



Three-Wheel Drive Kit without ROPS

Greensmaster® 3250-D Traction Unit

Model No. 04477

Installation Instructions

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. |
| 2 | No parts required | – | Remove the existing wheel. |
| 3 | No parts required | – | Modify the caster fork. |
| 4 | Motor and hub assembly Re-lube flangette Standard flangette Bearing Socket-head screw Locknut (1/2 inch) Hardened washer Spacer Adapter plate Hex-head bolt Decal | 1 1 1 1 2 2 3 1 1 3 2 | Install the motor and hub assembly. |
| 5 | Self-tapping screws Tube clamp Coverplate Hex-head screw (M8) Locknut (M8) Hose assembly (95-0517) Hose assembly (100-6412) Hose clamp bracket Cable tie | 4 4 2 2 2 1 1 2 1 | Install the hoses. |
| 6 | No parts required | – | Complete the installation. |



1

Preparing the Machine

No Parts Required

Procedure

1. Park the machine on a level surface.
2. Engage the parking brake.
3. Shut off the engine and remove the key.
4. Disconnect first the negative cable, then the positive cable from the battery.

2

Removing the Existing Wheel

No Parts Required

Procedure

1. Chock both front wheels to prevent the machine from moving.
2. Use a jack or hoist to lift the rear of the traction unit by the hoop welded on the caster fork, and remove the tire assembly from the caster fork.
3. Place appropriate jackstands beneath the frame to support the raised machine.
4. Remove the wheel hub assembly from the tire assembly.
Retain the lug nuts.
5. Remove the adapter plates from the caster fork.

3

Modifying the Caster Fork

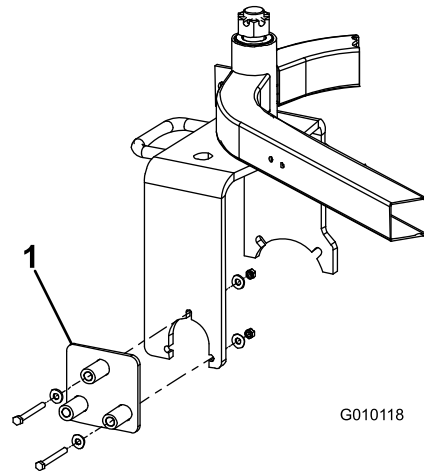
Traction Units with Serial Number 269999999 and Below

No Parts Required

Procedure

If the traction unit has a serial number prior to 269999999, you must modify the caster wheel fork. To modify the caster wheel fork, you must obtain a drill guide (Toro Part No. 112-0256-01) from an authorized Toro distributor. If you do not need to modify the caster wheel fork, proceed to Installing the Motor and Hub Assembly.

1. Mount the drill guide to the right side of the caster fork with 2 bolts (5/16 x 3 inches), 4 washers, and 4 nuts (Figure 1).



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Figure 1

1. Drill guide

2. Using the remaining hole in the drill guide, enlarge the hole in the caster fork to 9/16 inch (14 mm) diameter.
Important: Use a new or recently sharpened 9/16 (14 mm) inch drill bit. Proceed slowly when drilling. Do not use excessive force when drilling to prevent jamming the drill.
3. Move the fasteners to the other holes in the drill guide, and repeat the process until all 3 holes are enlarged.

4

Installing the Motor and Hub Assembly

Parts needed for this procedure:

| | |
|---|------------------------|
| 1 | Motor and hub assembly |
| 1 | Re-lube flangette |
| 1 | Standard flangette |
| 1 | Bearing |
| 2 | Socket-head screw |
| 2 | Locknut (1/2 inch) |
| 3 | Hardened washer |
| 1 | Spacer |
| 1 | Adapter plate |
| 3 | Hex-head bolt |
| 2 | Decal |

Procedure

1. Mount the 2 fittings (45°) to the side of the motor assembly (Figure 2).

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

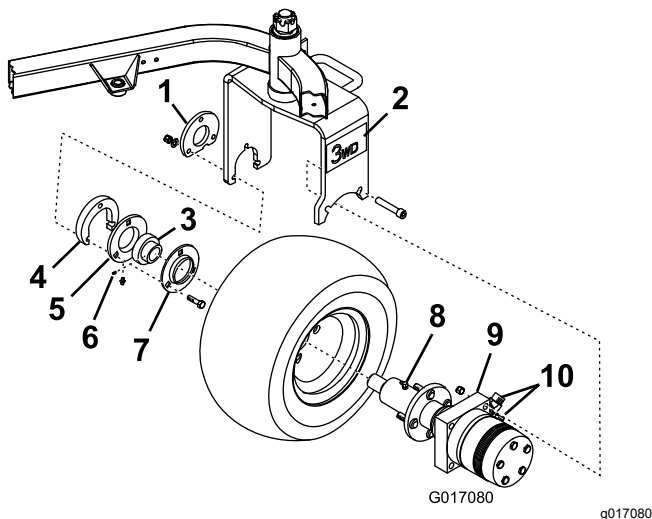


Figure 2

- | | |
|----------------------|----------------------------|
| 1. Spacer mount | 6. Set screw |
| 2. Decal (2) | 7. Standard flangette |
| 3. Bearing | 8. Grease fitting |
| 4. Adapter plate | 9. Motor and hub assembly |
| 5. Re-lube flangette | 10. 45° hydraulic fittings |

2. Remove the grease fitting from the new motor and hub assembly (Figure 2).
3. Mount the tire assembly to the motor and hub assembly with the 4 lug nuts that you previously removed.

Note: Torque the lug nuts to 70 to 90 ft-lb (95 to 122 N·m).

4. Install the grease fitting to the hub assembly, pointing it away from the hub.
5. Insert the flangettes and bearing onto the end of the motor shaft as shown in Figure 2.
6. Position the motor hub, flangettes with bearing, adapter plate, and tire assembly into the caster fork.

Note: Ensure that the motor is oriented with the hydraulic fittings to the rear of the machine (Figure 2).

7. Loosely secure the motor to the inside of the caster fork with 2 socket-head screws and 2 locknuts (Figure 2).

Note: Tighten the screws to 100 ft-lb (135 N·m).

8. Loosely assemble the flangettes (with the bearing to the inside of the caster fork) with 3 hex-head bolts (3/8 x 2-1/4 inches), an adapter bearing plate, a spacer mount, 3 hardened washers, and 3 locknuts (3/8 inch).

Important: Ensure that there is no radial load on the motor shaft.

Note: The grease fitting must be in the downward position on the flangette (Figure 2).

9. Torque the flangette screws to 40 ft-lb (55 N·m).

Important: Failing to carefully follow the above assembly sequence may result in premature motor seal and bearing failure.

10. Apply a thread-locking adhesive (such as Loctite®) to bearing set screws.

Note: Torque the set screws to 80 to 100 in-lb (9 to 11 N·m).

11. Verify overrunning bearing operation: The tire should roll freely forward, but the wheel motor will engage when the tire is rolled backward.
12. Lower the rear of the traction unit to the ground.
13. Grease all the fittings with No. 2 general purpose lithium-based grease.
14. Apply a 3-wheel-drive decal to each side of the caster fork (Figure 2).

5

Installing the Hoses

Parts needed for this procedure:

| | |
|---|--------------------------|
| 4 | Self-tapping screws |
| 4 | Tube clamp |
| 2 | Coverplate |
| 2 | Hex-head screw (M8) |
| 2 | Locknut (M8) |
| 1 | Hose assembly (95-0517) |
| 1 | Hose assembly (100-6412) |
| 2 | Hose clamp bracket |
| 1 | Cable tie |

Procedure

1. Drain all the hydraulic fluid from the reservoir by removing the upper hose from the pump (Figure 3).

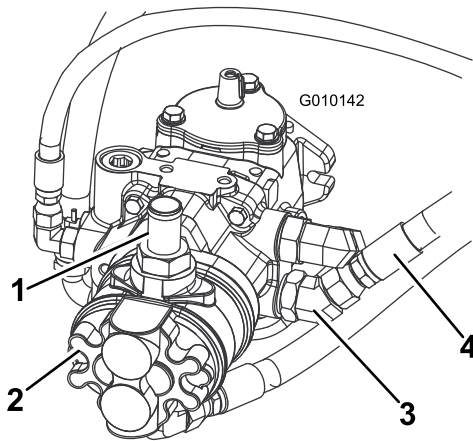


Figure 3

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1. Upper hose
2. Pump
3. 45° fitting
4. Lower hose

2. Connect the hose after draining the hydraulic fluid.

Note: The hydraulic system capacity is approximately 8.5 US gallons (33 L).

Important: Take care not to contaminate the hydraulic fluid if you are going to reuse it. A very small amount of debris can severely damage the hydraulic system.

3. Refer to the dimensions shown in Figure 4 to locate, mark, and drill 4 holes (9/32 inch or 7 mm diameter) into the right-hand frame tube.

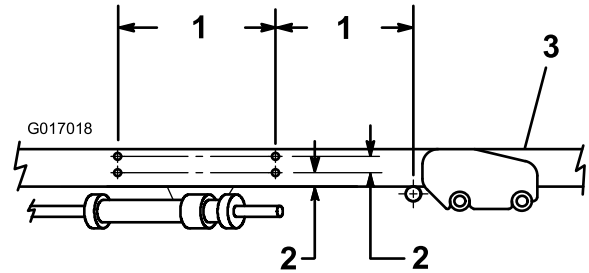


Figure 4

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1. 11 inches (27.9 cm) +/- 1/4 inch (0.6 cm)
2. 1 inch (25.4 mm) +/- 1/16 inch (1.6 mm)
3. Right-hand frame tube

4. Secure the hose clamp bracket assemblies (tube clamps, cover plates, clamp brackets, hex-head screws, and locknuts) to the frame with 4 self-tapping screws (Figure 5).

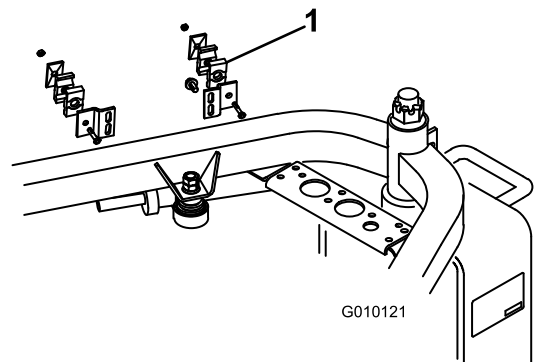
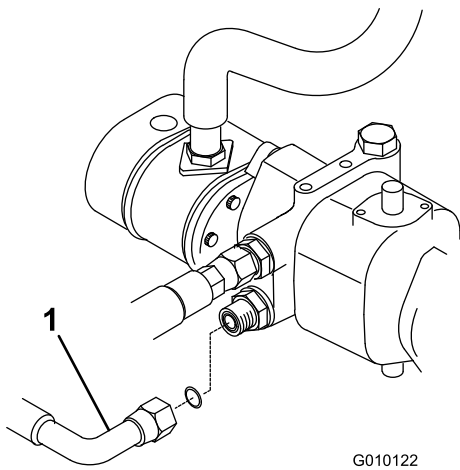


Figure 5

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1. Hose clamp bracket

5. Disconnect the lower hydrostat hose from the hydrostat (Figure 6) and from the upper-bulkhead tee fitting to the front-wheel motors (Figure 7).

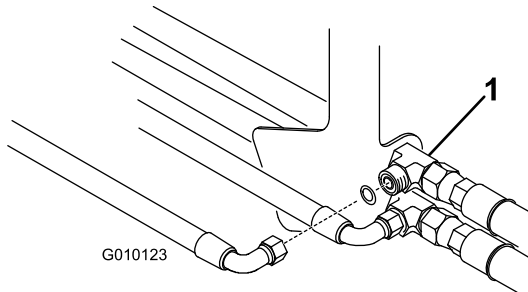


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Figure 6

1. Hydrostat hose (upper)



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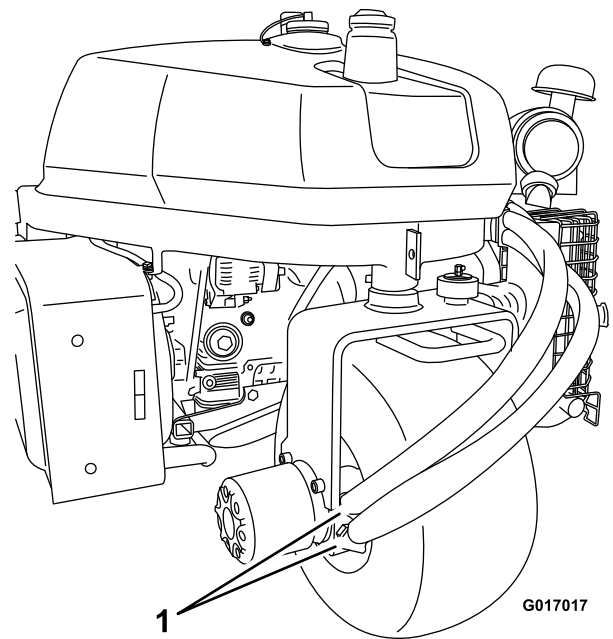
Figure 7

1. Upper-bulkhead tee fitting

Note: Remove and discard the lower hydrostat hose.

6. Connect the 90° fitting end of the new (shortest) hose to the lower port of the hydrostat.
7. Route the hose through the lower position in the hose clamps, behind the caster fork and to the lower port of the rear-wheel motor.

Note: Mount the bottom hose ends horizontally (Figure 8).



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Figure 8

1. Bottom hose ends

8. Secure the hose ends to the fittings.

Note: Use a backing wrench to ensure that the hose does not twist.

9. Secure the hoses together at the rear of the unit with a cable tie.
10. Turn the steering fork fully side-to-side to check for proper hose flex and position.

Note: The hoses should not rub on the tire, rim, tanks, steering fork, or steering hoses.

Note: The hydraulic lines must not be twisted, kinked, have sharp bends, or touch sharp edges, moving parts, or engine exhaust parts.

11. Secure the hoses in the brackets.

Note: The hose clamp brackets are slotted vertically to allow for adjustment.

12. Grease all fittings with No. 2 lithium grease.

6

Completing the Installation

No Parts Required

Procedure

1. Check the hydraulic-fluid level; refer to your traction unit *Operator's Manual*.
2. Connect the positive cable to the battery.
3. Connect the negative cable to the battery.
4. Start the engine.
5. Cycle the traction and lift cylinders to purge the air from the hydraulic system.
6. Check the hydraulic-fluid level.

Notes:



Count on it.