



## Kawasaki Zone Start Engine Conversion Kit

### For Toro Walk Power Lawn Mowers

Model 100-2863

**Installation  
Instructions**

## Loose Parts

**Note:** Use the following chart to identify the parts you will use to install the kit.

DESCRIPTION	QTY.	USE
Discharge Tunnel	1	Installing the new discharge tunnel and the door assembly
Latch Plate	1	
Discharge Door Assembly	1	
Door Retainer	1	
Self-tapping Screw – 1/4-10 x .60	2	
Screw – 3/8-16 x 1.5	3	Replacing the engine
Engine Decal	1	
Clamp	1	Installing the brake cable on the engine
Bolt	1	
Throttle Control	1	Replacing the throttle cable
Throttle Cable	1	
E-Ring	2	
Engine Guard	1	Installing the engine guard on the front of the lawn mower
Screw – 1/4-20 x 1.00	4	Attaching the guard to the lawn mower
Cable Tie	4	Securing the cables to the deck (1) Securing the brake cable to the right side of the handle (2) Installing the cables to the lower left side of the handle (1)
Traction Control Decal (Self-propelled models only)	1	Replacing the decal
Screw – 3/8-16 x 1.00	2	Filling the holes left from removing the fuel tank bracket
Locknut – 3/8-16	2	

DESCRIPTION	QTY.	USE
Square Key 3/16 x 1.25 (HP Models) or 3/16 x 0.50 (SP Models)	1	Installing the blade assembly
Oil Drain Tube	1	Draining the engine oil
Brake Cable	1	Replacing the brake cable
Blade Retainer	1	Replacing the blade retainer and the drive pulley
Blade Spacer	1	
Drive Pulley (SP Models only)	1	

## Before Installing

### WARNING

#### POTENTIAL HAZARD

- If you leave the wire on the spark plug, someone could accidentally start the engine.

#### WHAT CAN HAPPEN

- Someone accidentally starting the engine can seriously injure you or other bystanders.

#### HOW TO AVOID THE HAZARD

- Disconnect the wire from the spark plug before you install the kit. Set the wire aside so that it does not accidentally contact the spark plug.

1. Disconnect the wire from the spark plug.

### WARNING

#### POTENTIAL HAZARD

- If gasoline is spilled on a hot engine, it could ignite.

#### WHAT CAN HAPPEN

- Contact with burning gasoline could cause serious personal injury.

#### HOW TO AVOID THE HAZARD

- Drain the gasoline from a cold engine only.

2. Make sure that the engine is cool. Remove the cap from the fuel tank and use a pump-type syphon to drain the fuel into a clean, approved gasoline container.

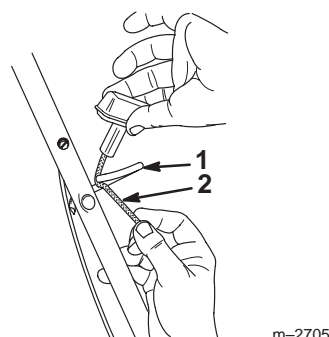
**Note:** This is the only procedure that Toro recommends for draining the fuel.

3. Connect the wire to the spark plug.
4. Start the engine and let it run until it runs out of fuel.
5. Disconnect the wire from the spark plug.
6. Drain the engine oil (Refer to your operator's manual for the procedure).

## Disassembly

### Removing the Starter Rope

Remove the starter rope from the rope guide (Fig. 1).



**Figure 1**

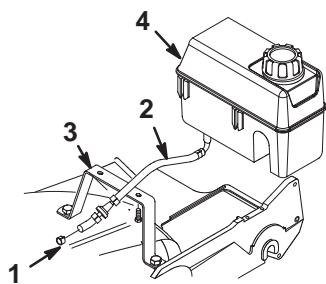
1. Rope guide
2. Starter rope

### Removing the Cable Ties

Cut the cable ties that hold the cables to the handle.

### Removing the Fuel Tank

1. Disconnect the fuel line from the engine (Fig. 2).



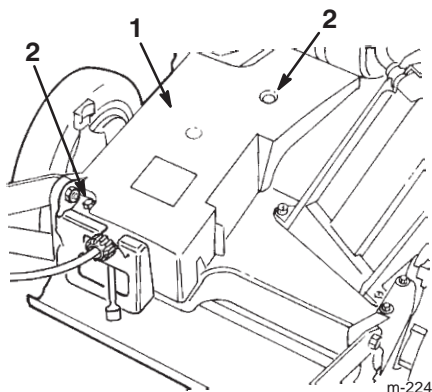
**Figure 2**

- |                    |                 |
|--------------------|-----------------|
| 1. Fuel line clamp | 3. Tank bracket |
| 2. Fuel line       | 4. Fuel tank    |

2. Remove the fuel tank from the tank bracket (Fig. 2).
3. Remove the tank bracket.
4. Install two screws and two locknuts to fill the holes left from removing the tank bracket.

### Disconnecting the Throttle Cable

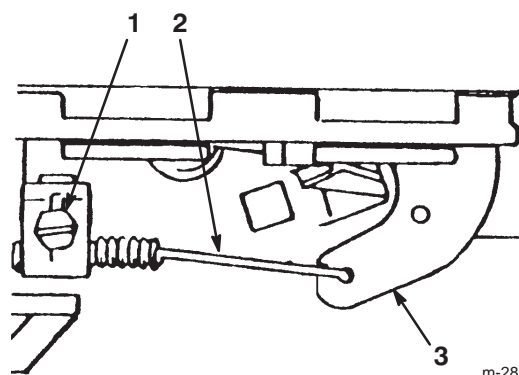
1. Remove two self-tapping screws that secure the belt cover to the lawn mower deck (Fig. 3). Set the cover and the fasteners aside for the installation.



**Figure 3**

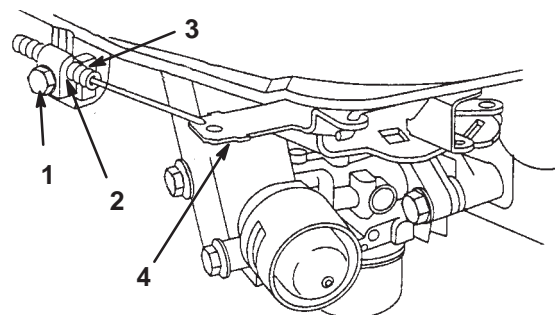
- |               |                           |
|---------------|---------------------------|
| 1. Belt cover | 2. Self-tapping screw (2) |
|---------------|---------------------------|

2. Loosen the cable clamp screw and disconnect the throttle cable from the throttle lever (Fig. 4 or Fig. 5).



**Figure 4**

- |                      |                   |
|----------------------|-------------------|
| 1. Cable clamp screw | 3. Throttle lever |
| 2. Throttle cable    |                   |

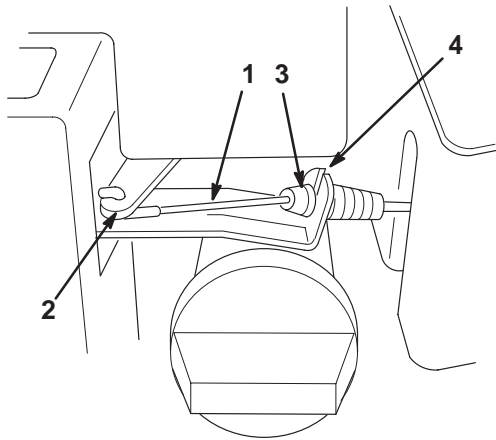


**Figure 5**

- |                      |                   |
|----------------------|-------------------|
| 1. Cable clamp screw | 3. Throttle cable |
| 2. Cable clamp       | 4. Throttle arm   |

### Disconnecting the Blade Brake Cable

1. Disconnect the blade brake cable from the brake arm (Fig. 6).



**Figure 6**

- |                |                        |
|----------------|------------------------|
| 1. Brake cable | 3. Brake cable fitting |
| 2. Brake arm   | 4. Brake assembly      |

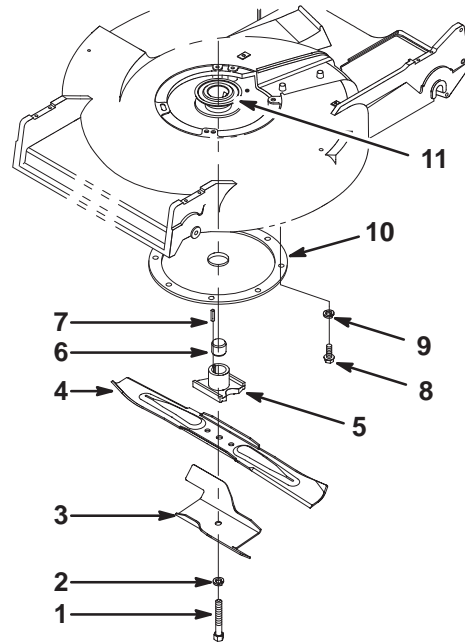
2. Use a pliers to squeeze the tabs on the top and the bottom of the blade brake cable fitting, and slide the cable out of the brake assembly (Fig. 6).

#### Self-propelled Models only

3. Cut the cable ties that secure the blade brake cable to the right side of the handle.
4. Remove the cable support, the screw, and the nut from the right side of the handle.
5. Remove the blade brake cable from the cable support.
6. Unhook the blade brake cable from the control bar control lever.
7. Retain the cable support, the screw, and the nut for installing the new cable.

#### Removing the Blade Assembly

1. Remove the blade bolt, the lock washer, the blade stiffener/accelerator, the blade, the blade retainer, the spacer, and the square key, and the crankshaft protector (Fig. 7).



**Figure 7**

- |                                |  |
|--------------------------------|--|
| 1. Blade bolt                  | 8. Self-tapping screw (3)                            |
| 2. Lock washer                 | 9. Internal lock washer (3)                          |
| 3. Blade stiffener/accelerator | 10. Crankshaft protector                             |
| 4. Blade                       | 11. Engine drive pulley (self-propelled models only) |
| 5. Blade retainer              |  |
| 6. Spacer                      |  |
| 7. Square key                  |  |

**Note:** Discard the old blade retainer, the spacer, and the square key.

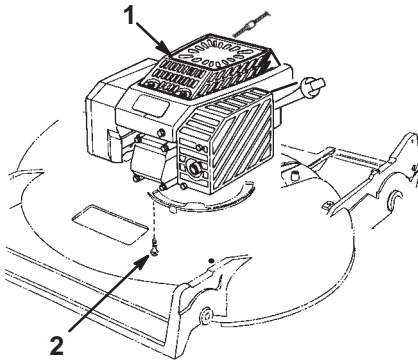
2. Remove the crankshaft protector by removing three self-tapping screws and three internal lock washers.

**Note:** Keep all these items for the installation.

3. Remove and discard the engine drive pulley (self-propelled models only).

#### Removing the Old Engine

Remove the three engine screws and carefully lift the engine off the housing (Fig. 8). Discard the screws and the engine.



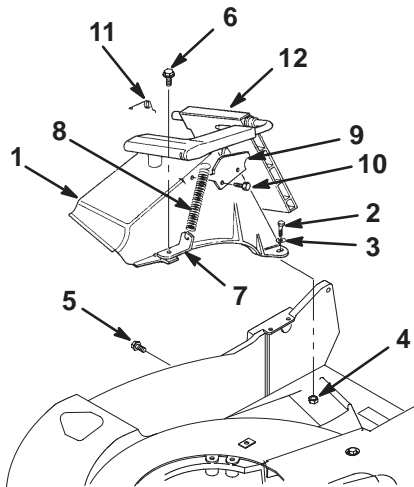
**Figure 8**

1. Engine                      2. Engine screw (3)

**Note:** Figure 8 shows the GTS 150 engine. The GTS 200 engine is not shown.

## Removing the Discharge Tunnel Assembly

1. Remove two capscrews, two flat washers, two locknuts, a 1/2 in. hex head washer screw, and a 3/4 in. hex head washer screw that secure the discharge tunnel assembly to the lawn mower housing (Fig. 9).



**Figure 9**

- |                                      |                             |
|--------------------------------------|-----------------------------|
| 1. Discharge tunnel                  | 7. Spring bracket           |
| 2. Capscrew (2)                      | 8. Spring extension         |
| 3. Flat washer (2)                   | 9. Latch plate              |
| 4. Locknut (2)                       | 10. Self-tapping screw (2)  |
| 5. Hex head washer screw (1/2" long) | 11. Door retainer           |
| 6. Hex head washer screw (3/4" long) | 12. Discharge door assembly |

**Note:** Keep all these items for the installation.

2. Lift off the discharge tunnel assembly (Fig. 9).
3. Remove the spring bracket and the spring extension (Fig. 9).

**Note:** Keep these items for the installation.

4. Discard the discharge tunnel assembly (Fig. 9).

## Conversion Kit Installation

### Installing the New Discharge Tunnel

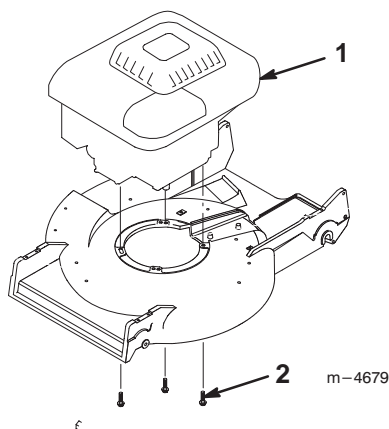
1. Position the new discharge tunnel on the lawn mower deck. Align the holes in the discharge tunnel with the holes in the lawn mower deck.
2. Fasten the rear-left and the rear-right corners of the discharge tunnel to the lawn mower deck using two capscrews, two flat washers, and two locknuts previously removed.
3. Fasten the front-right side of the discharge tunnel to the lawn mower deck using the 1/2 in. hex head washer screw previously removed.
4. Fasten the front-left corner of the discharge tunnel and the spring bracket to the lawn mower deck using the 3/4 in. hex head washer screw previously removed.
5. Install the new discharge door assembly and secure it with the new door retainer.
6. Install the new latch plate to the discharge tunnel using two new self-tapping screws.
7. Hook one end of the spring extension through the hole on the spring bracket and the other end onto the discharge door handle.
8. Open and close the discharge door to ensure that the discharge tunnel door closes when you release the handle.

### Installing the New Engine

1. Carefully set the new engine onto the lawn mower housing.
2. Install and tighten the three new engine screws (Fig. 10). Torque the engine screws to 250 to 400 in-lb (28 to 45 N•m).

#### For Self-propelled Models

3. Install a new engine drive pulley.
4. Install the belt onto the pulley.



**Figure 10**

1. Engine
2. Engine screw (3)

## Installing the Blade Assembly

Install the blade assembly in the reverse order of disassembly. Refer to *Removing the Blade Assembly* on page 4.

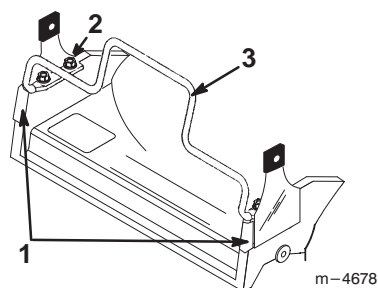
**Note:** Install a new blade retainer with a spacer and a key (Fig. 7).

**Note:** When you install the crankshaft protector, do not tighten the mounting screws (Fig. 7). Insert a shim (a business card works well) between the crankshaft protector and the hub on the blade retainer. Tighten the mounting screws and remove the shim.

**Note:** Torque the blade bolt to 50 ft-lb (68 N·m).

## Installing the Engine Guard

1. Remove four hex head screws from the front quadrants (Fig. 11). Leave the quadrants in place.



**Figure 11**

1. Front quadrants
2. Hex head screw (4)
3. Engine guard

2. Install the new engine guard on the front of the lawn mower deck with four hex head screws as shown in Figure 11.

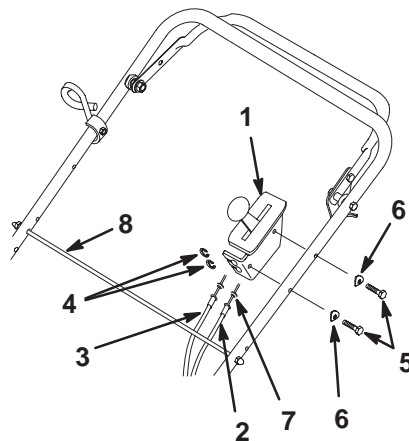
## Installing the New Throttle Control

1. **Hand Push Models Only** – Disconnect the brake and throttle cables from the throttle control by removing the E-rings (Fig. 12).

**Note:** Discard the E-rings.

**Self-propelled Models Only** - Disconnect the traction and throttle cables from the throttle control by removing the E-rings (Fig. 12).

**Note:** Discard the E-rings.



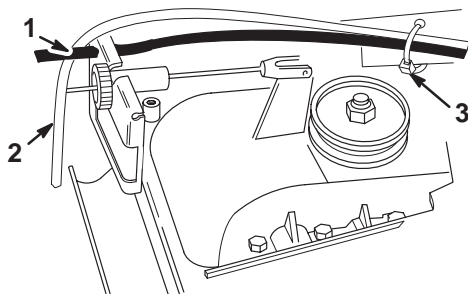
**Figure 12**

1. Throttle control
2. Brake cable (HP model)  
Traction cable (SP model)
3. Throttle cable
4. E-ring
5. Hex head screw (2)
6. Curved washer (2)
7. Seal
8. Bag support rod

2. Remove the two hex head screws and two curved washers that secure the throttle control to the handle (Fig. 12).

**Note:** Keep the screws and washers. Discard the throttle control and the throttle cable.

3. Install the new throttle control using two hex head screws and two curved washers previously removed.
4. Connect the new throttle cable to the throttle control using a new E-ring.
5. Connect the brake cable or the traction cable, depending on the lawn mower.
6. Route the cables behind the bag support rod.
7. Connect the brake cable to the throttle control (hand-push models only) or to the brake cable (self-propelled models only) using a new E-ring.
8. Connect the brake cable to the engine, leaving approximately 1/4 in. of cable to extend beyond the cable clamp (Fig. 14).
9. Install the belt cover using the fasteners previously removed (Fig. 3).
10. Make sure that the seals on the cables are pushed down tight (Fig. 12).
11. Route the throttle cable across the top of the transmission as shown in Figure 13.

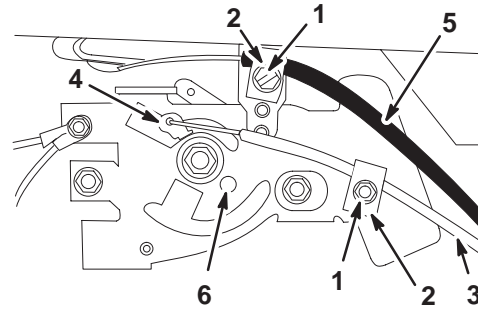


**Figure 13**

- |                      |              |
|----------------------|--------------|
| 1. Throttle cable    | 3. Cable tie |
| 2. Blade brake cable |              |


## Adjusting the Throttle Control

1. Connect the throttle cable to the speed control lever on the engine (Fig. 14).



**Figure 14**

- |                      |                        |
|----------------------|------------------------|
| 1. Cable clamp screw | 4. Speed control lever |
| 2. Cable clamp       | 5. Blade brake cable   |
| 3. Throttle cable    | 6. Base plate hole     |

2. Move the throttle to the  (FAST) position.
3. Align the hole of the speed control lever with the hole in the base plate by inserting a 7/32-in. (6 mm) diameter pin through both holes.
4. Pull the throttle cable to remove the slack.
5. Tighten the cable clamp screw.
6. Restrain the throttle and brake cables to the lawn mower housing with a cable tie to prevent the cables from contacting the gear box belt guide. **Do not secure the cables tight against the housing.**
7. Install the new blade brake cable, cable clamp, and the cable clamp screw to the engine (Fig. 14).

## Adjusting the Blade Brake Cable

1. Check the brake cable adjustment by moving the control bar toward the handle until there is no slack in the wire (Figs. 15 and 16).

**Note:** Ensure that the gap between the brake lever and the handle is 3/16 in. to 1/4 in.

2. To adjust the cable, do the following procedure:

### Hand Push Models Only:

- A. Loosen the jam nut on the brake cable (Fig. 15).

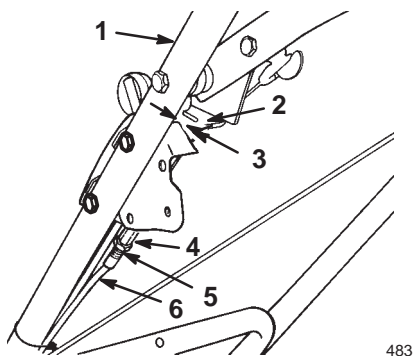


Figure 15

### Hand Push Model

- |                |                   |
|----------------|-------------------|
| 1. Handle      | 4. Cable adjuster |
| 2. Brake lever | 5. Jam nut        |
| 3. 3/16"-1/4"  | 6. Cable conduit  |

- B. Insert a 3/16 in. to 1/4 in. object between the brake lever and the handle (Fig. 15).

- C. Turn the cable adjuster on the brake cable until there is no slack.

- D. Tighten the nut.

### Self-propelled Models Only:

- A. Insert the blade brake cable into the cable support.

- B. Assemble the cable support to the right side of the handle. **Do not tighten the locknut.**

- C. Hook the blade brake cable to the control bar lever.

- D. Insert a 3/16 in. to 1/4 in. object between the brake lever and the handle (Fig. 16).

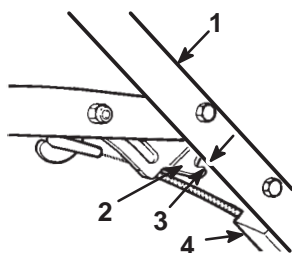


Figure 16

### Self-propelled Model

- |                |                        |
|----------------|------------------------|
| 1. Handle      | 3. 3/16 in. to 1/4 in. |
| 2. Brake lever | 4. Cable bracket       |

- E. Pull down on the cable conduit until there is no slack in the wire.

- F. Tighten the nut.

- G. Secure the blade brake cable to the right side of the handle with two cable ties.

## Installing the Starter Rope in Rope Guide

Install the starter rope in the rope guide (Fig. 1).

## Installing the New Cable Ties

Attach the cables to the lower left side of the handle using the new cable ties.

**Self-propelled Models Only:** Replace the old decal on the control bar with the new decal (Fig. 17).

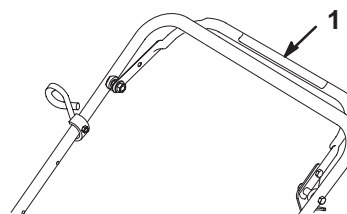


Figure 17

1. Decal

## Installing the New Engine Decal

Install the new decal on the engine as illustrated in Fig. 18.

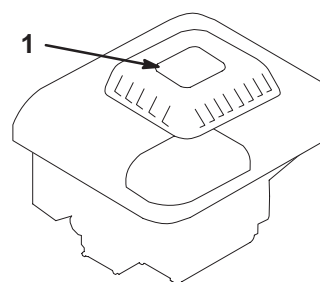


Figure 18

1. Decal location

## Before Starting the Engine

For information on how to fill the crankcase with oil, fill the fuel tank with gasoline, and operate the engine, refer to your *Kawasaki Engine Owner's Manual*.