



# Engine Conversion Kit

## Kawasaki-Powered Walk-Behind Greensmaster® Flex™ 18 or Flex™ 21 Mowers

Model No. 131-2009

### Installation Instructions

**Note:** If the machine is equipped with an incandescent light kit, you must order a new kit; contact your local Toro dealer for more information.

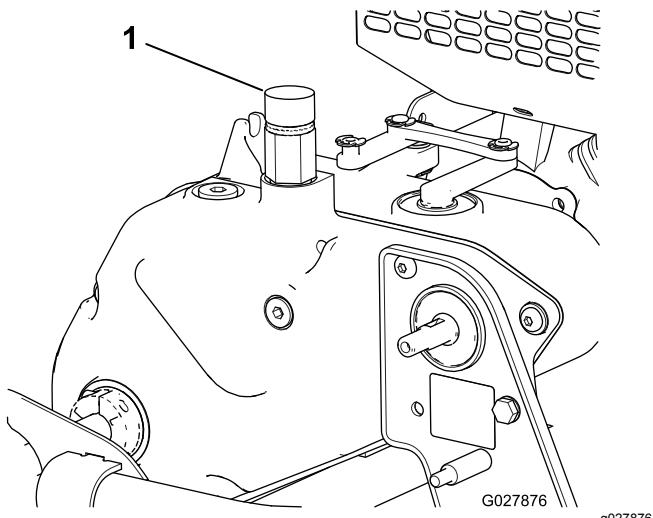
## 1

### Installing a Gearbox Vent

No Parts Required

#### Procedure

If your machine does not have the tall vent illustrated in [Figure 1](#), obtain the Gearbox Vent Kit for your model from your Toro Distributor and install the vent before replacing the engine.



**Figure 1**

1. Vent

## 2

### Removing the Old Engine

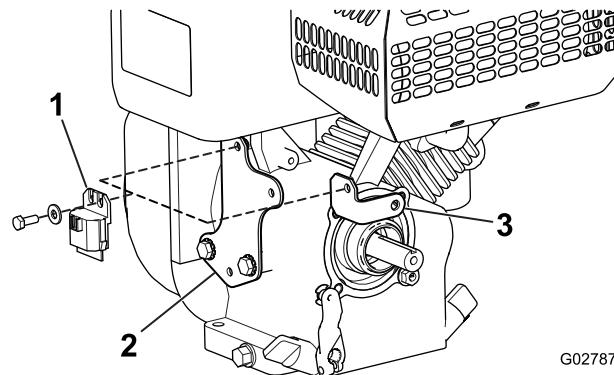
No Parts Required

#### Procedure

**Important:** Save all fasteners that you remove for reuse unless otherwise noted.

1. Drain the gearbox.
2. Remove and discard the nuts attaching the engine to the gearbox.
3. Support the gearbox from below so that it does not fall when you remove the engine.
4. Remove and discard the wire harness.
5. Remove and retain the wire harness bracket, the interlock module, and fasteners ([Figure 2](#)).

**Note:** If the machine is model year 2008 or earlier, keep the module mounting bracket. If your machine is model year 2009, order Part Number 120-2705-03 instead.

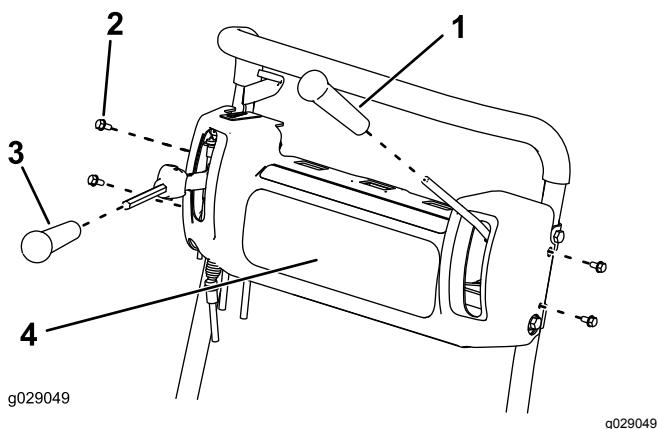


**Figure 2**

1. Interlock module
2. 2009 model wire harness bracket (if you have this bracket, discard it and order part 120-2705-03)
3. 2008 and earlier wire harness bracket (if you have this bracket, save it.)



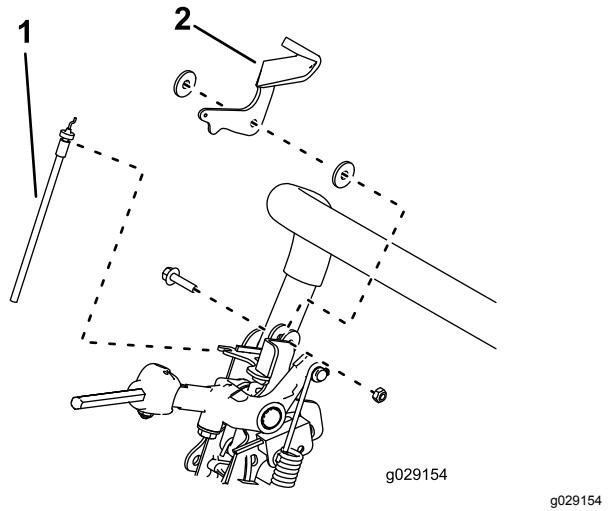
6. Remove the brake and traction lever grips (Figure 3).
7. Remove and discard the console cover (Figure 3).



**Figure 3**

- |                     |                        |
|---------------------|------------------------|
| 1. Brake lever grip | 3. Traction lever grip |
| 2. Bolt             | 4. Console cover       |

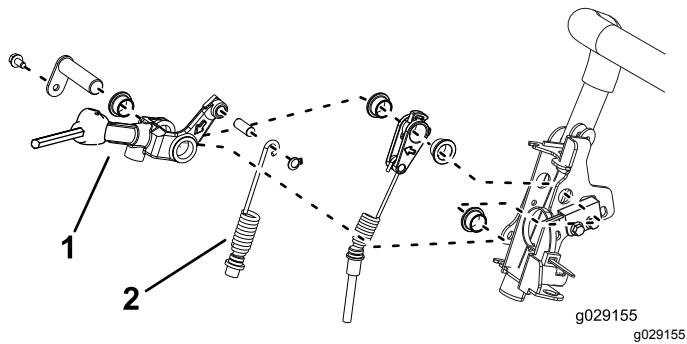
8. Remove and discard the throttle-control cable (Figure 4).
9. Remove and discard the throttle lever, but retain the mounting hardware (Figure 4).



**Figure 4**

- |                           |                   |
|---------------------------|-------------------|
| 1. Throttle-control cable | 2. Throttle lever |
|---------------------------|-------------------|

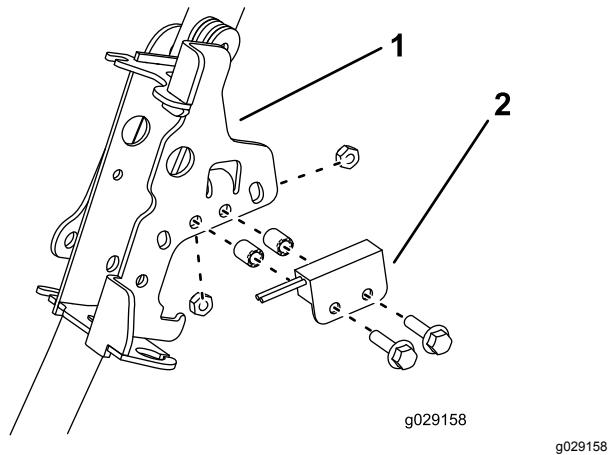
10. Remove the traction lever and traction cable from the old traction bracket (Figure 5). Keep all hardware.



**Figure 5**

- |                   |                   |
|-------------------|-------------------|
| 1. Traction lever | 2. Traction cable |
|-------------------|-------------------|

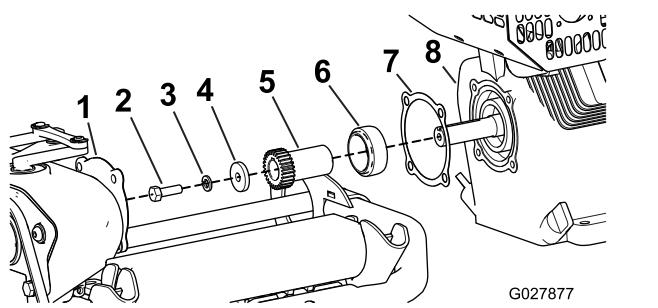
11. Remove the handle assembly.
12. Remove and discard the old traction bracket, but retain the proximity switch and mounting hardware (Figure 6).



**Figure 6**

- |                     |                     |
|---------------------|---------------------|
| 1. Traction bracket | 2. Proximity switch |
|---------------------|---------------------|

13. Remove and retain the old engine mounting bolts and nuts.
14. Remove and retain all engine output shaft hardware (Figure 7).



**Figure 7**

- |                |                   |
|----------------|-------------------|
| 1. Gearbox     | 5. Engine gear    |
| 2. Bolt        | 6. Engine adapter |
| 3. Lock washer | 7. Gearbox gasket |
| 4. Washer      | 8. Engine         |

15. Clean the frame and check for damage or wear.
16. Check the gearbox gasket for damage or wear and replace it if you find any.

# 3

## Installing the New Engine

### Parts needed for this procedure:

1	Engine
4	Set screw
4	Nut

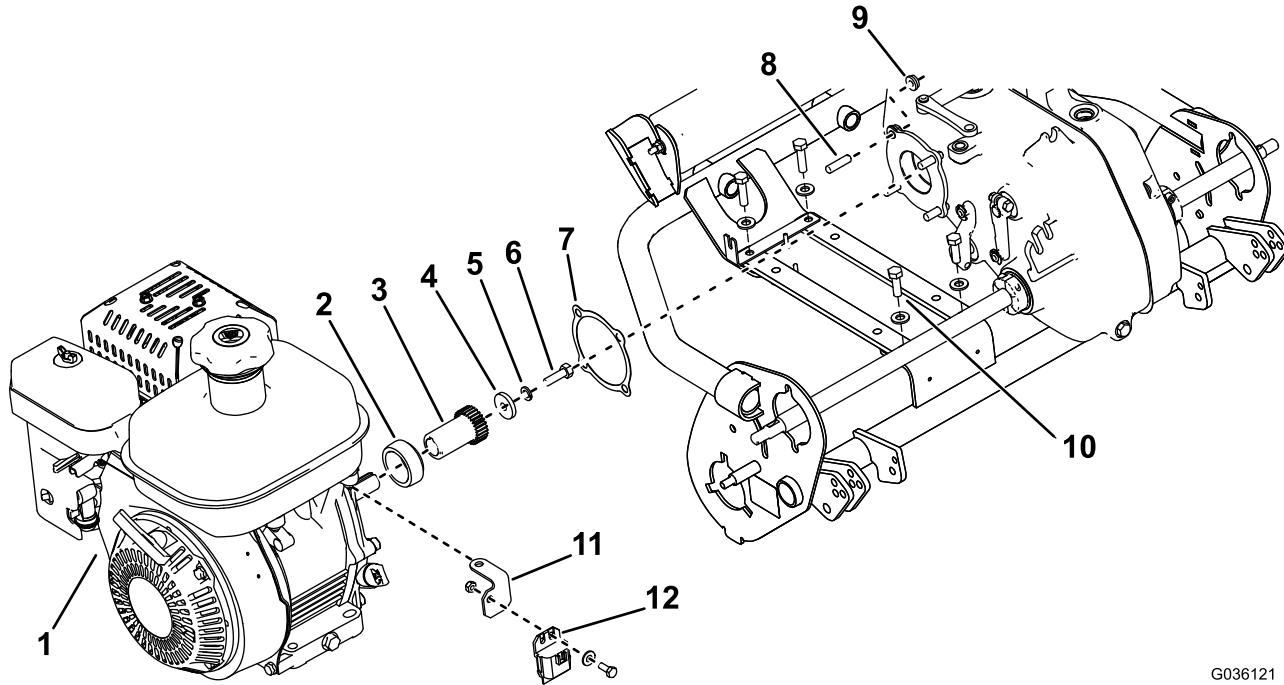
## Procedure

1. Install the existing engine output shaft components to the engine ([Figure 8](#)).

**Note:** Apply anti-seize compound to the key and engine drive shaft before installing.

2. Install the set screws to the engine ([Figure 8](#)).
3. Attach the wire-harness bracket to the fuel tank using the rear flange nut securing the tank to the engine ([Figure 8](#)).
4. Install the interlock module to the wire harness bracket with the fasteners removed previously ([Figure 8](#)).
5. Mount the engine onto the frame using the existing bolts and nuts ([Figure 8](#)).

**Note:** To make installing the engine to the frame easier, tighten the bolts 90% of the way.



**Figure 8**

- |                   |                |                   |                              |
|-------------------|----------------|-------------------|------------------------------|
| 1. New engine     | 4. Washer      | 7. Gearbox gasket | 10. Engine bolts and washers |
| 2. Engine adapter | 5. Lock washer | 8. Set screw      | 11. Wire-harness bracket     |
| 3. Engine gear    | 6. Bolt        | 9. Nut            | 12. Interlock module         |

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# 4

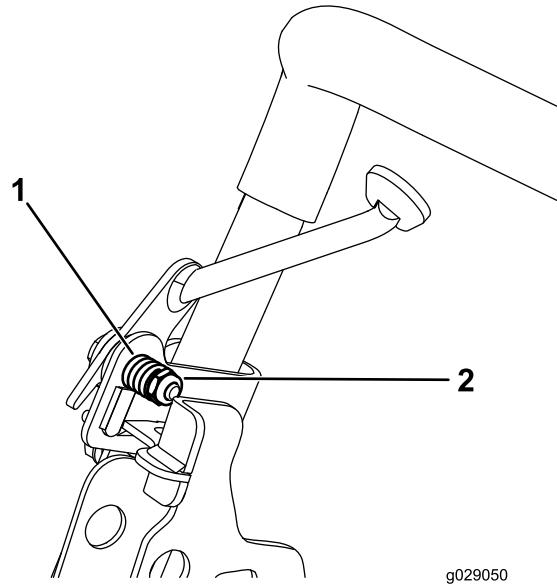
## Installing the Controls and Wiring

### Parts needed for this procedure:

1	Traction bracket
1	Throttle lever
1	Throttle cable
1	Console cover
1	Cable clip
1	Wire harness
1	Engine switch
4	Cable ties
1	Spring

## Procedure

1. Install the new traction bracket to the handle using the previously removed hardware ([Figure 11](#)).
2. Install the previously removed handle assembly.
3. Install the previously removed traction lever and cable with the previously removed fasteners ([Figure 11](#)).
4. Install and adjust the interlock switch according to the instructions in your *Operator's Manual*.
5. Install the new throttle lever and cable using the previously removed hardware ([Figure 11](#)).
6. Tighten the nut on the throttle spring until the spring is fully compressed, then back off 1/2 turn. At high idle the throttle lever should not move; if it moves, tighten the nut on the throttle spring slightly ([Figure 9](#)).



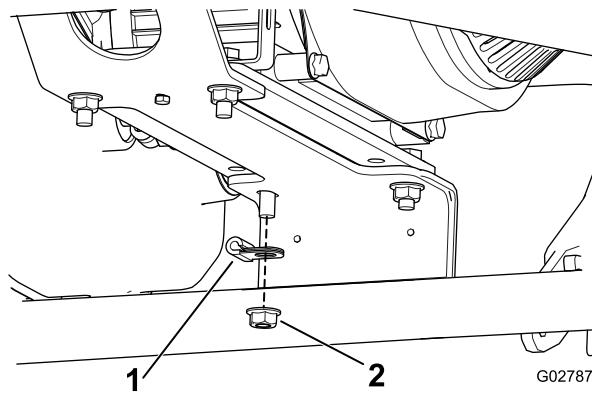
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**Figure 9**

1. Throttle spring      2. Nut

7. Install the console cover and handle grips ([Figure 11](#)).
8. Attach the new throttle cable to the right, rear engine mounting location using the cable clip and the existing bolt, washer, and nut ([Figure 10](#)).



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**Figure 10**

1. Cable clip      2. Right, rear engine mounting nut

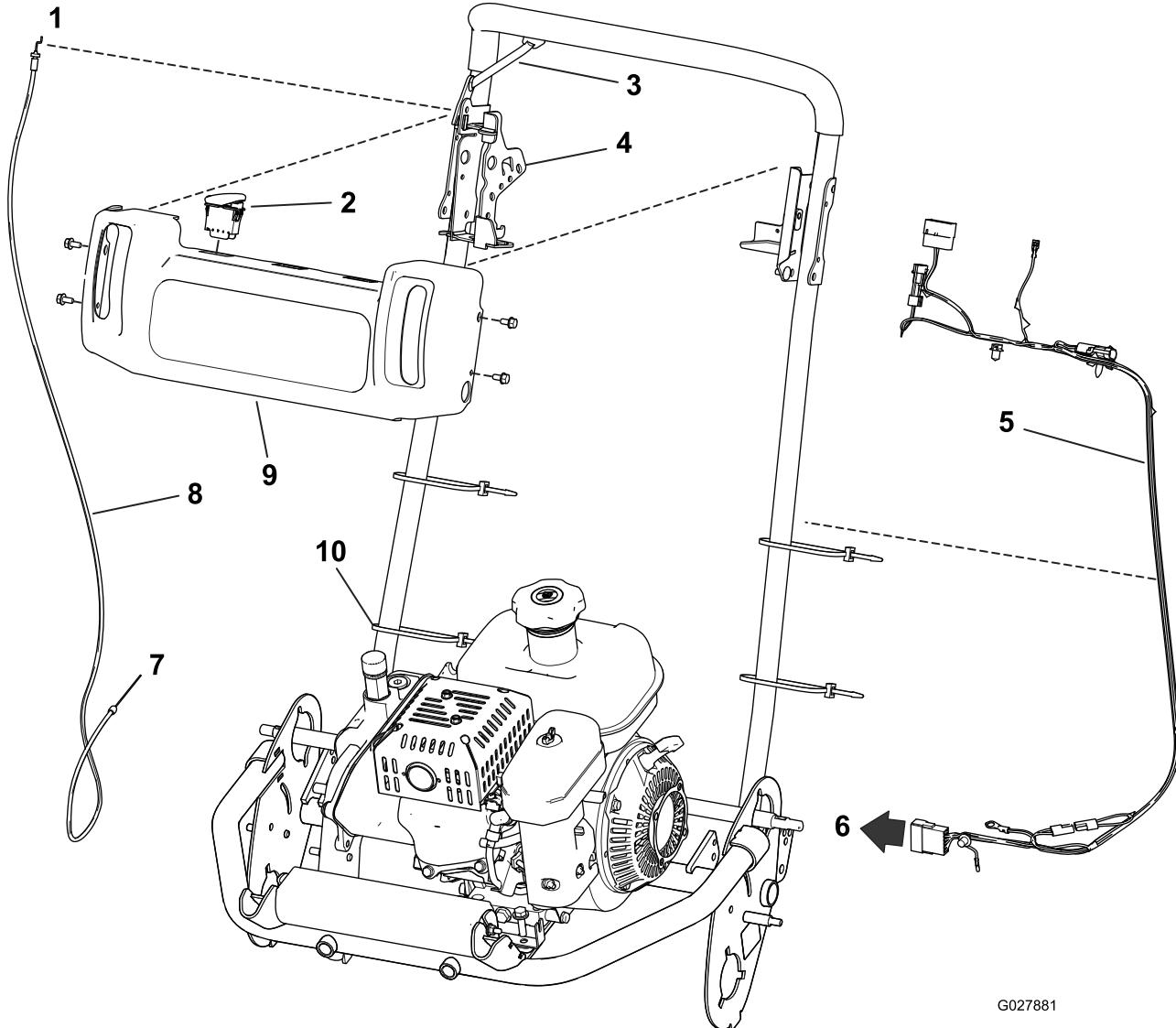
9. Attach the engine to the gearbox using the previously removed nuts ([Figure 8](#)).
10. Tighten all of the engine mounting fasteners.
11. Connect the wire harness to the interlock module, and route the harness up the left side of the handle ([Figure 11](#)).
12. Install the engine switch in the console and connect it to the wire harness ([Figure 11](#)).

**Note:** Connect the wire harness to the hourmeter if the machine is equipped with one.

13. Snap the wire harness into place under the console cover.
14. Mount the green ground wire using the cowling bolt under the fuel tank, and connect the red wire to the engine.

**Note:** Apply skin-over grease to the bolt and ground lug terminal.

15. If you are using a new module bracket, clip the wire harness to the new module bracket.
16. Attach the cables and wire harness to the handles using the 4 new cable-ties (Figure 11).



**Figure 11**

1. Connect to the throttle lever.
2. Engine switch
3. Throttle lever
4. Traction bracket
5. Wire harness
6. Connect to the interlock module.
7. Connect to the throttle on the engine.
8. Throttle cable
9. Console cover
10. Cable tie

# 5

## Lubricating and Adjusting the Machine

No Parts Required

### Procedure

1. Lubricate the machine according to the instructions in your *Operator's Manual*.
2. Fill the gearcase with oil according to the instructions in your *Operator's Manual*.
3. Fill the engine crankcase with oil according to the instructions in your *Operator's Manual*.
4. Connect the battery.
5. Adjust the engine speed to the following specifications:

High idle (no load)	3275 to 3475 rpm
Low idle (no load)	1465 to 1715 rpm

# Notes:



**Count on it.**