



Key Start Kit

Workman® MDX Utility Vehicle

Model No. 119-9534

Installation Instructions

Note: Determine the left and right sides of the machine from the normal operating position.

Note: If the vehicle you are installing this kit on is in the serial range of 310000001 to 310000400, you will also need the Regulator Adapter Kit (119-9501).

Loose Parts

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

Procedure	Description	Qty.	Use
1	No parts required	—	Prepare the machine.
2	Key start module Bolt (1/4 x 1-3/8 inch) Flange nut (1/4 inch) Front key start harness	1 1 1	Install the key start module and front key start harness.
3	Neutral switch Screws (#4 x 3.4 inch) Speed nut Jumper harness	1 2 1 1	Install the neutral switch.
4	Rear key start harness Idle screw Spring	1 1 1	Install the rear key start harness and throttle body adjuster.
5	Rollers Large spring	6 1	Adjust the primary clutch.
6	No parts required	—	Adjust the low idle.
7	Shim	2	Adjust the secondary clutch.

1

Preparing the Machine

No Parts Required

Procedure

1. Park the machine on a level surface, engage the parking brake, stop the engine, and remove the key
2. Open the hood.

2

Installing the Key Start Module and Front Key Start Harness

Parts needed for this procedure:

1	Key start module
1	Bolt (1/4 x 1-3/8 inch)
1	Flange nut (1/4 inch)
	Front key start harness

Procedure

1. Secure the key start module to the pedal assembly frame using a bolt (1/4 x 1-3/8 inch) and flange nut (1/4 inch) as shown in Figure 1.
2. Disconnect the existing wiring harness connector from the pedal switch (Figure 1).

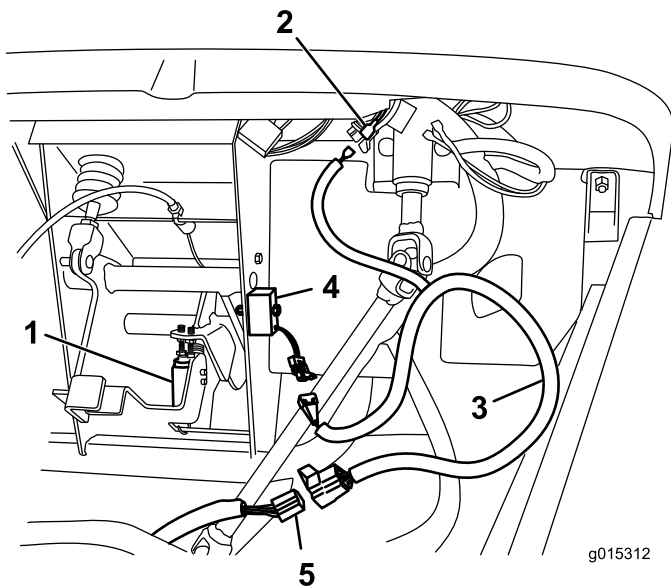


Figure 1

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|-----------------------------------|--------------------------------------|
| 1. Pedal switch | 4. Key start module |
| 2. Open key start spade connector | 5. Existing wiring harness connector |
| 3. Front key start harness | |

3. Locate the front key start harness (Figure 1) in the loose parts.
4. Connect the front key start harness to the key start module with the matching connector and connect the opposite end to the existing wiring harness connector (Figure 1).
5. Locate the lead from the existing wiring labeled Key Start. Connect the key start lead on the front key start harness to the labeled lead on the vehicle (Figure 1).

Note: If the connector has a protective sleeve on it, cut the sleeve off before installation.

3

Installing the Neutral Switch

Parts needed for this procedure:

1	Neutral switch
2	Screws (#4 x 3.4 inch)
1	Speed nut
1	Jumper harness

Procedure

1. Remove the eight bolts and nuts holding the seat base to the frame.
2. Remove the shift knob and the shift plate from the seat base.
3. Remove the seat base.
4. Assemble the switch to the right side of the shift assembly using 2 screws (#4 x 3.4 inch) and the speed nut (Figure 2).

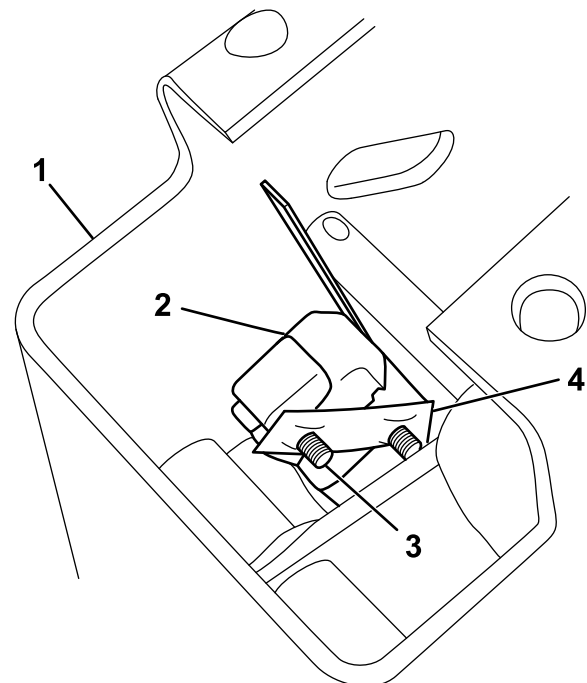


Figure 2

- | | |
|-------------------------|--------------|
| 1. Shift lever assembly | 3. Screw |
| 2. Switch | 4. Speed nut |

5. Connect the jumper harness to the switch and to the connector, with the blue and yellow wire, on the vehicle harness near the shift lever (Figure 3).

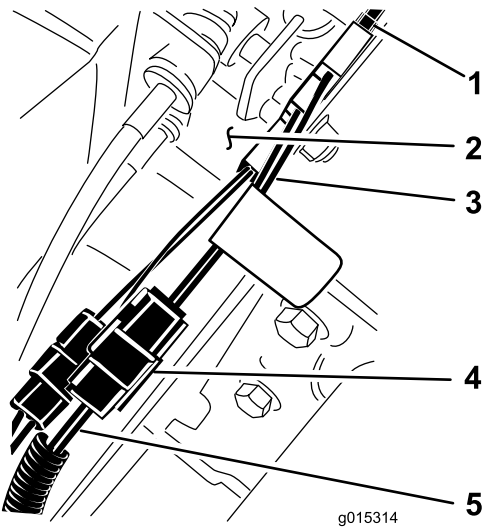


Figure 3

1. Switch
2. Shift lever assembly
3. Jumper harness
4. Connector on vehicle harness
5. Yellow and blue wires

6. Install the shift lever assembly, shift plate and knob to the seat base.
7. Install the seat base to the frame.

4

Installing the Rear Key Start Harness and Idle Screw

Parts needed for this procedure:

1	Rear key start harness
1	Idle screw
1	Spring

Procedure

1. Lift the bed to access the engine compartment and secure it with the prop-rod.
2. Remove the electrical cover located along the right side of the frame to gain access to the regulator and wiring (Figure 4).
3. If the vehicle you are installing this kit on is in the serial range of 310000001 to 310000400, install the Regulator Adapter Kit (119-9501).
4. Disconnect the regulator from the vehicle harness and connect it to the rear key start harness (Figure 4).

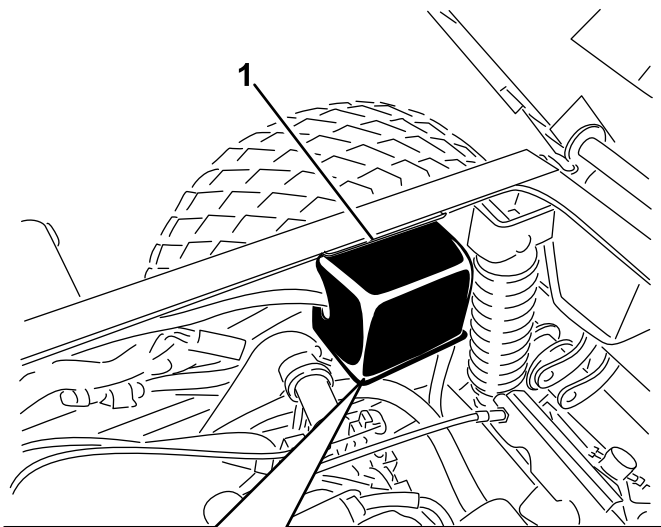


Figure 4

1. Electrical cover
2. Regulator
3. Regulator connector
4. Rear key start harness
5. Main wire harness

5. Connect the rear key start harness to the vehicle harness (Figure 4).
6. Route the rear key start harness along the frame with the existing wiring forward to the engine. Make sure the harness travels between the air filter assembly and the right side of the vehicle frame.

7. Locate the engine ignition module on the underside of the engine shroud (Figure 5). It is on the forward end of the engine assembly.

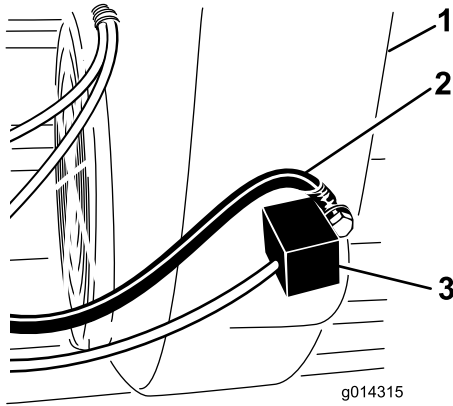


Figure 5

1. Engine shroud
2. Black ground wire with ring terminal
3. Engine ignition module

8. Remove the bullet style lead from the grey wire coming from the engine ignition module and install the lead to the connector at the end of the rear key start harness that was routed forward.
9. Tape the end of the gray wire. This wire will remain disconnected and the tape will prevent it from grounding.
10. Install the idle screw and spring to the carburetor assembly at the throttle lever as shown in Figure 6.

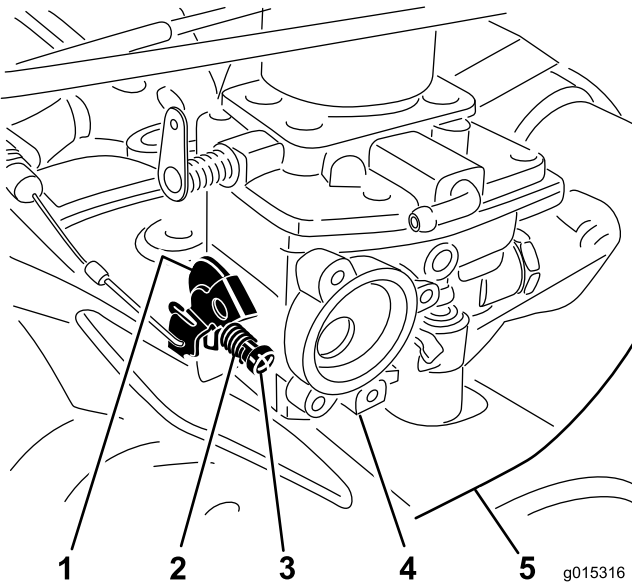


Figure 6

1. Throttle lever
2. Spring
3. Idle screw
4. Carburetor assembly
5. Engine shroud

11. Thread the screw into the throttle stop until it makes initial contact with the throttle lever. Then turn the screw one revolution.

5

Adjusting the Primary Clutch

Parts needed for this procedure:

6	Rollers
1	Large spring

Procedure

Note: This procedure requires special tools. The puller (TOR6013), clutch holder (TOR6016B), and spider removal tool (TOR6016A) are available from your Authorized Toro Distributor. Refer to the *Service Manual* for more details regarding the clutch removal and service.

1. Locate the clutch below the exhaust system on the driver side of the engine compartment (Figure 7).

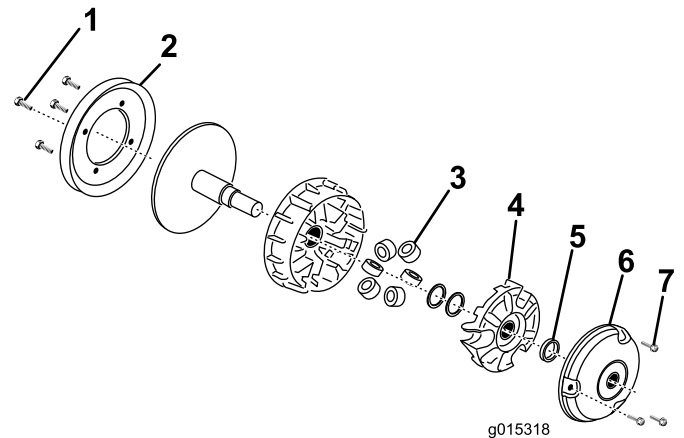


Figure 7

1. Pulley bolts
2. Pulley
3. Rollers
4. Spider
5. Limiter shim
6. Cover
7. Cover bolts

2. Remove the clutch using the TOR6013 puller, as described in the *Service Manual*.
3. Remove the 4 bolts securing the pulley to the back of the clutch (Figure 7).
4. Mount the clutch to the TOR6016B clutch holder using 4 bolts (1/4 x 1 inch).
5. Place the holder in a vice.
6. Remove the 3 bolts holding the cover (Figure 7).
7. Remove the limiter shim and save for reassembly (Figure 7).

8. Use the spider removal tool (TOR6016A) to remove the spider, turning it counterclockwise (Figure 7).

Important: Do not remove any shims that may be on the post under the spider.

9. Remove the 6 rollers and replace them with the new rollers from the kit (Figure 7).
10. Install the spider using the tool to torque it to 190 to 220 ft-lb (258 to 298 N-m).
11. Install the limiter shim.
12. Place the spring from the kit over the post into the recess in the spider.
13. Compress the spring with the cover, making sure to line up the X on the cover to the X on the spider.
14. Install the cover bolts and torque them to 132 to 168 in-lb (15 to 18 N-m).
15. Remove the clutch from the holder and install the pulley.
16. Torque the pulley bolts to 132 to 168 in-lb (15 to 18 N-m).
17. Install the clutch as described in the *Service Manual*.

6

Adjusting the Low Idle

No Parts Required

Procedure

Adjust the idle of the engine once the kit has been installed to ensure the correct operation of the vehicle with the key start.

1. Start the engine
2. Adjust the idler screw to achieve a low idle of 1100 ± 50 RPM.
3. Lower the bed.

7

Adjusting the Secondary Clutch

Parts needed for this procedure:

2	Shim
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Procedure

If the unit still creeps in gear at low idle, you will need to add one or two shims to the secondary clutch to loosen the tension on the belt.

CAUTION

If the machine has been running, the muffler and exhaust system will be very hot and can cause serious burns if you touch them.

Allow the machine to cool completely before performing this procedure.

1. Park the machine on a level surface, engage the parking brake, stop the engine, and remove the key
2. Lift the bed to access the engine compartment and secure it with the prop-rod.
3. Disconnect the two springs securing the muffler to the exhaust system, remove the two fasteners securing the muffler to the frame, and remove the muffler (Figure 8).

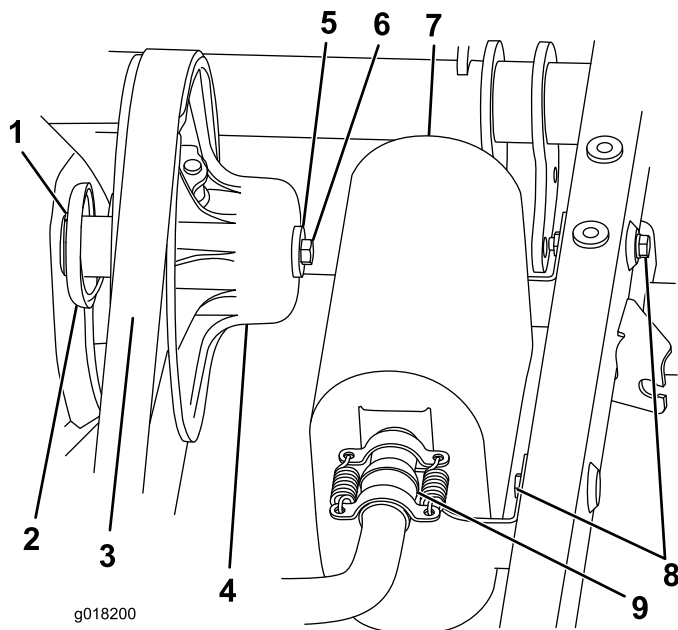


Figure 8

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|--------------------------|--------------------------------|
| 1. Retaining ring | 6. Bolt |
| 2. Outer spring retainer | 7. Muffler |
| 3. Belt | 8. Muffler fasteners |
| 4. Secondary clutch | 9. Disconnect the muffler here |
| 5. Step washer | |

4. Remove the belt from the secondary clutch (Figure 8).
5. Remove the bolt and step washer securing the clutch and pull the clutch off of the transaxle (Figure 8).
6. Turn the clutch around (Figure 9).

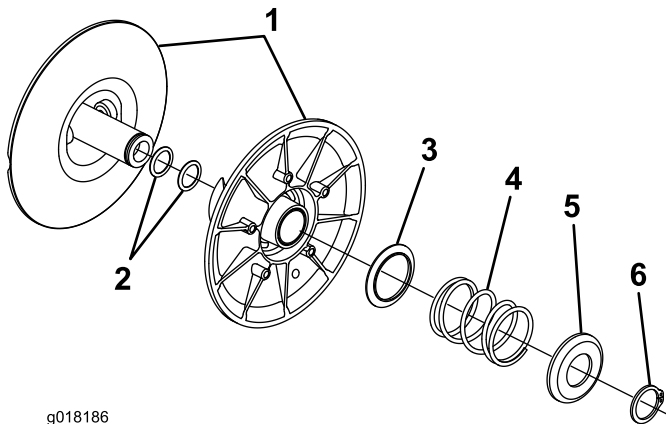


Figure 9

- | | |
|--------------------------|--------------------------|
| 1. Secondary clutch | 4. Spring |
| 2. Shims | 5. Outer spring retainer |
| 3. Inner spring retainer | 6. Retaining ring |

7. Using the spring compression tool (TOR-6027), compress the outer spring retainer and spring inward relieving pressure on the retaining ring (Figure 9).

8. Remove the retaining ring and slowly release the spring pressure, removing the outer spring retainer and the spring.

⚠ CAUTION

The spring is under considerable pressure and can spring outward if you remove the retaining ring without first compressing the spring. This can throw parts at you or bystanders causing injury.

Compress the spring before removing the retaining ring and release the spring pressure carefully and slowly.

9. Pull the two halves of the clutch apart (Figure 9).
10. Slide a shim onto the clutch shaft (Figure 9).
11. Assemble the clutch, using the spring compression tool (TOR-6027) to hold the spring while you secure it with the retaining ring.
12. Install the clutch onto the transaxle and secure it using the step washer and bolt you removed previously.
13. Torque the bolt to 39 to 47 ft-lb (53 to 63 N-m).
14. Install the belt.
15. Install the muffler using the fasteners you removed previously.
16. Lower the bed and test the machine. If the machine still creeps while in gear at low idle, repeat this procedure and install the second shim.

Notes:



Count on it.