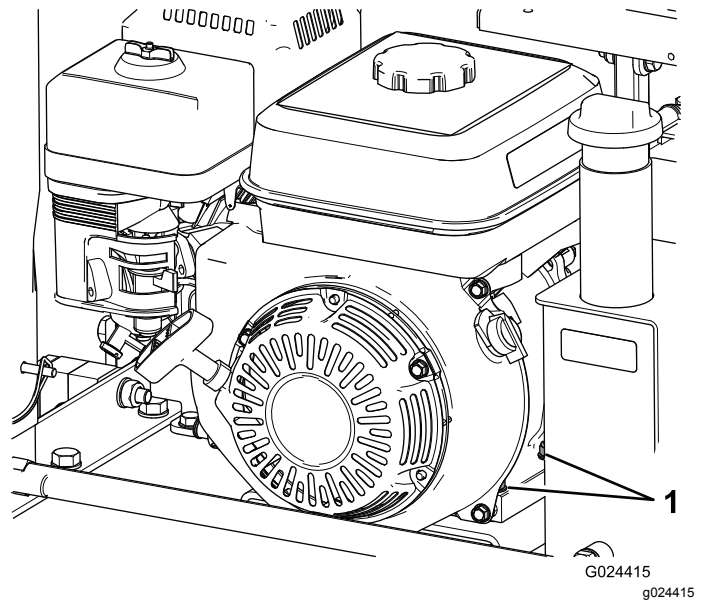
**Figure 4**

- |                       |                   |
|-----------------------|-------------------|
| 1. Fan                | 4. Bolt (8 mm)    |
| 2. Coupler            | 5. Washer (8 mm)  |
| 3. Hub (transmission) | 6. Locknut (8 mm) |

2. Remove the locknuts, capscrews, and washers that secure the engine to the frame of the machine ([Figure 5](#)).

**Note:** Access the capscrews from the underside of the machine.

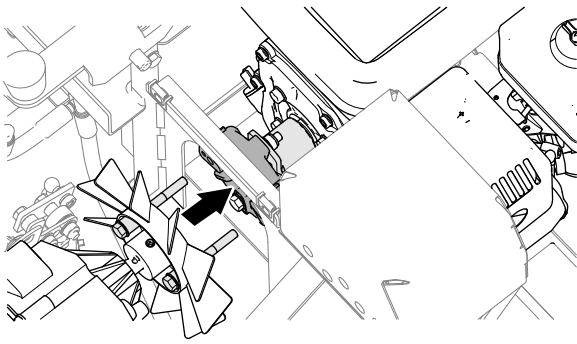
**Note:** Retain the locknuts, capscrews, and washers for installing the engine in [Assembling the Engine to the Chassis](#) (page 10).



**Figure 5**

1. Capscrews, washers, and locknuts

1. Move the engine away from the transmission, and remove the engine from the machine ([Figure 6](#)).



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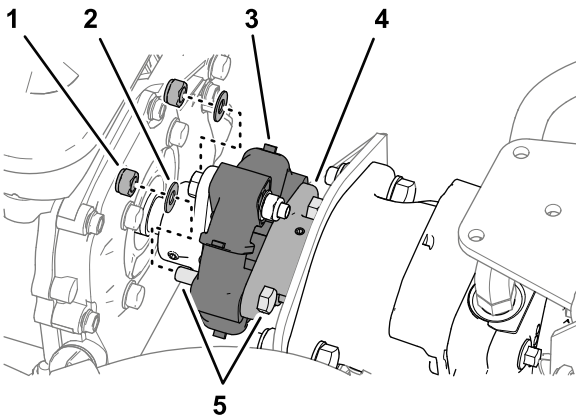
**Figure 6**

2. Clean the engine deck of oil and debris.

## Removing the Engine (model 44913)

1. Remove the 2 locknuts (8 mm) and 2 washers (8 mm) that secure the hydraulic-pump hub to the coupler ([Figure 7](#)).

**Note:** Retain the nuts and washers for installation in [Assembling the Coupler to the Hydraulic-Pump Hub](#) (page 10).



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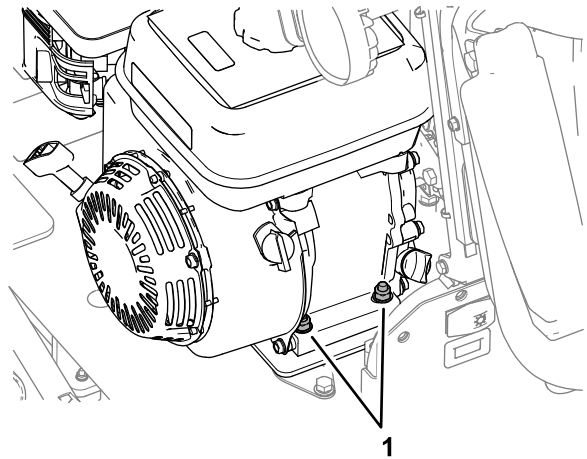
**Figure 7**

- |                   |                         |
|-------------------|-------------------------|
| 1. Locknut (8 mm) | 4. Hub (hydraulic pump) |
| 2. Washer (8 mm)  | 5. Bolt (8 mm)          |
| 3. Coupler        |                         |

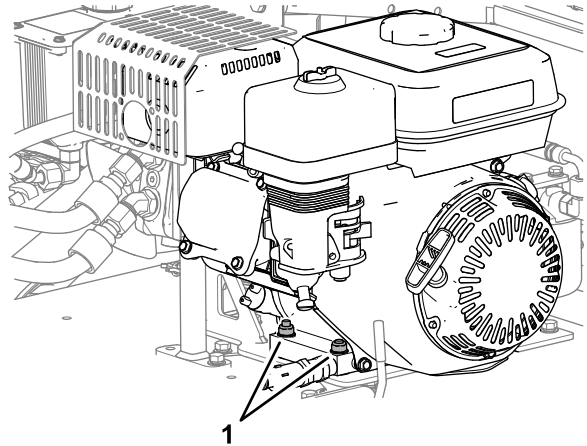
2. Remove the locknuts, capscrews, and washers that secure the engine to the frame of the machine ([Figure 8](#)).

**Note:** Access the capscrews from the underside of the machine.

**Note:** Retain the locknuts, capscrews, and washers for installing the engine in [Assembling the Engine to the Chassis](#) (page 10).



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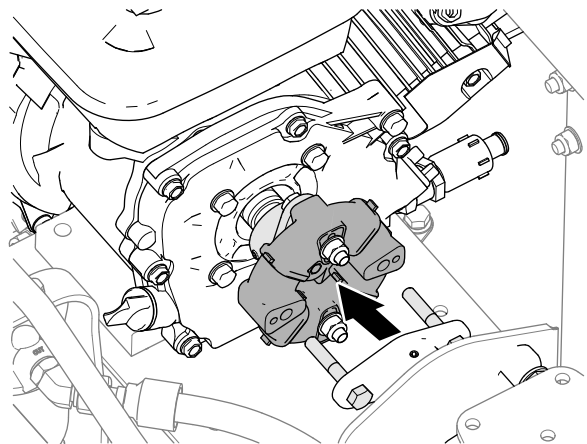


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**Figure 8**

1. Capscrews, washers, and locknuts

3. Move the engine away from the hydraulic pump, and remove the engine from the machine ([Figure 9](#)).



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**Figure 9**

4. Clean the engine deck of oil and debris.

# 3

## Transferring the Oil Drain Valve

Parts needed for this procedure:

1	Engine
---	--------

### Draining the Engine Oil

1. Place the old engine on a level surface.
2. Install the drain hose onto the drain valve (Figure 10).
3. Place the other end of the hose (Figure 10) into a drain pan with a 1 L (1 US qt).

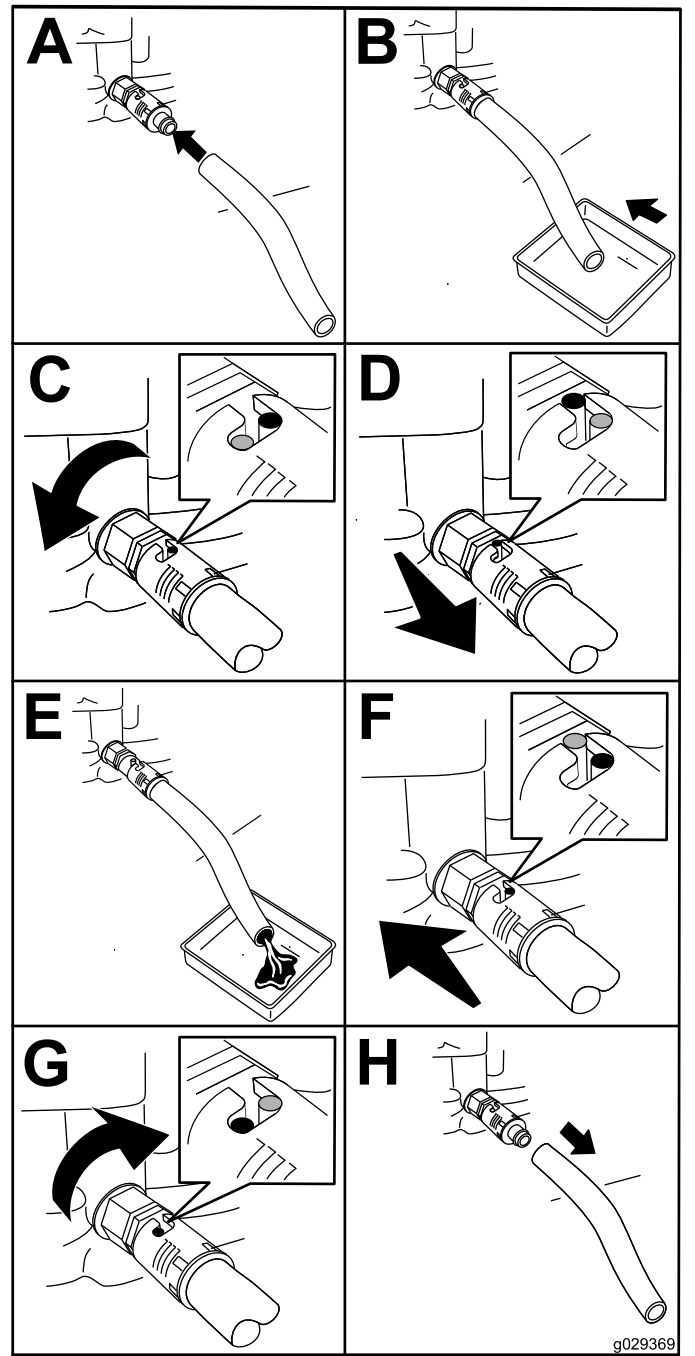


Figure 10

4. Turn the oil drain valve 1/4 turn counterclockwise and allow the engine oil to drain completely (Figure 10).
5. Turn the oil drain valve 1/4 turn clockwise to close the valve (Figure 10).
6. Remove the drain hose (Figure 10) and wipe any spilled oil.
7. Dispose of the waste oil properly.

**Note:** Recycle it according to local codes.

## Moving the Oil Drain Valve to the New Engine

1. Remove the drain valve, adapter, and gasket from the old engine (Figure 11).

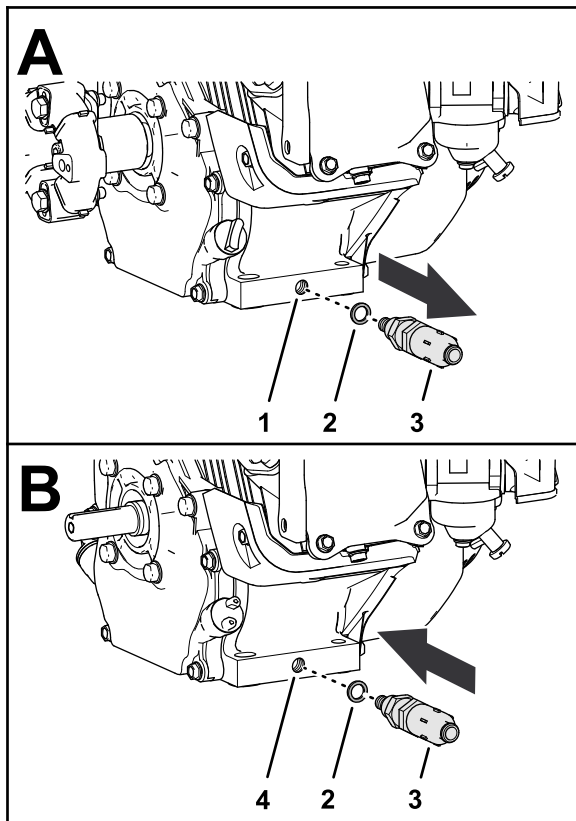


Figure 11

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- |                            |                            |
|----------------------------|----------------------------|
| 1. Drain port (old engine) | 3. Drain valve and adapter |
| 2. Gasket                  | 4. Drain port (new engine) |

2. Install the drain valve, adapter, and gasket into the new engine (Figure 11).

## Adding Oil to the Engine

**Crankcase Capacity:** 0.60 L (0.63 US qt)

1. Clean the area around the oil-filler cap (Figure 12).

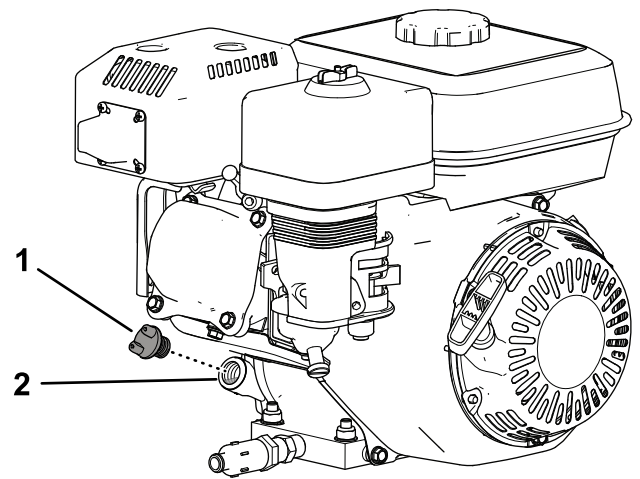


Figure 12

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- |                   |                |
|-------------------|----------------|
| 1. Oil-filler cap | 2. Filler port |
|-------------------|----------------|

2. Remove the oil-filler cap by rotating it counterclockwise.
3. Fill the crankcase with the specified oil; refer to Engine Oil specification in the *Operator's Manual* for your machine.

The engine is full of oil when the oil level is at the bottom edge of the oil-fill port.

**Important:** Do not overfill the crankcase with engine oil.

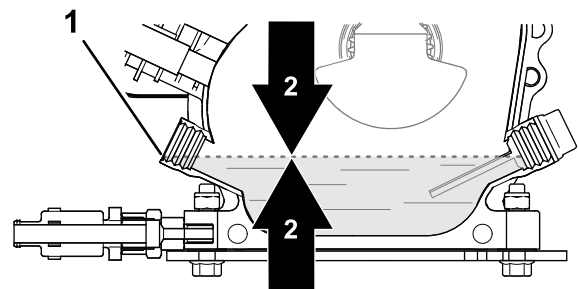


Figure 13

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- |                                |                     |
|--------------------------------|---------------------|
| 1. Oil-fill port (bottom edge) | 2. Engine-oil level |
|--------------------------------|---------------------|

4. Install the oil-filler cap and wipe up any spilled oil.

# 4

## Installing the Hub and Coupler

Parts needed for this procedure:

1	Key
1	Hub
2	Set screw

## Removing the Coupler

Model 44912

Remove the 2 locknuts (8 mm), 2 bolts (8 x 50 mm), and 4 washers (8 mm) that secure the coupler to the hub of the old engine, and remove the coupler ([Figure 14](#)).

**Note:** You no longer need the old engine.

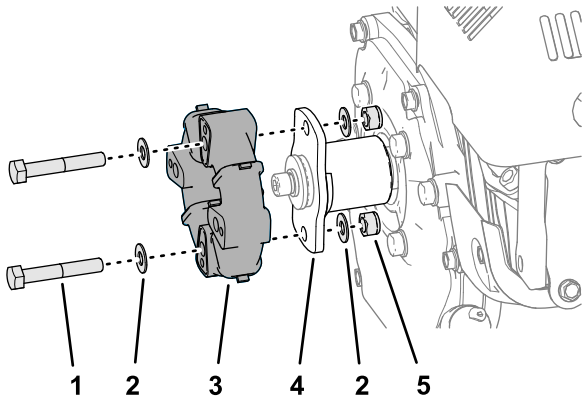


Figure 14

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1. Bolt (8 x 50 mm)
2. Washer (8 mm)
3. Coupler
4. Hub
5. Locknut (8 mm)

## Assembling the Hub and Coupler

Model 44912

1. Thread the 2 set screws into the new hub ([Figure 15](#)).

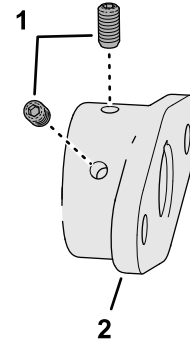


Figure 15

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1. Set screws
2. Hub

2. Assemble the coupler that you removed in [Removing the Coupler \(page 7\)](#) to the new hub with the 2 bolts (8 x 50 mm), 2 washers, and 2 locknuts as shown in [Figure 15](#).

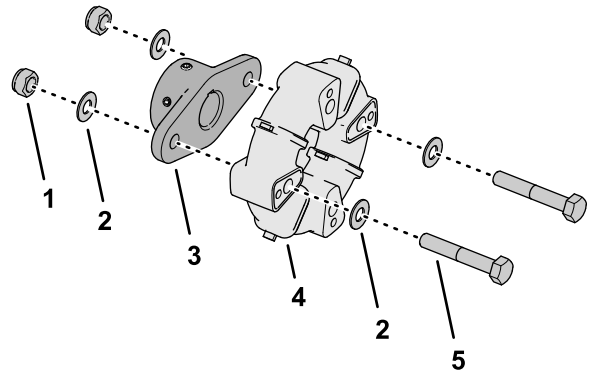


Figure 16

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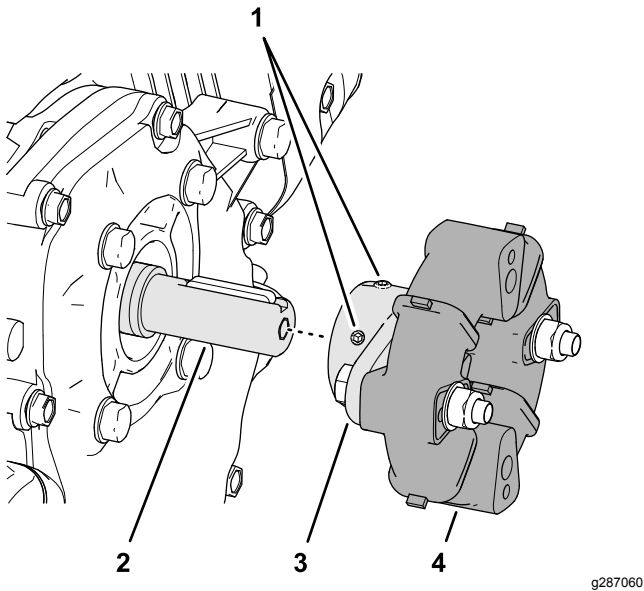
1. Locknut
2. Washer
3. Hub
4. Coupler
5. Bolt (8 x 50 mm)

3. Torque the nuts and bolts to 23 to 29 N·m (17 to 21 ft-lb).

# Removing the Engine Hub and Coupler

## Model 44913

1. Loosen the 2 set screws that secure the hub and coupler to the crankshaft of the old engine ([Figure 17](#)).



**Figure 17**

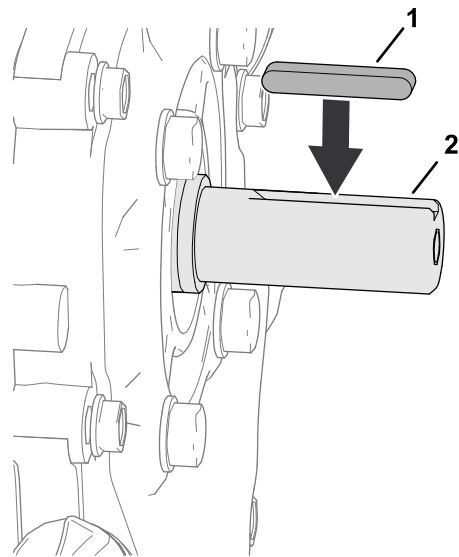
- |               |            |
|---------------|------------|
| 1. Set screws | 3. Hub     |
| 2. Crankshaft | 4. Coupler |

2. Remove the engine hub and coupler from the crankshaft ([Figure 17](#)).

**Note:** You no longer need the old engine.

## Assembling the Hub and Coupler to the Engine

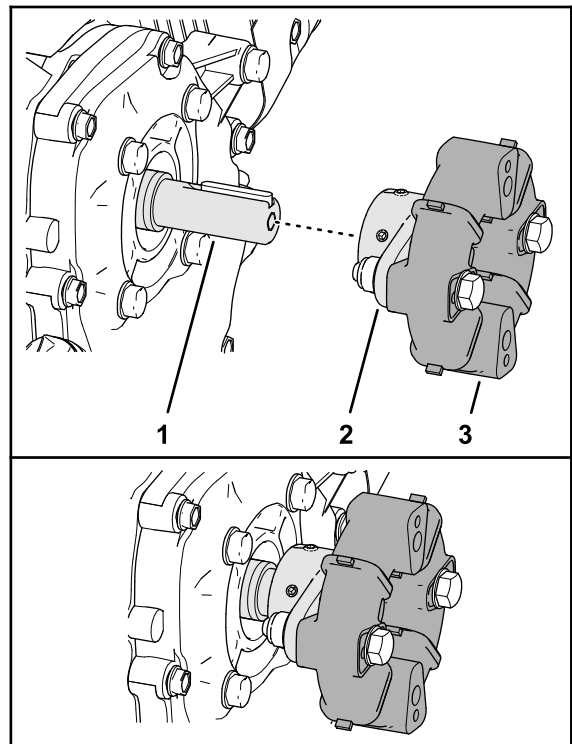
1. Insert the key into the slot in the crankshaft of the new engine ([Figure 18](#)).



**Figure 18**

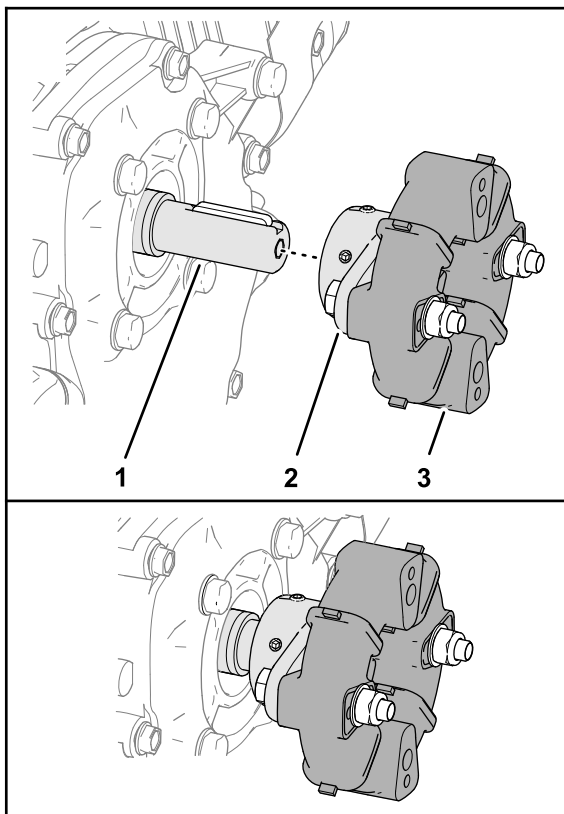
- |        |                                 |
|--------|---------------------------------|
| 1. Key | 2. Crankshaft slot (new engine) |
|--------|---------------------------------|

2. Align the slot in the engine hub that you removed in [Removing the Engine Hub and Coupler](#) (page 8) with the crankshaft and key of the new engine ([Figure 19](#) or [Figure 20](#)).



**Figure 19**  
Model 44912

- |               |            |
|---------------|------------|
| 1. Crankshaft | 3. Coupler |
| 2. Hub        |            |



**Figure 20**  
Model 44913

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- |               |            |
|---------------|------------|
| 1. Crankshaft | 3. Coupler |
| 2. Hub        |            |

3. Assemble the hub and coupler onto the crankshaft ([Figure 20](#)).

Do not tighten the set screws.

# 5

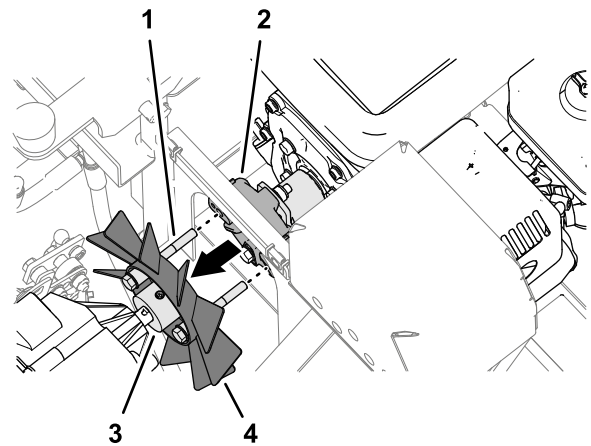
## Installing the Engine to the Machine

No Parts Required

### Assembling the Coupler to the Transmission and Fan

Model 44912

1. Align the holes in the coupler with the 2 bolts that align the transmission hub and fan ([Figure 21](#)).

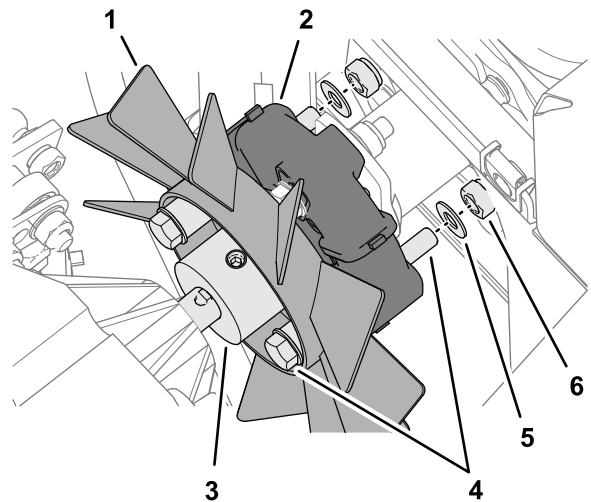


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**Figure 21**

- |               |                       |
|---------------|-----------------------|
| 1. Bolt (8mm) | 3. Hub (transmission) |
| 2. Coupler    | 4. Fan                |

2. Assemble the coupler onto the bolts and secure the coupler ([Figure 22](#)) with 2 washers (8 mm) and 2 locknuts (8 mm) that you removed in [Removing the Engine \(model 44912\) \(page 3\)](#).



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**Figure 22**

- |                       |                   |
|-----------------------|-------------------|
| 1. Fan                | 4. Bolt (8 mm)    |
| 2. Coupler            | 5. Washer (8 mm)  |
| 3. Hub (transmission) | 6. Locknut (8 mm) |

3. Torque the nuts and bolts to 23 N·m (17 to 21 ft-lb).

## Assembling the Coupler to the Hydraulic-Pump Hub

### Model 44913

1. Align the holes in the coupler with the 2 bolts (8 mm) in the hydraulic-pump hub (Figure 23).

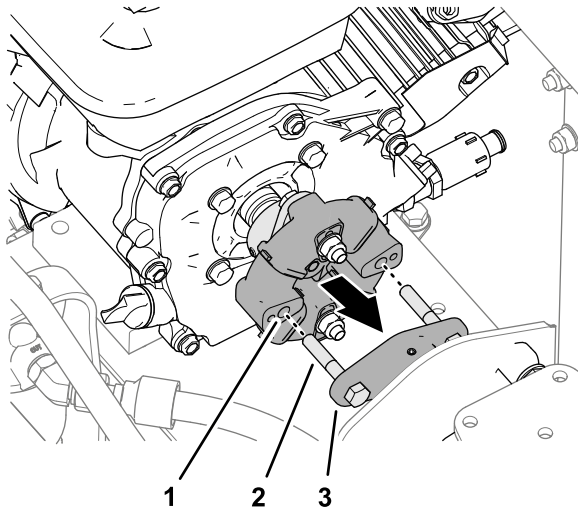


Figure 23

- |                   |                       |
|-------------------|-----------------------|
| 1. Hole (coupler) | 3. Hydraulic-pump hub |
| 2. Bolt (8 mm)    |                       |

2. Assemble the coupler onto the bolts and secure the coupler (Figure 24) with 2 washers (8 mm) and 2 locknuts (8 mm) that you removed in Removing the Engine (model 44913) (page 4).

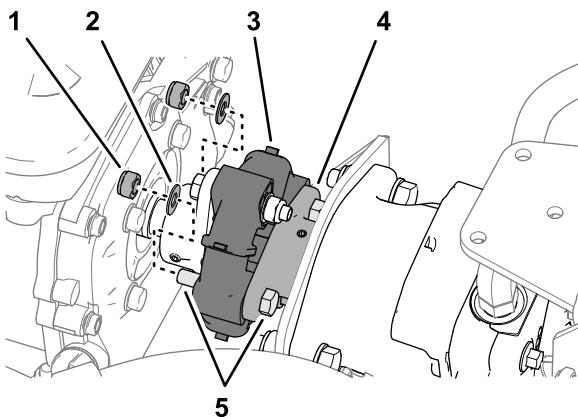


Figure 24

- |                   |                         |
|-------------------|-------------------------|
| 1. Locknut (8 mm) | 4. Hub (hydraulic pump) |
| 2. Washer (8 mm)  | 5. Bolt (8 mm)          |
| 3. Coupler        |                         |

3. Torque the nuts and bolts to 23 N·m (17 to 21 ft-lb).

## Assembling the Engine to the Chassis

1. Align the holes in the engine with the holes in the chassis (Figure 25 or Figure 26).

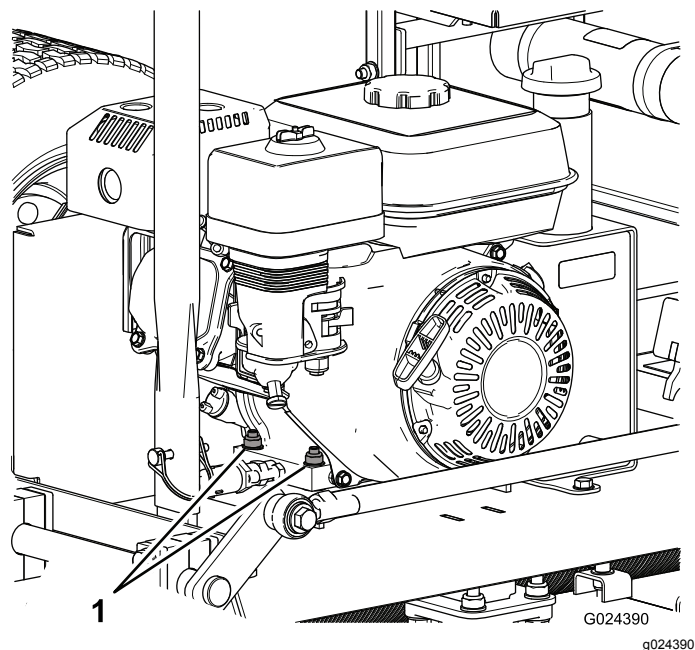
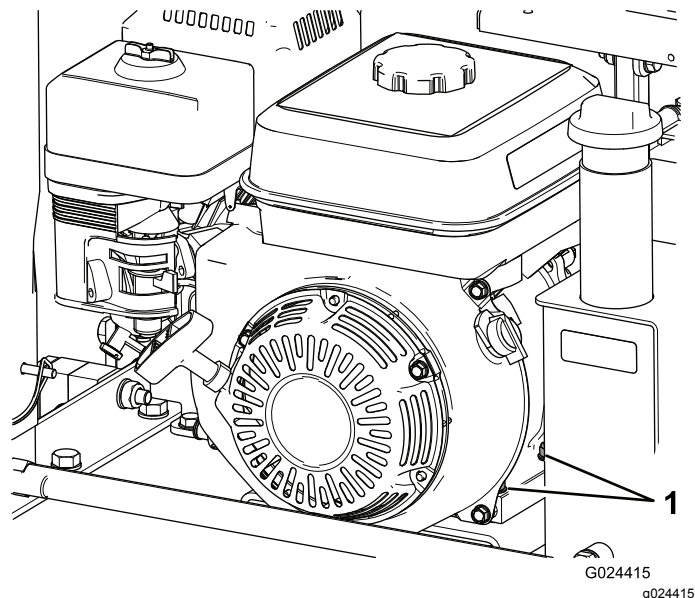
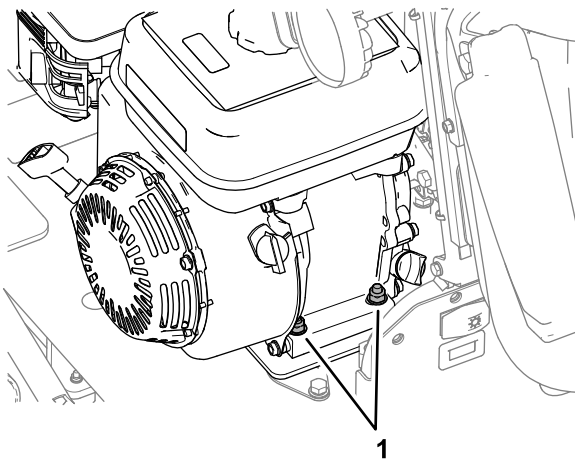
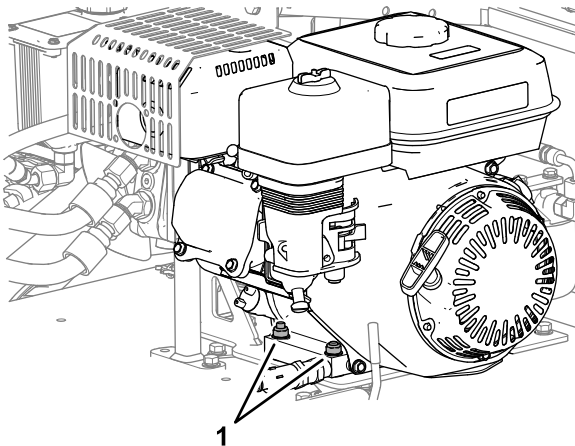


Figure 25  
Model 44912

1. Capscrews, washers, and locknuts



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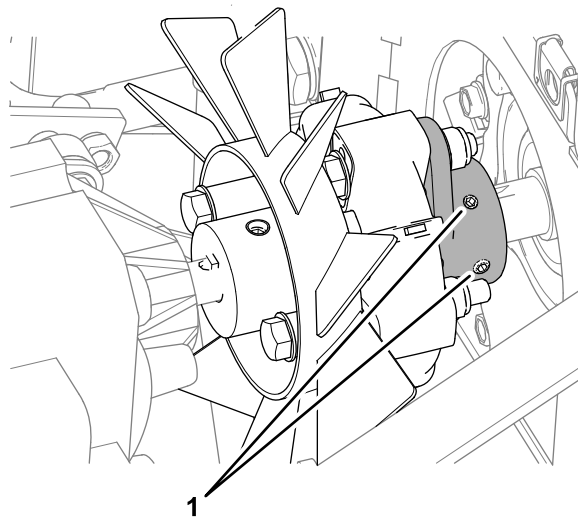
**Figure 26**  
Model 44913

1. Capscrews, washers, and locknuts

2. Assemble the engine to the chassis ([Figure 25](#) or [Figure 26](#)) with the 2 capscrews, 8 washers and 4 locknuts that you removed in [Removing the Engine \(model 44912\) \(page 3\)](#) or [Removing the Engine \(model 44913\) \(page 4\)](#).
3. Torque the nuts and bolts to 23 to 29 N·m (17 to 21 ft·lb).

## Securing the Engine Hub

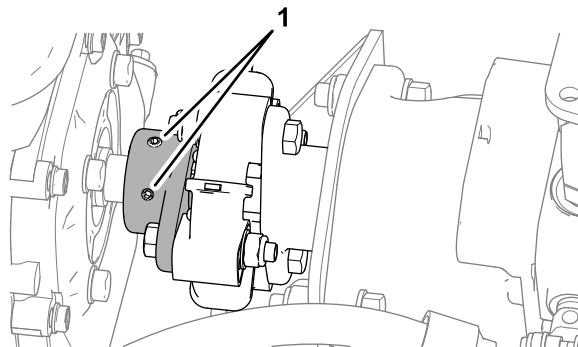
Tighten the setscrews of the engine hub ([Figure 27](#) or [Figure 28](#)).



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**Figure 27**  
Model 44912

1. Setscrews (engine hub)



g287117

**Figure 28**  
Model 44913

1. Setscrews (engine hub)

# 6

## Installing the Transmission Cover

No Parts Required

## Assembling the Transmission Cover to the Machine

Model 44912

1. Lower the transmission cover onto the machine aligning the grommets at the bottom of the cover with the studs in the chassis (Figure 29).

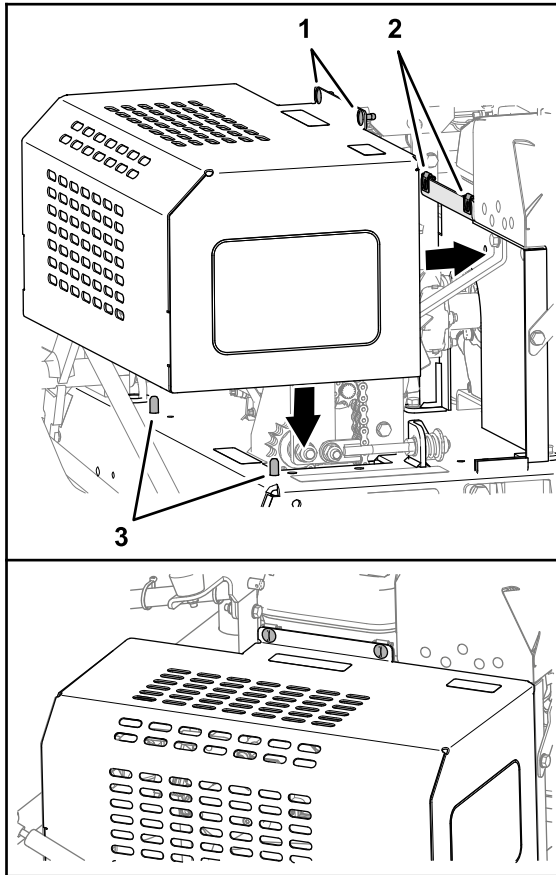


Figure 29

1. Quarter-turn fasteners
2. Receptacle clips
3. Studs

2. Align the quarter-turn fasteners with the receptacle clips on the flange of the panel (Figure 29).
3. Rotate the 2 quarter-turn fastener clockwise to secure the transmission cover (Figure 29).

## Assembling the Transmission Cover to the Machine

Model 44913

1. Align the holes in the mounting flange of the transmission cover with the holes in the chassis of the machine (Figure 30).

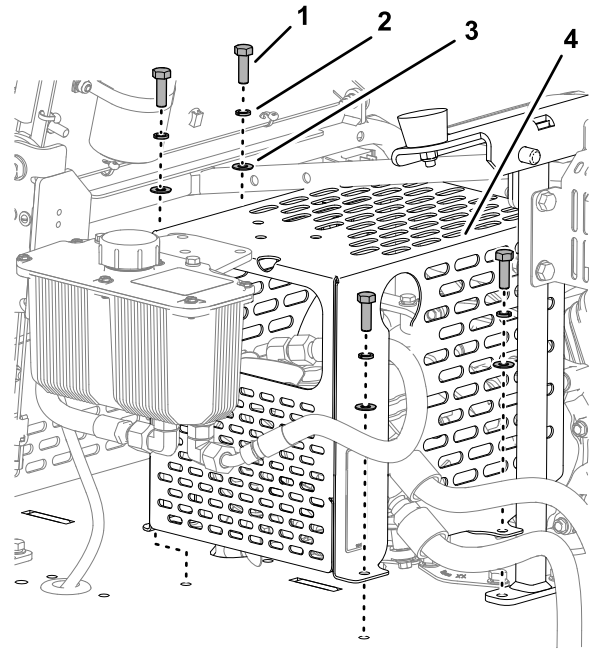
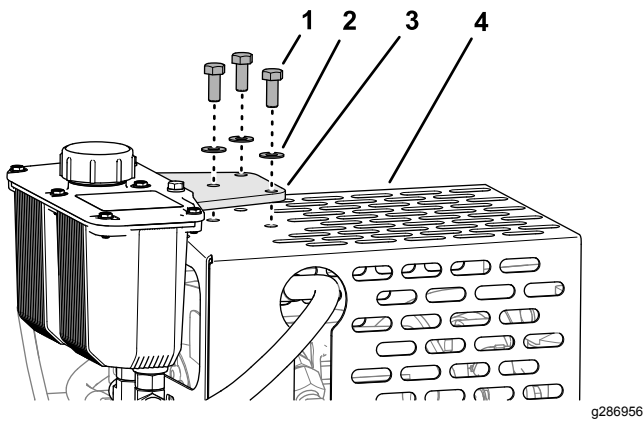


Figure 30

1. Capscrew (8 x 25 mm)
2. Lock washer (8 mm)
3. Washer (8 mm)
4. Transmission cover

2. Assemble the transmission cover to the chassis (Figure 30) with the 4 capscrews (8 x 25 mm), 4 lock washers (8 mm), and 4 washers (8 mm) that you removed in [Removing the Transmission Cover \(model 44913\) \(page 2\)](#).
3. Torque the capscrews to 23 to 29 N·m (17 to 21 ft-lb).
4. Align the holes in the hydraulic-reservoir mount to the threaded holes in the transmission cover (Figure 31).



**Figure 31**

- |                         |                              |
|-------------------------|------------------------------|
| 1. Capscrew (8 x 20 mm) | 3. Hydraulic-reservoir mount |
| 2. Washer (8 mm)        | 4. Transmission cover        |

- 
5. Assemble the hydraulic-reservoir to the cover (Figure 31) with the 3 capscrews (8 x 20 mm) and 3 washers (8 mm) that you removed in [Removing the Transmission Cover \(model 44913\) \(page 2\)](#).
  6. Torque the capscrews to 23 to 29 N·m (17 to 21 ft-lb).

# 7

## Completing the Installation

**No Parts Required**

### Procedure

1. Connect the spark-plug wire to the spark plug.
2. Add fuel to the fuel tank, refer to the *Operator's Manual* for your machine.
3. Lower and latch the operator's seat.

**Notes:**

**Notes:**



**Count on it.**