



Speed Reduction Kit

2015 and After Groundsmaster® 360 Multi-Purpose Machine

Model No. 30287

Installation Instructions

⚠ WARNING

CALIFORNIA Proposition 65 Warning

This product contains a chemical or chemicals known to the State of California to cause cancer, birth defects, or reproductive harm.

Installation

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 before installing the kit.
2	Hydraulic cylinder Hydraulic fitting (90 degree) Hydraulic fitting (45 degree) Jam nut (3/8 inch) Brake-linkage yolk	1 1 1 1 1	Prepare the cylinder before installing the kit.
3	Cylinder support Jam nut Yolk linkage Clevis pin Spring-clevis pin Locking-cotter pin U-bolt Nut (3/8)	1 1 1 1 1 1 2 4	Mount the cylinder to the frame.
4	Short hydraulic hose Long hydraulic hose Hydraulic fitting (straight) Cable tie	1 1 1 3	Connect the hoses to the hydraulic system.
5	No parts required	—	Install the rear wheels to the traction unit.
6	No parts required	—	Adjust the operation of the speed-reduction unit.
7	No parts required	—	Complete the installation.



⚠ WARNING

Hydraulic fluid escaping under pressure can penetrate skin and cause injury.

- Make sure that all hydraulic fluid hoses and lines are in good condition and that all hydraulic connections and fittings are tight before applying pressure to the hydraulic system.
- Keep your body and hands away from pin-hole leaks or nozzles that eject high-pressure hydraulic fluid.
- Use cardboard or paper to find hydraulic leaks.
- Safely relieve all pressure in the hydraulic system before performing any work on the hydraulic system.
- Seek immediate medical attention if fluid is injected into skin.

1

Preparing the Machine

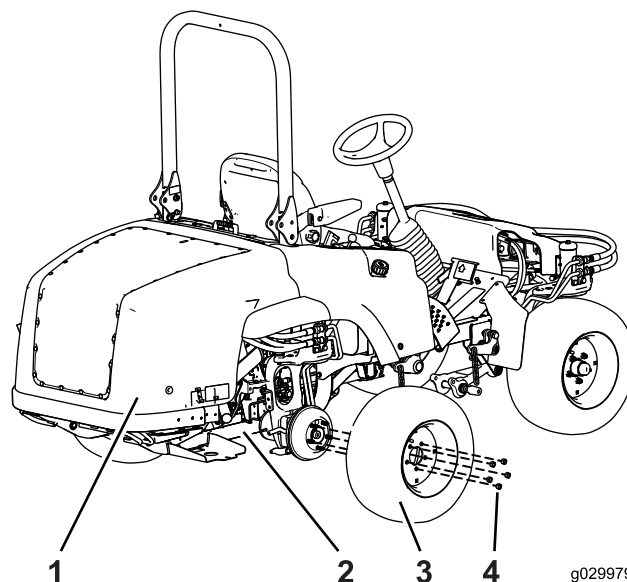
No Parts Required

Procedure

1. Park the machine on a level surface.
2. Start the engine and fully lower the mower. Stop the engine and remove the key from the ignition switch.
3. Jack up the rear of the machine until the rear tires are off the shop floor. Support the machine with jack stands to prevent it from falling accidentally.

Important: On 4-wheel-drive models, the front tires must also be off the ground and supported by jack stands.

4. Remove the 5 lug nuts that secure the rear wheels to the hub and set them aside.



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Figure 1

1. Traction unit
2. Install area
3. Rear wheel
4. Lug nuts

5. Remove the rear wheels.

2

Preparing the Hydraulic Cylinder

Parts needed for this procedure:

1	Hydraulic cylinder
1	Hydraulic fitting (90 degree)
1	Hydraulic fitting (45 degree)
1	Jam nut (3/8 inch)
1	Brake-linkage yolk

Installing the Hydraulic Fittings

1. Install the hydraulic fitting (45 degree) to the cylinder-retract port on the hydraulic cylinder (Figure 2).

Note: Ensure that the O-rings are in position and lubricated with hydraulic oil before installing the fittings.

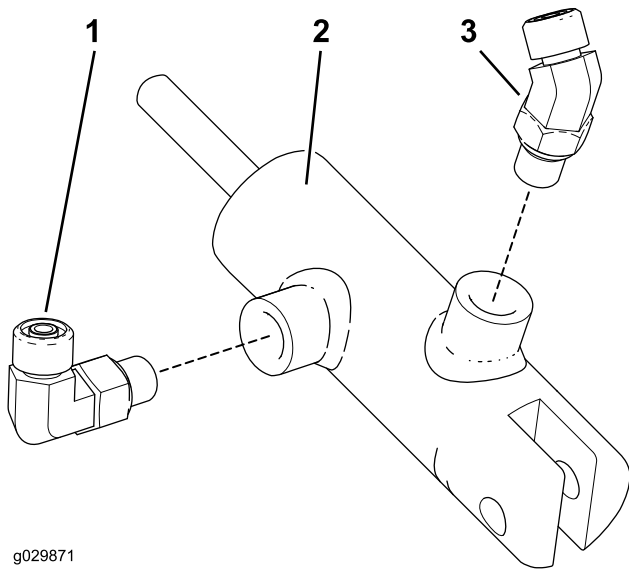


Figure 2

1. Hydraulic fitting (90 degree)
2. Hydraulic cylinder
3. Hydraulic fitting (45 degree)

2. Torque the fitting to 20 to 26 N-m (15 to 19 ft-lb).
3. Aim the open end of the fitting along the axis of the cylinder body (Figure 3).

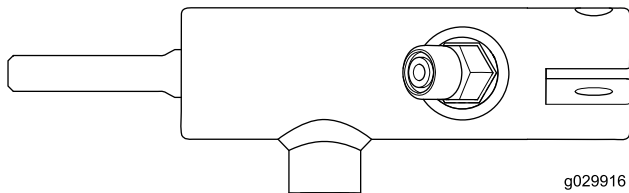


Figure 3

4. Install the hydraulic fitting (90 degree) to the cylinder-extend port on the hydraulic cylinder (Figure 2).

Note: Ensure the O-rings are in position and lubricated with hydraulic oil before installing the fittings.

5. Torque the fitting to 20 to 26 N-m (15 to 19 ft-lb).
6. Rotate the open end of the fitting 70 degrees as shown in Figure 4.

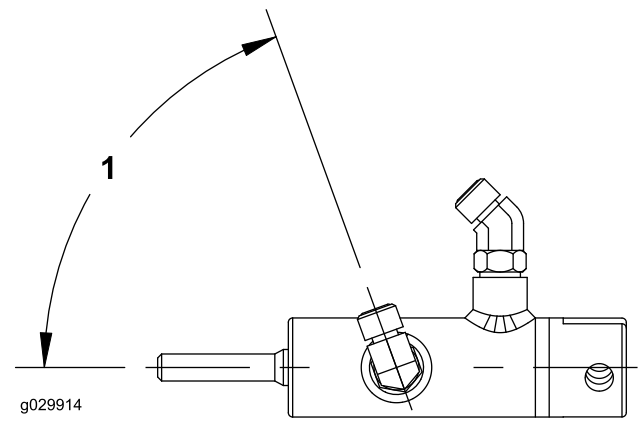


Figure 4

1. 70 degree

Installing the Connecting Pin

1. Install the jam nut (3/8 inch) to the cylinder rod until it is 2.22 cm (0.875 inch) from the end (Figure 5).

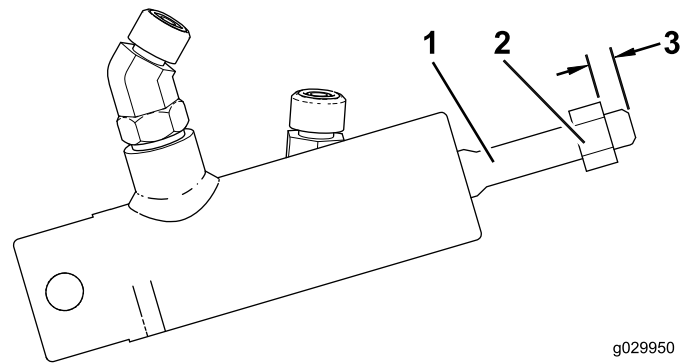


Figure 5

1. Cylinder rod
2. Jam nut (3/8 inch)
3. 2.22 cm (0.875 inch)

2. Loosely install the brake-linkage yolk to the cylinder rod until it contacts the jam nut (Figure 6).

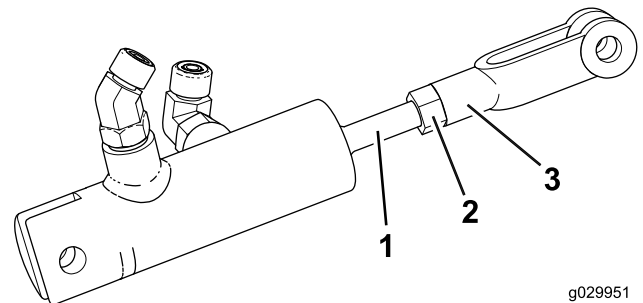


Figure 6

1. Cylinder rod
2. Jam nut (3/8 inch)
3. Brake-linkage yolk

3

Mounting and Adjusting the Cylinder to the Frame

Parts needed for this procedure:

1	Cylinder support
1	Jam nut
1	Yolk linkage
1	Clevis pin
1	Spring-clevis pin
1	Locking-cotter pin
2	U-bolt
4	Nut (3/8)

Installing the Cylinder Mount to the Frame

- Loosely install the cylinder mount to the frame using the 2 U-bolts and 4 nuts (3/8 inch) as shown in [Figure 7](#).

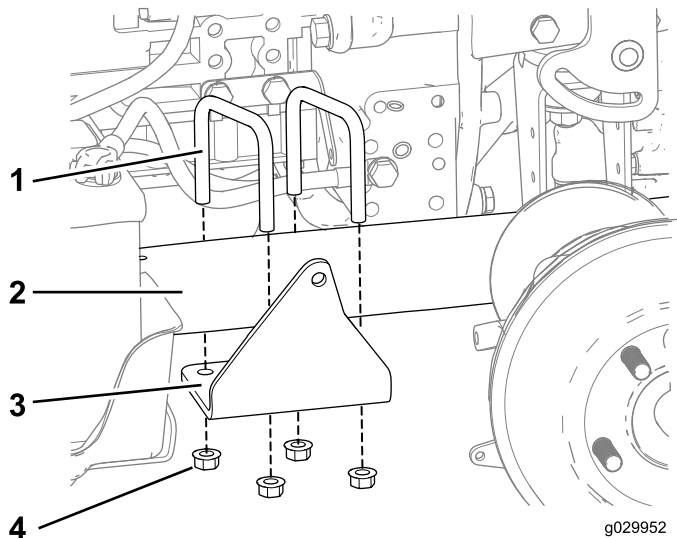


Figure 7

- U-bolts
- Right, rear frame
- Hydraulic-cylinder mount
- Flange nut (3/8 inch)

- Connect the hydraulic cylinder to the cylinder mount with the clevis pin and the locking-cotter pin ([Figure 8](#)).

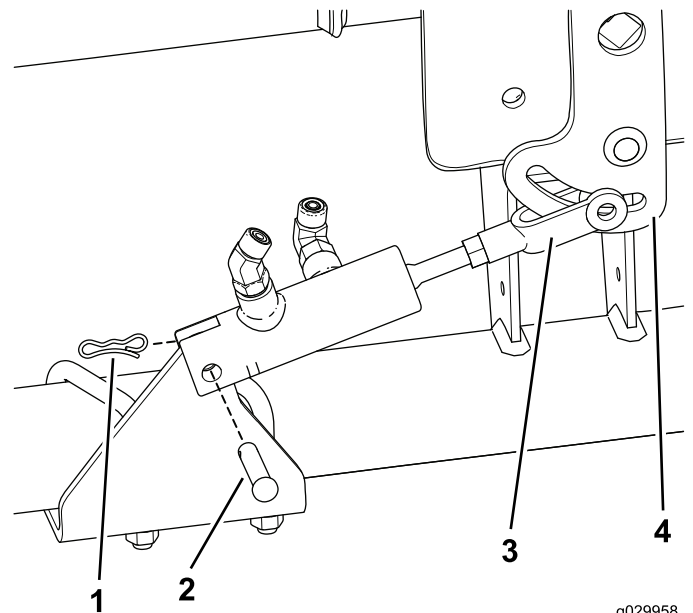


Figure 8

- Locking-cotter pin
- Clevis pin
- Yolk linkage
- Traction lever

- Arrange the holes in the yolk linkage around the slot in the traction lever ([Figure 8](#)).
- Insert the spring-clevis pin through the yolk linkage and rotate it into the locked position ([Figure 9](#)).

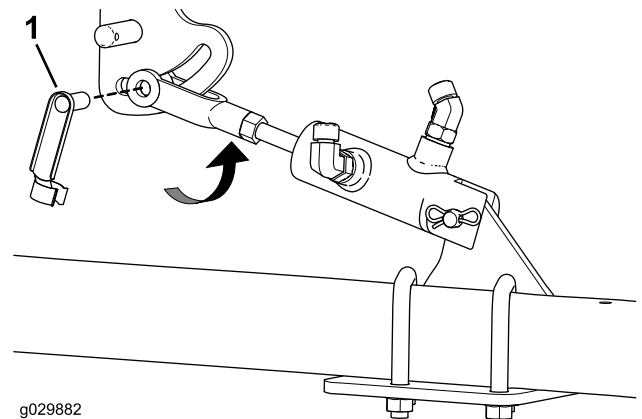


Figure 9

- Spring-clevis pin

- Tighten the jam nut against the yolk linkage.
- Fully extend the cylinder and position the cylinder mount to the dimensions shown in [Figure 10](#).

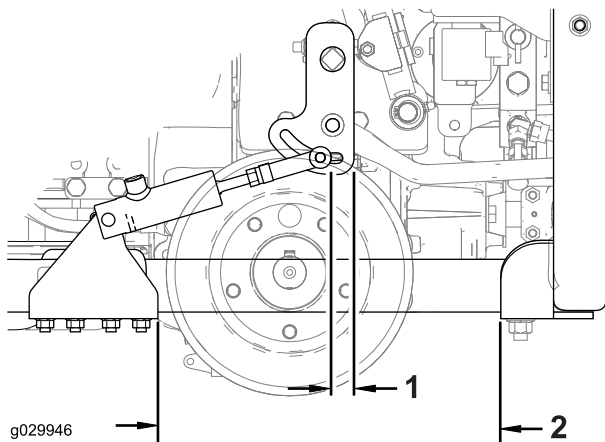


Figure 10

1. 2.2 cm (0.86 inch)
2. 33 cm (13 inch)

7. Tighten the 4 flange nuts to secure the mounting bracket to the frame (Figure 7).

4

Connecting the Hydraulic Hoses

Parts needed for this procedure:

1	Short hydraulic hose
1	Long hydraulic hose
1	Hydraulic fitting (straight)
3	Cable tie

Installing the Short Hydraulic Hose

Rotate the operator seat to access the hydraulic manifold; refer to the traction unit *Operator's Manual*.

1. Locate and remove the threaded plug on the hydraulic transmission (Figure 11).

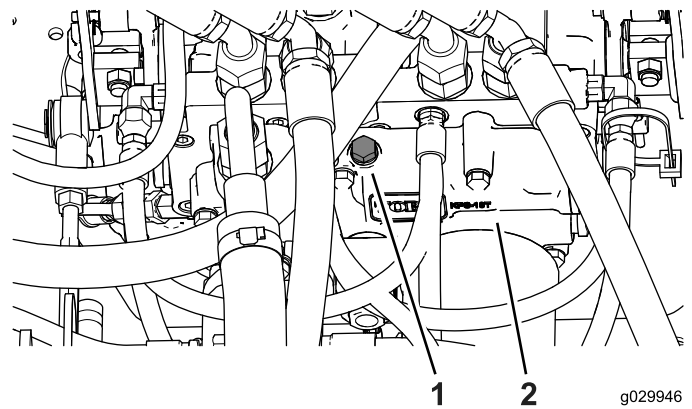


Figure 11

1. Threaded plug
2. Hydraulic manifold

2. Connect the hydraulic fitting (straight) at the location you removed the threaded plug from on the hydraulic transmission.

Note: Ensure that the O-rings are in position and lubricated with hydraulic oil before installing the fitting.

3. Torque the hydraulic fitting (straight) to 12 to 14 N-m (9 to 11 ft-lb).
4. Connect the hose fitting (90 degree) on the short-hydraulic hose to the hydraulic fitting (straight) on the hydraulic transmission (Figure 12).

Note: Ensure that the O-rings are in position and lubricated with hydraulic oil before connecting the hose.

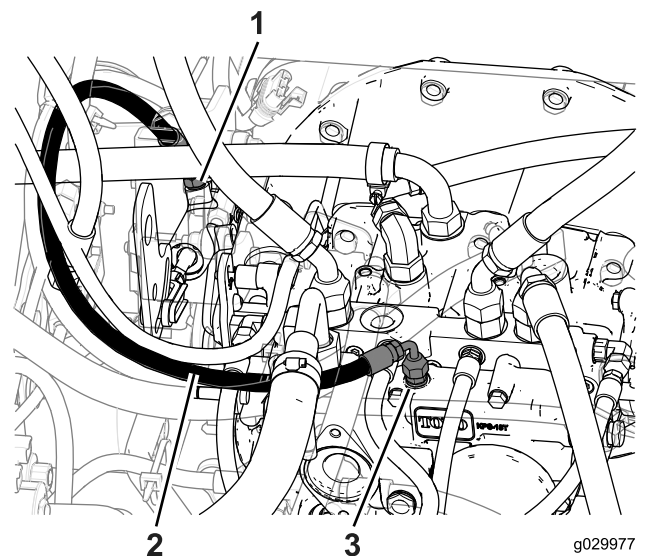


Figure 12

1. Hydraulic fitting (straight)
2. Short hydraulic hose
3. Hose fitting (90 degree)

5. Torque the fitting to 24 to 29 N-m (18 to 22 ft-lb).
6. Route the short hydraulic hose as shown in Figure 13.

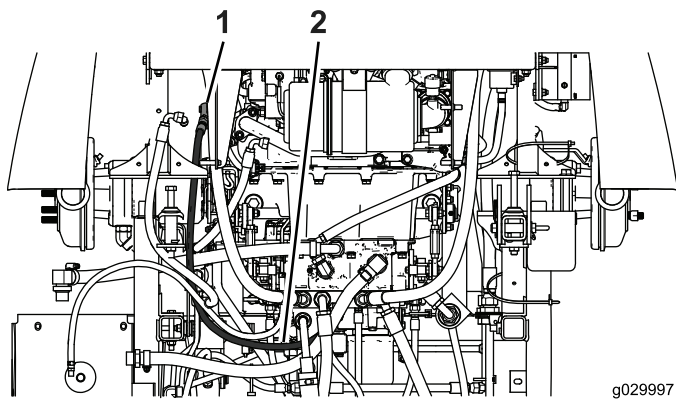


Figure 13

1. Hydraulic cylinder
2. Short hydraulic hose

7. Connect the hose fitting (straight) on the short hydraulic hose to the hydraulic fitting (45 degree) on the hydraulic cylinder (Figure 14).

Note: Ensure that the O-rings are in position and lubricated with hydraulic oil before connecting the hose.

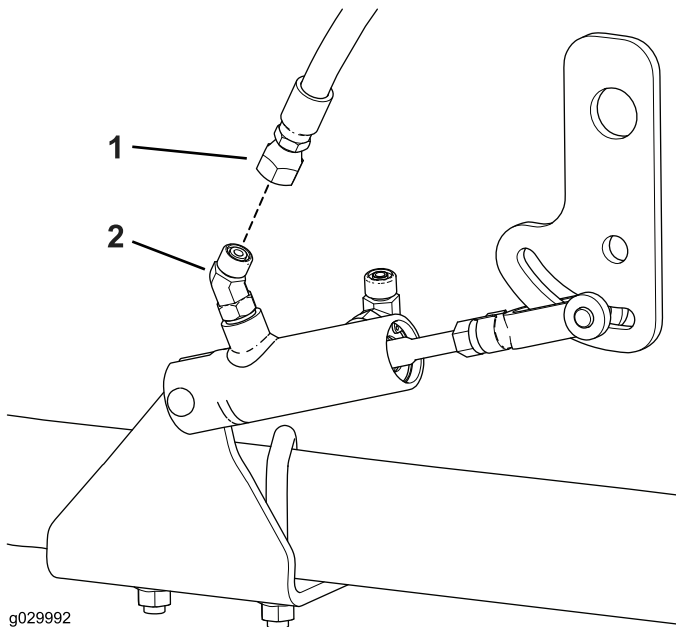


Figure 14

1. Hose fitting (straight)
2. Hydraulic fitting (45 degree)

8. Torque the fitting to 20-26 N-m(15 to 19 ft-lb).

Installing the Long Hydraulic Hose

1. Locate and remove the threaded cap on the hydraulic line.

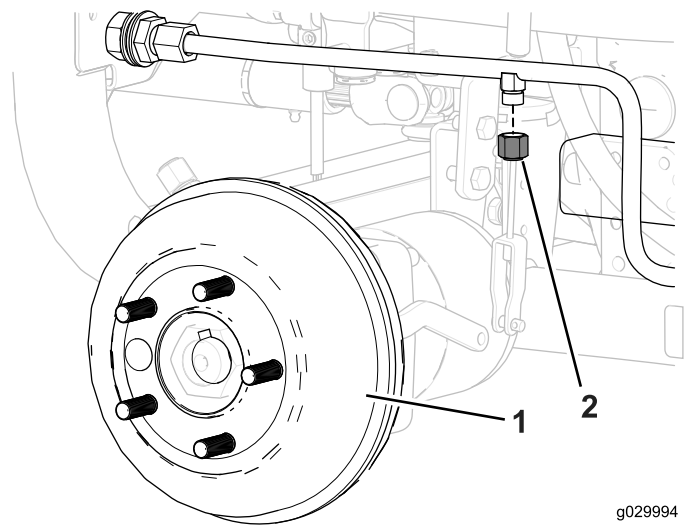


Figure 15

1. Left, rear-wheel hub
2. Hose fitting (90 degree)

2. Connect the hose fitting (90 degree) on the long hydraulic hose to the hydraulic fitting on the hydraulic line (Figure 16).

Note: Ensure that the O-rings are in position and lubricated with hydraulic oil before connecting the hose.

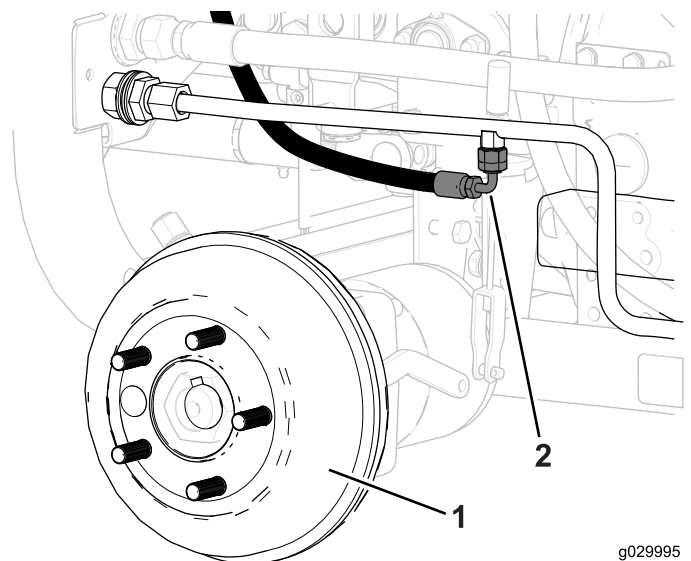


Figure 16

1. Left rear-wheel hub
2. Threaded cap

3. Torque the fitting to 24 to 29 N-m (18 to 22 ft-lb).
4. Route the long hydraulic hose as shown in Figure 17.

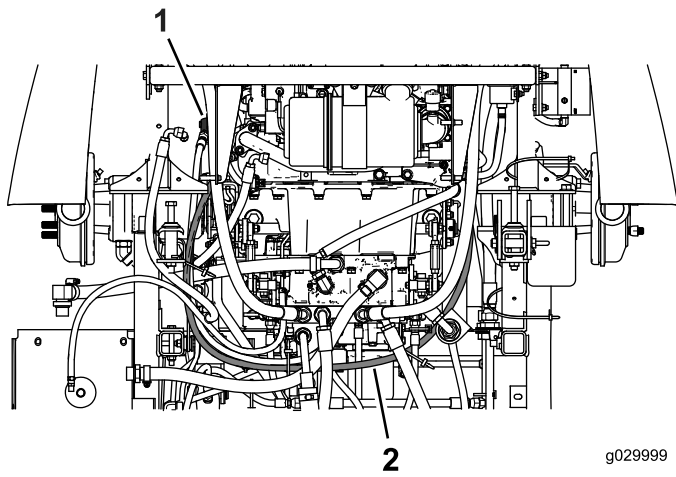


Figure 17

1. Hydraulic cylinder
2. Long hydraulic hose

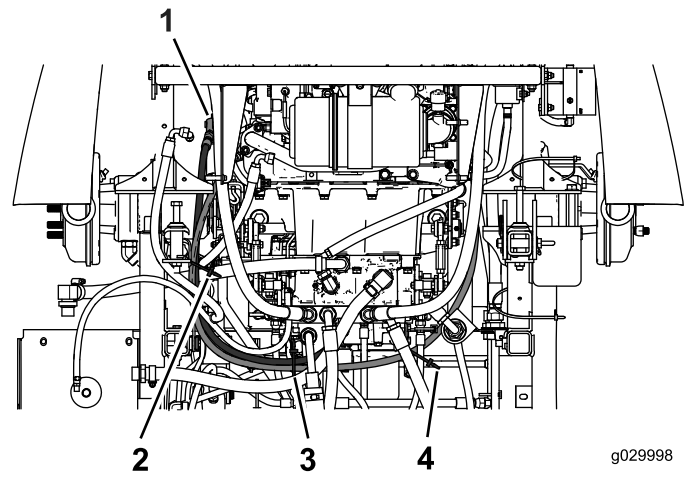


Figure 19

1. Hydraulic cylinder
2. Cable tie
3. Cable tie
4. Cable tie

5. Connect the hose fitting (straight) on the long-hydraulic hose to the hydraulic fitting (90 degree) on the hydraulic cylinder (Figure 18).

Note: Ensure that the O-rings are in position and lubricated with hydraulic oil before connecting the hose.

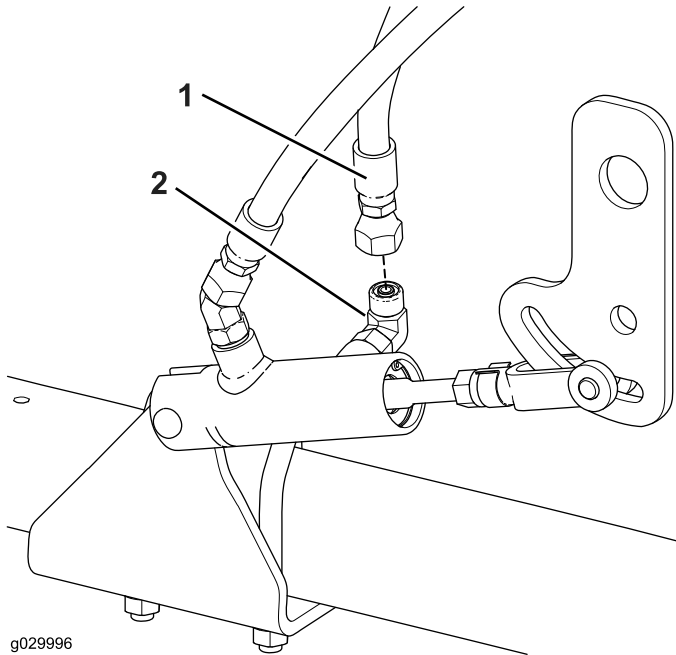


Figure 18

1. Hose fitting (straight)
2. Hydraulic fitting (90 degree)

6. Torque the fitting to 20-26 N-m(15 to 19 ft-lb).
7. Secure the hydraulic hoses with the cable ties (Figure 19).

Important: Secure the hoses away from sharp edges and moving parts.

5

Installing the Rear Wheels

No Parts Required

Procedure

1. Install the rear-wheel to the traction unit and hand-tighten the lug nuts.
2. Torque the lug nuts to 101 to 115 N-m (75 to 85 ft-lb) in the following order ([Figure 20](#)).

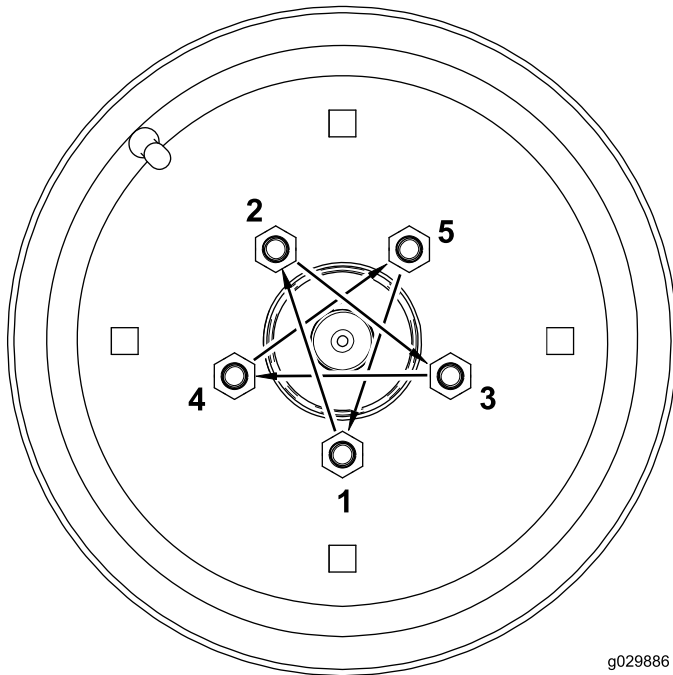


Figure 20

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6

Adjusting the Speed-Reduction Unit

No Parts Required

Procedure

Operate the traction unit to check the setting of the speed-reduction kit. If required, make the following adjustments:

- Remove the spring-clevis pin securing the yoke to the traction lever ([Figure 21](#)).

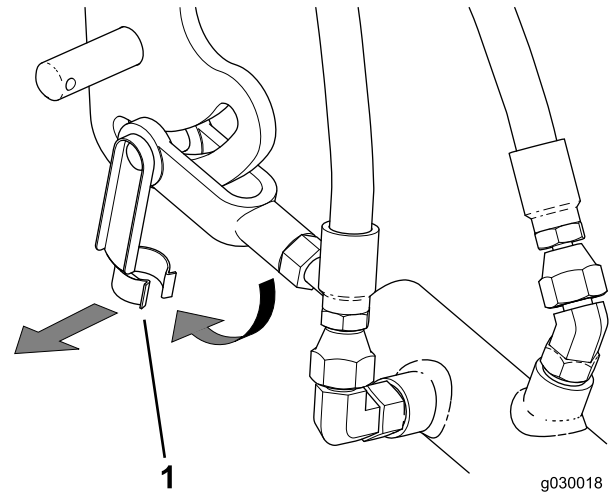


Figure 21

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- Loosen the jam nut on the cylinder rod ([Figure 6](#)).
- Rotate the yoke in on the cylinder rod to increase the mowing speed.
- Rotate the yoke out on the cylinder rod to decrease the mowing speed.

Note: The speed range of the adjustment is 6.4 to 19.3 km/h (4 to 12 mph). A slower-speed setting may compromise the hill-climbing capability of the traction unit.

7

Completing the Installation

No Parts Required

Procedure

Perform the following after installing the speed reduction kit.

- Check the hydraulic-fluid levels and replenish if required.
- Clean-up excess fluid on the traction unit.
- Install covers or components that were temporarily removed during the install.
- Carefully lower the traction unit to the ground.

Operation

The speed-reduction unit automatically operates when you activate the cutter unit.