Form No. 3464-184 Rev A

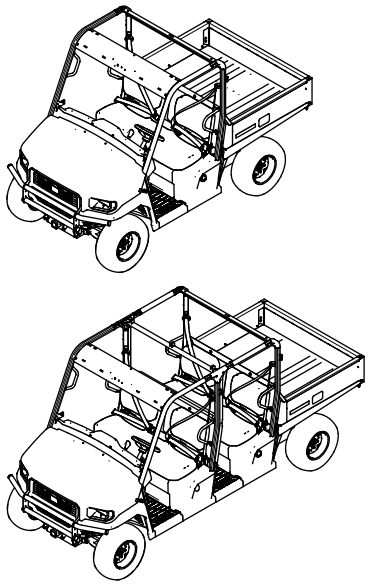
TORO®

Count on it.

Operator's Manual

Workman® UTX Gasoline Utility Vehicle

Model No. 08100—Serial No. 415260000 and Up
Model No. 08100TC—Serial No. 400000000 and Up
Model No. 08101—Serial No. 415260000 and Up



Note: The removal or modification of evaporative emission-related parts on this OHRV is illegal. Violators may be subject to civil and/or criminal penalties as provided under California and federal law.

Register at www.Toro.com.
Original Instructions (EN)

CE UK CA

3464-184

This product complies with all relevant European directives; for details, please see the separate product specific Declaration of Conformity (DOC) sheet.

It is a violation of California Public Resource Code Section 4442 or 4443 to use or operate the engine on any forest-covered, brush-covered, or grass-covered land unless the engine is equipped with a spark arrester, as defined in Section 4442, maintained in effective working order or the engine is constructed, equipped, and maintained for the prevention of fire.

The enclosed engine owner's manual is supplied for information regarding the US Environmental Protection Agency (EPA) and the California Emission Control Regulation of emission systems, maintenance, and warranty. Replacements may be ordered through the engine manufacturer.

⚠ WARNING

CALIFORNIA
Proposition 65 Warning

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Wash hands after handling.

Introduction

This utility vehicle is intended to be used primarily off-highway by professional, hired operators to transport people and material loads for commercial applications. Using this product for purposes other than its intended use could prove dangerous to you and bystanders.

Read this information carefully to learn how to operate and maintain your product properly and to avoid injury and product damage. You are responsible for operating the product properly and safely.

Visit www.Toro.com for product safety and operation training materials, accessory information, help finding a dealer, or to register your product.

Whenever you need service, genuine Toro parts, or additional information, contact an Authorized Service Distributor or Toro Customer Service and have the model and serial numbers of your product ready. Figure 1 identifies the location of the model and serial numbers on the product. Write the numbers in the space provided.

Important: **With your mobile device, you can scan the QR code on the serial number decal (if equipped) to access warranty, parts, and other product information.**

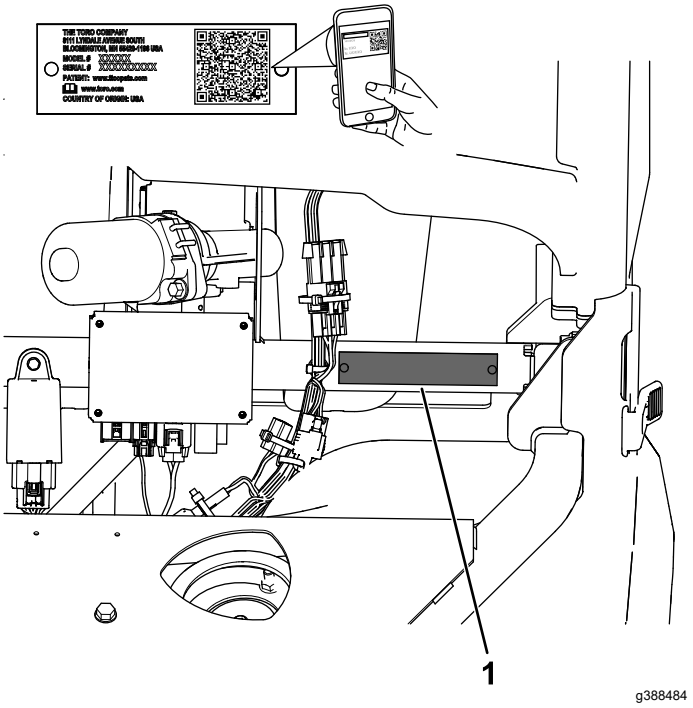


Figure 1

1. Model and serial number location

Model No. _____

Serial No. _____

All Rights Reserved

This manual uses 2 words to highlight information. **Important** calls attention to special mechanical information and **Note** emphasizes general information worthy of special attention.

The safety-alert symbol (Figure 2) appears both in this manual and on the machine to identify important safety messages that you must follow to avoid accidents. This symbol will appear with the word **Danger**, **Warning**, or **Caution**.

- **Danger** indicates an imminently hazardous situation which, if not avoided, **will** result in death or serious injury.
- **Warning** indicates a potentially hazardous situation which, if not avoided, **could** result in death or serious injury.
- **Caution** indicates a potentially hazardous situation which, if not avoided, **may** result in minor or moderate injury.



g000502

Figure 2

Safety-alert symbol

Contents

Safety 5
General Safety 5
Safety and Instructional Decals 6
Setup 9
1 Installing the Steering Wheel 9
2 Connecting the Battery 10
3 Changing the Blinker Mode from United States (US) to European (EU) 11
4 Converting the Speedometer from mph to km/h 11
5 Checking the Fluid Levels and Tire Pressure 12
6 Installing the Rollover Protection System (ROPS) 13
7 Installing the Rollover Protection System (ROPS) 33
8 Burnishing the Brakes 56
Product Overview 57
Controls 57
Specifications 63
Attachments/Accessories 63
Before Operation 64
Before Operation Safety 64
Performing Daily Maintenance 64
Checking the Tire Pressure 65
Adding Fuel 66
Breaking in a New Machine 66
During Operation 67
During Operation Safety 67
Operating the Cargo Bed 69
Starting the Engine 71
Driving the Machine 71
Using the Cruise Control 71
Adjusting the Ground Speed Governor 72
Stopping the Machine 72
Shutting Off the Engine 72
Using the 4-Wheel Drive/Differential Lock(s) 73
Controlling the Engine Throttle While in the P (PARK) Position 74
Loading the Cargo Bed 75
After Operation 76
After Operation Safety 76
Hauling the Machine 76
Towing the Machine 77
Towing a Trailer 77
Maintenance 78
Maintenance Safety 78
Recommended Maintenance Schedule(s) 79
Daily Maintenance Checklist 81
Maintaining the Machine under Special Operating Conditions 81
Pre-Maintenance Procedures 82
Preparing the Machine for Maintenance 82
Raising the Machine 82
Accessing the Hood 83
Lubrication 84
Greasing the Machine 84
Engine Maintenance 86
Engine Safety 86
Servicing the Air Cleaner 86
Servicing the Engine Oil 87
Servicing the Spark Plugs 89
Checking and Adjusting the Alternator Belt 90
Checking the Spark-Plug Wires 91
Checking the Positive Crankcase Ventilation (PCV) Valve 92
Checking the Timing Belt 92
Checking/Adjusting the Intake/Exhaust-Valve End Clearance 93
Fuel System Maintenance 96
Checking the Fuel Lines and Connections 96
Electrical System Maintenance 96
Electrical System Safety 96
Servicing the Battery 96
Servicing the Fuses 100
Drive System Maintenance 101
Maintaining the Tires 101
Checking the Steering and Suspension Components 101
Checking/Adjusting the Front Wheel Alignment 102
Adjusting the Front Ride Height 103
Checking the Transaxle-Fluid Level 104
Changing the Transaxle Fluid 104
Checking the Front Differential Oil Level 105
Changing the Front Differential Oil 105
Cooling System Maintenance 106
Cooling System Safety 106
Checking the Engine-Coolant Level 106
Removing Debris from the Cooling System 107
Checking the Coolant Hoses 108
Changing the Engine Coolant 108
Brake Maintenance 109
Checking the Brakes 109
Checking the Brake-Fluid Level 109
Changing the Brake Fluid 110
Belt Maintenance 111
Servicing the Drive Belt 111
Cleaning 112
Washing the Machine 112
Storage 113
Storage Safety 113
Storing the Machine 113
Troubleshooting 114

Safety

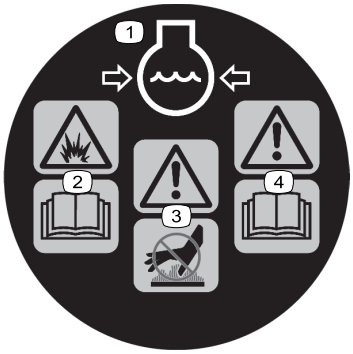
General Safety

This product is capable of causing personal injury. Always follow all safety instructions to avoid serious personal injury.

- Read and understand the contents of this *Operator's Manual* before you start the machine. Ensure that everyone using this product knows how to use it and understands the warnings.
- Carrying a heavy load with and/or adding attachments to the vehicle may affect its stability, depending on the amount and distribution of the weight.
- Use your full attention while operating the machine. Do not engage in any activity that causes distractions; otherwise, injury or property damage may occur.
- Do not put your hands or feet near moving components of the machine.
- Do not operate the machine without all guards and other safety protective devices in place and working on the machine.
- Keep bystanders and children out of the operating area. Never allow children under 16 to operate the machine unless they have obtained a state-issued motor vehicle driver's license.
- Stop and shut off the machine and remove the key before servicing or fueling.

Safety and Instructional Decals

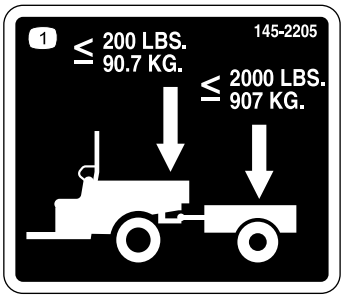
Safety decals and instructions are easily visible to the operator and are located near any area of potential danger. Replace any decal that is damaged or missing.



decal161-5218

161-5218

1. Engine coolant under pressure
2. Explosion hazard—read the *Operator's Manual*.
3. Warning—do not touch the hot surface.
4. Warning—read the *Operator's Manual*.



decal145-2205

145-2205

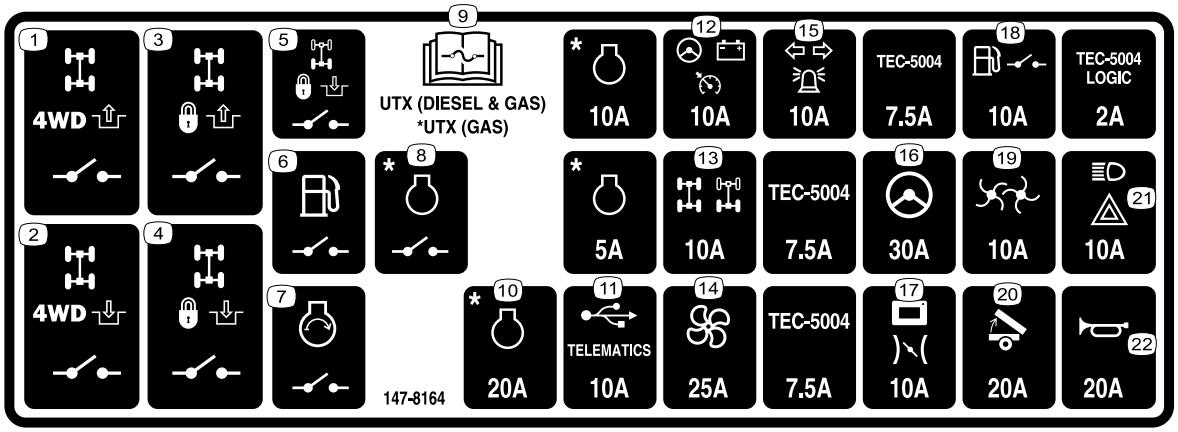
1. Do not exceed a tongue weight of 90.7 kg (200 lb); do not exceed a transport load of 907 kg (2,000 lb).



decal144-1143

144-1143

1. Warning—read the *Operator's Manual*.
2. Warning—all operators should be trained before operating the machine.
3. Warning—wear hearing protection.
4. Collision hazard—do not operate the machine on public streets, roads, or highways.
5. Warning—do not allow people under the age of 16 to operate the machine.
6. Warning—do not operate the machine under the influence of drugs or alcohol.
7. Falling hazard—do not carry passengers in the bed; do not carry extra passengers in between the seats.
8. Fire hazard—shut off the engine when adding fuel to the machine.
9. Warning—shift the transmission lever to the P (PARK) position, turn the key to the off position, and remove the key before leaving the machine.

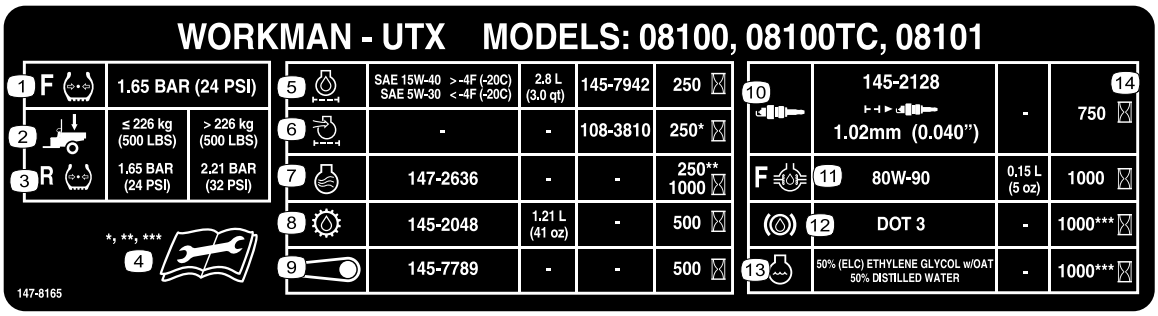


decal147-8164

147-8164

Note: * Gasoline machines only

1. Front differential lock and 4-wheel drive disengage relay
2. Front differential lock and 4-wheel drive engage relay
3. Front differential lock disengage relay
4. Front differential lock engage relay
5. Rear differential lock engage relay
6. Fuel relay
7. Starter relay
8. Engine relay
9. Read the *Operator's Manual* for fuse information.
10. Engine power (gasoline machines only)
11. USB/telematics
12. Alternator, power steering, and speed sensor enable
13. Front and rear differentials
14. Cooling fan
15. Position lights and turn-signal lights
16. Power steering
17. Display and throttle
18. Fuel relay
19. Salt spreader
20. Bed lift
21. Headlights and hazard lights
22. Horn



decal147-8165

147-8165

Note: * Replace more frequently in dusty or dirty conditions

** Check at 250 hours, replace at 1,000 hours

*** 1,000 hours or 5 years; whichever comes sooner

1. Front tire pressure
2. Rear tire pressure (varies depending on cargo load)
3. Rear tire pressure
4. Read the *Operator's Manual* before performing maintenance.
5. Engine oil and filter
6. Engine-air filter
7. Positive crankcase ventilation (PCV) valve
8. Transaxle fluid
9. Drive belt
10. Spark plug and gap distance
11. Front differential fluid
12. Brake fluid
13. Engine coolant
14. Hours



decal145-2215

145-2215

1. Warning—Read the *Operator's Manual*, wear a seat belt, avoid tipping the machine.
2. Warning—do not drill or weld.

For Standard (2-Person) Models



decal144-1144

144-1144

1. Runover/backover hazard—do not carry passengers.
2. Attention—read the *Operator's Manual*; maximum weight 567 kg (1,250 lb).

For Crew (4-Person) Models



decal144-2293

144-2293

1. Runover/backover hazard—do not carry passengers.
2. Attention—read the *Operator's Manual*; maximum weight 453 kg (1,000 lb).



decalbatterysymbols

Battery Symbols

Some or all of these symbols are on your battery.

1. Explosion hazard
2. No fire, open flame, or smoking
3. Caustic liquid/chemical burn hazard
4. Wear eye protection.
5. Read the *Operator's Manual*.
6. Keep bystanders away from the battery.
7. Wear eye protection; explosive gases can cause blindness and other injuries.
8. Battery acid can cause blindness or severe burns.
9. Flush eyes immediately with water and get medical help fast.
10. Contains lead; do not discard

Setup

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

1

Installing the Steering Wheel

TC Models Only

Parts needed for this procedure:

1	Steering wheel
1	Cover

Procedure

1. If the cover is installed, remove it from the hub of the steering wheel.
2. Remove the locknut (1/2 inch) from the steering shaft.
3. Ensure that the front wheels are centered.
4. Slide the steering wheel onto the steering shaft.
5. Secure the steering wheel to the shaft using the previously removed locknut (1/2 inch) and tighten it to 24 to 30 N·m (18 to 22 ft-lb).
6. Install the cover onto the steering wheel.

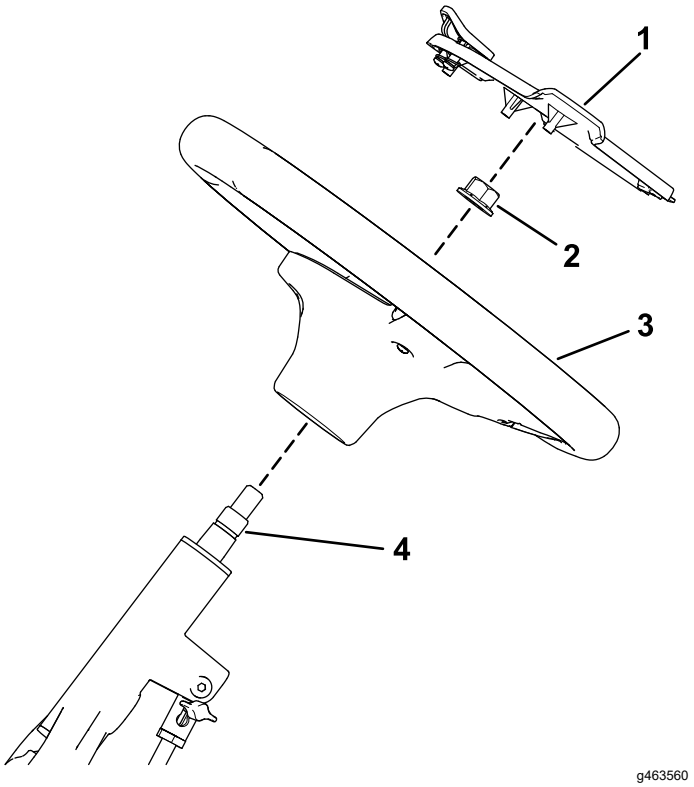


Figure 3

1. Cover
2. Locknut (1/2 inch)
3. Steering wheel
4. Steering shaft

2

Connecting the Battery

TC Models Only

No Parts Required

Procedure

⚠ WARNING

Incorrect battery cable routing could damage the machine and cables, causing sparks. Sparks can cause the battery gases to explode, resulting in personal injury.

- **Always disconnect the negative (black) battery cable before disconnecting the positive (red) cable.**
- **Always connect the positive (red) battery cable before connecting the negative (black) cable.**

1. Connect the positive battery cable (red) to the positive (+) terminal of the battery and secure the cable using the bolt and nuts (Figure 4).
2. Slide the insulator boot over the positive terminal (Figure 4).

   Note: The insulator boot prevents a possible short-to-ground from occurring.
3. Connect the negative battery cable (black) to the negative (–) terminal of the battery and secure the cable using the bolt and nuts (Figure 4).

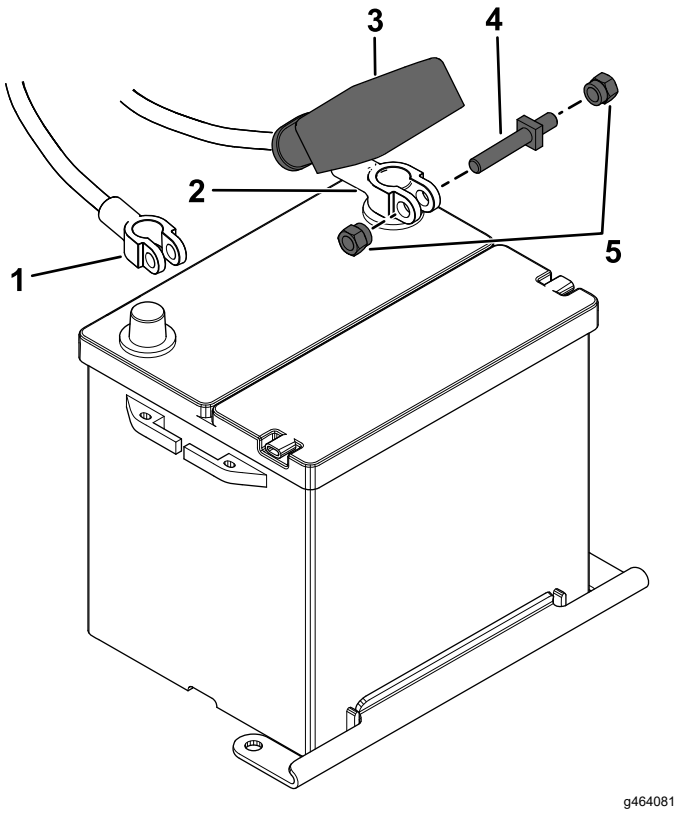


Figure 4

1. Negative battery cable (black)
2. Positive battery cable (red)
3. Insulator boot (positive battery cable)
4. Bolt
5. Nuts

3

Changing the Blinker Mode from United States (US) to European (EU)

International Models Only

No Parts Required

Procedure

Disconnect the default US jumper connection located underneath the hood (Figure 5).

Note: Use a cable tie to secure the loose connection.

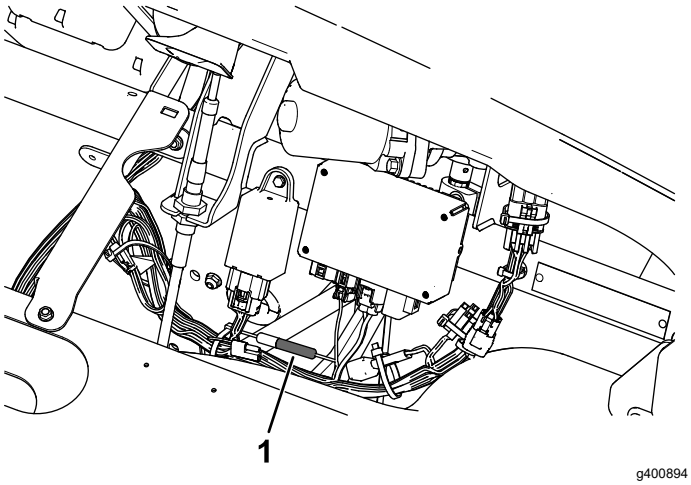


Figure 5

1. Default US jumper connection

4

Converting the Speedometer from mph to km/h

No Parts Required

Procedure

1. Shift the transmission lever to the P (PARK) position.
2. Rotate the key switch to the ON position.
3. Press and hold the display button between 3 to 10 seconds to convert the speedometer from mph to km/h.

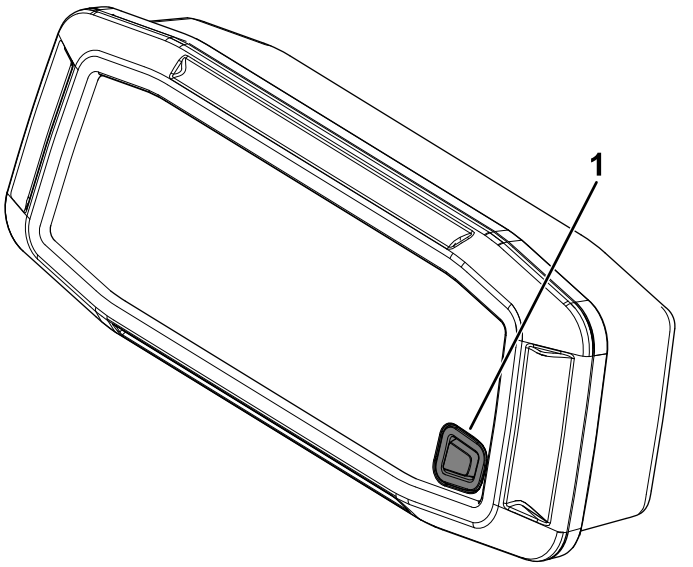


Figure 6

1. Button

5

Checking the Fluid Levels and Tire Pressure

No Parts Required

Procedure

1. Check the engine-oil level before you first start the engine; refer to Checking the Engine-Oil Level (page 87).
2. Check the transaxle-fluid level before you first start the engine; refer to Checking the Transaxle-Fluid Level (page 104).
3. Check the front differential oil level before you first start the engine; refer to Checking the Front Differential Oil Level (page 105).
4. Check the engine-coolant level before you first start the engine; refer to Checking the Engine-Coolant Level (page 106).
5. Check the brake-fluid level before you first start the engine; refer to Checking the Brake-Fluid Level (page 109).
6. Check the air pressure in the tires; refer to Checking the Tire Pressure (page 65).

6

Installing the Rollover Protection System (ROPS)

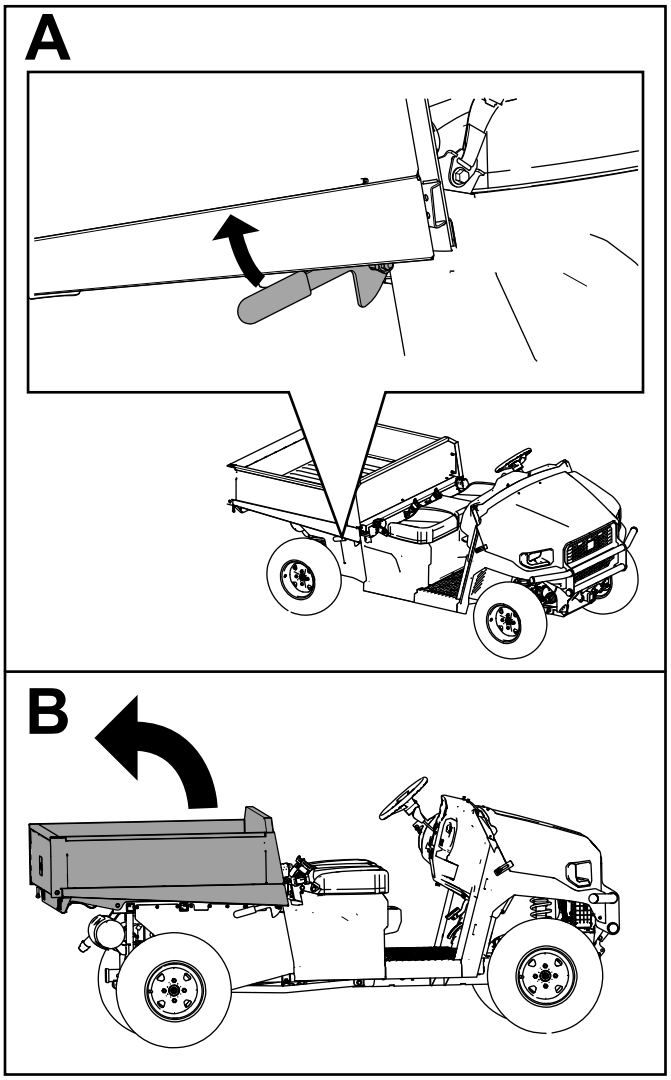
For Standard (2-Person) Models

Parts needed for this procedure:

1	Left, front roll bar assembly
1	Right, front roll bar assembly
1	Left, rear roll bar assembly
1	Right, rear roll bar assembly
1	Front crosslink
1	Rear crosslink
1	Seat panel
2	Shoulder restraint
8	Hex-head bolt (3/8 x 1-1/4 inches)
12	Carriage bolt (5/16 x 3/4 inch)
4	Hex-washer head bolt (5/16 x 3/4 inch)
10	Hex-washer head bolt (1/4 x 3/4 inch)
2	Hex-washer head bolt (1/4 x 1 inch)
2	Button-head bolt (5/16 x 1-1/2 inches)
2	Flange-head bolt (3/8 x 2-1/4 inches)
14	Locknut (5/16 inch)
10	Locknut (3/8 inch)
2	Locknut (1/4 inch)
2	Locknut (7/16 inch)
1	CVT-intake hood

Procedure

1. Raise the cargo bed (Figure 7).



g361797

Figure 7

2. Raise the hood (Figure 8).

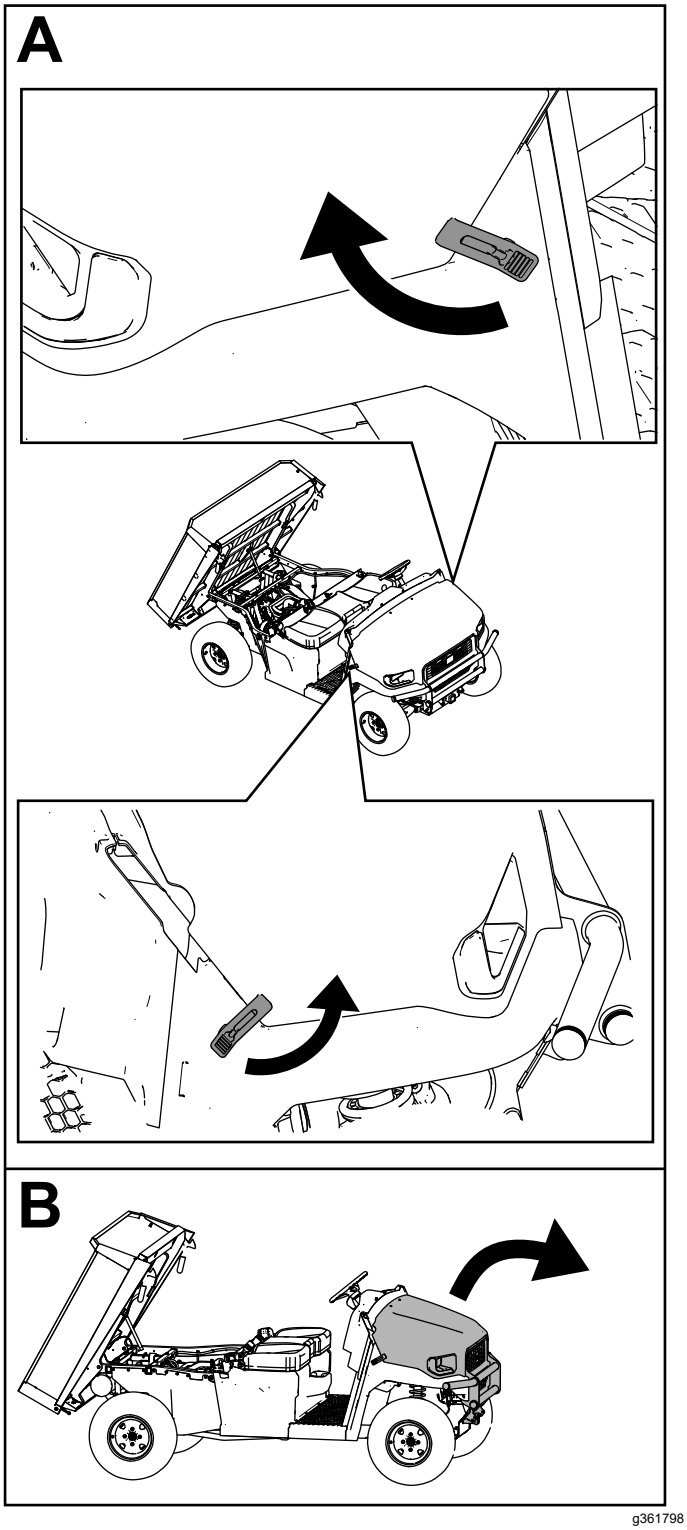


Figure 8

3. Remove the hex-washer head bolts (1/4 x 3/4 inch) and T30 torx-head fasteners from the right and left seat-base panels (Figure 9).

   Remove the fuel-tank cap from the left seat-base panel (Figure 10).

   Note: Do not pull the cap out until you reach the end of the tether.

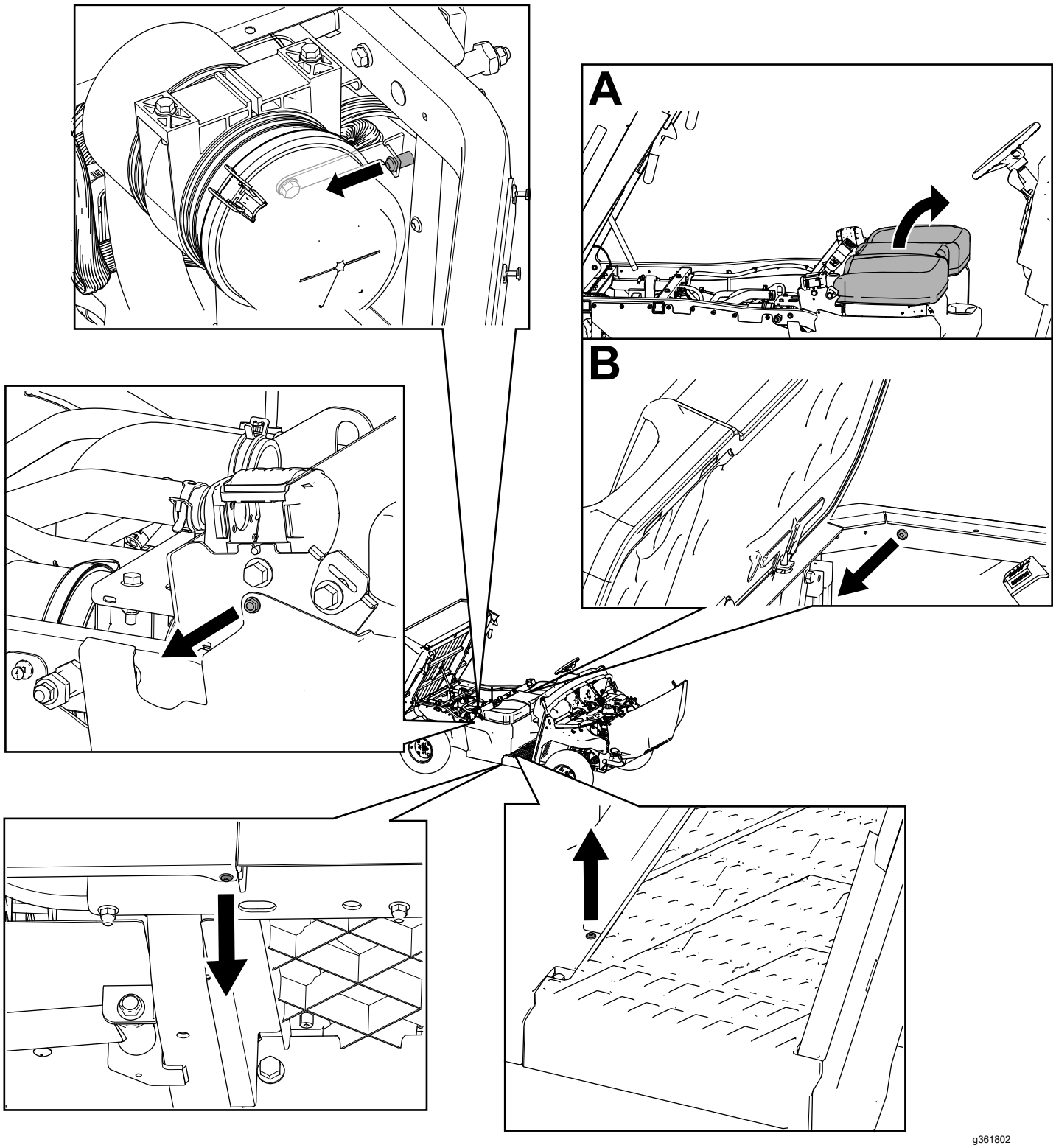
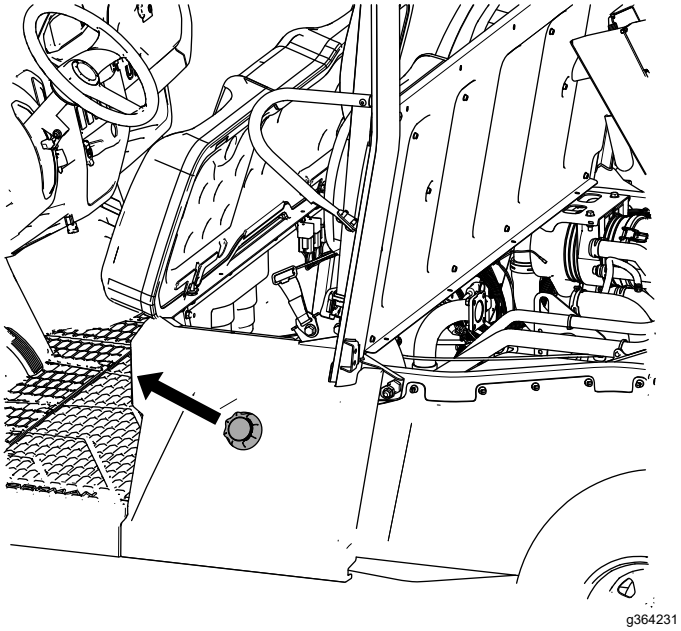


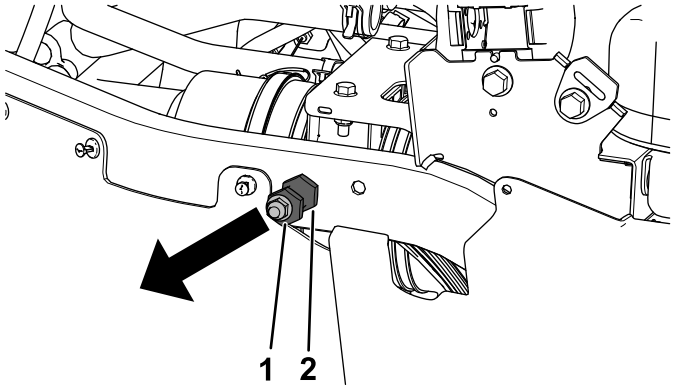
Figure 9



g364231

Figure 10

4. Remove the locknut (3/8 inch) and latch pin from the right and left, rear frame tubes (Figure 11).

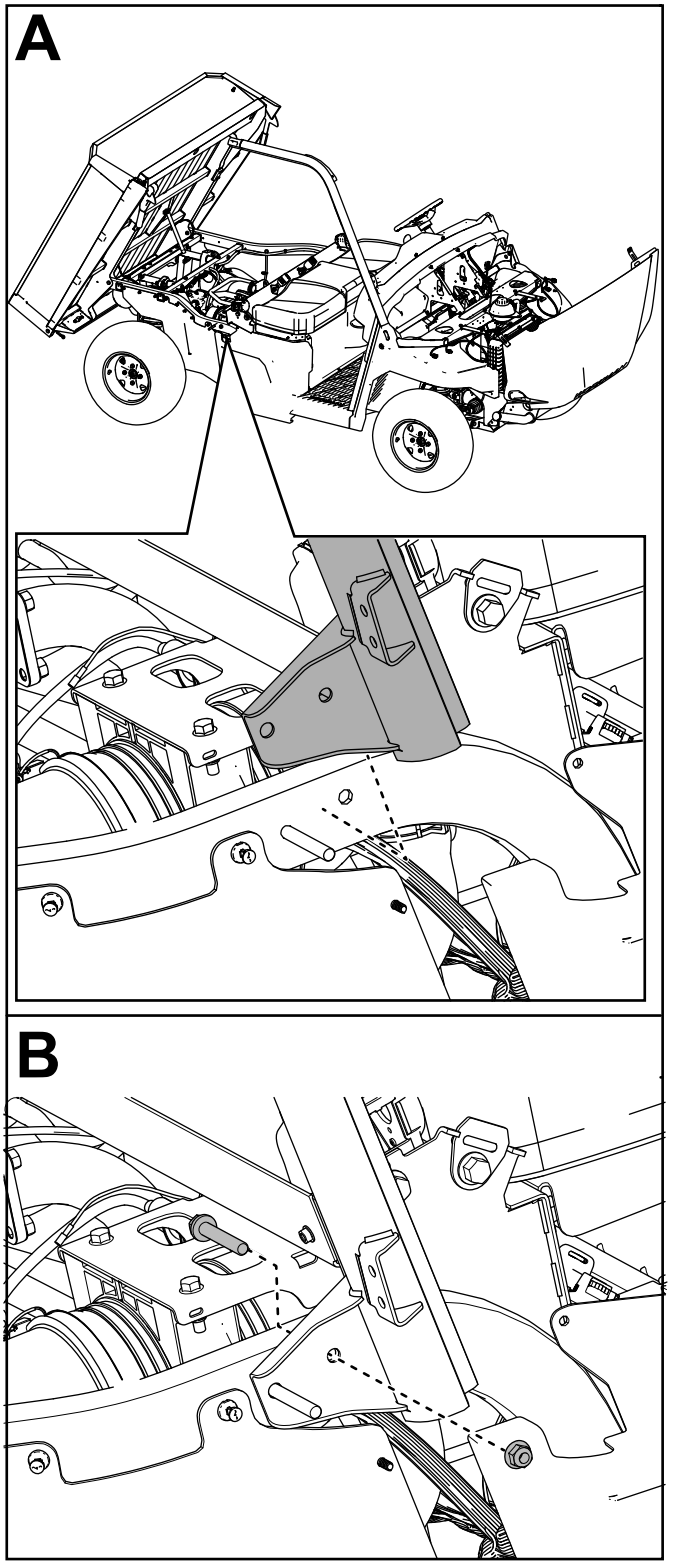


g364844

Figure 11

1. Locknut (3/8 inch)
2. Latch pin

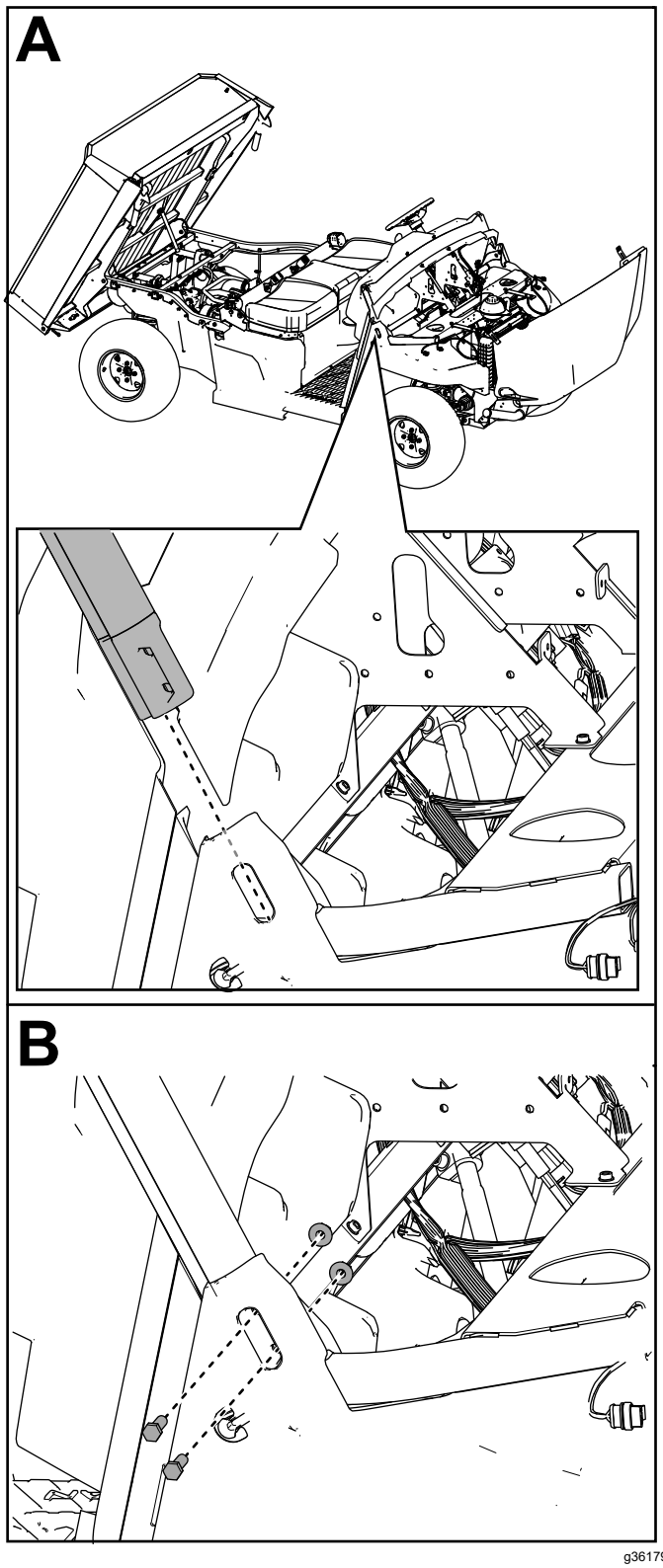
5. Loosely secure the right, rear roll bar assembly to the right, rear frame tube using 1 flange-head bolt (3/8 x 2-1/4 inches) and 1 locknut (3/8 inch) as shown in Figure 12.



g361804

Figure 12

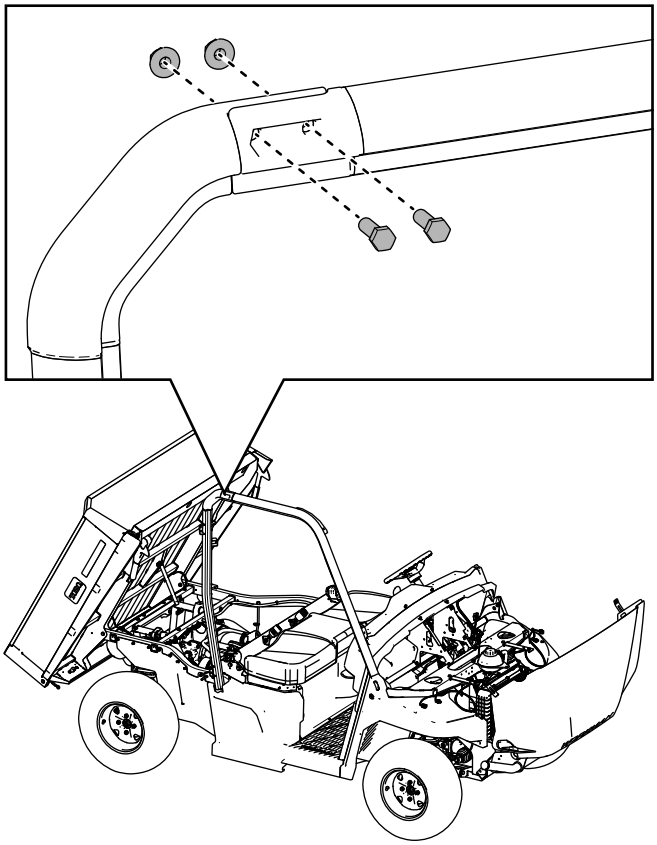
6. Repeat steps 3 through 5 for the left, rear roll bar assembly.
7. Loosely secure the right, front roll bar assembly to the right roll bar mount bracket using 2 hex-head bolts (3/8 x 1-1/4 inches) and 2 locknuts (3/8 inch) as shown in Figure 13.



g361799

Figure 13

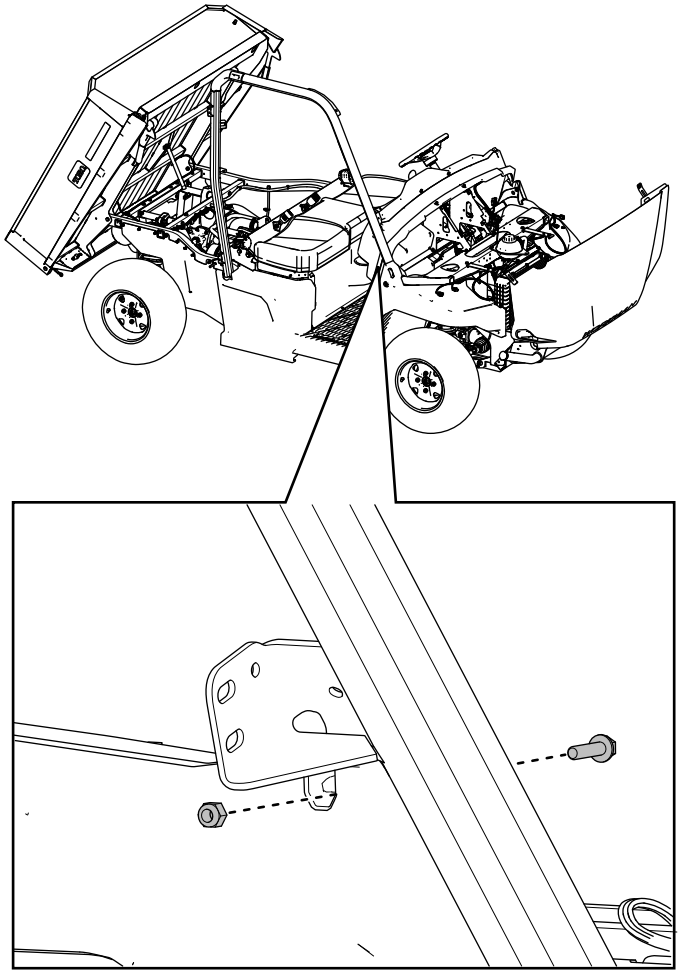
8. Loosely secure the right, front roll bar assembly to the right, rear roll bar assembly using 2 hex-head bolts (3/8 x 1-1/4 inches) and 2 locknuts (3/8 inch) as shown in Figure 14.



g361800

Figure 14

9. Loosely secure the right, front roll bar assembly to the dash panel using 1 hex-washer head bolt (1/4 x 1 inch) and 1 locknut (1/4 inch) as shown in Figure 15.

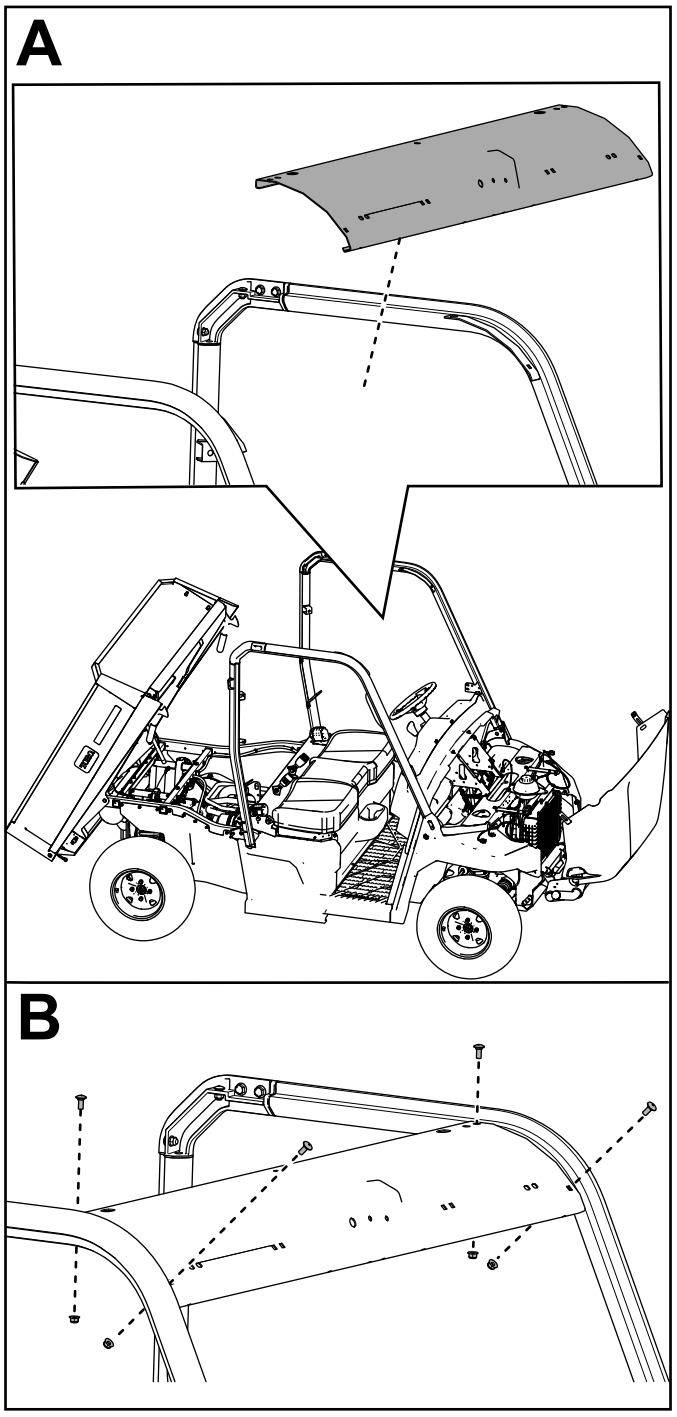


g361801

Figure 15

10. Repeat steps 7 through 9 for the left, front roll bar assembly.

11. Secure the front crosslink to the front roll bar assemblies using 4 carriage bolts (5/16 x 3/4 inch) and 4 locknuts (5/16 inch) as shown in Figure 16.

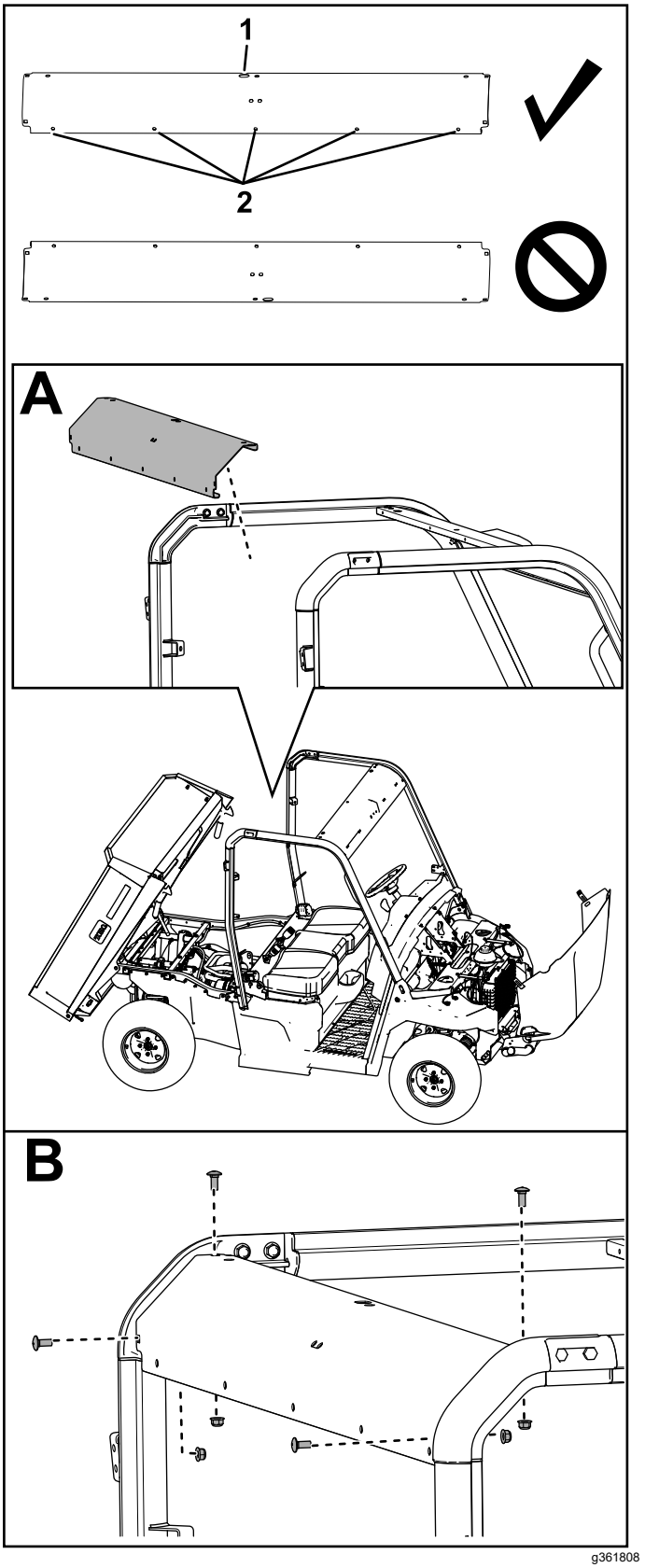


g361807

Figure 16

12. Secure the rear crosslink to the rear roll bar assemblies using 4 carriage bolts (5/16 x 3/4 inch) and 4 locknuts (5/16 inch) as shown in Figure 17.

    Ensure that you position the crosslink as shown in Figure 17.

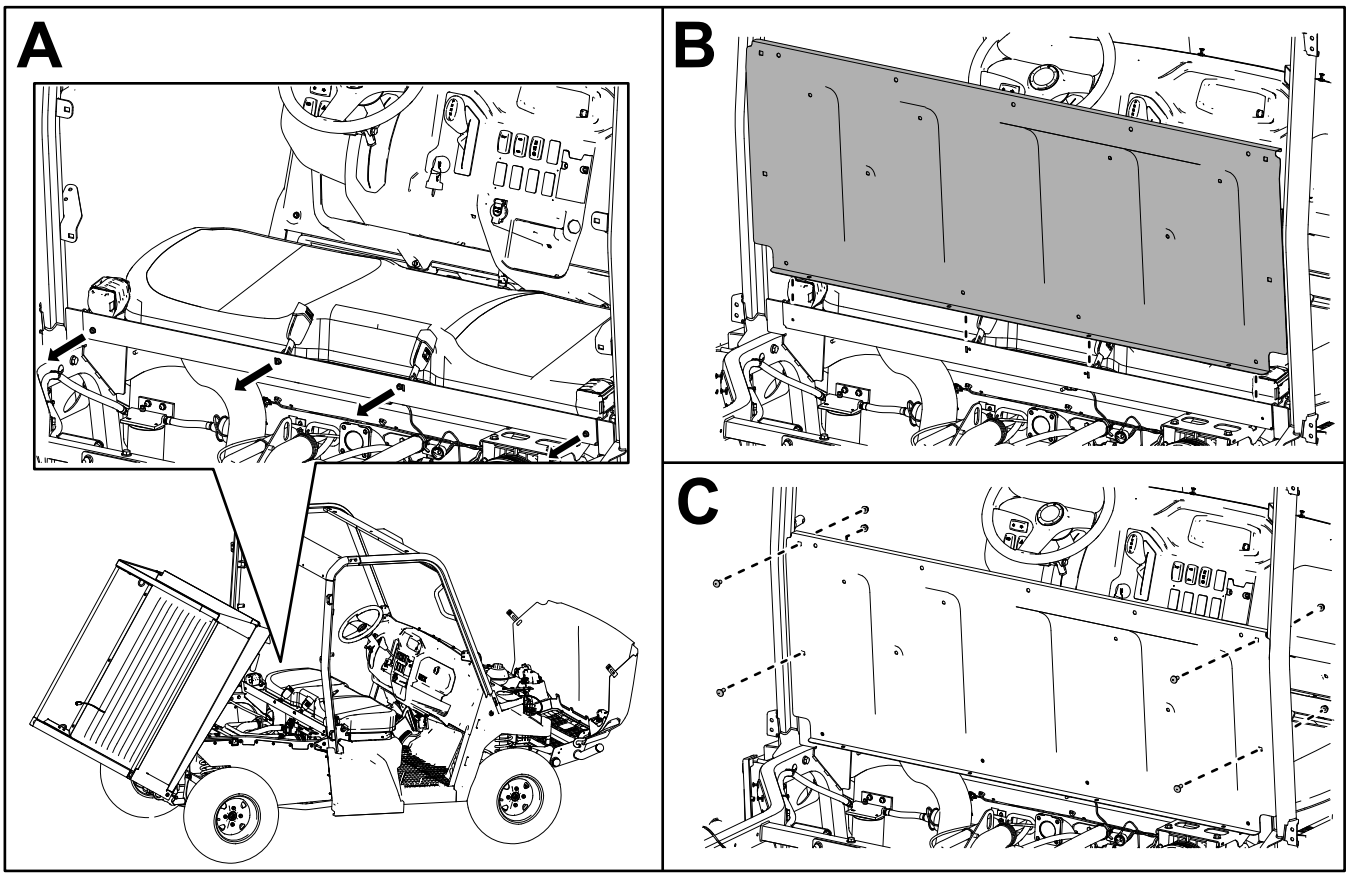


g361808

Figure 17

1. Ensure that the notch is on the top.
2. Ensure that the holes are on the bottom.

13. Secure the seat panel to the rear roll bar assemblies using 4 carriage bolts (5/16 x 3/4 inch) and 4 locknuts (5/16 inch) as shown in Figure 18.



g362076

Figure 18

14. Secure the seat panel to the rear frame crosslink channel using 4 hex-washer head bolts (1/4 x 3/4 inch) as shown in Figure 19.

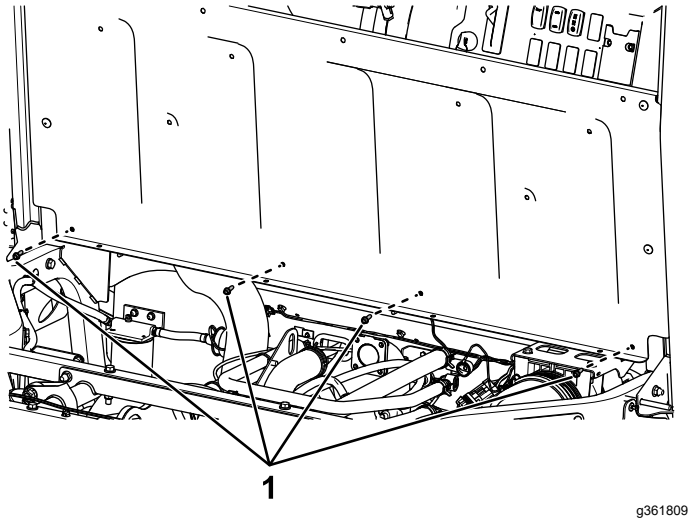


Figure 19

1. Hex-washer head bolts (1/4 x 3/4 inch)

15. Torque the fasteners to the specifications shown in Figure 20.

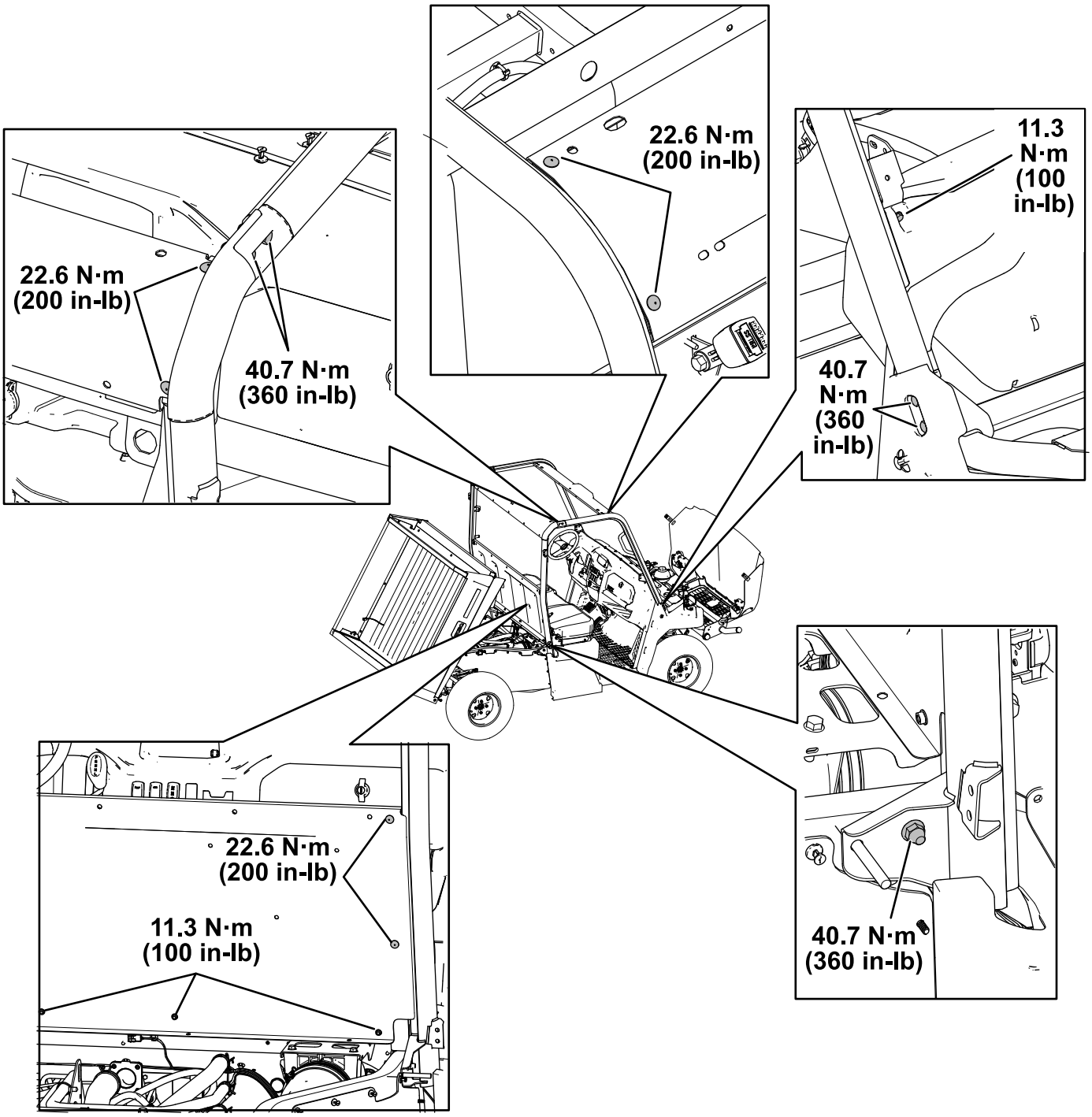


Figure 20

16. Secure the 2 shoulder restraints to the rear roll bar assemblies using 4 self-tapping screws (5/16 x 3/4 inch), 2 button-head bolts (5/16 x 1-1/2 inches), and 2 locknuts (5/16 inch) as shown in Figure 21.

    Torque the locknuts (5/16 inch) to 22.6 N·m (200 in-lb) as shown in Figure 21.

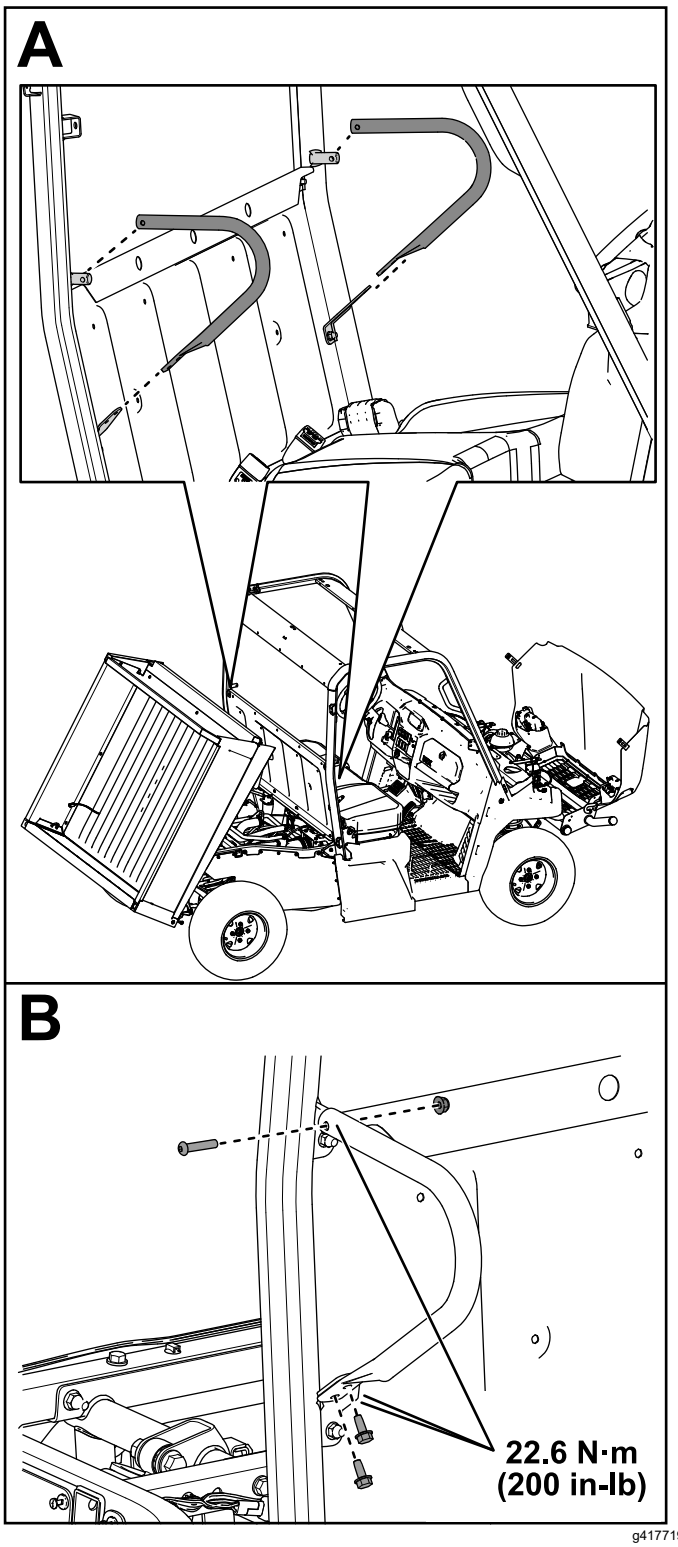


Figure 21

17. Secure the right seat belt as follows:

    A. Remove the cap from the top portion of the seat belt (Figure 22).

    B. Insert seat belt into the roll bar seat belt bracket and secure the seat belt using a locknut (7/16 inch) as shown in Figure 22.

       Torque the locknut (7/16 inch) to 48.8 N·m (432 in-lb) as shown in Figure 22.

    C. Install the cap (Figure 22).

    D. Repeat these steps for the left seat belt.

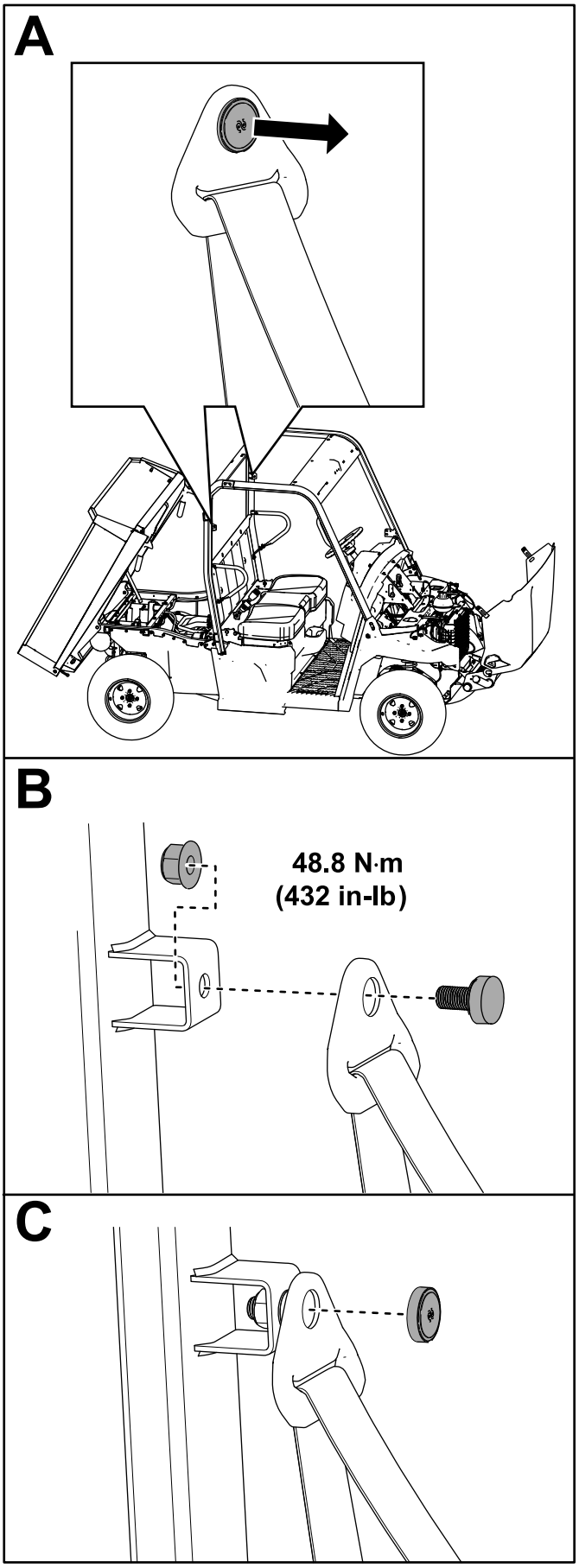
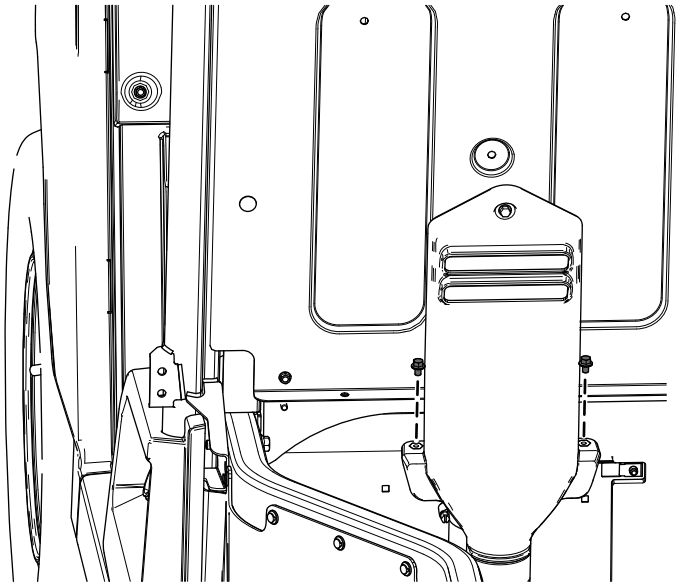


Figure 22

18. To install the CVT-intake hood and the seat backs, do the following:

A. Remove the 2 flange-head bolts (1/4 x 3/8 inch) from the CVT-intake hood (Figure 23).

Retain the bolts.



g464082

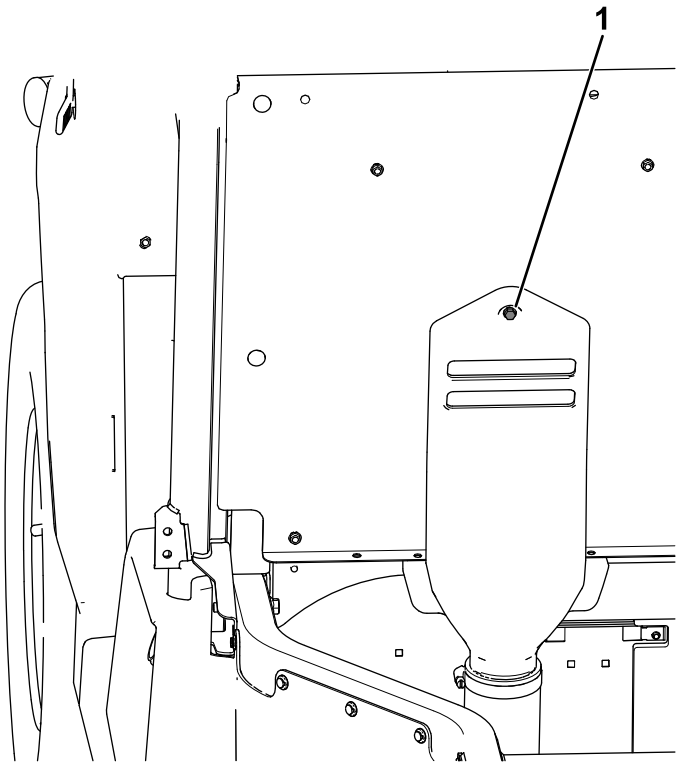
Figure 23

B. Insert the captive bolt attached to the CVT-intake hood into the hole shown in the seat panel (Figure 24).

Do not secure the bolt at this time.

If your machine **does not have** the holes present in the seat panel for the CVT-intake hood, proceed to **step C**.

If your machine **does have** the holes present in the seat panel for the CVT-intake hood, proceed to **step E**.

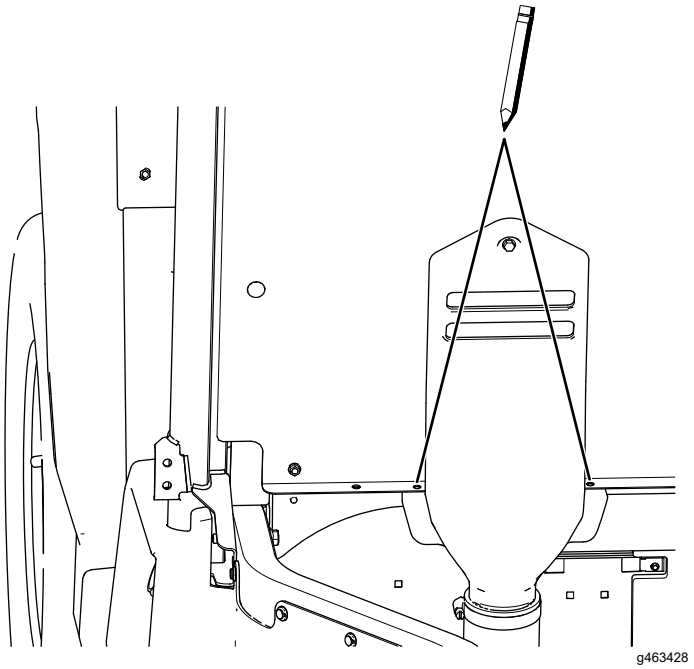


g463425

Figure 24

1. Captive bolt

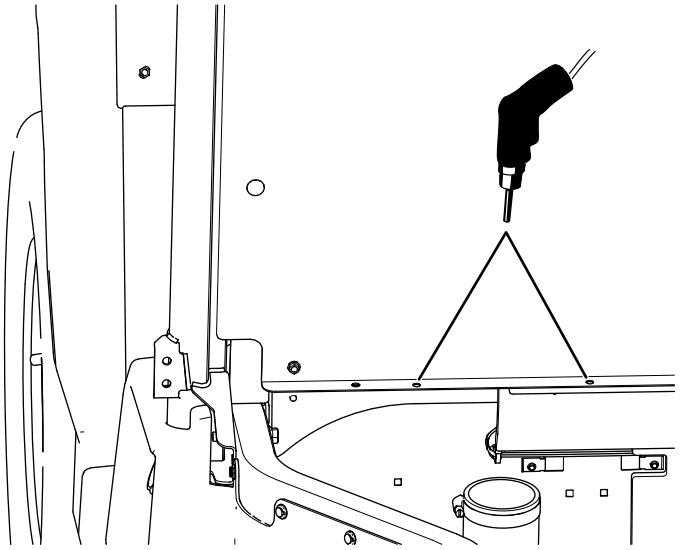
C. Using the CVT-intake hood as the template, mark the 2 hole locations (Figure 25).



g463428

Figure 25

D. Move the CVT-intake hood and drill the 2 holes (11/32 inch) into the seat panel (Figure 26).

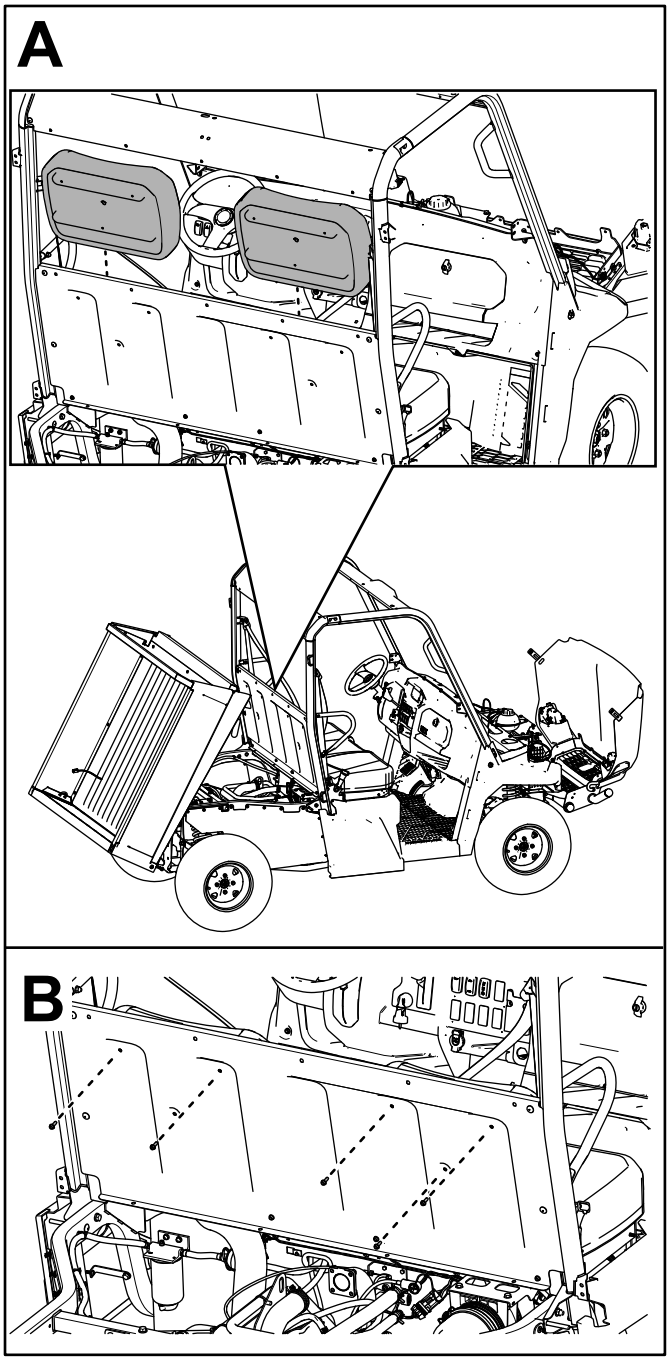


g463424

Figure 26

E. Secure the 2 seat backs to the seat panel using 5 hex-washer head bolts (1/4 x 3/4 inch) as shown in Figure 27.

Do not install a bolt into the left, middle hole in the seat panel.



g463427

Figure 27

F. Insert the captive bolt attached to the CVT-intake hood into the hole shown on the seat panel (Figure 28).

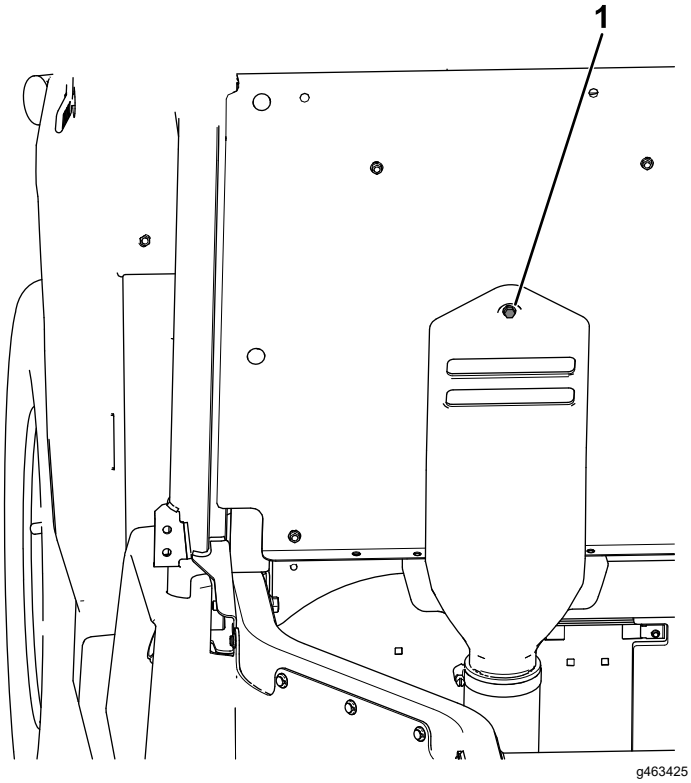


Figure 28

G. Secure the bottom of the CVT-intake hood to the seat panel using the previously-removed 2 flange-head bolts (1/4 x 3/8 inch) as shown in Figure 29.

Torque the 2 flange-head bolts (1/4 x 3/8 inch) to 5.4 N·m (48 in-lb).

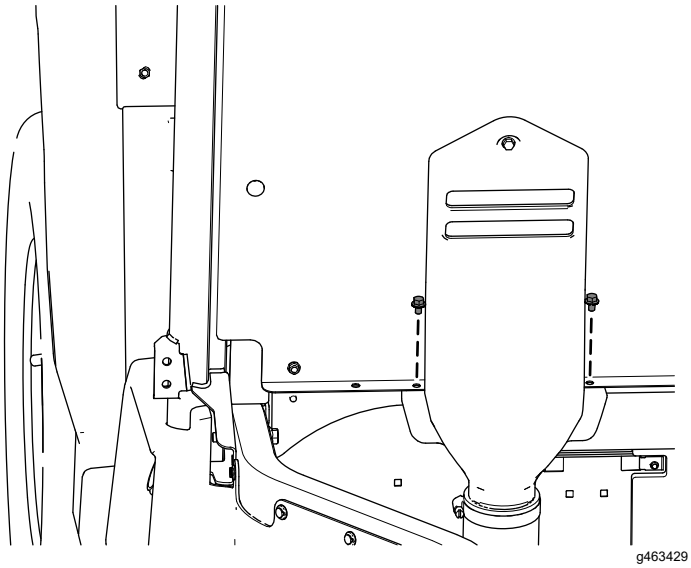


Figure 29

H. Torque the 5 hex-washer head bolts (1/4 x 3/4 inch) and the captive bolt attached to the CVT-intake hood to 5.4 N·m (48 in-lb) as shown in Figure 30.

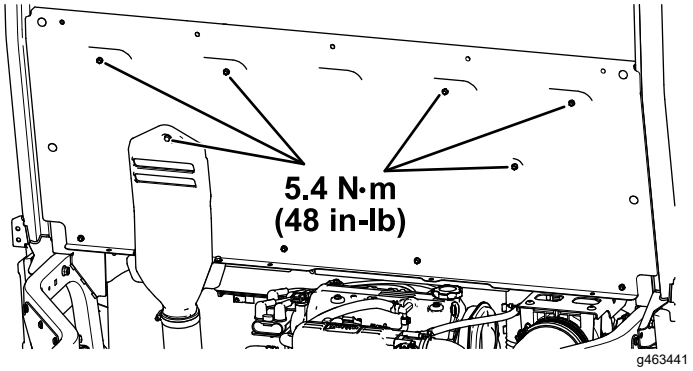
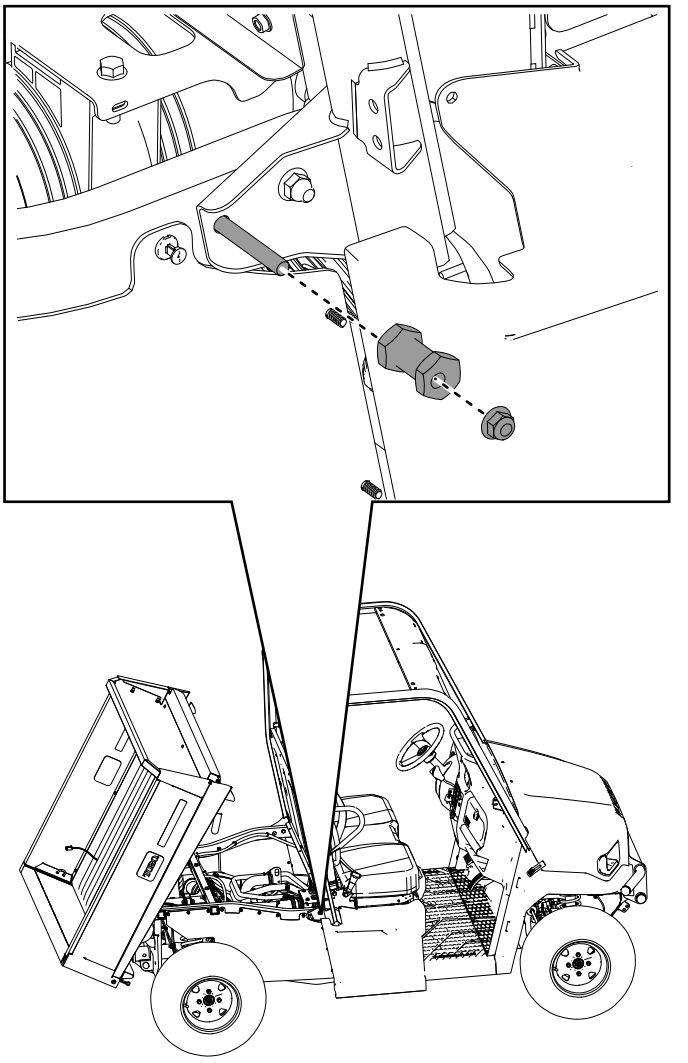


Figure 30

19. Install the previously removed locknuts (3/8 inch) and latch pins to the right and left, rear frame tubes (Figure 31).



g361795

Figure 31

20. Adjust the alignment nut for the cargo bed latch until you close the gap and the cargo bed latches securely (Figure 32).

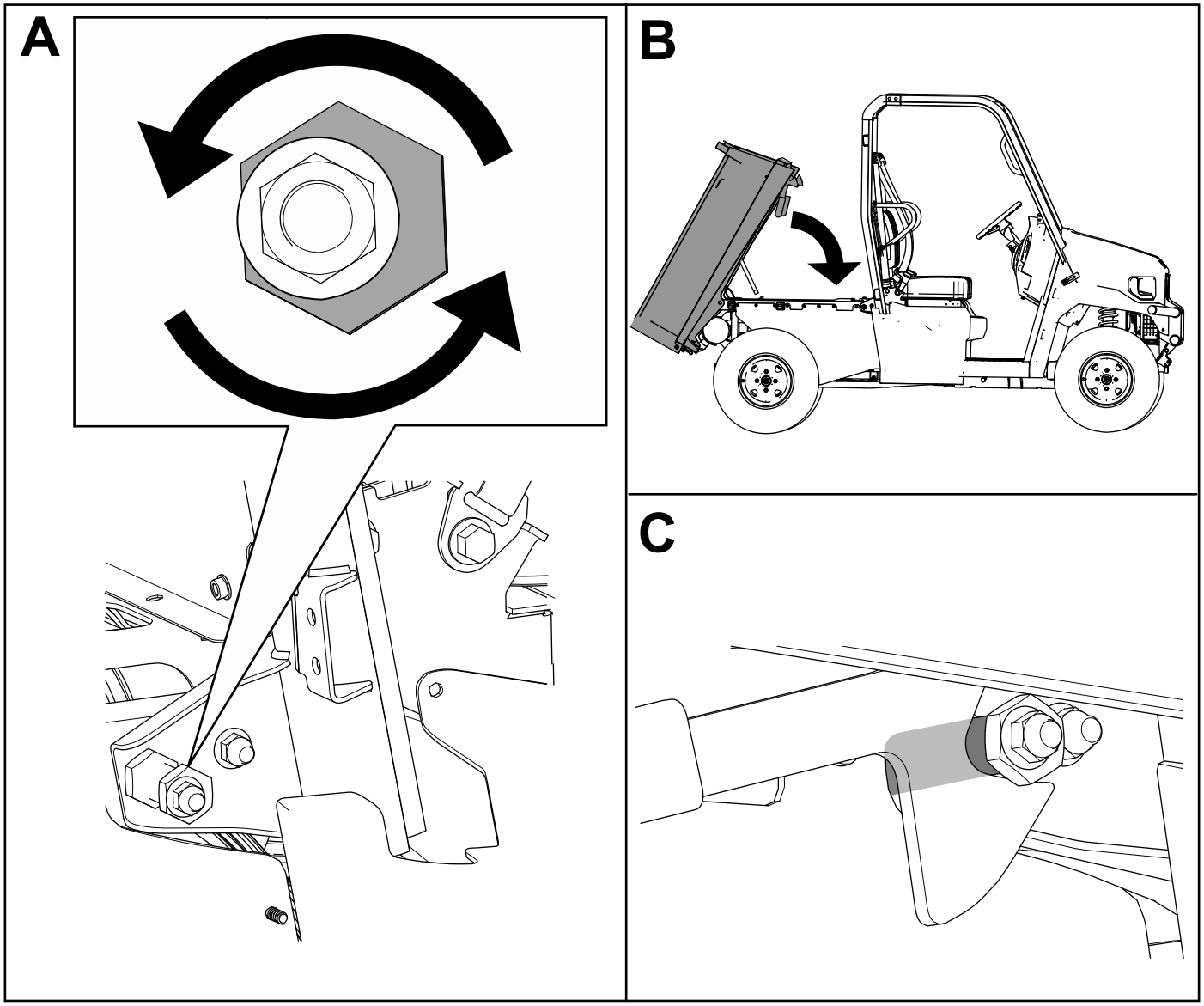


Figure 32

21. Torque the locknut (3/8 inch) to 40.7 N·m (360 in-lb) as shown in Figure 33.

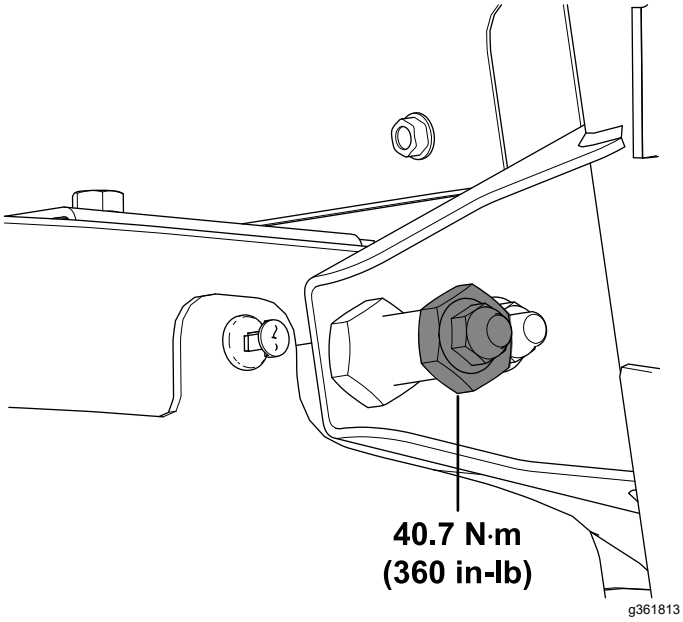


Figure 33

22. Secure the right and left seat-base panels using the previously removed hex-washer head bolts (1/4 x 3/4 inch) as shown in Figure 34.

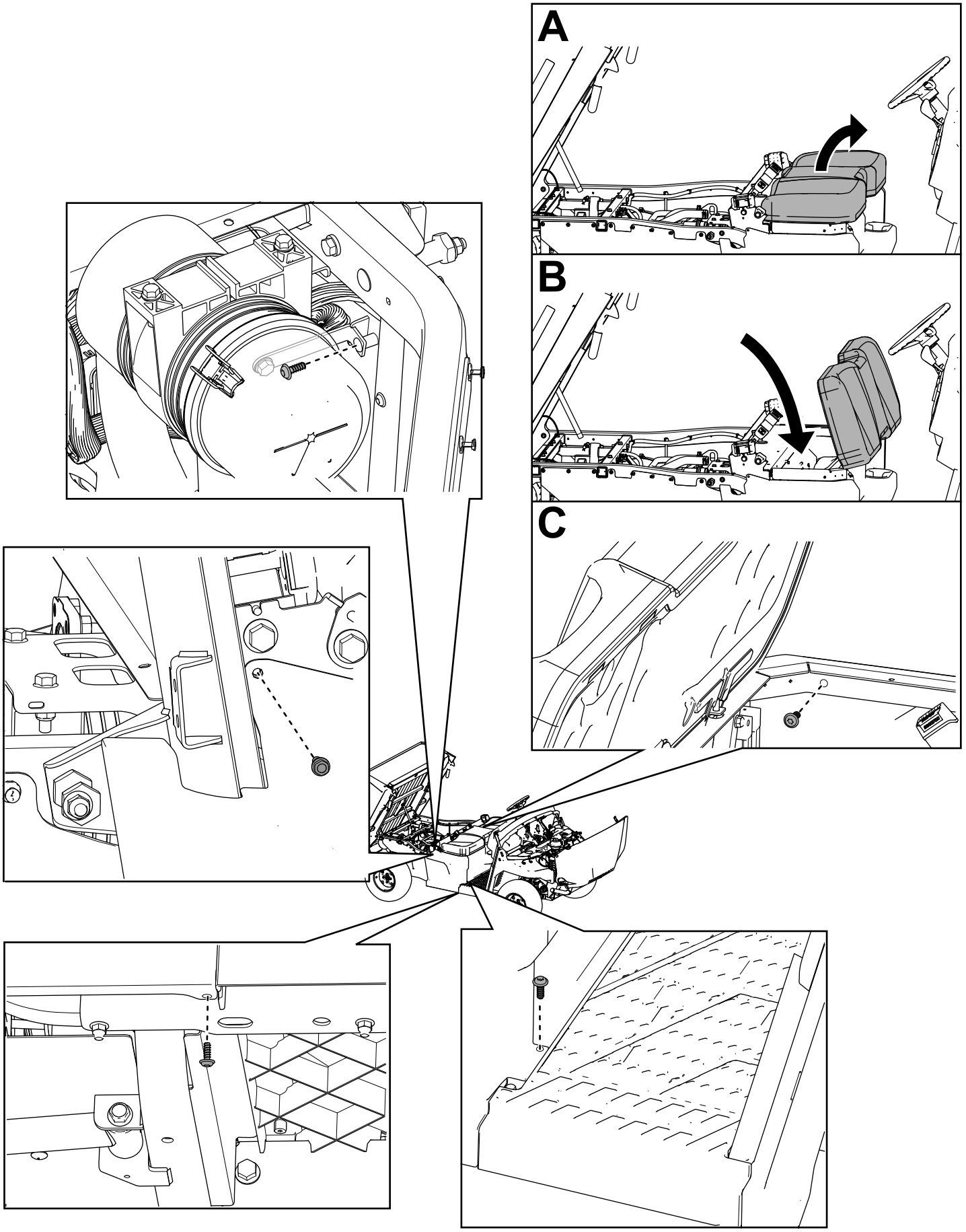
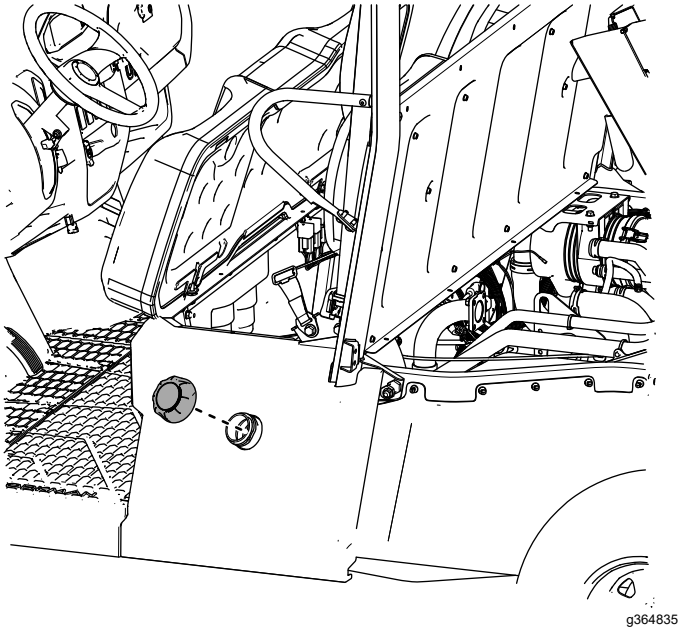


Figure 34

23. Install the fuel-tank cap to the left seat-base panel (Figure 35).



g364835

Figure 35

7

Installing the Rollover Protection System (ROPS)

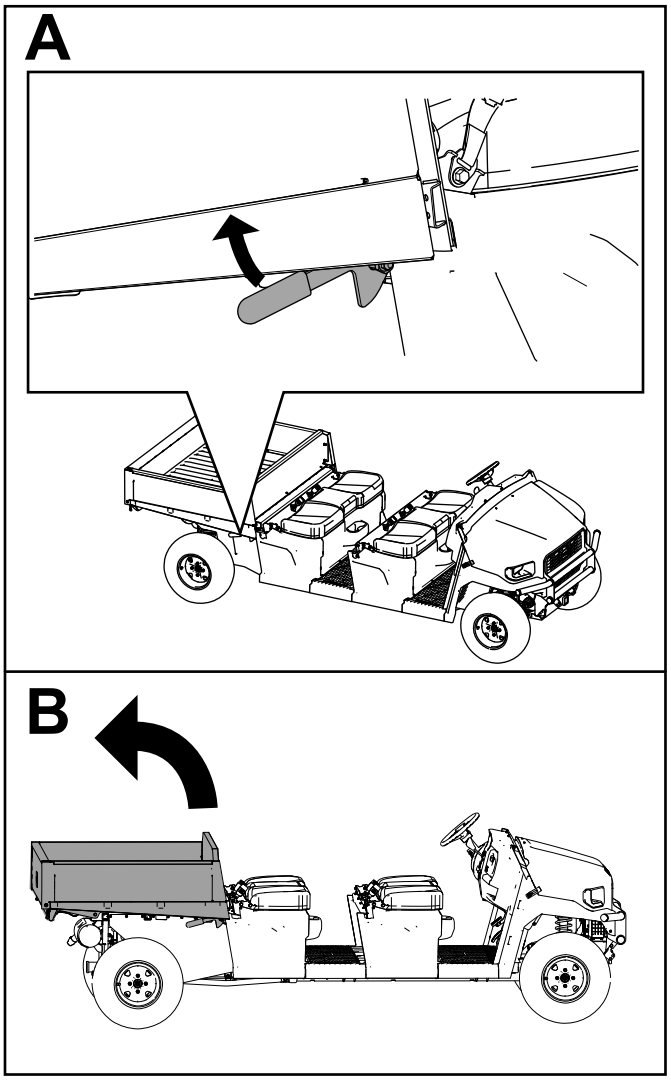
For Crew (4-Person) Models

Parts needed for this procedure:

1	Left, front roll bar assembly
1	Right, front roll bar assembly
1	Left, rear roll bar assembly
1	Right, rear roll bar assembly
1	Left, middle roll bar assembly
1	Right, middle roll bar assembly
2	Roll bar connector assembly
1	Rear seat handle assembly
1	Front crosslink
1	Middle crosslink
1	Rear crosslink
2	Seat panel
4	Shoulder restraint
20	Hex-head bolt (3/8 x 1-1/4 inches)
16	Carriage bolt (5/16 x 3/4 inch)
8	Hex-washer head bolt (5/16 x 3/4 inch)
24	Hex-washer head bolt (1/4 x 3/4 inch)
2	Hex-washer head bolt (1/4 x 1 inch)
4	Button-head bolt (5/16 x 1-1/2 inches)
2	Flange-head bolt (3/8 x 2-1/4 inches)
4	Flange-head bolt (3/8 x 1 inch)
20	Locknut (5/16 inch)
26	Locknut (3/8 inch)
2	Locknut (1/4 inch)
4	Locknut (7/16 inch)
4	Clip (1/4 inch)
1	CVT-intake hood

Procedure

1. Raise the cargo bed (Figure 36).



g364836

Figure 36

2. Raise the hood (Figure 37).

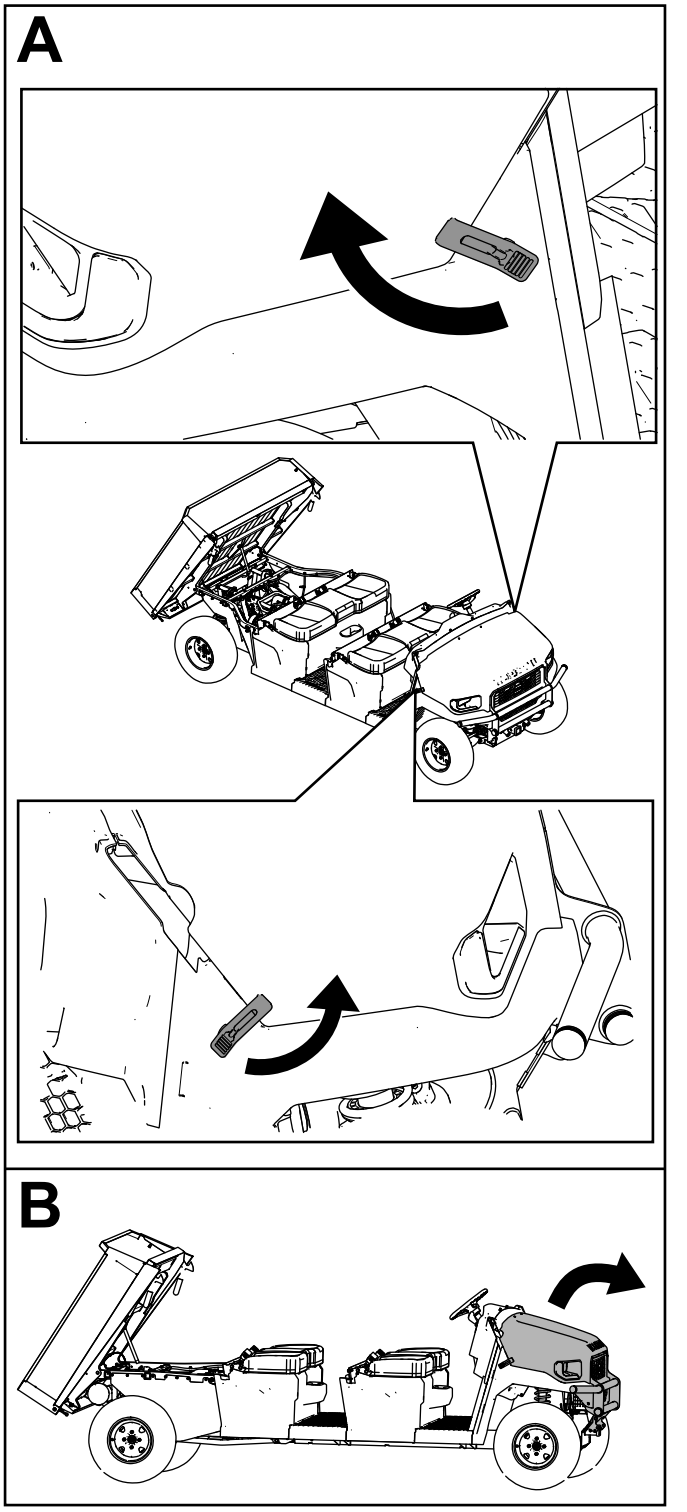


Figure 37

3. Remove the hex-washer head bolts (1/4 x 3/4 inch) and T30 torx-head fasteners from the 2 right and 2 left seat-base panels (Figure 38).

   Remove the fuel-tank cap from the left, rear seat-base panel (Figure 39).

   Note: Do not pull the cap out until you reach the end of the tether.

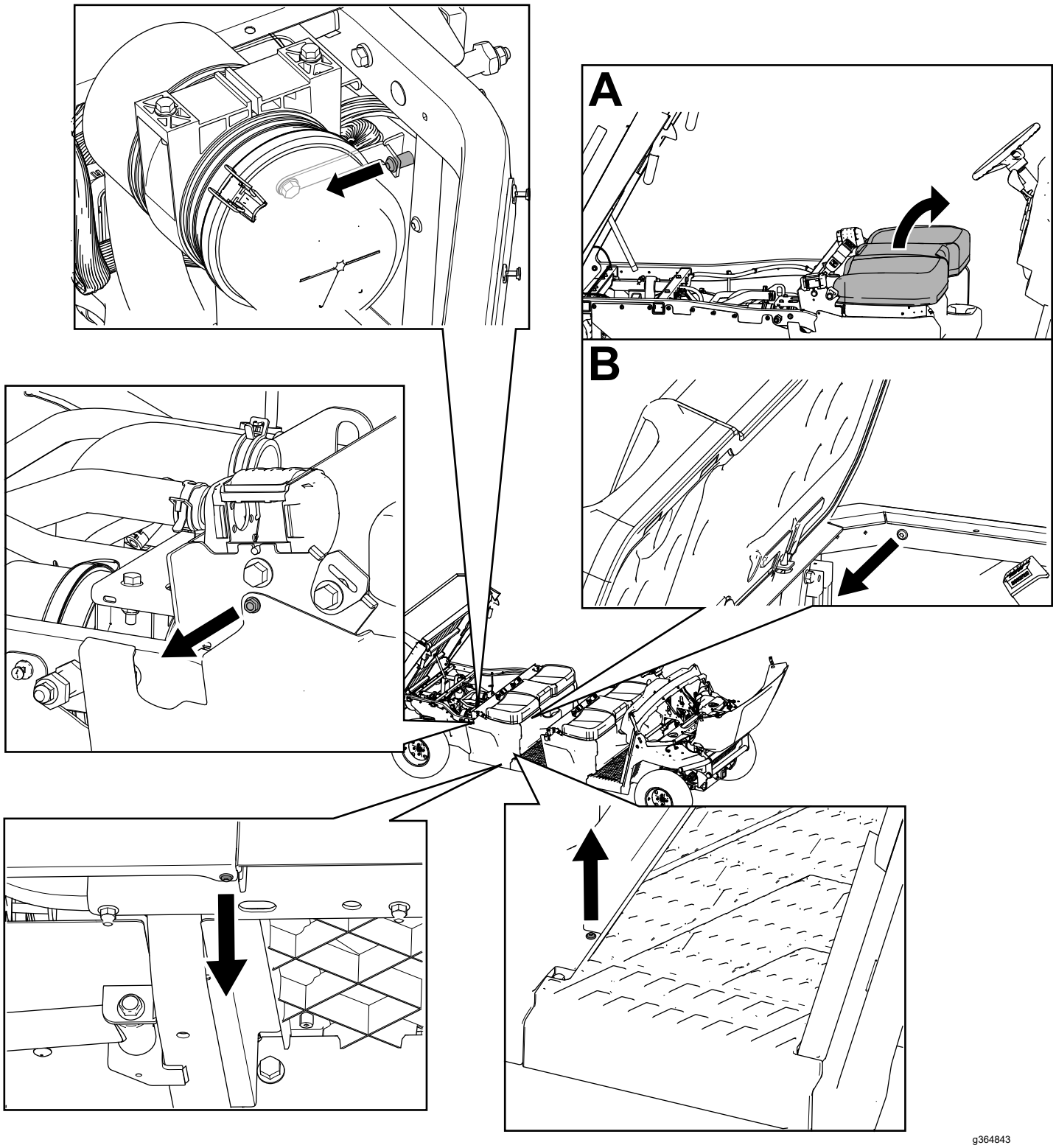
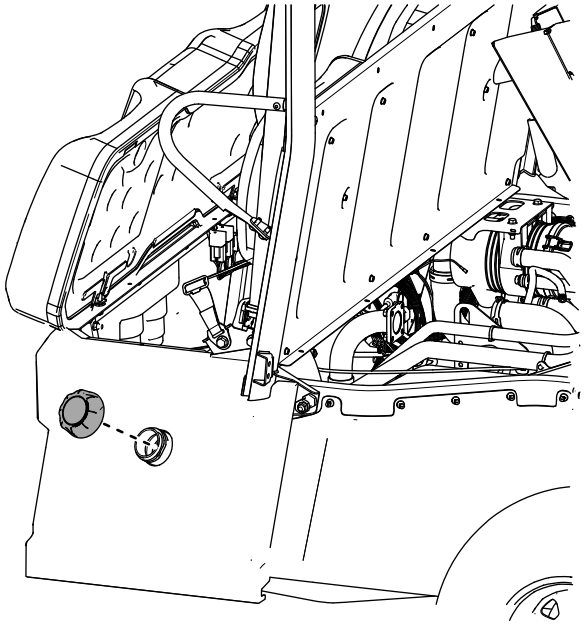


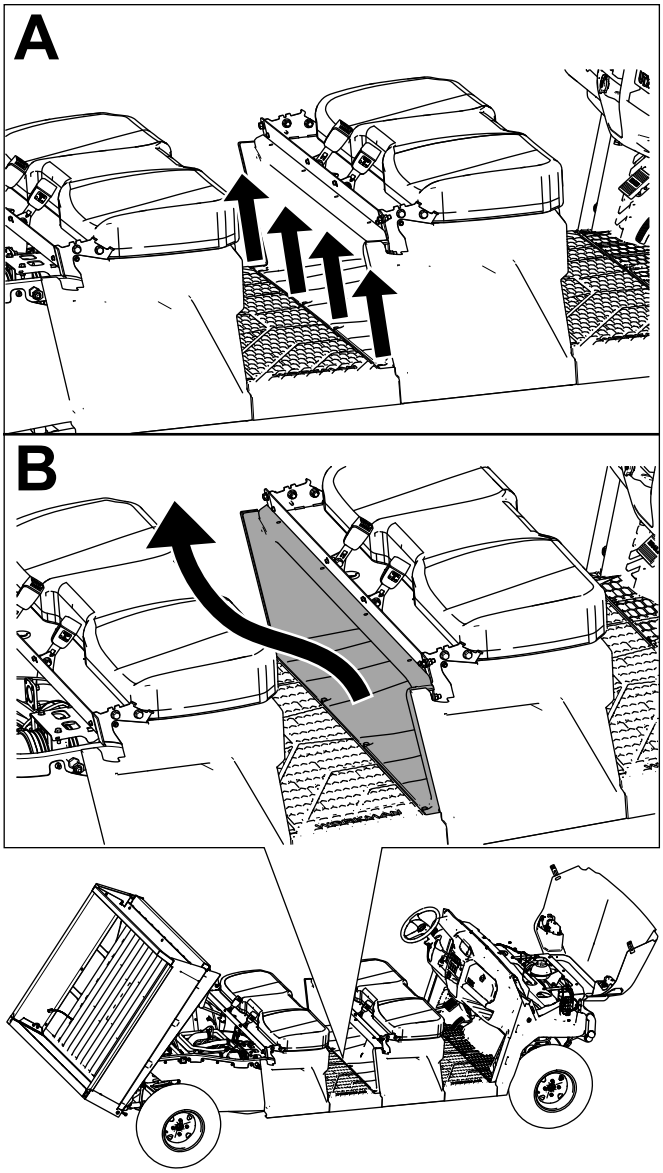
Figure 38



g401266

Figure 39

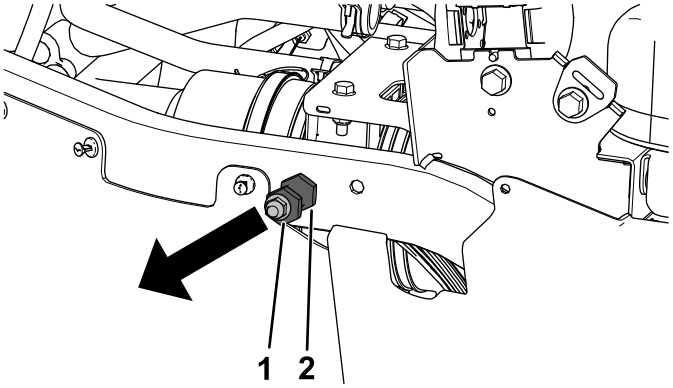
4. Remove the 4 hex-washer head bolts (5/16 x 1 inch) securing the foot well and remove the foot well (Figure 40).



g364842

Figure 40

5. Remove the locknut (3/8 inch) and latch pin from the right and left, rear frame tubes (Figure 41).

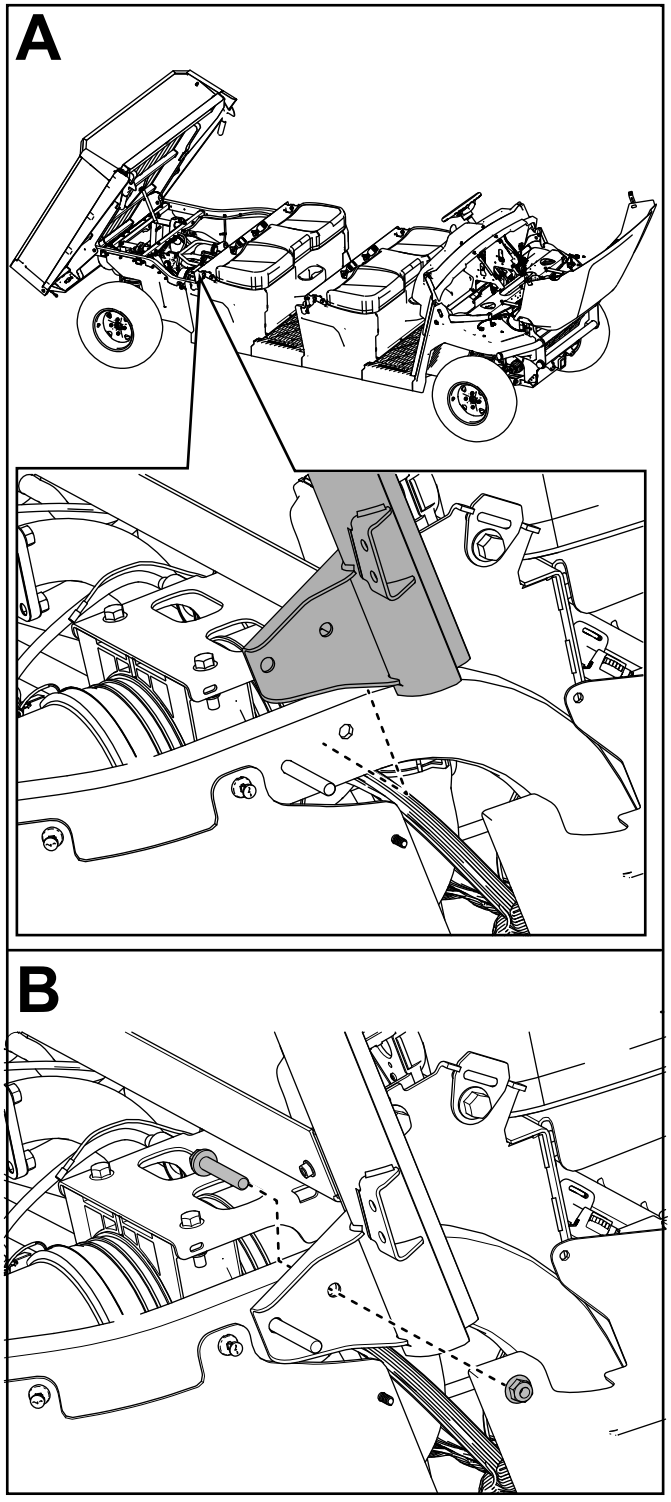


g364844

Figure 41

1. Locknut (3/8 inch)
2. Latch pin

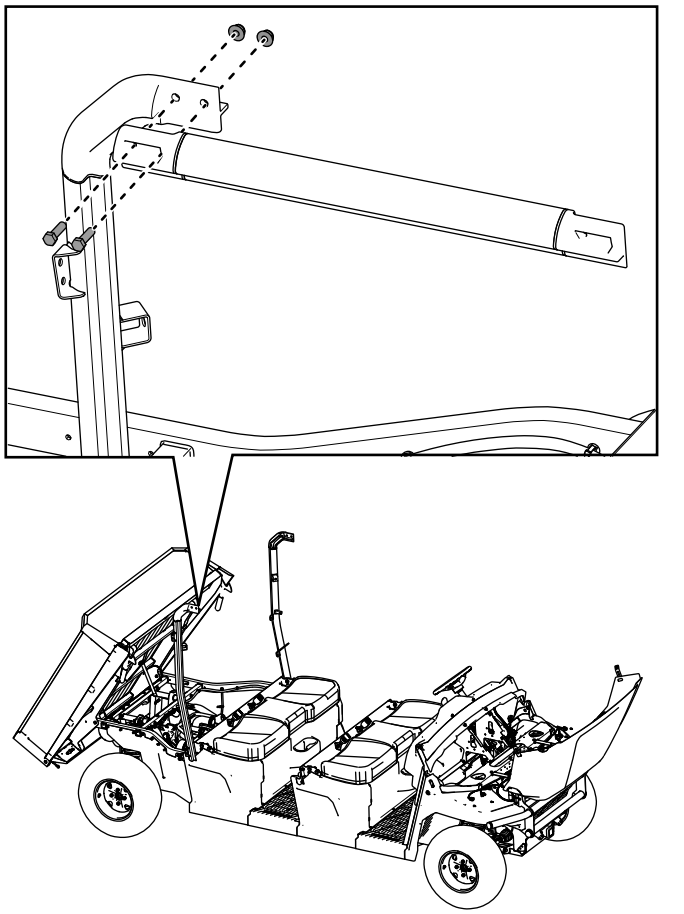
6. Loosely secure the right, rear roll bar assembly to the right, rear frame tube using 1 flange-head bolt (3/8 x 2-1/4 inches) and 1 locknut (3/8 inch) as shown in Figure 42.



g364845

Figure 42

7. Repeat step 6 on the left side.
8. Loosely secure the right roll bar connector assembly to the right, rear roll bar assembly using 2 hex-head bolts (3/8 x 1-1/4 inches) and 2 locknuts (3/8 inch) as shown in Figure 43.



g364840

Figure 43

9. Repeat step 8 on the left side.

10. Loosely secure the right, front roll bar assembly to the right roll bar mount bracket using 2 hex-head bolts (3/8 x 1-1/4 inches) and 2 locknuts (3/8 inch) as shown in Figure 44.

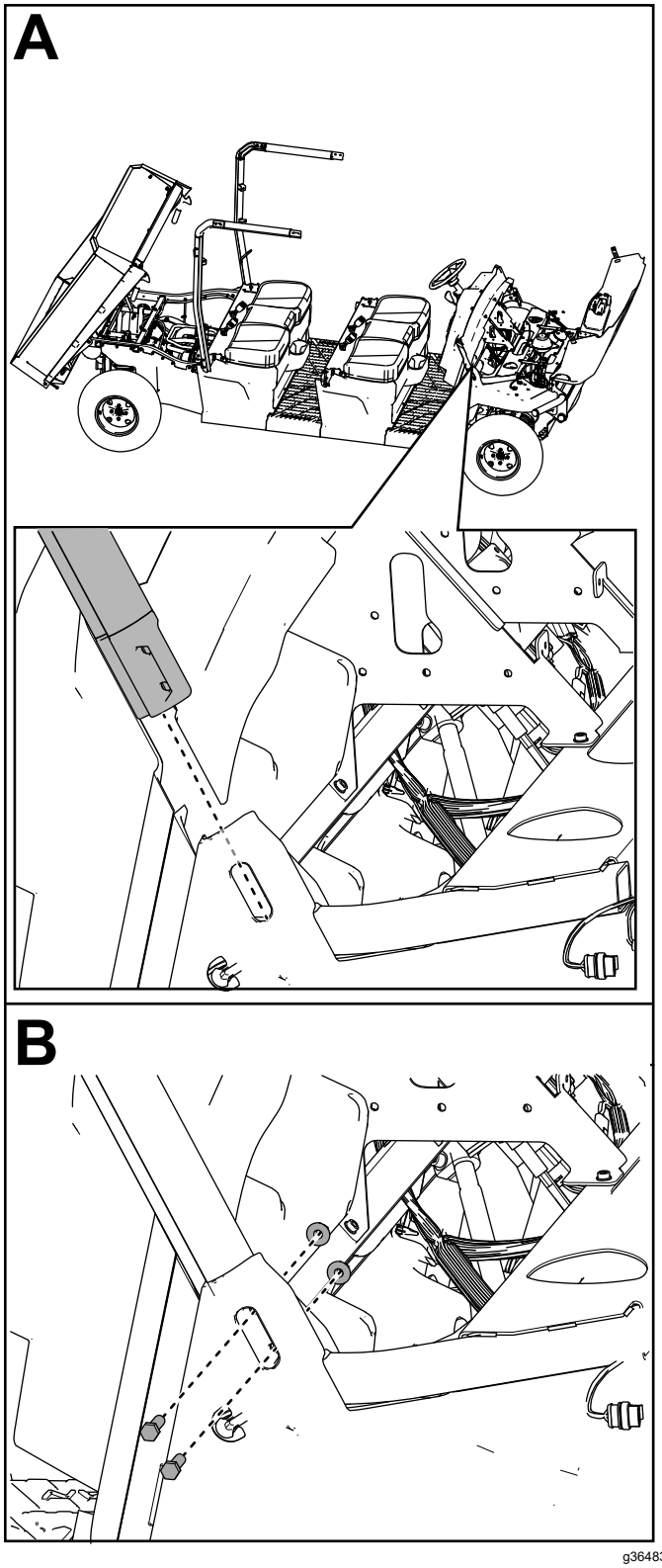


Figure 44

11. Loosely secure the right, front roll bar assembly to the dash panel using 1 hex-washer head bolt (1/4 x 1 inch) and 1 locknut (1/4 inch) as shown in Figure 45.

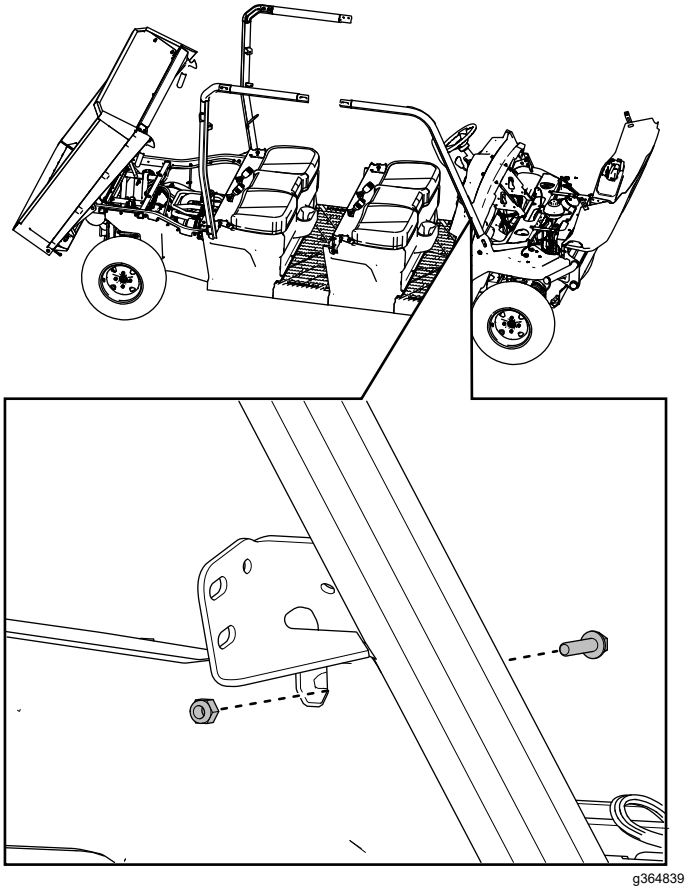
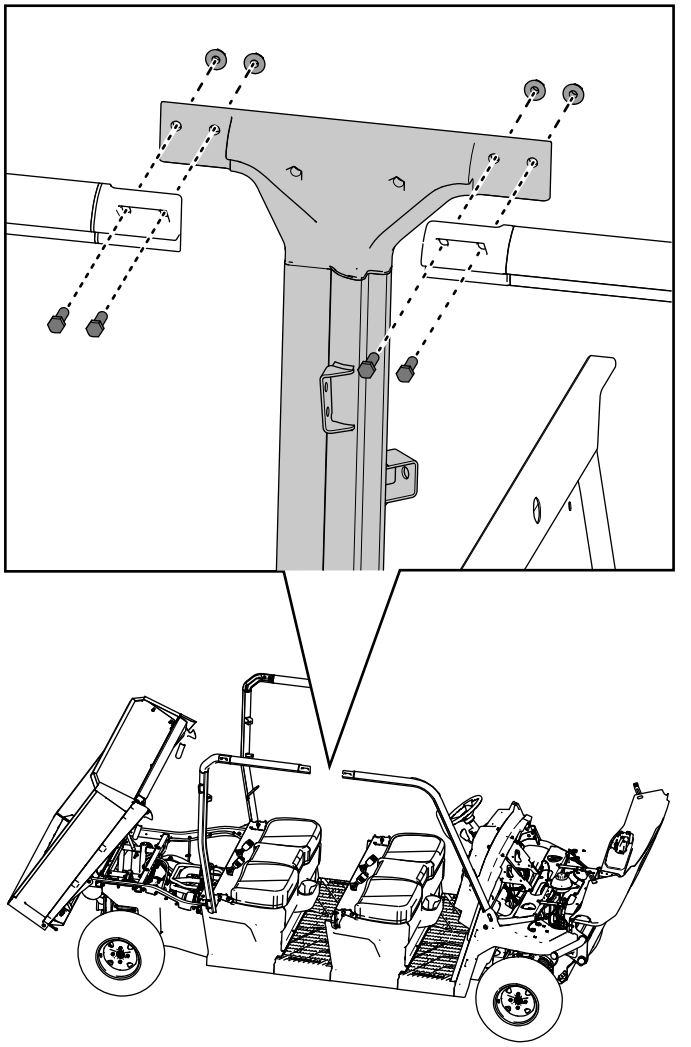


Figure 45

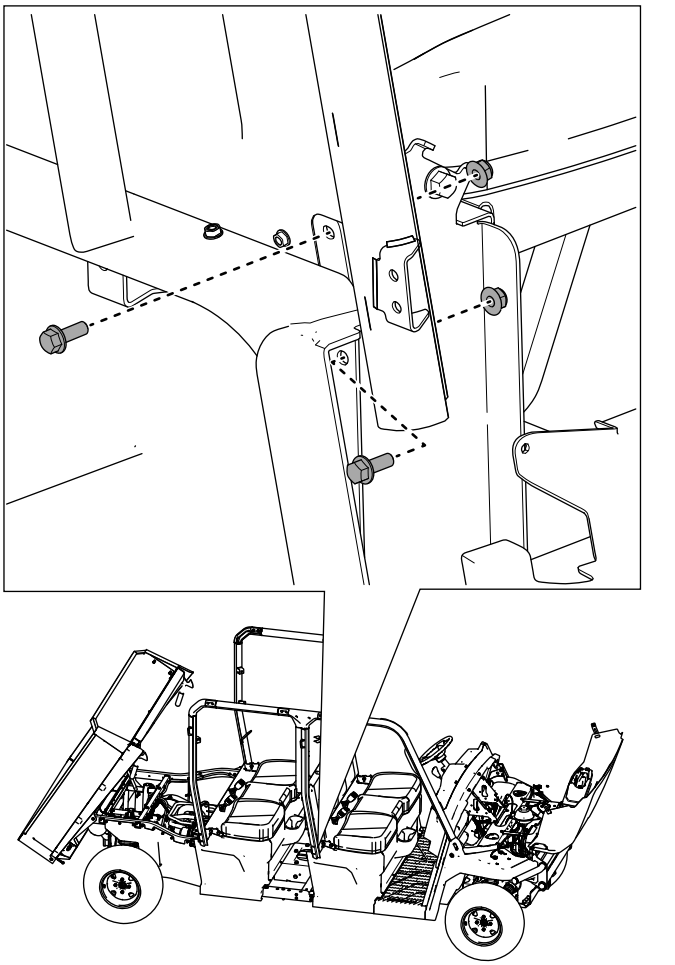
12. Loosely secure the top of the right, middle roll bar assembly to the right, front and rear roll bar assemblies using 4 hex-head bolts (3/8 x 1-1/4 inches) and 4 locknuts (3/8 inch) as shown in Figure 46.



g364867

Figure 46

13. Loosely secure the bottom of the right, middle roll bar assembly to the seat base assembly using 2 flange-head bolts (3/8 x 1 inch) 2 locknuts (3/8 inch) as shown in Figure 47.



g364848

Figure 47

14. Repeat steps 10 through 13 on the left side.

15. Secure the front crosslink to the front roll bar assemblies using 4 carriage bolts (5/16 x 3/4 inch) and 4 locknuts (5/16 inch) as shown in Figure 48.

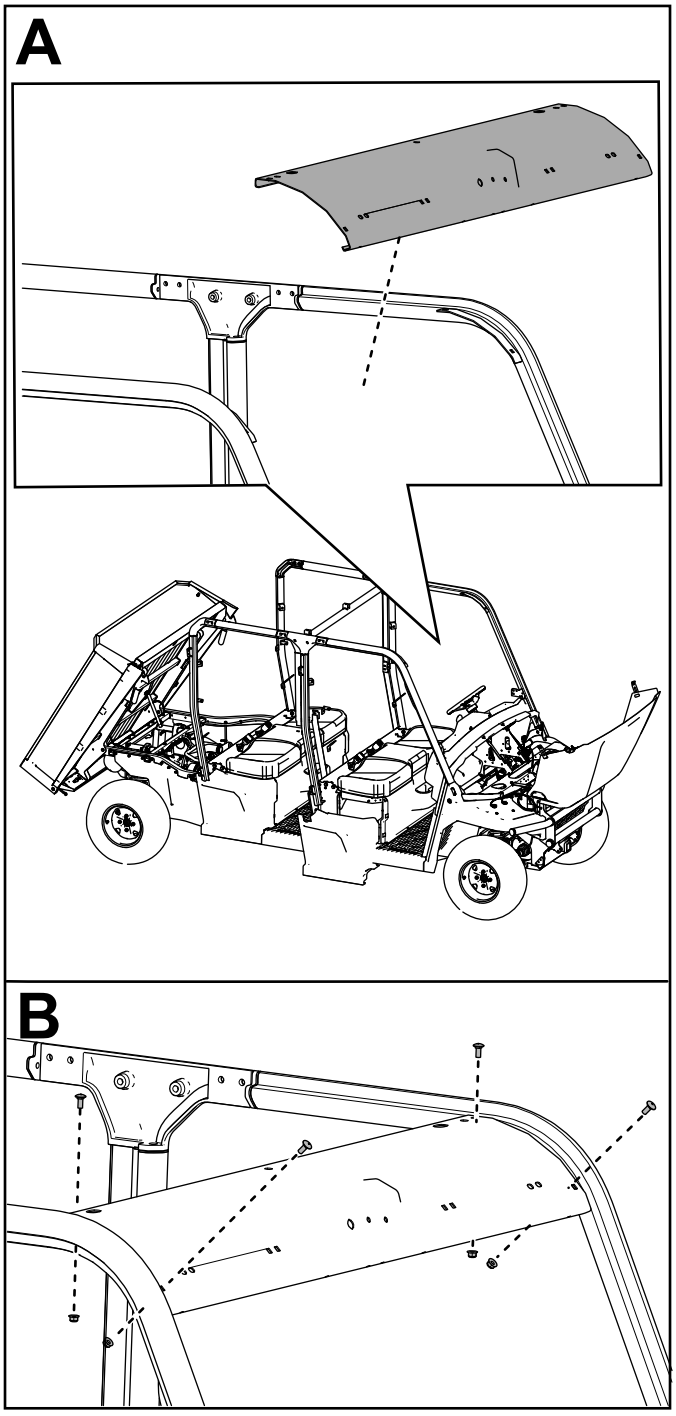


Figure 48

16. Secure the middle crosslink to the middle roll bar assemblies using 4 hex-head bolts (3/8 x 1-1/4 inches) and 4 locknuts (3/8 inch) as shown in Figure 49.

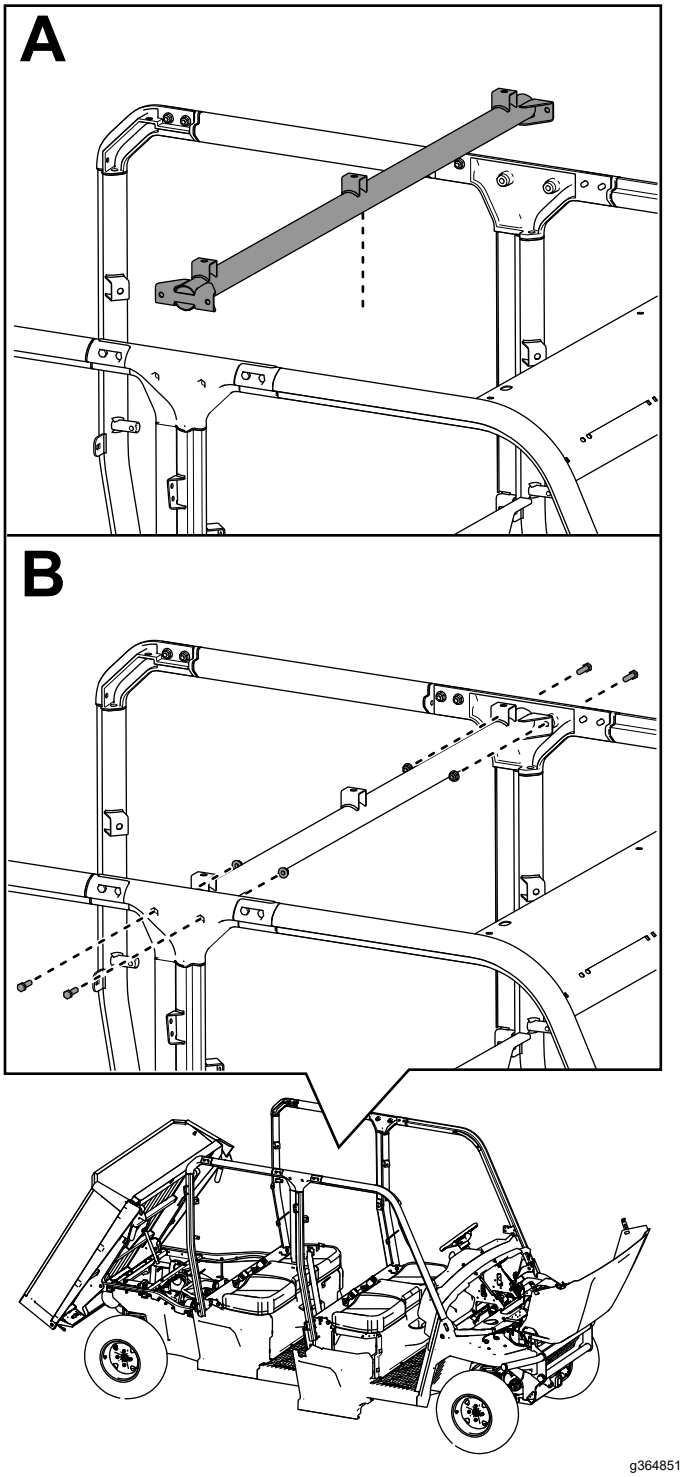
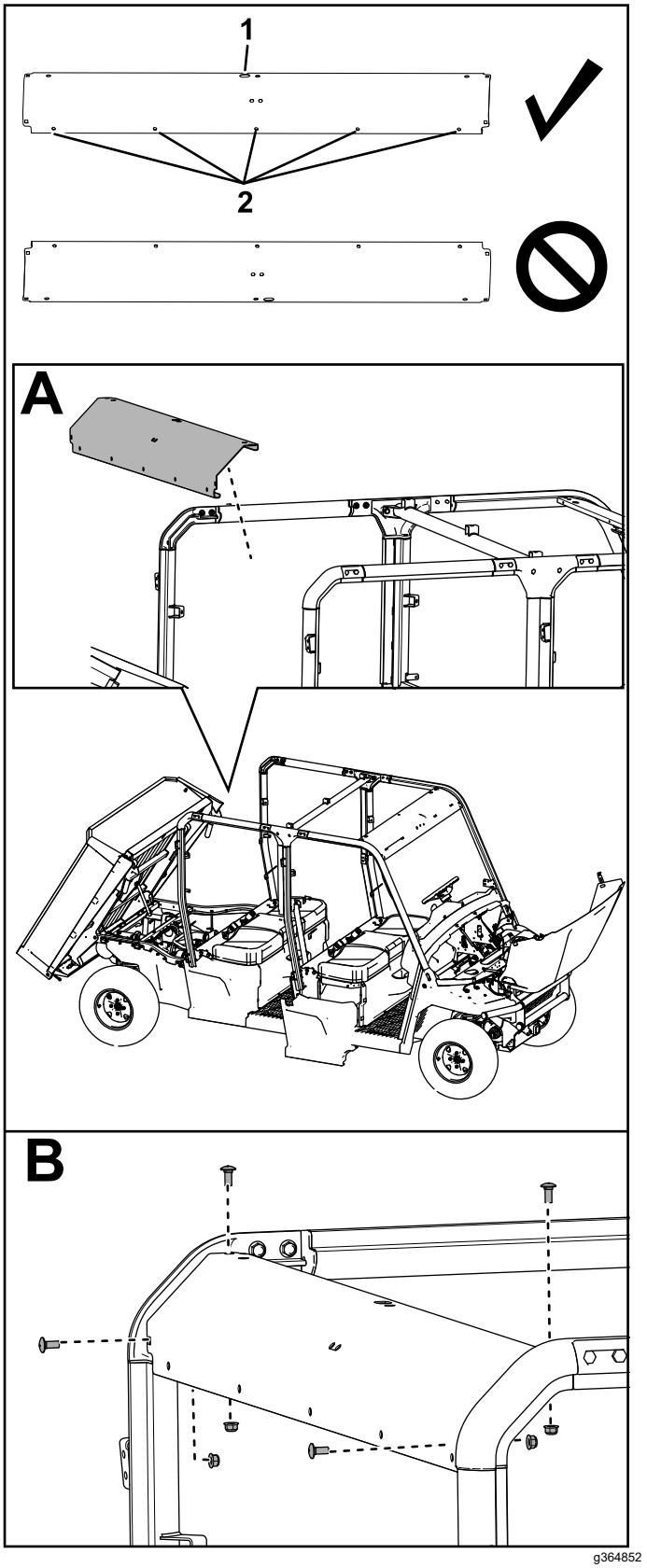


Figure 49

17. Secure the rear crosslink to the rear roll bar assemblies using 4 carriage bolts (5/16 x 3/4 inch) and 4 locknuts (5/16 inch) as shown in Figure 50.

    Ensure that you position the crosslink as shown in Figure 50.

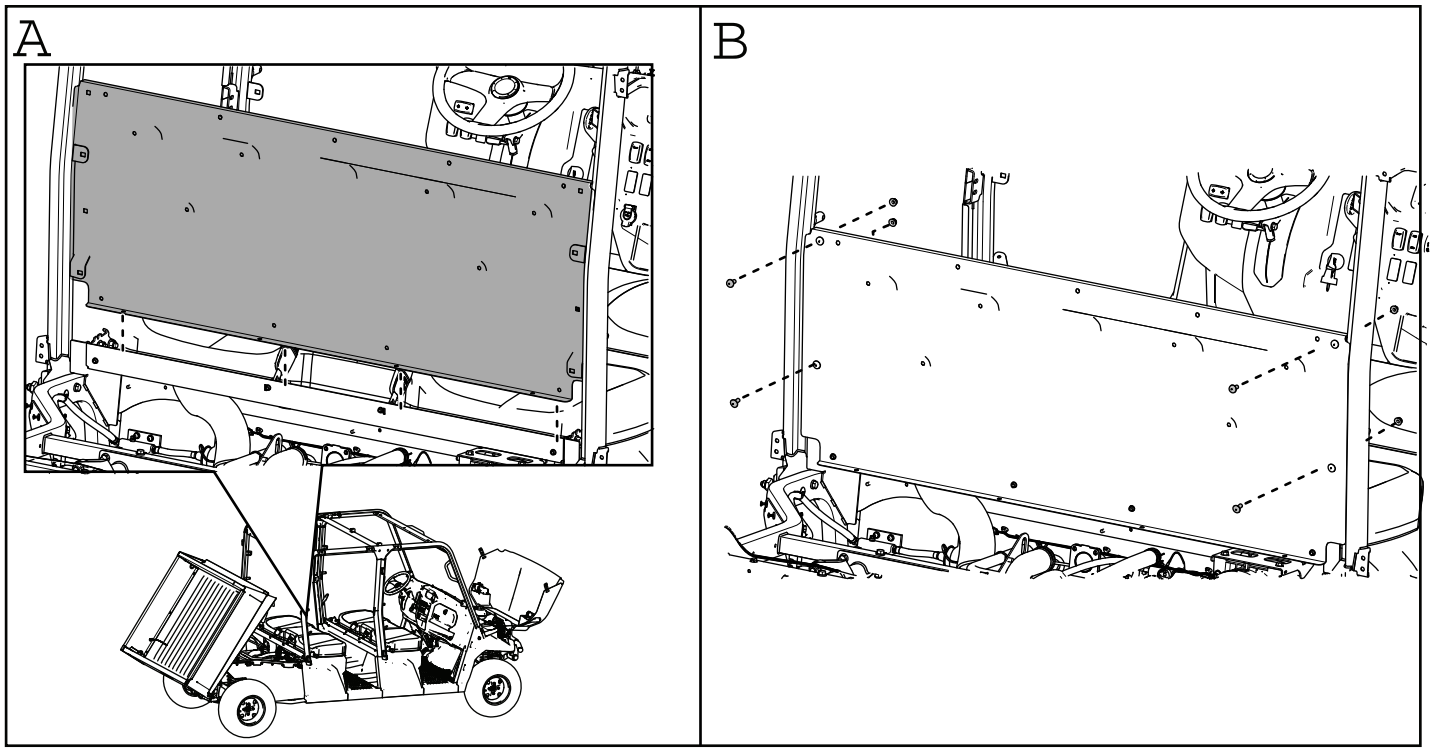


g364852

Figure 50

1. Ensure that the notch is on the top.
2. Ensure that the holes are on the bottom.

18. Loosely secure a seat panel to the rear roll bar assemblies using 4 carriage bolts (5/16 x 3/4 inch) and 4 locknuts (5/16 inch) as shown in Figure 51.

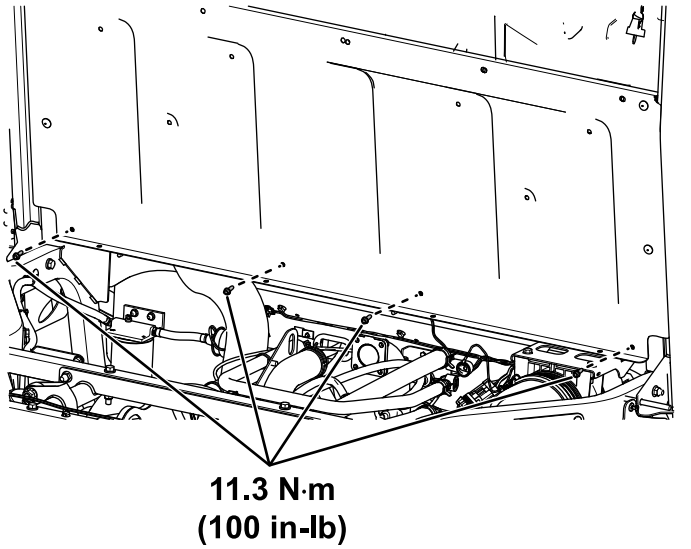


g364854

Figure 51

19. Secure a seat panel to the rear frame crosslink channel using 4 hex-washer head bolts (1/4 x 3/4 inch) as shown in Figure 52.

    Torque the 4 hex-washer head bolts (1/4 x 3/4 inch) to 11.3 N·m (100 in-lb).



g364853

Figure 52

20. Loosely secure the middle portion of the seat panel to the middle roll bar assemblies using 2 carriage bolts (5/16 x 3/4 inch) and 2 locknuts (5/16 inch) as shown in Figure 53.

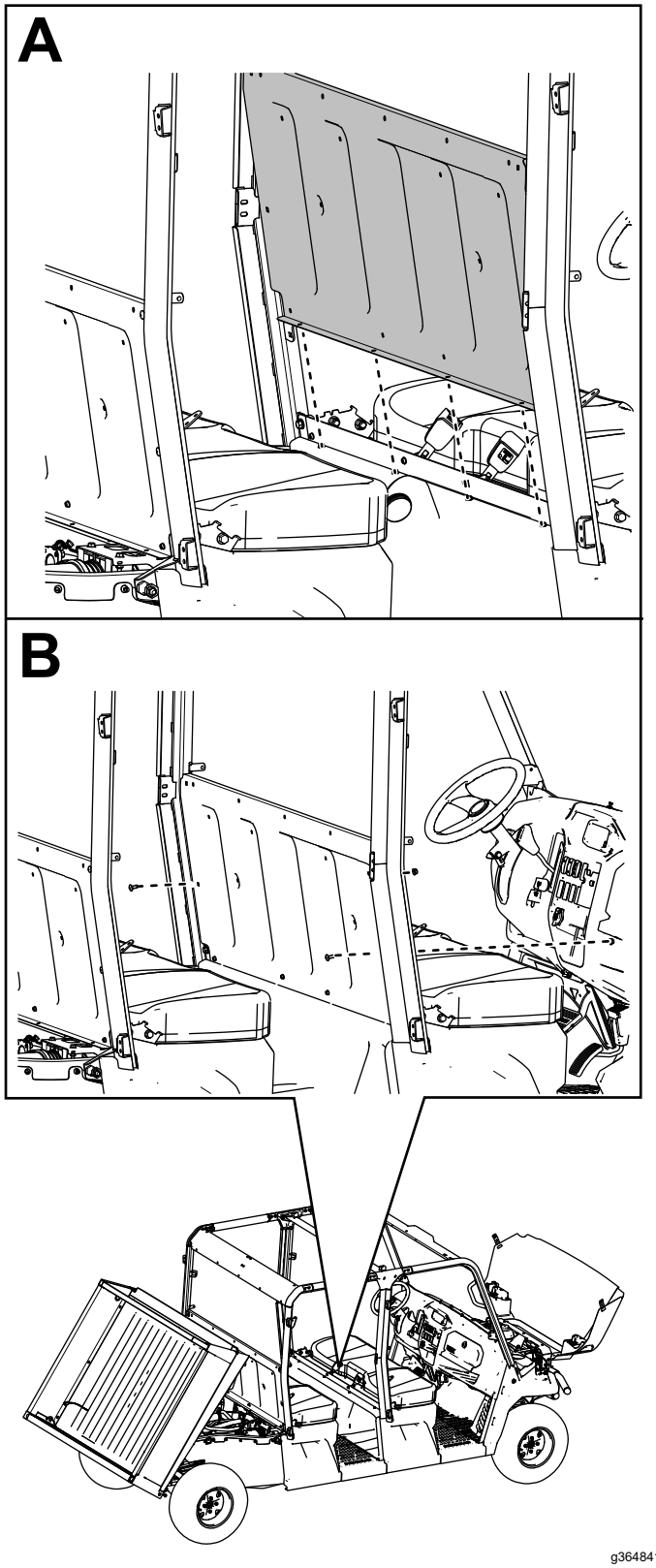


Figure 53

21. Loosely secure the rear seat handle assembly to the middle seat panel using 2 carriage bolts (5/16 x 3/4 inch) and 2 locknuts (5/16 inch) as shown in Figure 54.

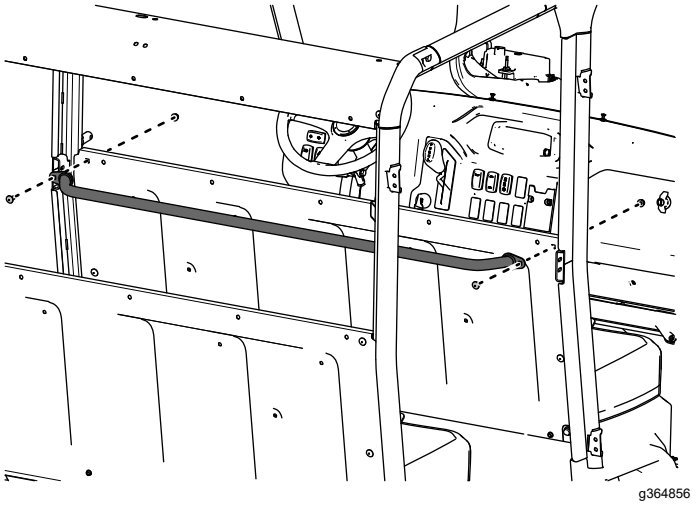


Figure 54

22. Install the 4 clips (1/4 inch) to the middle seat panel (Figure 55).

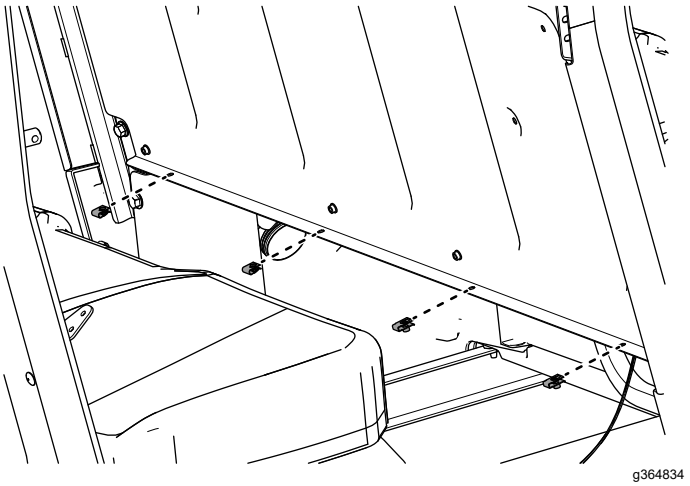
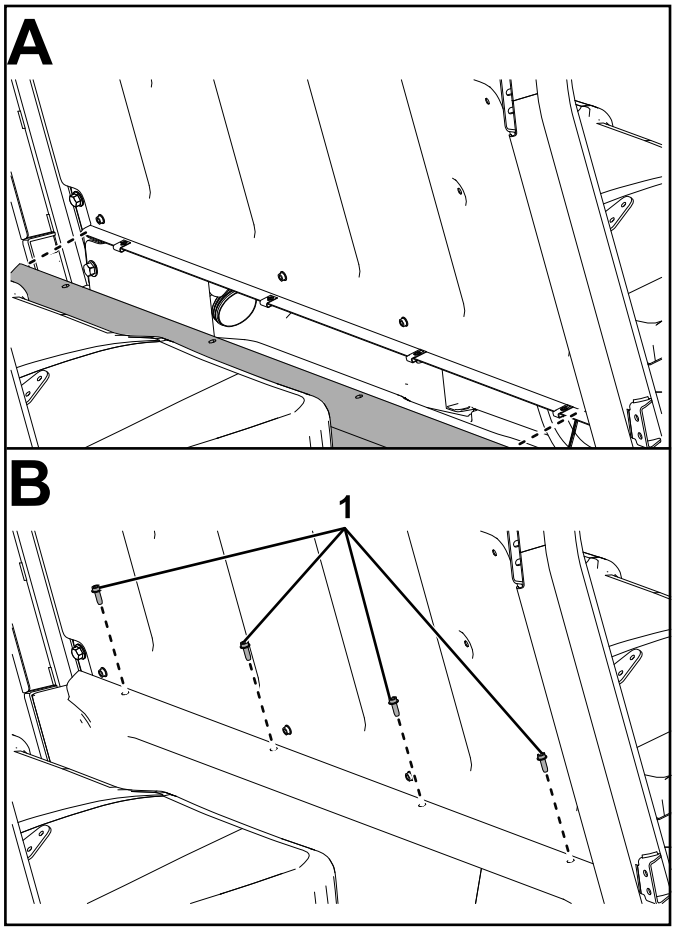


Figure 55

23. Secure the middle seat panel to the foot well and 4 clips (1/4 inch) using 4 hex-washer head bolts (1/4 x 3/4 inch) as shown in Figure 56.

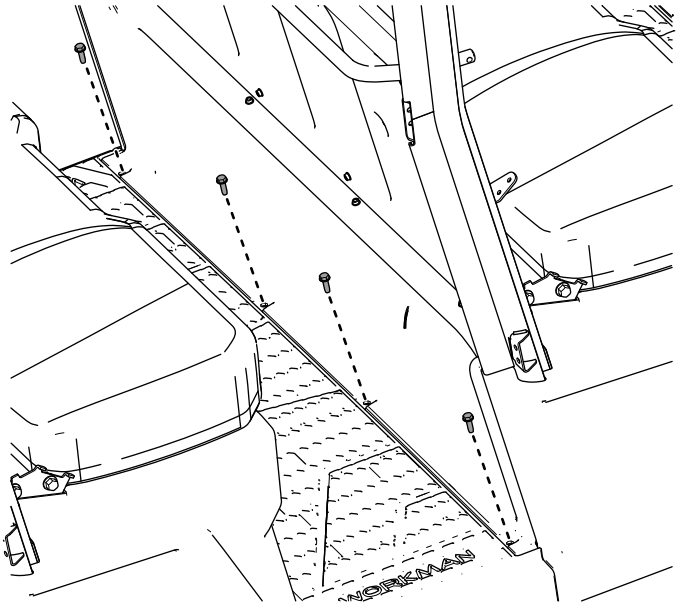
    Torque the 4 hex-washer head bolts (1/4 x 3/4 inch) to 11.3 N·m (100 in-lb).



g364849

Figure 56

24. Secure the bottom of the foot well using the previously removed 4 hex-washer head bolts (5/16 x 1 inch) as shown in Figure 57.



g364855

Figure 57

25. Torque the fasteners to the specifications shown in Figure 58.

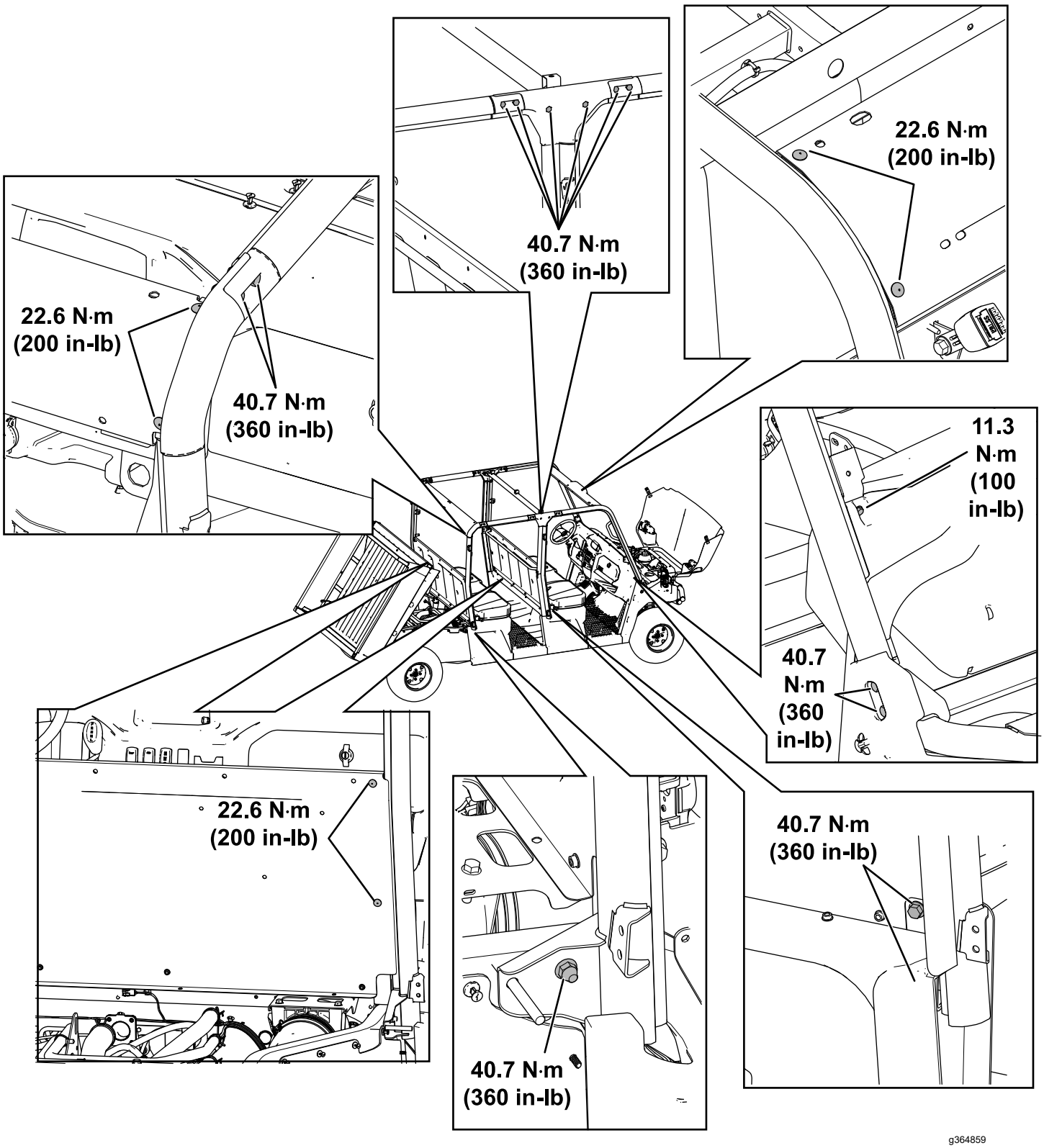


Figure 58

26. Secure the 4 shoulder restraints to the rear roll bar assemblies and middle roll bar assemblies using 8 self-tapping screws (5/16 x 3/4 inch), 4 button-head bolts (5/16 x 1-1/2 inches), and 4 locknuts (5/16 inch) as shown in Figure 59.

    Torque the locknuts (5/16 inch) to 22.6 N·m (200 in-lb) as shown in Figure 59.

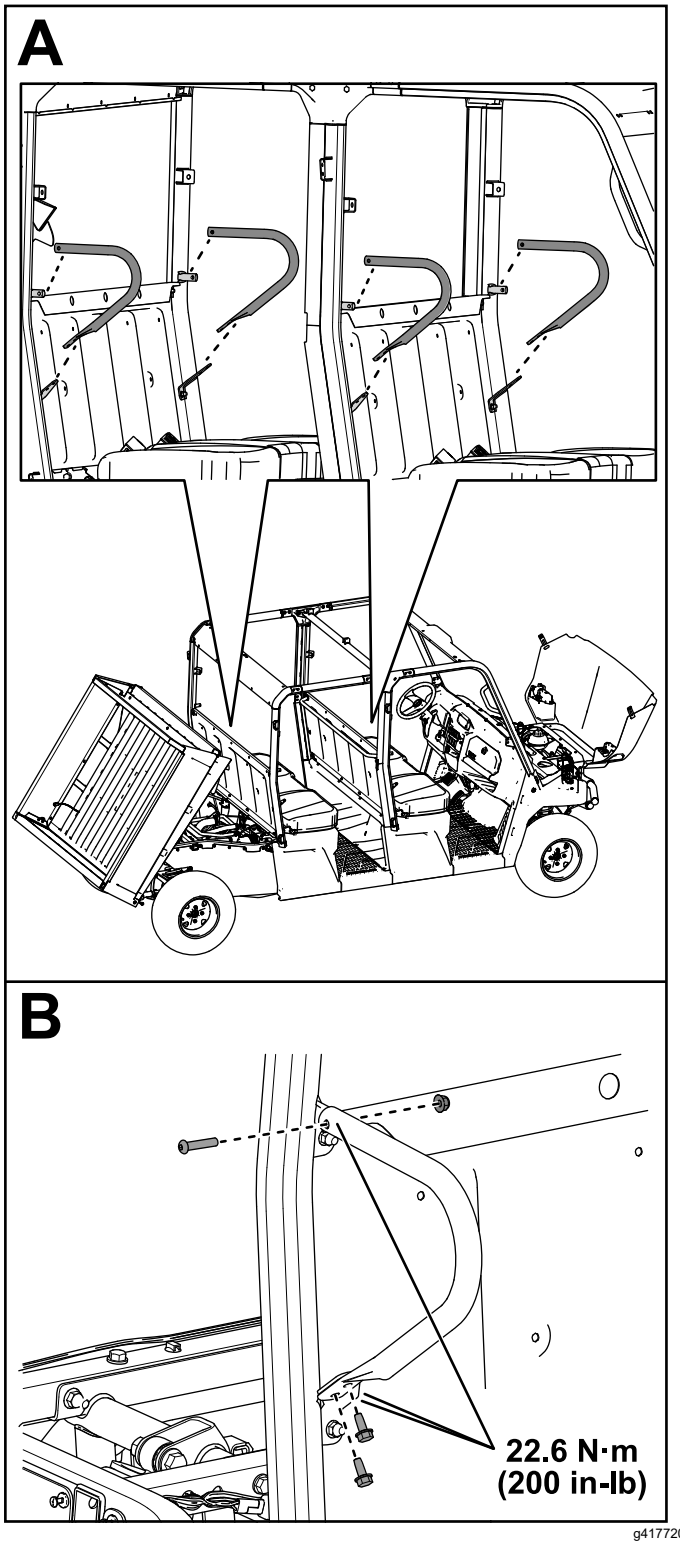


Figure 59

27. Secure the right seat belts as follows:

    A. Remove the cap from the top portion of the seat belt (Figure 60).

    B. Insert seat belt into the roll bar seat belt bracket and secure the seat belt using a locknut (7/16 inch) as shown in Figure 60.

       Torque the locknut (7/16 inch) to 48.8 N·m (432 in-lb) as shown in Figure 60.

    C. Install the cap (Figure 60).

    D. Repeat these steps for the left seat belts.

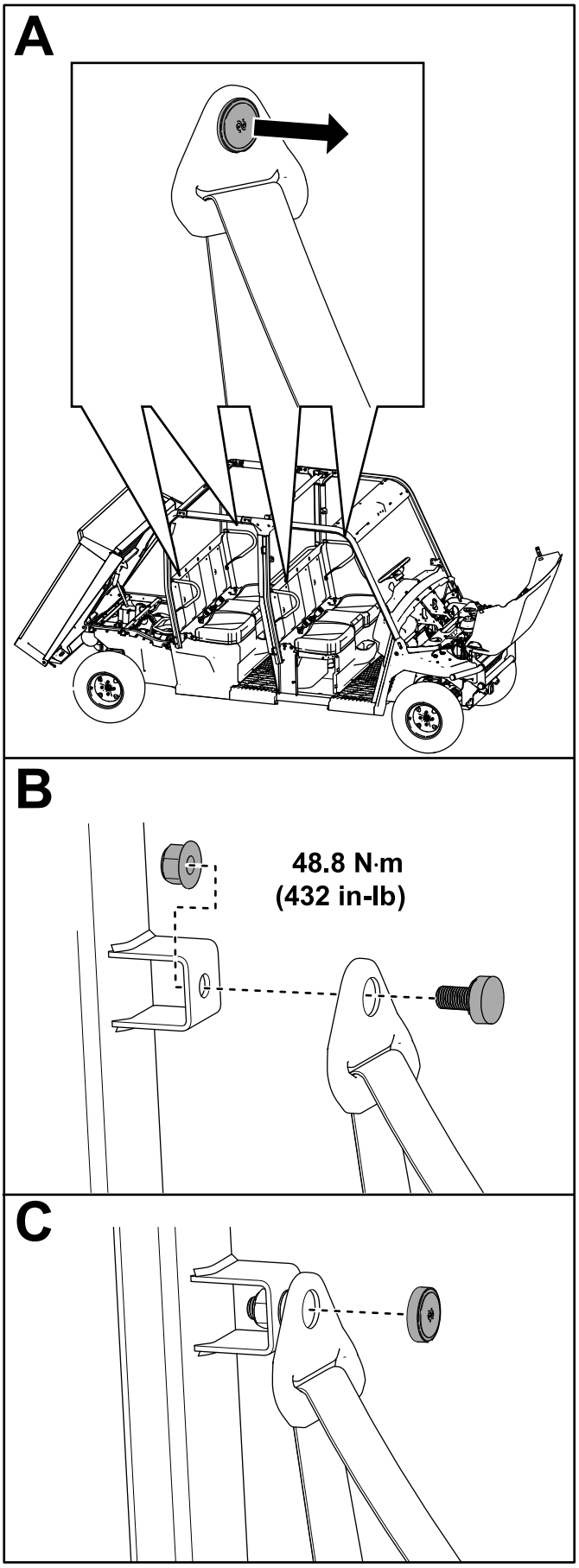
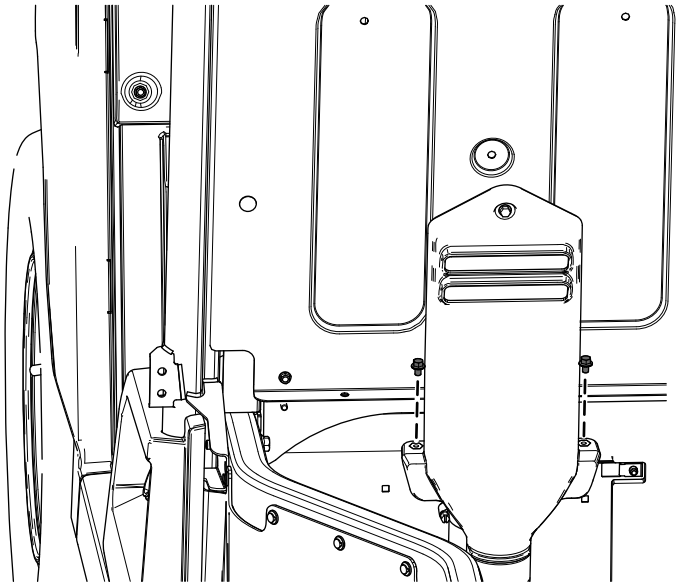


Figure 60

28. To install the CVT-intake hood and the seat backs, do the following:

A. Remove the 2 flange-head bolts (1/4 x 3/8 inch) from the CVT-intake hood (Figure 61).

Retain the bolts.



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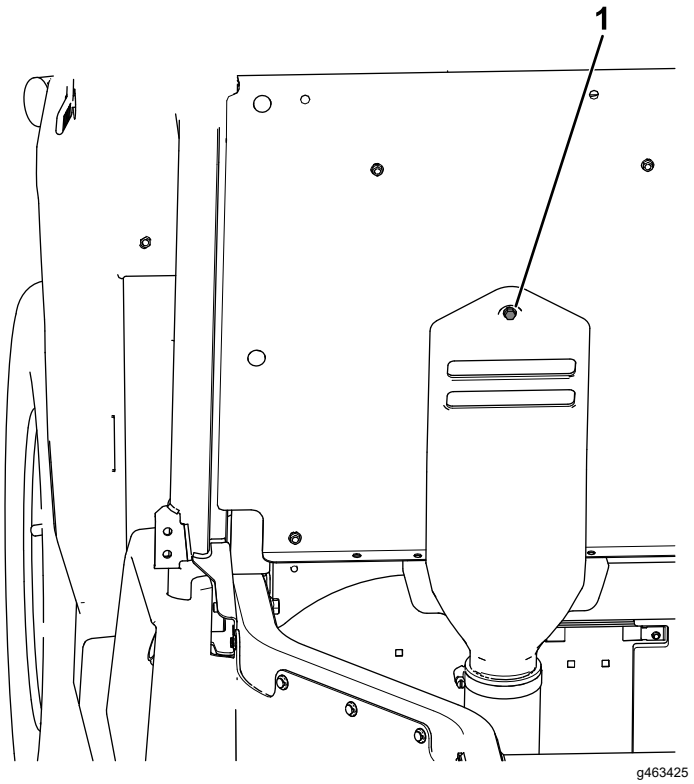
Figure 61

B. Insert the captive bolt attached to the CVT-intake hood into the hole shown in the seat panel (Figure 62).

Do not secure the bolt at this time.

If your machine **does not have** the holes present in the seat panel for the CVT-intake hood, proceed to **step C**.

If your machine **does have** the holes present in the seat panel for the CVT-intake hood, proceed to **step E**.

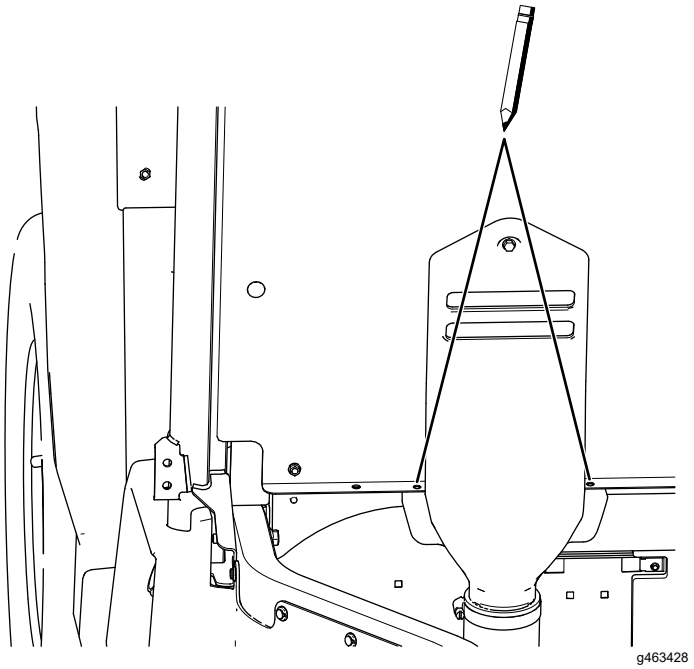


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Figure 62

1. Captive bolt

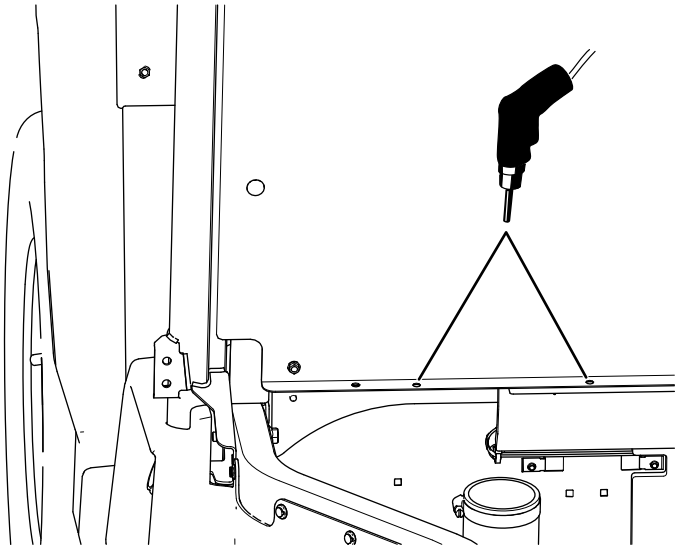
C. Using the CVT-intake hood as the template, mark the 2 hole locations (Figure 63).



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Figure 63

D. Move the CVT-intake hood and drill the 2 holes (11/32 inch) into the seat panel (Figure 64).

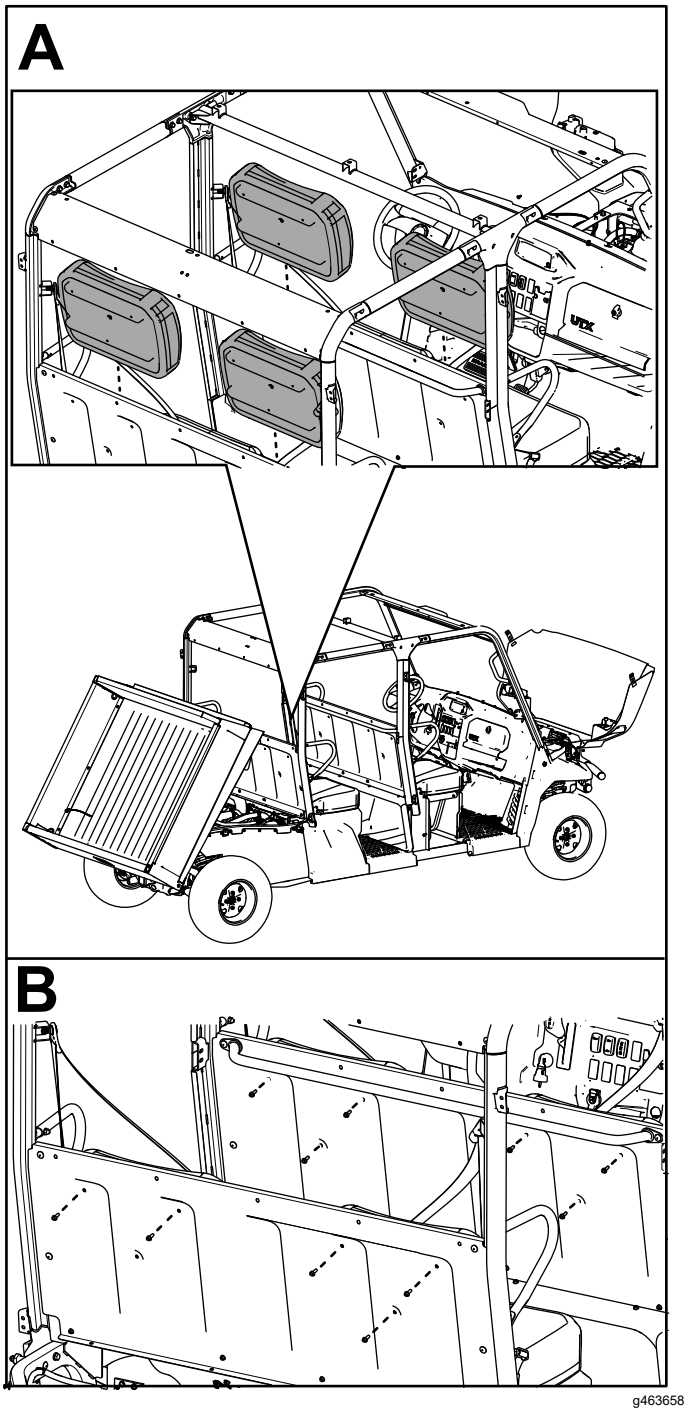


g463424

Figure 64

E. Secure the 4 seat backs to the seat panels using 11 hex-washer head bolts (1/4 x 3/4 inch) as shown in Figure 65.

Do not install a bolt into the left, middle hole in the seat panel.



g463658

Figure 65

F. Insert the captive bolt attached to the CVT-intake hood into the hole shown on the seat panel (Figure 66).

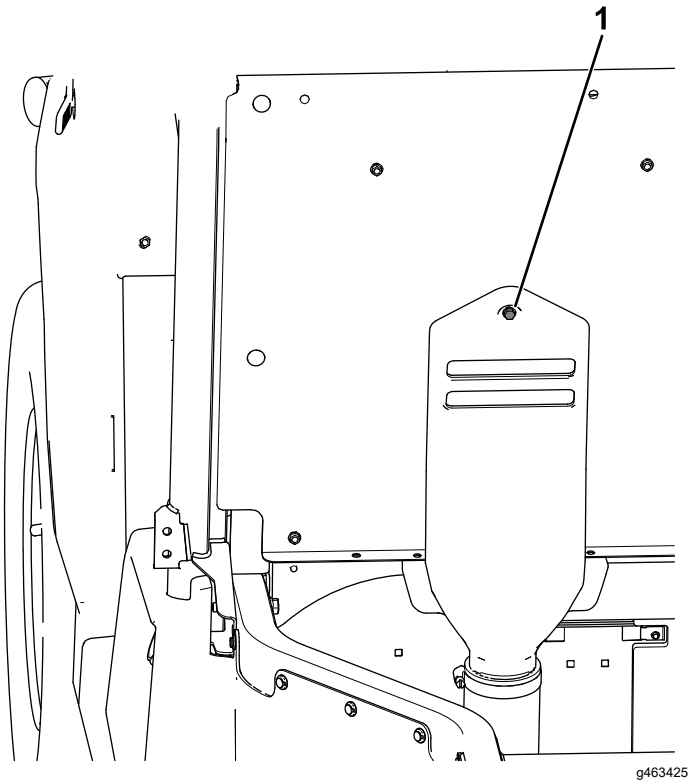


Figure 66

1. Captive bolt

G. Secure the bottom of the CVT-intake hood to the seat panel using the previously-removed 2 flange-head bolts (1/4 x 3/8 inch) as shown in Figure 67.

Torque the 2 flange-head bolts (1/4 x 3/8 inch) to 5.4 N·m (48 in-lb).

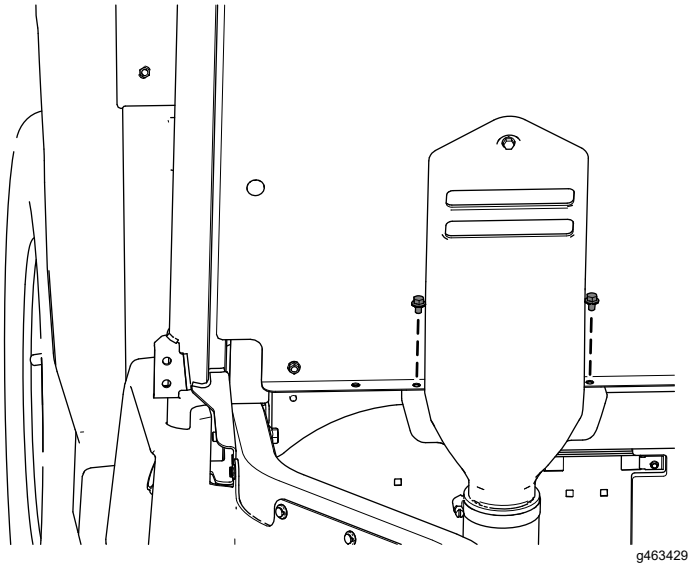


Figure 67

H. Torque the 11 hex-washer head bolts (1/4 x 3/4 inch) and the captive bolt attached to the CVT-intake hood to 5.4 N·m (48 in-lb) as shown in Figure 68.

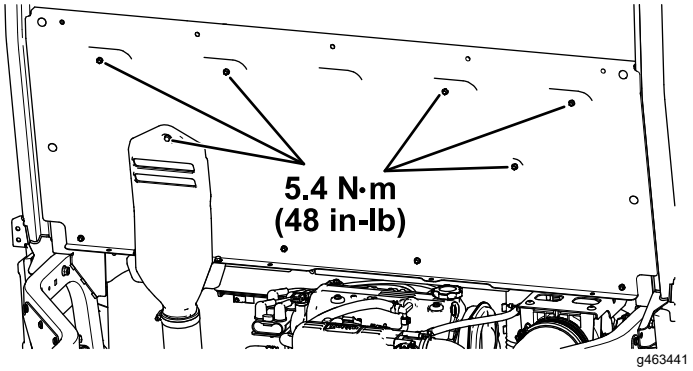
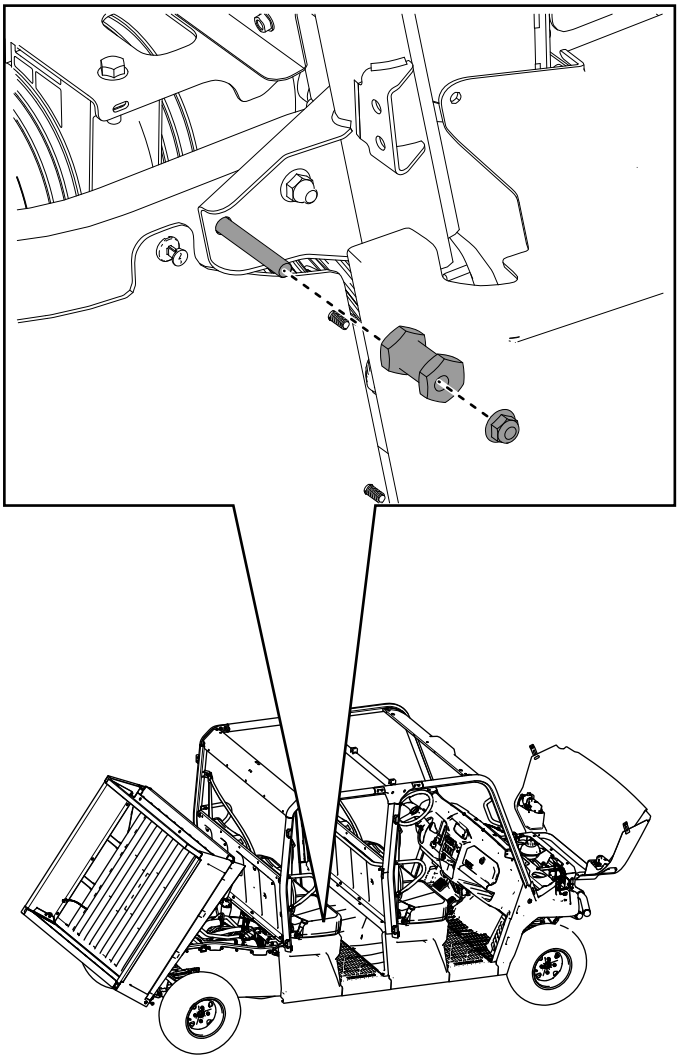


Figure 68

29. Install the previously removed locknuts (3/8 inch) and latch pins to the right and left, rear frame tubes (Figure 69).



g364832

Figure 69

30. Adjust the alignment nut for the cargo bed latch until you close the gap and the cargo bed latches securely (Figure 70).

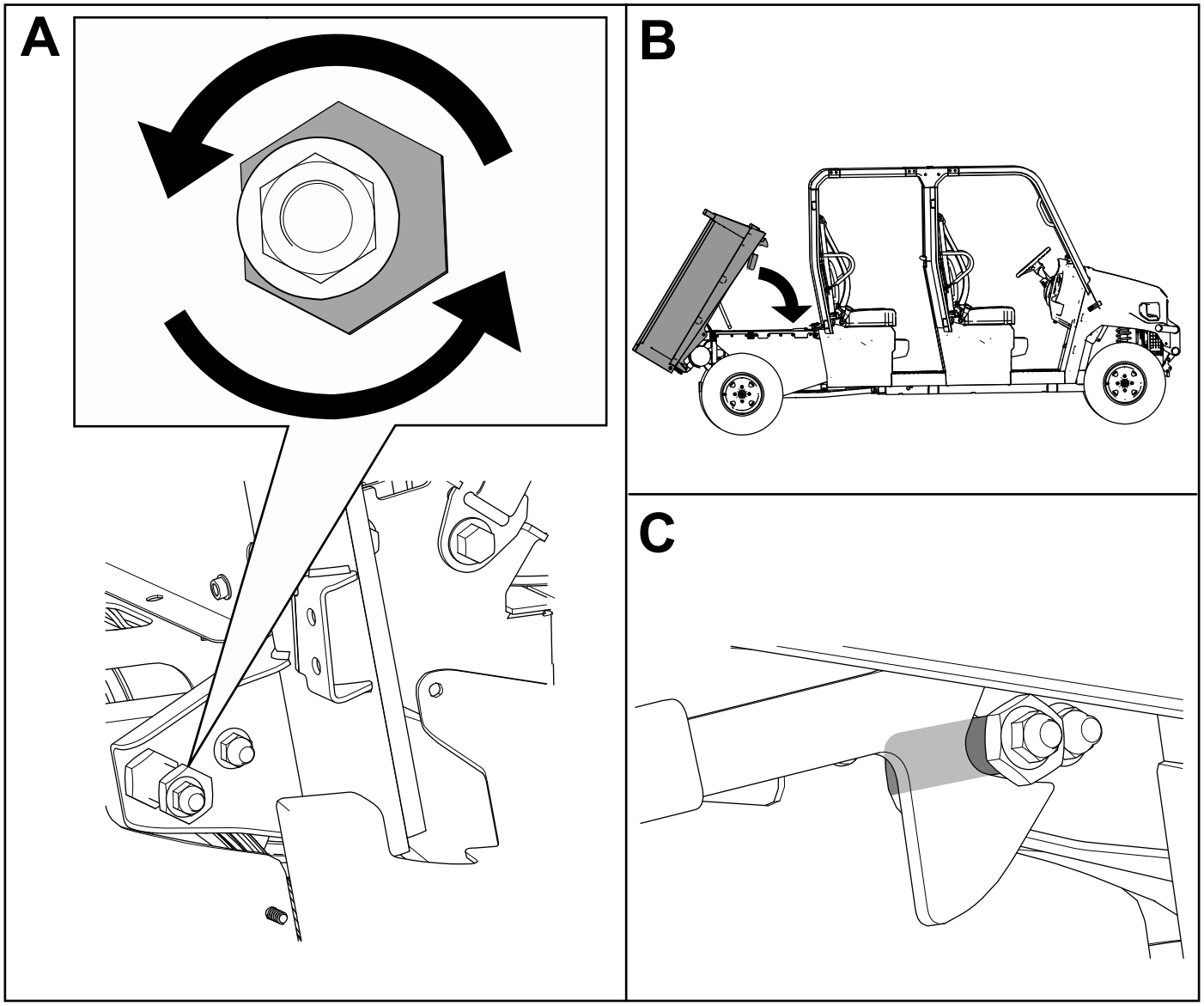


Figure 70

31. Torque the locknut (3/8 inch) to 40.7 N·m (360 in-lb) as shown in Figure 71.

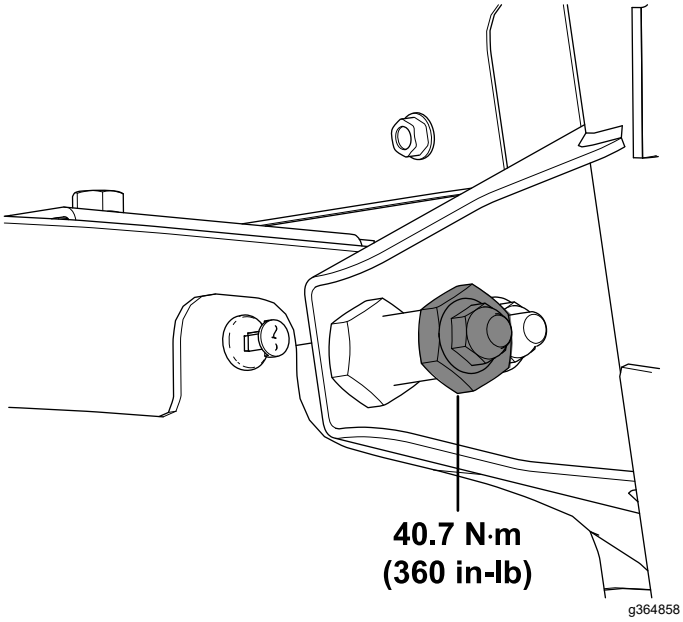


Figure 71

32. Secure the 2 right and 2 left seat-base panels using the previously removed hex-washer head bolts (1/4 x 3/4 inch) as shown in Figure 72.

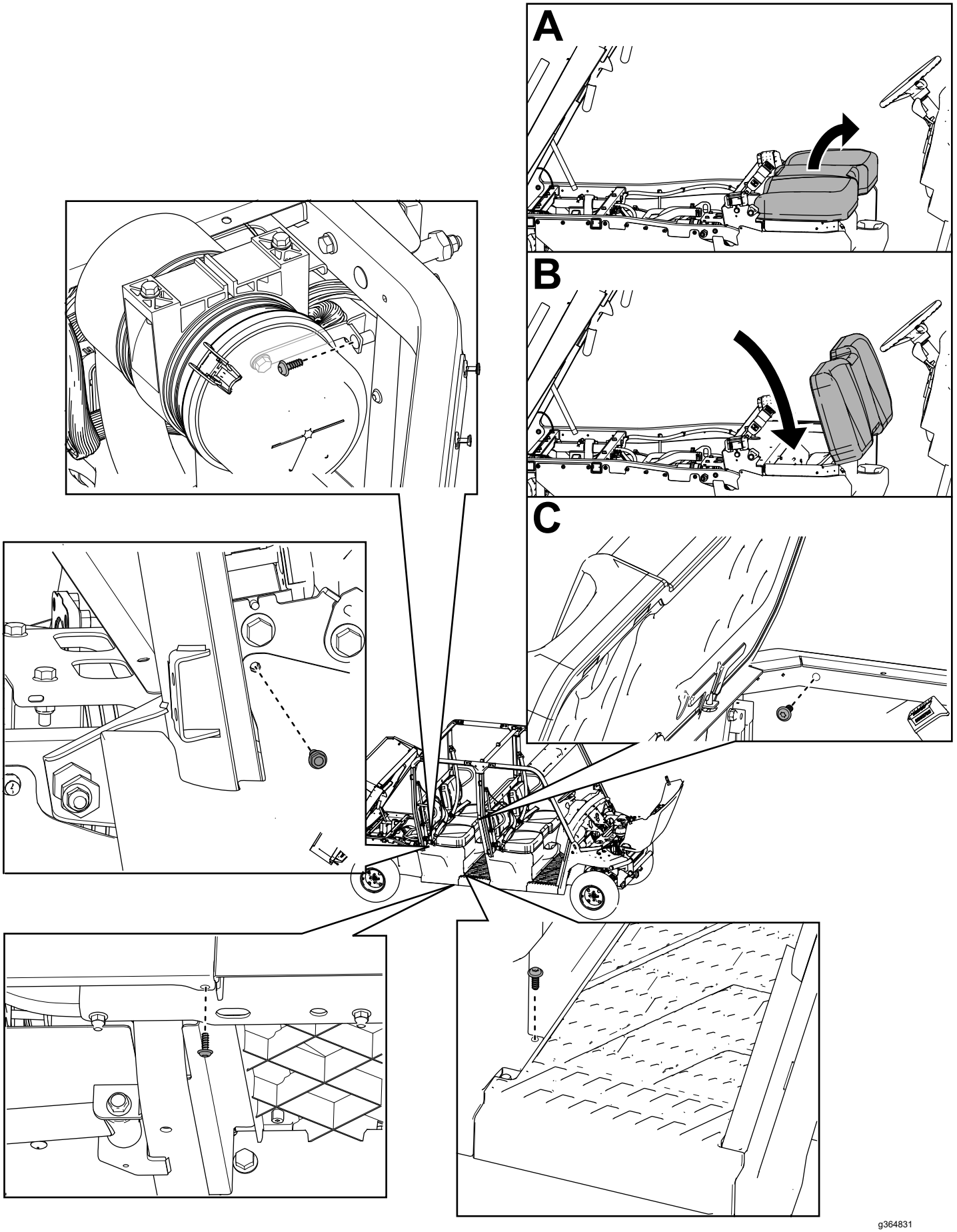
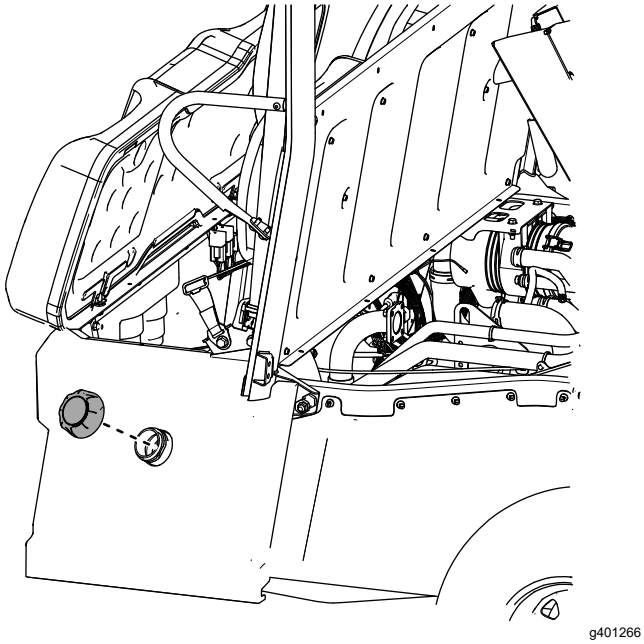


Figure 72

33. Install the fuel-tank cap to the left, rear seat-base panel (Figure 73).



g401266

Figure 73

8

Burnishing the Brakes

No Parts Required

Procedure

To ensure optimum performance of the brake system, burnish the brakes before use.

1. Bring the machine up to full speed, apply the brakes to rapidly stop the machine without locking up the tires.
2. Repeat this procedure 10 times, waiting 1 minute between stops, to avoid overheating the brakes.

Product Overview

Controls

Become familiar with all the controls before you start the engine and operate the machine.

Control Panel

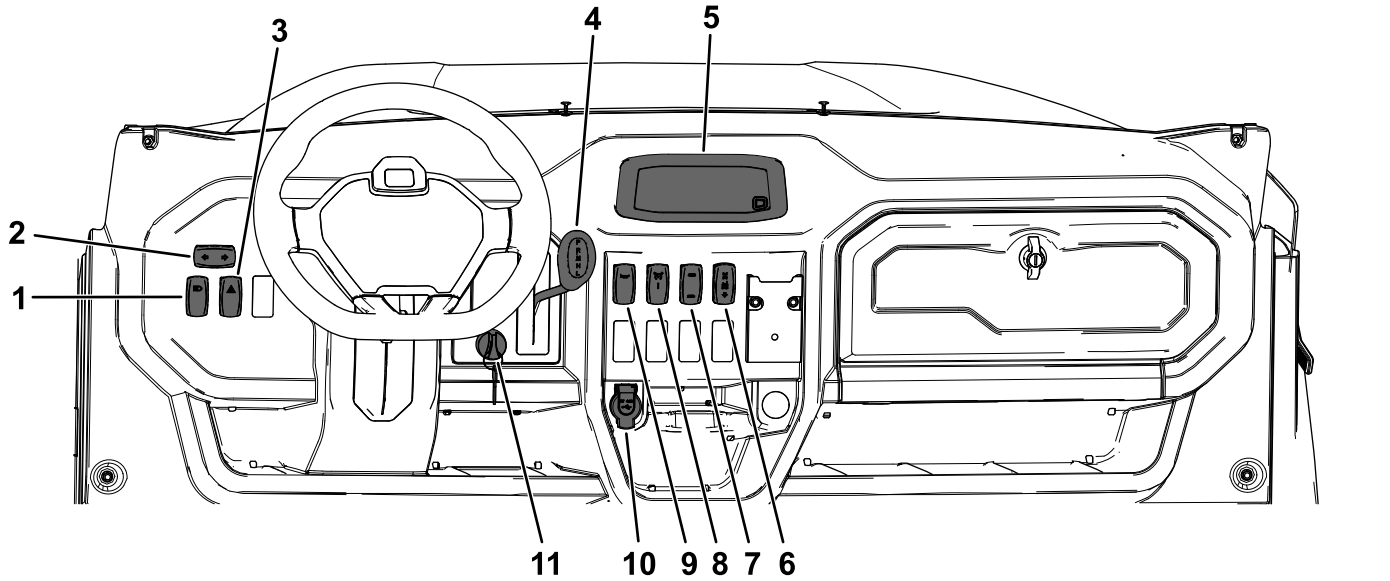


Figure 74

1. Headlight switch
2. Turn-signal switch
3. Hazard-light switch
4. Gear selector
5. Display
6. Differential-lock switch
7. 2-wheel drive/4-wheel drive switch
8. Cruise control switch
9. Horn switch
10. USB power point
11. Key switch

Key Switch

Use the key switch (Figure 74) to start and shut off the engine. To shut off the engine, rotate the key switch counterclockwise to the OFF position.

The key switch has 3 positions: OFF, RUN, and START. Rotate the key switch clockwise to the START position to engage the starter motor. Release the key switch when the engine starts. The key switch moves automatically to the ON position.

Headlight Switch

Push the headlight switch (Figure 74) up to turn on the headlights or down to turn off the headlights.

Turn-Signal Switch

Press the left side of the turn-signal switch (Figure 74) to activate the left-turn signal and the right side of the switch to activate the right-turn signal.

Note: The center position is off.

Hazard-Light Switch

Press the hazard-light switch (Figure 74) up to turn on the hazard lights or down to turn off the hazard lights.

Cruise Control Switch

Press the cruise control switch (Figure 74) up to set the desired drive speed; refer to Using the Cruise Control (page 71).

Differential-Lock Switch

Use the differential-lock switch (Figure 74) to engage or disengage the front and/or rear differentials; refer to Using the 4-Wheel Drive/Differential Lock(s) (page 73).

2-Wheel Drive/4-Wheel Drive Switch

Use the 2-wheel drive/4-wheel drive switch (Figure 74) to toggle between 2-wheel drive and 4-wheel drive; refer to Using the 4-Wheel Drive/Differential Lock(s) (page 73)

Horn Switch

Press the horn switch (Figure 74) to sound the horn.

USB Power Point

Use the power point (Figure 74) to power mobile devices.

Gear Selector

Use the gear selector (Figure 74) to shift the transmission between **P** (PARK), **R** (REVERSE), **N** (NEUTRAL), **H** (HIGH FORWARD), and **L** (LOW FORWARD) ground operation.

Important: **Do not shift the transmission to the REVERSE, HIGH, or LOW gear unless the machine is motionless and the engine is at low-idle; otherwise, you could damage the transmission.**

Display

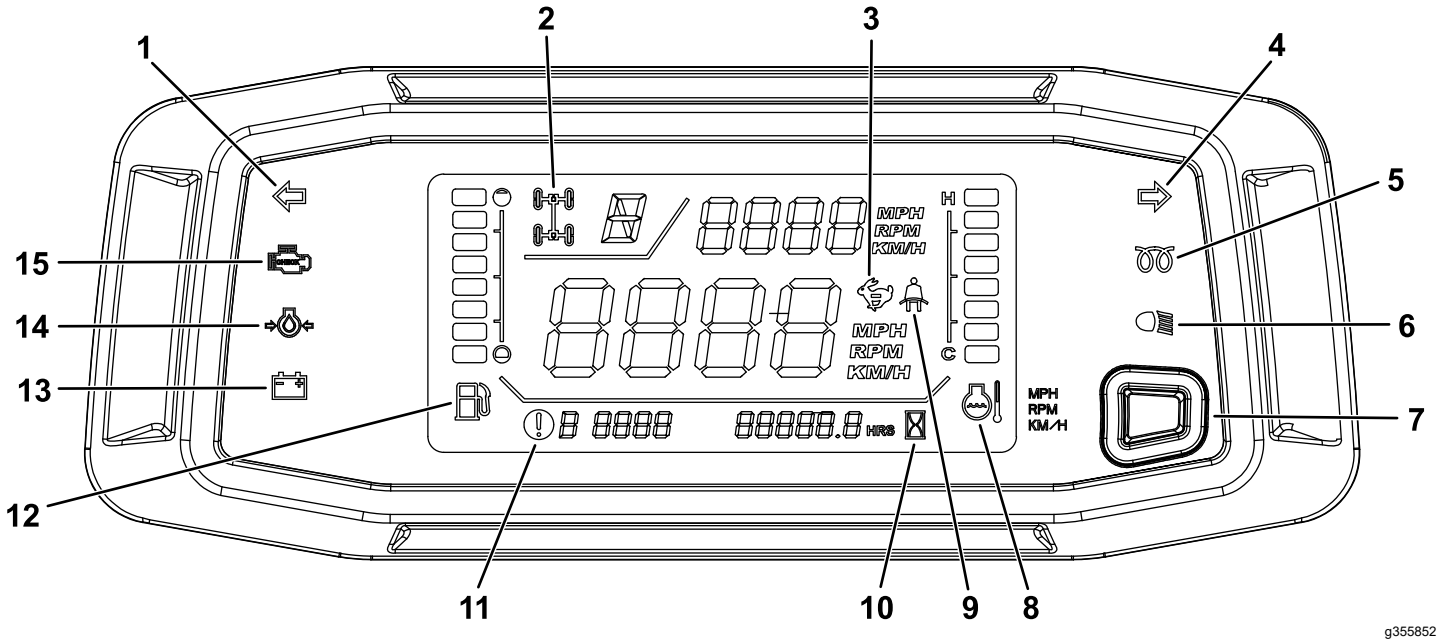


Figure 75

1. Left-turn signal indicator
2. 2-wheel drive/4-wheel drive/differential lock indicator
3. Cruise control/speed-limited indicator
4. Right-turn signal indicator
5. Glow-plug indicator (diesel machines only)
6. Headlights indicator
7. Display button/ground speed governor control
8. Coolant-temperature gauge and indicator
9. Seat belt indicator
10. Hour meter
11. Fault code indicator
12. Fuel gauge
13. Charge indicator
14. Oil-pressure warning light
15. Check-engine light

Turn-Signal Indicators

The left or right turn-signal blinks when you press the turn-signal switch to the left or right (Figure 75).

2-Wheel Drive/4-Wheel Drive/Differential Lock Indicator

Note: When the indicator (Figure 75) is blinking it means that the setting is not engaged/inactive; when it becomes solid, it is engaged/active.

Refer to Figure 76 and the corresponding table for using the 2-wheel drive/4-wheel drive switch and differential lock switch together.

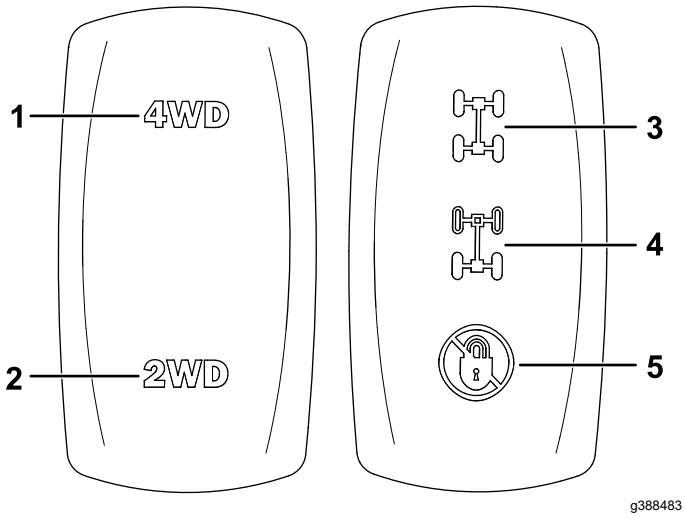
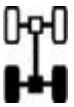
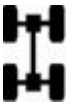
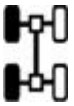
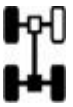
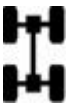


Figure 76

1. Up position—engages 4-wheel drive
2. Down position—engages 2-wheel drive
3. Up position—engages both the front and rear differential locks
4. Mid position—engages the rear differential lock only
5. Down position—disengages the differential lock(s)

2-Wheel Drive/4-Wheel Drive Switch Position	Differential Lock Switch Position	Result
2	5	No indicator
2	4	
2	3	 (blinking—inactive configuration)
1	5	
1	4	
1	3	

Cruise Control/Speed-Limited Indicator

If the cruise control is set, the indicator illuminates (Figure 75).

If the top speed of the machine is limited, the indicator illuminates. The speed is limited if the following occurs:

- The cruise control is set.
- There is a fault code.
- A seat belt is not buckled.

Headlights Indicator

The headlights indicator illuminates when the headlights are in the ON position.

Seat Belt Indicator

The seat belt indicator illuminates when the operator does not have their seat belt fastened.

Note: If the seat belt is not fastened, the machine speed will be limited.

Fault Code Indicator

The fault code indicator illuminates and the corresponding fault code number appears when a machine fault occurs.

Important: **Do not operate the machine if a fault code appears; otherwise, serious damage could occur. Contact your authorized Toro distributor.**

Hour Meter

The hour meter indicates the total hours of machine operation. The hour meter (Figure 75) starts to function whenever the engine is running.

Note: To obtain the odometer reading, contact your authorized Toro distributor.

Oil-Pressure-Warning Light

The oil-pressure-warning light (Figure 75) illuminates if the engine-oil pressure drops below a safe level while the engine is running.

Important: **If the light flickers or remains on, stop the machine, shut off the engine, and check the oil level. If the oil level is low, but adding oil does not cause the light to go out when the engine is started, shut off the engine immediately, and contact your authorized Toro distributor. for assistance.**

Check the operation of the warning light as follows:

1. Ensure that the machine is in the P (PARK) position.
2. Turn the key switch to the ON position, but do not start the engine.

   Note: The oil-pressure light should illuminate. If the light does not turn on, then there is a potential malfunction in the display and/or signal.

   Note: If you just started or shut off the engine, it may take a few seconds for the light to turn off or on.

Coolant-Temperature Gauge and Light

The coolant-temperature gauge registers the coolant temperature in the engine and operates only when the key switch is in the ON position (Figure 75).

The 8 coolant bars blink and a fault code appears if the engine overheats.

Charge Indicator

The charge indicator illuminates when the battery discharges. If the light illuminates during operation, stop the machine, shut off the engine, and check for possible causes, such as the alternator belt (Figure 75).

Important: **If the alternator belt is loose or broken, do not operate the machine until the adjustment or repair is complete. Failure to observe this precaution may damage the engine.**

Check the operation of the warning lights as follows:

- Shift the transmission lever to the P (PARK) position.
- Turn the key switch to the ON position, but do not start the engine. The coolant temperature, charge indicator, and oil-pressure lights should glow. If any light does not function, there is a malfunction in the system that you must repair.

Fuel Gauge

The fuel gauge shows the amount of fuel in the tank. It displays only when key switch is in the ON position (Figure 75).

A single bar indicates a low fuel level and 1 flashing bar indicates that the fuel tank is nearly empty.

Tachometer

The tachometer displays the speed of the engine (Figure 75).

Speedometer

The speedometer registers the ground speed of the machine (Figure 75).

Display Button/Ground Speed Governor Control

Press the button (Figure 75) between 0 to 3 seconds to swap the locations of tachometer and speedometer.

Press and hold the button (Figure 75) between 3 to 10 seconds to convert the speedometer from mph to km/h.

Press and hold the button for 10 seconds or more to adjust the ground speed governor; refer to Adjusting the Ground Speed Governor (page 72).

Check-Engine Light

The check-engine light illuminates to indicate an engine malfunction; refer to Troubleshooting (page 114).

Accelerator Pedal

Use the accelerator pedal (Figure 77) to vary the ground speed of the machine when the transmission is in gear. Pressing down the accelerator pedal increases the engine speed and ground speed. Releasing the pedal decreases the engine speed and ground speed.

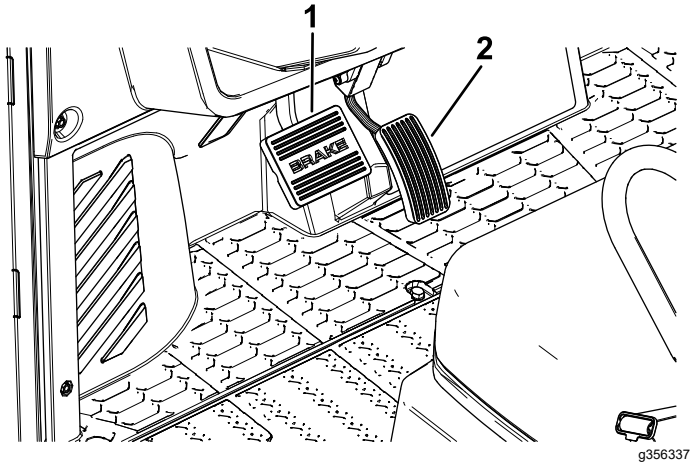


Figure 77

1. Brake pedal
2. Accelerator pedal

Brake Pedal

Use the brake pedal to stop or slow the machine (Figure 77).

⚠ CAUTION

Operating a machine with worn or incorrectly-bled brakes may result in personal injury.

If the brake pedal travels to within 25 mm (1 inch) of the machine floor board, bleed and/or repair the brakes.

Specifications

Note: Specifications and design are subject to change without notice.

Overall width	154 cm (60-1/2 inches)
Overall length	Model 08100: 314 cm (123-1/2 inches) Model 08100TC: 314 cm (123-1/2 inches) Model 08101: 405 cm (159-1/2 inches)
Curb weight—The total weight of an operational vehicle with original equipment as manufactured; filled to the maximum capacity of engine fuel, engine oil, transmission, differential fluids, and coolant; but without the weight of the operator, passenger(s), accessories, attachments, and cargo.	Model 08100: 884 kg (1,949 lb) Model 08100TC: 884 kg (1,949 lb) Model 08101: 994 kg (2,191 lb)
Gross vehicle weight (GVW)—The maximum allowable total vehicle weight, including the vehicle's curb weight plus the combined weights of all vehicle occupants, any cargo loads, the trailer tongue weight, and the weights of any installed options, attachments and/or accessories. Installation of options, attachments, and/or accessories may reduce the allowable cargo capacity below the stated limit.	1814 kg (4,000 lb)
Cargo bed capacity—Maximum cargo load, not including attachments and/or accessories.	Model 08100: 567 kg (1,250 lb) Model 08100TC: 567 kg (1,250 lb) Model 08101: 454 kg (1,000 lb)
Tow capacity	Tongue weight: 91 kg (200 lb) Maximum trailer weight: 907 kg (2,000 lb)
Ground clearance	23 cm (9 inches) with no load or operator
Wheel base	Model 08100: 203 cm (80 inches) Model 08100TC: 203 cm (80 inches) Model 08101: 295 cm (116 inches)
Height	201 cm (79 inches) to top of ROPS
Cargo bed length	Inside: 113 cm (44-1/2 inches) Outside: 127 cm (50 inches)
Cargo bed width	Inside: 142 cm (56 inches) Outside: 151 cm (59-1/2 inches)
Cargo bed inside height	28 cm (11 inches)
Engine speed	Low idle: 800 to 900 rpm High idle: 4,700 to 4,900 rpm

Attachments/Accessories

A selection of Toro approved attachments and accessories is available for use with the machine to enhance and expand its capabilities. Contact your Authorized Service Dealer or authorized Toro distributor or go to www.Toro.com for a list of all approved attachments and accessories.

To ensure optimum performance and continued safety certification of the machine, use only genuine Toro replacement parts and accessories. Replacement parts and accessories made by other manufacturers could be dangerous, and such use could void the product warranty.

Operation

Before Operation

Before Operation Safety

General Safety

- This vehicle is not a toy. Never allow children under 16 (unless they have obtained a state-issued motor vehicle driver's license) or people who are not trained or physically capable to safely operate or service the machine. Local regulations may restrict the age of the operator. The owner is responsible for training all operators and mechanics.
- Become familiar with the safe operation of the equipment, operator controls, and safety signs.
- Shut off the machine, remove the key, and wait for all movement to stop before you leave the operator's position. Allow the machine to cool before adjusting, servicing, cleaning, or storing it.
- Know how to stop and shut off the machine quickly.
- Ensure that there are not more occupants (you and your passenger(s)) than the number of handholds equipped on the machine. Do not carry small children on a person's lap.
- Ensure that all passengers understand and follow the instructions and warnings in the *Operator's Manual*.
- Check that all safety devices and decals are in place. Repair or replace all safety devices and replace all illegible or missing decals. Do not operate the machine unless they are present and functioning properly.

Fuel Safety

- Use extreme care in handling fuel. It is flammable and its vapors are explosive.
- Extinguish all cigarettes, cigars, pipes, and other sources of ignition.
- Use only an approved fuel container.
- Do not remove the fuel cap or fill the fuel tank while the engine is running or hot.
- Do not add or drain fuel in an enclosed space.
- Do not store the machine or fuel container where there is an open flame, spark, or pilot light, such as on a water heater or other appliance.
- If you spill fuel, do not attempt to start the engine; avoid creating any source of ignition until the fuel vapors have dissipated.

Performing Daily Maintenance

Service Interval: Before each use or daily

Before starting the machine each day, perform the Each Use/Daily procedures listed in Maintenance (page 78).

Checking the Tire Pressure

Service Interval: Before each use or daily

⚠ DANGER

Low tire pressure decreases the side-hill stability of the machine. This could cause a rollover, which may result in personal injury or death.

Do not under-inflate the tires.

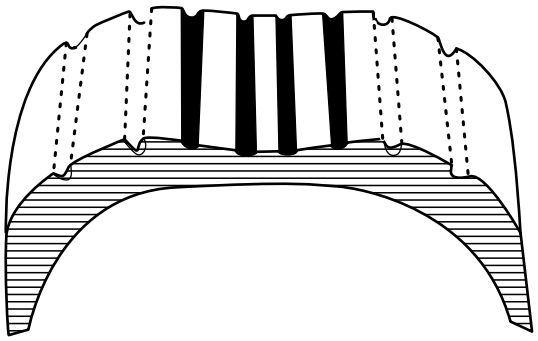
Refer to the following list for the recommended tire pressure specifications:

- **Front tire pressure:** approximately 165 kPa (24 psi)
- **Rear tire pressure with a cargo load of 227 kg (500 lb) or less:** approximately 165 kPa (24 psi)
- **Rear tire pressure with a cargo load of more than 227 kg (500 lb):** approximately 221 kPa (32 psi)

Important: **Do not over-inflate the tires according to the specification listed on the sidewall of the tire.**

Important: **Check the tire pressure frequently to ensure proper inflation. If the tires are not inflated to the correct pressure, the tires will wear prematurely and may cause the 4-wheel drive to bind.**

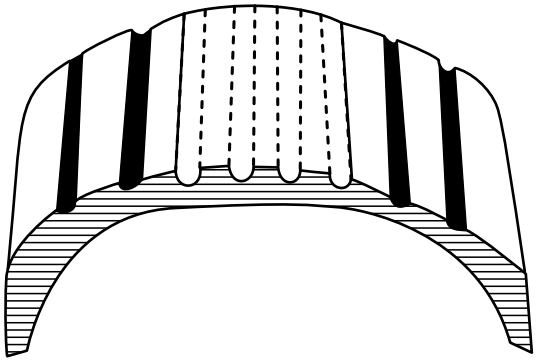
Figure 78 shows an example of tire wear caused by **under-inflation**.



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Figure 78

Figure 79 shows an example of tire wear caused by **over-inflation**.



g395581

Figure 79

Adding Fuel

Recommended Fuel

Type	Unleaded gasoline
Minimum octane rating	87 (US) or 91 (research octane; outside the US)
Ethanol	No more than 10% by volume
Methanol	None
MTBE (methyl tertiary butyl ether)	Less than 15% by volume
Oil	Do not add to the fuel

Use only clean, fresh (no more than 30 days old), fuel from a reputable source.

Important: **To reduce starting problems, add fuel stabilizer/conditioner to fresh fuel as directed by the fuel-stabilizer/conditioner manufacturer.**

Refer to your engine owner's manual for additional information.

Filling the Fuel Tank

Fuel-tank capacity: 32 L (8.5 US gallons)

1. Clean the area around the fuel-tank cap.
2. Remove the fuel-tank cap.
3. Fill the tank to approximately 25 mm (1 inch) below the bottom of the filler neck and install the cap.

   Note: Do not overfill the fuel tank.
4. Install the fuel-tank cap securely.
5. Wipe up any spilled fuel.

Breaking in a New Machine

During the first 50 hours, perform the following guidelines to provide proper performance for the machine:

- After starting a cold engine, let it warm up for about 15 seconds before using the machine.

  Note: Allow more time for the engine to warm up when operating in cold temperatures.
- After using the machine, allow the engine to cool down for about 15 seconds before shutting the engine off.
- Ensure that the brakes are burnished; refer to 8 Burnishing the Brakes (page 56).
- Check the fluid levels more often during this process.
- Vary the machine speed during operation and avoid fast accelerations.
- A break-in oil for the engine is not required. Original engine oil is the same type specified for regular oil changes.

During Operation

During Operation Safety

General Safety

- The owner/operator can prevent and is responsible for accidents that may cause personal injury or property damage.
- Passengers should sit in the designated seating positions only. Do not carry passengers in the cargo bed. Keep bystanders and children out of the operating area.
- Wear appropriate clothing, including eye protection; long pants; substantial, slip-resistant footwear; and hearing protection. Tie back long hair and do not wear loose clothing or loose jewelry.
- Wear an approved helmet whenever you operate the machine on rough or uneven terrain or at high speeds.
- Use your full attention while operating the machine. Do not engage in any activity that causes distractions; otherwise, injury or property damage may occur.
- Do not operate the machine while ill, tired, or under the influence of alcohol or drugs.
- Operate the machine outdoors or in a well-ventilated area only.
- Do not exceed the maximum gross vehicle weight (GVW) of the machine.
- Use extra caution when operating, braking, or turning the machine with a heavy load in the cargo bed.
- Carrying oversized loads in the cargo bed reduces the stability of the machine. Do not exceed the carrying capacity of the bed.
- Carrying material that cannot be bound to the machine adversely affects the steering, braking, and stability of the machine. When you carry material that cannot be bound to the machine, use caution when steering or braking.
- Carry a reduced load and reduce the ground speed of the machine when operating on rough, uneven terrain, and near curbs, holes, and other sudden changes in terrain. Loads may shift, causing the machine to become unstable.
- You and your passengers should remain seated whenever the machine is moving. Keep your hands on the steering wheel; your passengers should use the handholds provided. Keep arms and legs within the machine body at all times.
- Operate the machine only in good visibility. Watch for holes, ruts, bumps, rocks, or other hidden objects. Uneven terrain could overturn the machine. Tall grass can hide obstacles. Use care when approaching blind corners, shrubs, trees, or other objects that may obscure your vision.
- Do not drive the machine near drop-offs, ditches, or embankments. The machine could suddenly roll over if a wheel goes over the edge or if the edge gives way.
- Always watch out for and avoid low overhangs such as tree limbs, door jambs, overhead walkways, etc.
- Look behind and down before reversing the machine to be sure of a clear path.
- This machine was not designed or intended to be used on public roadways. Doing so may be hazardous and in violation of local laws.
- When using the machine on public roads, follow all traffic regulations and use any additional accessories that may be required by law, such as lights, turn signals, slow-moving vehicle (SMV) signs, and others as required.
- If the machine ever vibrates abnormally, stop and shut off the machine immediately, wait for all movement to stop, and inspect for damage. Repair all damage to the machine before resuming operation.
- It can take longer to stop the machine on wet surfaces than on dry surfaces. To dry out wet brakes, drive slowly on a level surface while putting light pressure on the brake pedal.
- Operating the machine on a paved surface in different modes, such as 2-wheel drive and 4-wheel drive, and carrying passengers and cargo may affect the handling of the machine.
- Operating the machine at high speed and then quickly stopping may cause the rear wheels to lock up, which impairs your control of the machine.
- Improperly driving and/or making abrupt maneuvers while driving at fast speed increases the risk of a tip-over or rollover.
- Do not touch the engine, transmission, muffler, or exhaust manifold while the engine is running, or soon after you shut off the engine, because these areas may be hot enough to cause burns.
- Do not leave a running machine unattended.
- Before you leave the operating position, do the following:
  - Park the machine on a level surface.
  - Shift the transmission lever to the P (PARK) position.
  - Shut off the machine and remove the key.
  - Wait for all movement to stop.

- Do not operate the machine when there is the risk of lightning.
- Use accessories and attachments approved by The Toro® Company only.

Rollover Protection System (ROPS) Safety

- The ROPS is an integral safety device. Do not remove the ROPS from the machine.
- Always wear your seat belt to prevent/minimize injury to you and your passenger(s) in the event of an accident; ensure that it is attached and that you can release it quickly in an emergency.
- Check carefully for overhead obstructions and do not contact them.
- Keep the ROPS in safe operating condition by thoroughly inspecting it periodically for damage and keeping all the mounting fasteners tight.
- Replace damaged ROPS components. Do not repair or alter them.

Multi-Passenger Safety

- Do not exceed the gross vehicle weight (GVW) of the machine. You must account for yourself, your passengers, and the load in the cargo bed contributing to the overall GVW of the machine.
- Passengers should sit in the designated seating positions only. Do not allow passengers to sit in the cargo bed.
- You and your passengers should remain seated with your seat belts secured whenever the machine is in motion.
- The additional machine length results in a larger turn radius, so allow more space to maneuver the machine.

Slope Safety

Slopes are a major factor related to loss-of-control and tip-over accidents, which can result in severe injury or death.

- Survey the site to determine which slopes are safe for operating the machine and establish your own procedures and rules for operating on those slopes. Always use common sense and good judgment when performing this survey.
- If you feel uneasy operating the machine on a slope, do not do it.
- Keep all movement on slopes slow and gradual. Do not suddenly change the speed or direction of the machine.
- Avoid operating the machine on wet terrain. Tires may lose traction. A rollover can occur before the tires lose traction.
- Travel straight up and down a slope.
- If you begin to lose momentum while climbing a slope, gradually engage the brakes and slowly reverse the machine straight down the slope.
- Turning while going up or down a slope can be dangerous. If you must turn on a slope, do it slowly and cautiously.
- Heavy loads affect stability on a slope. Carry a reduced load and reduce your ground speed when operating on a slope or if the load has a high center of gravity. Secure the load to the cargo bed of the machine to prevent the load from shifting. Take extra care when hauling loads that shift easily (e.g., liquids, rock, sand, etc.).
- Avoid starting, stopping, or turning the machine on a slope, especially with a load. Stopping while going down a slope takes longer than stopping on a level surface. If you must stop the machine, avoid sudden speed changes, which can cause the machine to tip or roll over. Do not engage the brakes suddenly when rolling rearward, as this may cause the machine to overturn.

Loading and Dumping Safety

- Do not exceed the gross vehicle weight (GVW) of the machine when operating it with a load in the cargo bed and/or towing a trailer.
- Distribute the load in the cargo bed evenly to improve the stability and control of the machine.
- Before dumping, ensure that there is no one behind the machine.
- Do not dump a loaded cargo bed while the machine is sideways on a slope. The change in weight distribution may cause the machine to overturn.

Operating the Cargo Bed

Raising the Cargo Bed

⚠ WARNING

A raised bed could fall and injure persons that are working beneath it.

- **Remove any load material from the bed before raising it.**
- **Ensure that the cargo bed is fully up and stable before working under the bed.**

⚠ WARNING

Driving the machine with the cargo bed raised could cause the machine to tip or roll easier. You could damage the structure of the cargo bed if you operate the machine with the bed raised.

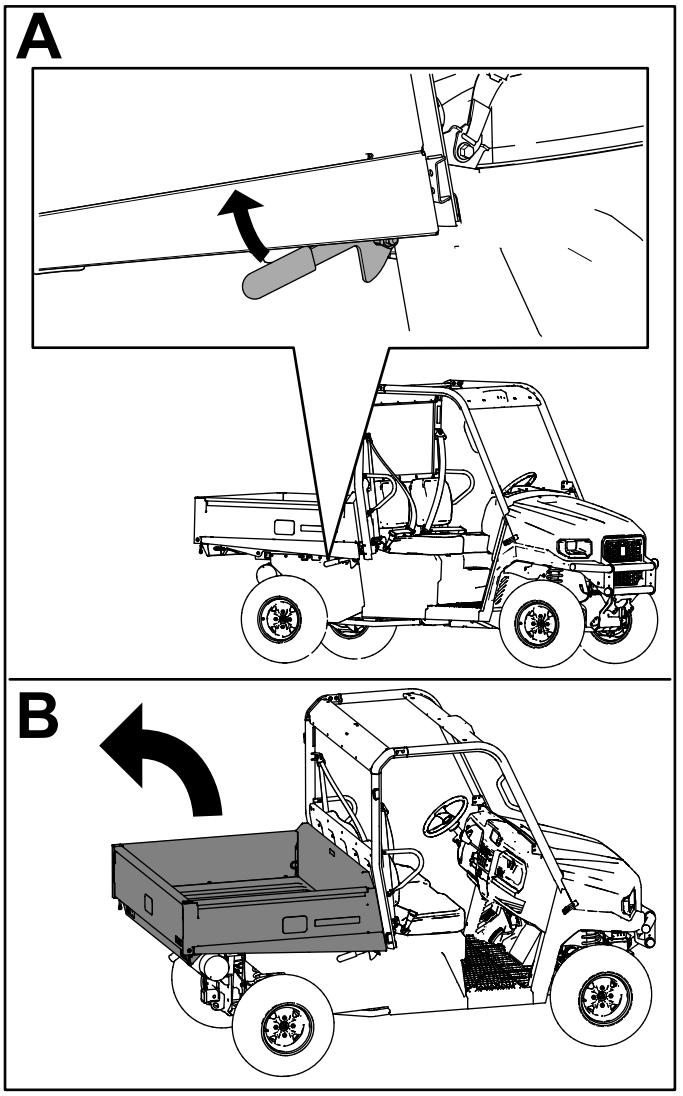
- **Operate the machine when the cargo bed is down.**
- **After emptying the cargo bed, lower it.**

⚠ CAUTION

If a load is concentrated near the back of the cargo bed when you release the lever, the bed may unexpectedly tip open, injuring you or bystanders.

- **Center loads in the cargo bed, if possible.**
- **Hold the cargo bed down and ensure that no one is leaning over the bed or standing behind it when releasing the lever.**
- **Remove all cargo from the bed before lifting the bed up to service the machine.**

Lift the lever to raise the cargo bed (Figure 80).



g398990

Figure 80

Lowering the Cargo Bed

⚠ WARNING

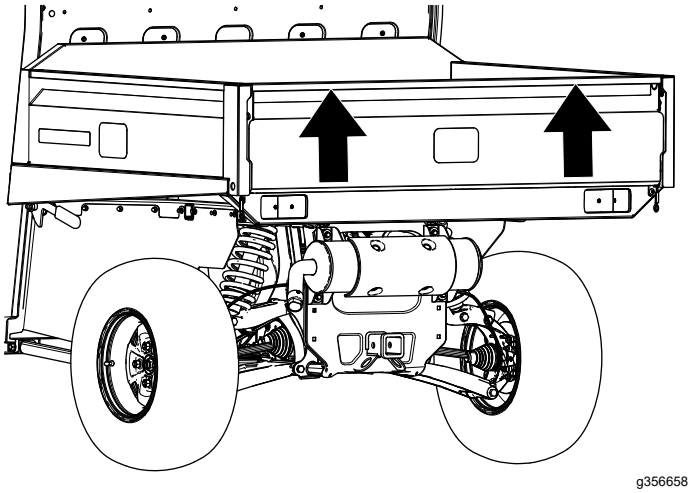
The weight of the bed may be heavy. Hands or other body parts could be crushed.

Keep your hands and other body parts away when lowering the bed.

Slowly push down the cargo bed until it latches securely.

Opening the Tailgate

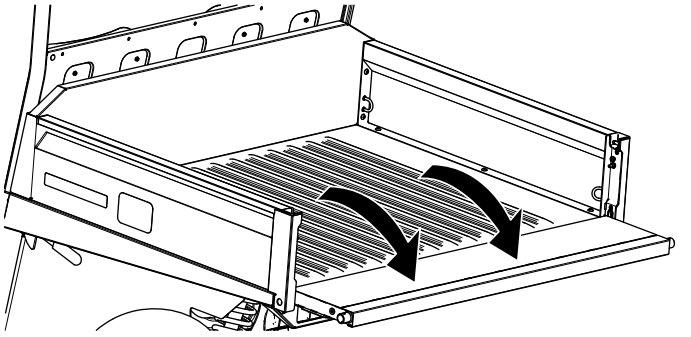
1. Ensure that the cargo bed is down and latched.
2. Using both hands, raise the tailgate using the ridge near the top of the tailgate (Figure 81).



g356658

Figure 81

3. Lower the tailgate until it is flush with the bottom of the cargo bed (Figure 82).



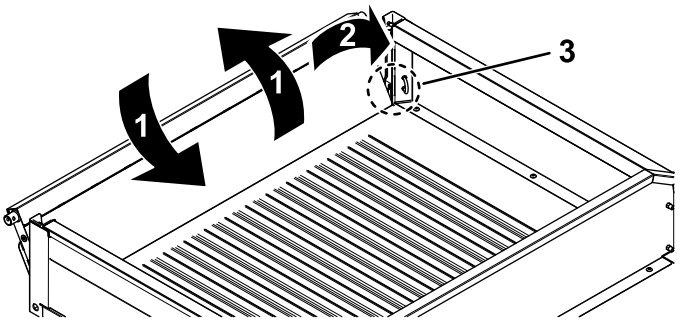
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Figure 82

Closing the Tailgate

If you unloaded loose material such as sand, landscaping rock, or wood chips from the cargo bed of the machine, some of the material that you unloaded may have lodged in the hinge area of the tailgate. Perform the following steps before closing the tailgate.

1. Use your hands to remove as much of the material from the hinge area as possible.
2. Rotate the tailgate to approximately the 45° position (Figure 83).



g356661

Figure 83

1. Rotate the tailgate back and forth several times.
2. Rotate the tailgate to approximately the 45° position.
3. Hinge area

3. Use a short, shaking motion to rotate the tailgate back and forth several times (Figure 83).

   Note: This action helps move material away from the hinge area.
4. Lower the tailgate and check for material remaining in the hinge area.
5. Repeat steps 1 through 4 until the material is removed from the hinge area.
6. Rotate the tailgate up and lift the tailgate into the notches in the cargo bed.

Starting the Engine

Important: **Do not attempt to push or tow the machine to get it started. Damage to the drive train could result.**

1. Sit on the operator seat and ensure that the machine is in the P (PARK) position.
2. Keep your foot off the accelerator pedal.
3. Rotate the key switch to the ON position.
4. Rotate the key switch to the START position.

   If your foot is not on the brake pedal, you cannot start the engine.

   Note: Release the key immediately when the engine starts and allow it to return to the RUN position.

Note: Do not run the starter motor more than 10 seconds at a time or premature starter failure may result. If engine fails to start after 10 seconds, turn the key to the OFF position. Check the controls and starting procedure, wait 10 additional seconds, and repeat the starting operation.

Driving the Machine

1. Press the brake pedal.
2. Move the gear selector to the desired gear.
3. Release the brake pedal and gradually press the accelerator pedal.

   Important: **Always stop the machine before shifting gears.**

   Use the chart below to determine the ground speed of each gear when operating the machine.

Gear	Maximum speed (km/h)	Maximum speed (mph)
R (REVERSE)	0 to 24	0 to 15
H (HIGH FORWARD)	0 to 40 default or 0 to 72 with doors installed	0 to 25 default or 0 to 45 with doors installed
L (LOW FORWARD)	0 to 24	0 to 15

Note: Leaving the key switch in the ON position for long periods of time without starting the engine discharges the battery.

Using the Cruise Control

In order to use cruise control, your seat belt must be fastened, and you need to be driving at the following ground speed based on your selected gear:

- **H (High Forward) gear—**6 km/h (4 mph) or greater
- **L (Low Forward) gear—**3 km/h (2 mph) or greater

1. Move the cruise control switch to the ON position (Figure 84).
2. When you reach the desired drive speed, press the cruise control switch up to engage/set the cruise control (Figure 84).

   To increase the cruise control speed, press the switch up until you reach the desired speed (Figure 84).

   Note: Press the button 1 time to increase the ground speed by an increment of 1 km/h (1 mph).

   To disengage cruise control, press the switch to the down, OFF position (Figure 84).

   Note: When you press the brake pedal, the cruise control disengages.

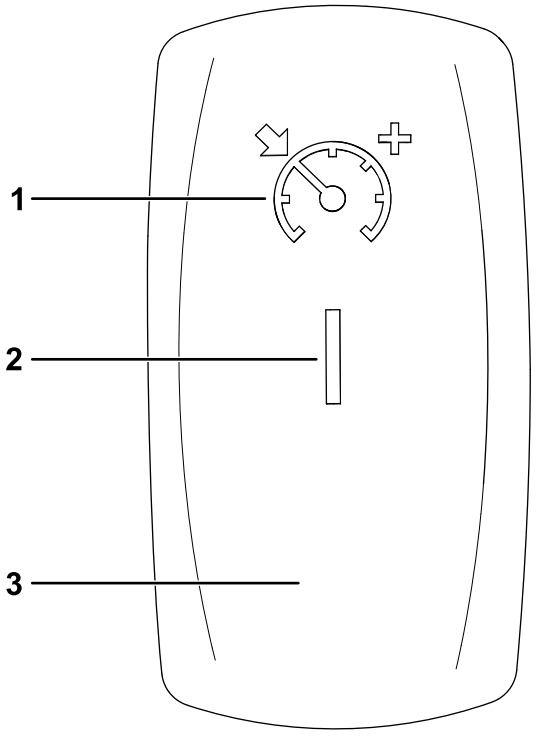


Figure 84

1. Set cruise control/increase cruise speed
2. ON position
3. OFF positon

Adjusting the Ground Speed Governor

1. Press and hold the button (Figure 85) for at least 10 seconds.

   The set speed will blink.

2. Press the button 1 time to increase the ground speed by an increment of 1 km/h (1 mph).

   Note: The default maximum speed that you can increase to is 40 km/h (25 mph).

   If doors are installed on the machine, the maximum ground speed that you can increase to is 72 km/h (45 mph); the minimum is 8 km/h (5 mph).

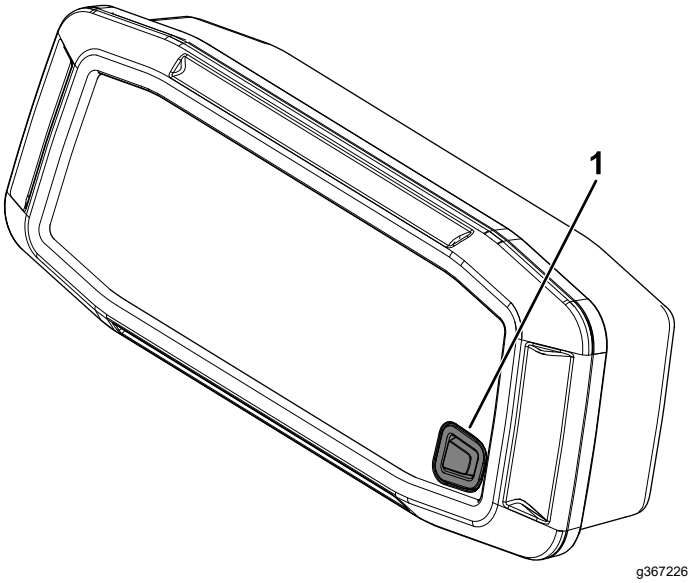


Figure 85

1. Button

Stopping the Machine

To stop the machine, remove your foot from the accelerator pedal, then press the brake pedal.

Shutting Off the Engine

1. Stop the machine.
2. Shift the transmission lever to the P (PARK) position.
3. Rotate the key switch to the OFF position and remove the key.

Using the 4-Wheel Drive/Differential Lock(s)

⚠ WARNING

Loss of control or damage to the machine or turf can happen if you do not properly use the 4-wheel drive/differential lock(s).

- **The machine speed must be at 16 km/h (10 mph) or less to engage the 4-wheel drive.**
- **The machine speed must be at 8 km/h (5 mph) or less to engage the differential lock(s).**
- **You can release the 4-wheel drive/differential lock(s) while the machine is in motion. The 4-wheel drive/differential lock(s) may stay engaged while an axle load is present. The 4-wheel drive/differential lock(s) releases once you remove an axle load.**
- **Use 4-wheel drive/differential lock(s) only when necessary for improved ground engagement.**

⚠ WARNING

Tipping or rolling the machine on a hill will cause serious injury.

- **The extra traction available with the 4-wheel drive/differential lock(s) can be enough to get you into dangerous situations, such as climbing slopes that are too steep to turn around. Be careful when operating with the 4-wheel drive/differential lock(s) on, especially on steeper slopes.**
- **If the 4-wheel drive/differential lock(s) are on when making a sharp turn at a higher speed and the inside rear wheel lifts off the ground, there may be a loss of control, which could cause the machine to skid. Use the 4-wheel drive/differential lock(s) only at slower speeds.**

Engaging 4-Wheel Drive

1. Ensure that the machine speed is 16 km/h (10 mph) or less and your foot is off the accelerator pedal.
2. Press the 2-wheel drive/4-wheel drive switch (Figure 86) up to engage 4-wheel drive.

   Note: You can disengage 4-wheel drive at any speed.

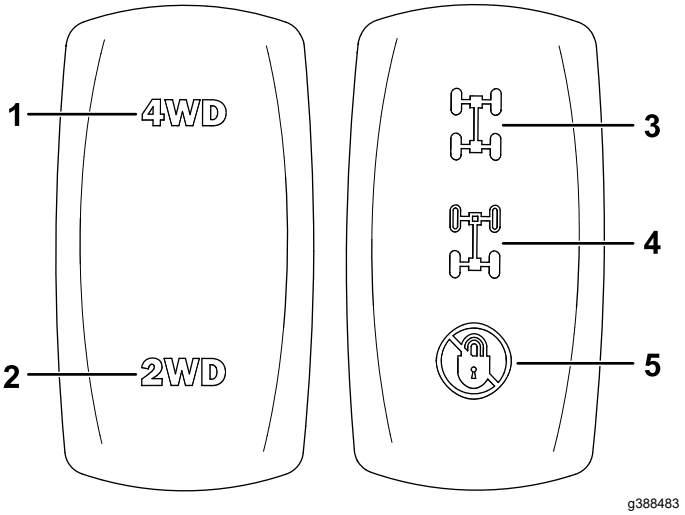


Figure 86

1. Up position—engages 4-wheel drive
2. Down position—engages 2-wheel drive
3. Up position—engages the front and rear differential locks
4. Mid position—engages the rear differential lock
5. Down position—disengages the differential lock(s)

Disengaging 4-Wheel Drive

With your foot off the accelerator pedal, disengage 4-wheel drive by pressing the 2-wheel drive/4-wheel drive switch to the down position (Figure 86).

Note: The 4-wheel drive icon will not be illuminated on the display when the switch is disengaged.

Note: You can release 4-wheel drive while the machine is in motion. 4-wheel drive may stay engaged while an axle load is present. 4-wheel drive releases once you remove an axle load.

Engaging the Differential Lock(s)

1. Ensure that the machine speed is 8 km/h (5 mph) or less and your foot is off the accelerator pedal.
2. Press the differential-lock switch to the mid position to engage the rear differential lock (Figure 86).

   Press the differential-lock switch to the up position to engage the front and rear differential locks (Figure 86).

   Note: The differential lock(s) are only active when the differential-lock switch is pushed.

   Note: The differential-lock(s) icon appears on the display when you engage the differential lock.

Disengaging the Differential Lock(s)

With your foot off the accelerator pedal, disengage the differential lock(s) by pressing the differential-lock switch to the down position (Figure 86).

Note: The differential-lock(s) icon will not be illuminated on the display when the switch is disengaged.

Note: You can release the differential lock(s) while the machine is in motion. The differential lock(s) may stay engaged while an axle load is present. The differential lock(s) release once you remove an axle load.

Controlling the Engine Throttle While in the P (PARK) Position

If you are warming up the engine in cold weather or if you need to charge your battery using the engine, do the following:

1. Shift the transmission lever to the P (PARK) position.
2. With one foot on the brake pedal, simultaneously press your other foot on the accelerator pedal.

   Note: There is no throttle control while in the N (NEUTRAL) position.

Loading the Cargo Bed

Use the following guidelines when loading the cargo bed and operating the machine:

- Observe the weight capacity of the machine and limit the weight of the load that you carry in the cargo bed as described in Specifications (page 63) and on the gross vehicle weight tag of the machine.

  Note: The load rating is specified for machine operation on a level surface only.

- Reduce the weight of the load that you carry in the cargo bed when operating the machine on hills and rough terrain.
- Reduce the weight of the load that you carry when the materials are tall (and have a high center of gravity), such as a stack of bricks, landscaping timbers, or fertilizer bags. Distribute the load as low as possible to ensure that the load does not reduce your ability to see behind the machine when operating it.
- Keep loads centered by loading the cargo bed as follows:
  - Evenly position the weight in the cargo bed from side to side.

    Important: **Tipping over is more likely to occur if the cargo bed is loaded to 1 side.**

  - Evenly position the weight in the cargo bed from front to back.

    Important: **Loss of steering control or the machine may tip over if you position the load behind the rear axle and the traction on the front tires is reduced.**

- Use extra caution when transporting oversized loads in the cargo bed, particularly when you cannot center the weight of the oversize load to the cargo bed.
- Whenever possible, secure the load by binding it to the cargo bed so that it does not shift.
- When transporting liquids, use caution when driving the machine uphill or downhill, when suddenly changing speed or stopping, or when driving over rough surfaces.

The capacity of the cargo bed is 0.45 m^3 (15.9 ft^3). The amount (volume) of material that you can place in the bed without exceeding the load ratings of the machine can vary greatly depending on the density of the material.

Refer to the following table for load volume limits with various materials:

Material	Density	Maximum Cargo Box Capacity (on level ground)
Gravel, dry	1522 kg/m^3 (95 lb/ft^3)	Full
Gravel, wet	1922 kg/m^3 (120 lb/ft^3)	3/4 Full
Sand, dry	1442 kg/m^3 (90 lb/ft^3)	Full
Sand, wet	1922 kg/m^3 (120 lb/ft^3)	3/4 Full
Wood	721 kg/m^3 (45 lb/ft^3)	Full
Bark	<721 kg/m^3 (<45 lb/ft^3)	Full
Earth, packed	1602 kg/m^3 (100 lb/ft^3)	3/4 Full (approximately)

After Operation

After Operation Safety

General Safety

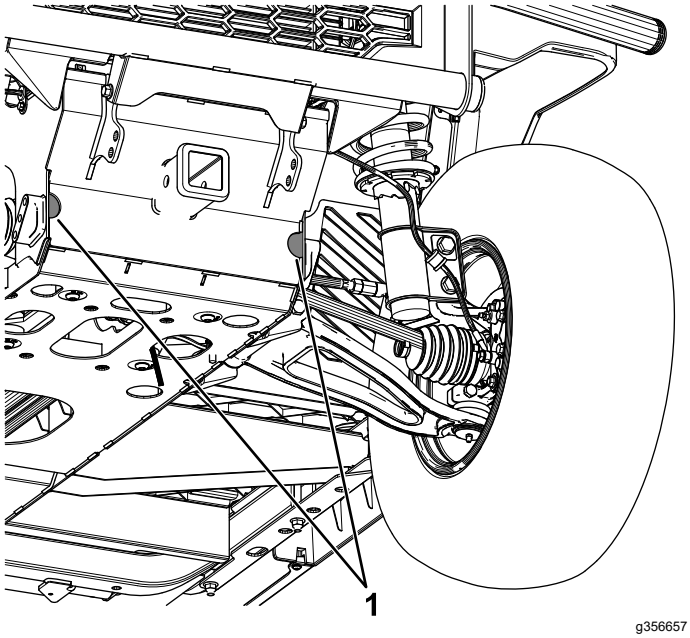
- Before you leave the operating position, do the following:
  - Park the machine on a level surface.
  - Shift the transmission lever to the P (PARK) position.
  - Shut off the machine and remove the key.
  - Wait for all movement to stop.
- Allow the machine to cool before adjusting, servicing, cleaning, or storing it.
- Do not store the machine where there is an open flame, spark, or pilot light, such as on a water heater or other appliance.
- Keep all parts of the machine in good working condition and all hardware tightened.
- Maintain and clean the seat belt(s) as necessary.
- Replace all worn, damaged, or missing decals.

Hauling the Machine

- Use care when loading or unloading the machine into a trailer or a truck.
- Use full-width ramps for loading the machine into a trailer or a truck.
- Tie the machine down securely.

Refer to Figure 87 and Figure 88 for the tie-down locations on the machine.

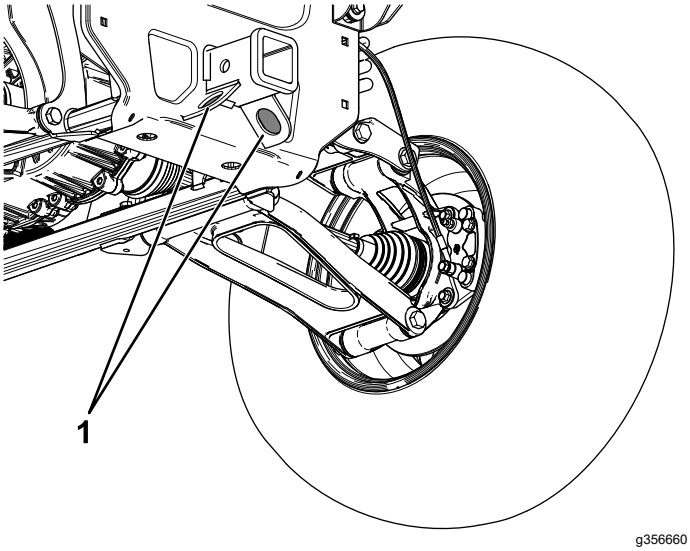
Note: Load the machine on the trailer with the front of the machine facing forward.



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Figure 87

1. Front tie-down locations



g356660

Figure 88

1. Rear tie-down locations

Towing the Machine

In case of an emergency, you can tow the machine for a short distance; however, this is not the standard operating procedure.

⚠ WARNING

Towing at excessive speeds could cause a loss of steering control, resulting in personal injury.

Never tow the machine at faster than 8 km/h (5 mph).

Note: The power steering may not function, making it difficult to steer.

Towing the machine is a 2-person job. If you must move the machine a considerable distance, transport it on a truck or trailer.

1. Affix a tow line to the tongue at the front of the frame of the machine (Figure 87).
2. Move the gear selector to the N (NEUTRAL) position.

Towing a Trailer

The machine is capable of pulling trailers and attachments. Contact your authorized Toro distributor for the available tow hitches.

Your machine can tow trailers with a maximum gross trailer weight (GTW) up to 907 kg (2,000 lb).

Always load a trailer with approximately 60% of the trailer cargo weight toward the front of the trailer axle. Do not exceed 91 kg (200 lb) of tongue weight on the tow hitch of the machine.

When hauling cargo or towing a trailer, do not overload the machine or trailer. Overloading can cause poor performance or damage to the brakes, axle, engine, transaxle, steering, suspension, body structure, or tires.

Important: **To reduce the potential for drive belt damage, use the L (LOW RANGE) position when towing.**

Maintenance

Maintenance Safety

- Do not allow untrained personnel to service the machine.
- Before you leave the operating position, do the following:
  - Park the machine on a level surface.
  - Shift the transmission lever to the P (PARK) position.
  - Shut off the machine and remove the key.
  - Wait for all movement to stop.
- Allow the machine to cool before adjusting, servicing, cleaning, or storing it.
- Support the machine with jack stands whenever you work under the machine.
- Do not work under a raised bed without the proper bed safety support in place.
- To ensure that the entire machine is in good condition, keep all hardware properly tightened.
- To reduce the potential fire hazard, keep the machine area free of excessive grease, grass, leaves, and accumulation of dirt.
- If possible, do not perform maintenance while the machine is running. Keep away from moving parts.
- If you must run the machine to perform a maintenance adjustment, keep your hands, feet, clothing, and any parts of the body away from any moving parts. Keep bystanders away from the machine.
- Clean up oil and fuel spills.
- Keep all parts of the machine in good working condition and all the hardware properly tightened. Replace all worn or damaged decals.
- Never interfere with the intended function of a safety device or reduce the protection provided by a safety device.
- Do not overspeed the engine by changing the governor settings. To ensure safety and accuracy, have an authorized Toro distributor check the maximum engine speed with a tachometer.
- If major repairs are ever necessary or assistance is required, contact an authorized Toro distributor.
- Altering this machine in any manner may affect the operation of the machine, performance, durability, or its use may result in injury or death. Such use could void the product warranty of The Toro® Company.

Recommended Maintenance Schedule(s)

Maintenance Service Interval	Maintenance Procedure
After the first 50 hours	• Check the tension of the alternator belt. If necessary, adjust the belt tension. • Check the intake/exhaust-valve end clearance. Adjust, if necessary. • Torque the wheel-lug nuts.
Before each use or daily	• Check the seat belt(s) for wear, cuts, and other damage. Replace the seat belt(s) if any component does not operate properly. • Check the tire pressure. • Check the engine-oil level. • Check the level of the coolant. • Remove debris from the engine area and radiator. • Check the brake-fluid level. Check the brake-fluid level before you start the engine.
Every 100 hours	• Check the condition of the wheels and tires. • Check the steering and suspension for loose or damaged components. • Check the front wheel alignment. • Check the brakes.
Every 250 hours	• Grease the machine (lubricate more frequently in heavy-duty applications). • Change the air-cleaner filter (more frequently in dusty or dirty conditions). • Change the engine oil and filter. • Check the tension of the alternator belt. If necessary, adjust the belt tension. If the belt is worn or damaged, replace the belt. • Check the positive crankcase ventilation (PCV) valve. Clean, if necessary. • Torque the wheel-lug nuts. • Check the transaxle-fluid level. • Check the condition of the drive belt and clean the clutches.
Every 500 hours	• Check the spark-plug wires. • Check the timing belt. Replace, if necessary. • Check the intake/exhaust-valve end clearance. Adjust, if necessary. • Check the fuel lines and connections. • Change the transaxle fluid. • Check the front differential oil level. • Check the coolant hoses for cracks, swelling, or deterioration. • Replace the drive belt.
Every 750 hours	• Change the spark plugs.
Every 1,000 hours	• Change the front differential oil. • Change the engine coolant. • Change the brake fluid.
Every 2,000 hours	• Replace the timing belt.

Note: Download a free copy of the electrical schematic by visiting www.Toro.com and searching for your machine from the Manuals link on the home page.

Important: **Refer to your engine owner's manual for additional maintenance procedures.**

⚠ WARNING

Failing to properly maintain the machine could result in premature failure of machine systems, causing possible harm to you or bystanders.

Keep the machine well maintained and in good working order as indicated in these instructions.

⚠ CAUTION

Only qualified and authorized personnel should maintain, repair, adjust, or inspect the machine.

- **Avoid fire hazards and have fire-protection equipment present in the work area. Do not use an open flame to check fluid levels or leakage of fuel, battery electrolyte, or coolant.**
- **Do not use open pans of fuel or flammable cleaning fluids for cleaning parts.**

⚠ CAUTION

If you leave the key in the switch, someone could accidently start the engine and seriously injure you or other bystanders.

Shut off the engine and remove the key from the switch before you perform any maintenance.

Daily Maintenance Checklist

Duplicate this page for routine use.

Maintenance Check Item	For the week of:						
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Check the operation of the gear selector.							
Check the fuel level.							
Check the engine-oil level.							
Check the brake-fluid level.							
Check the transaxle-fluid level.							
Check the air filter.							
Check the engine-cooling fins.							
Check for unusual engine noises.							
Check for unusual operating noises.							
Check the tire pressure.							
Check for fluid leaks.							
Check the instrument operation.							
Check the accelerator operation.							
Wash the machine.							
Touch up any damaged paint.							

Maintaining the Machine under Special Operating Conditions

Important: **If the machine is subjected to any of the conditions listed below, perform maintenance twice as frequently:**

- Desert operation
- Cold climate operation—below 10°C (50°F)
- Trailer towing
- Frequent operation in dusty conditions
- Construction work
- After extended operation in mud, sand, water, or similar dirty conditions, do the following:
  - Have your brakes inspected and cleaned as soon as possible. This prevents any abrasive material from causing excessive wear.
  - Wash the machine using water alone or with a mild detergent.

    Important: **Do not use brackish or reclaimed water to clean the machine.**

Pre-Maintenance Procedures

Preparing the Machine for Maintenance

1. Park the machine on a level surface.
2. Shift the transmission lever to the P (PARK) position.
3. Raise and empty the cargo bed.
4. Shut off the engine and remove the key.
5. Allow the machine to cool before performing maintenance.
6. Disconnect the negative (-) battery cable from the battery post.

Raising the Machine

⚠ DANGER

A machine on a jack may be unstable and slip off the jack, injuring anyone beneath it.

- **Do not start the machine while the machine is on a jack, as the engine vibration or wheel movement could cause the machine to slip off the jack.**
- **Always remove the key from the key switch before getting off the machine.**
- **Block the tires when the machine is on a jack.**

When jacking up the front of the machine, always place a wooden block (or similar material) between the jack and the machine frame.

The jacking point at the front of the machine is located at the front frame bottom plate (Figure 89).

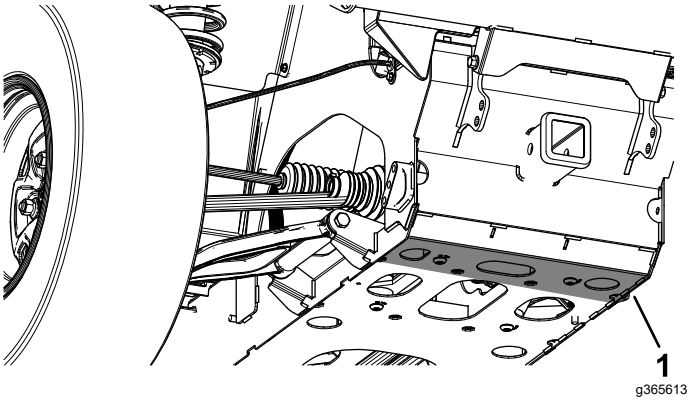


Figure 89

1. Front jacking point

The jacking point at the rear of the machine is located at the rear cradle bracket (Figure 90).

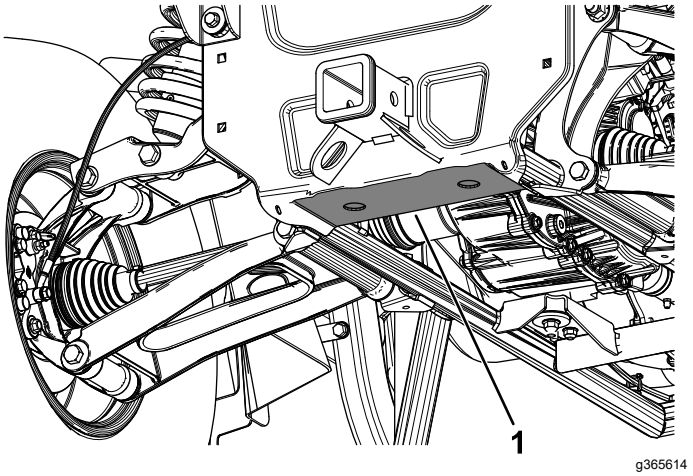


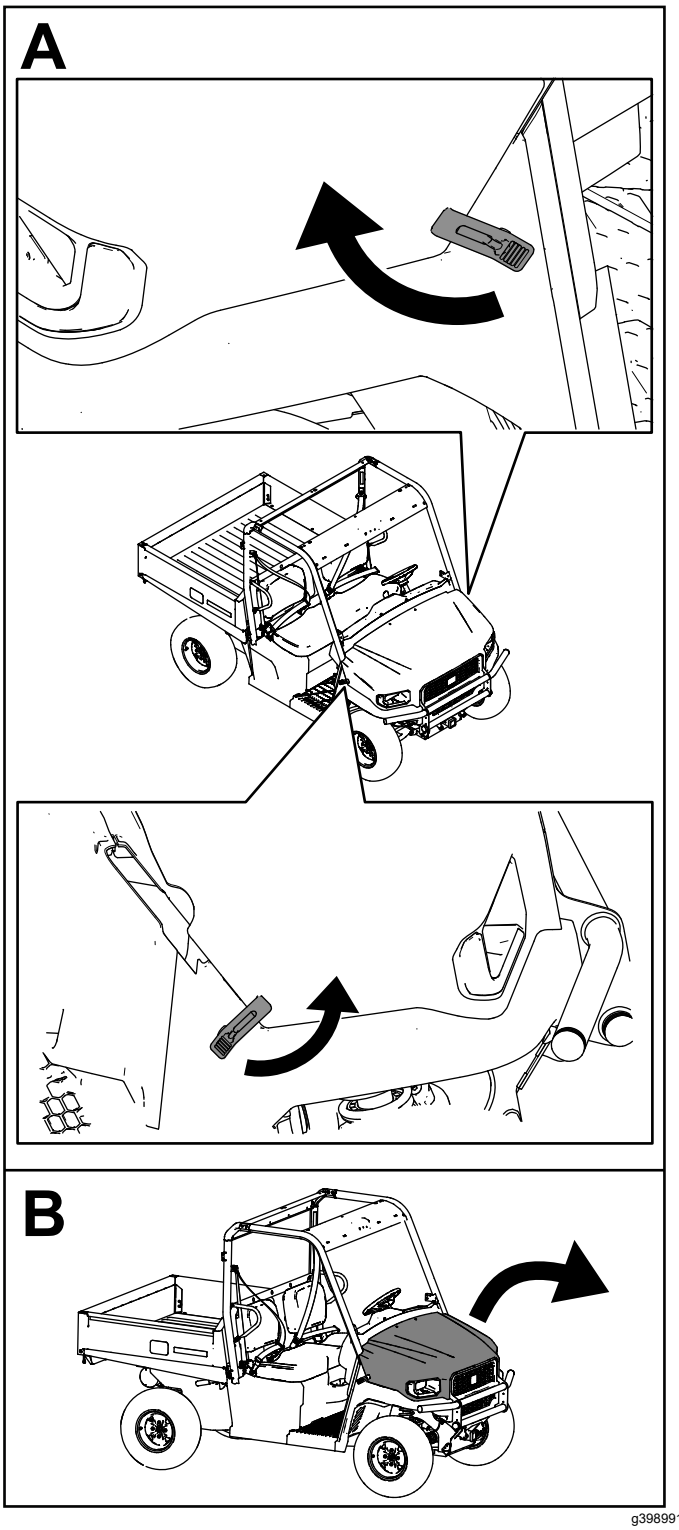
Figure 90

1. Rear jacking point

Accessing the Hood

Raising the Hood

1. Lift up the handle of the rubber latches on each side of the hood.
2. Raise the hood.



g398991

Figure 91

Closing the Hood

1. Gently lower the hood.
2. Secure the hood by aligning the rubber latches onto the latch anchors on each side of the hood (Figure 91).

Lubrication

Greasing the Machine

Service Interval: Every 250 hours—Grease the machine (lubricate more frequently in heavy-duty applications).

Grease Type: No. 2 lithium grease

1. Use a rag to wipe the grease fitting clean so that foreign matter cannot be forced into the bearing or bushing.
2. With a grease gun, apply grease into the grease fittings on the machine.
3. Wipe any excess grease off the machine.

The grease fitting locations and quantities are as follows:

- **Front control arm pivots (2)**; refer to Figure 92

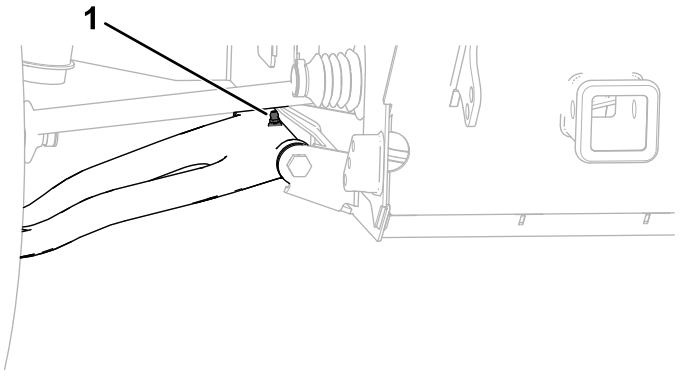


Figure 92
Right side shown

1. Front control arm pivot grease fitting

- **Rear control arm pivots (4)**; refer to Figure 93

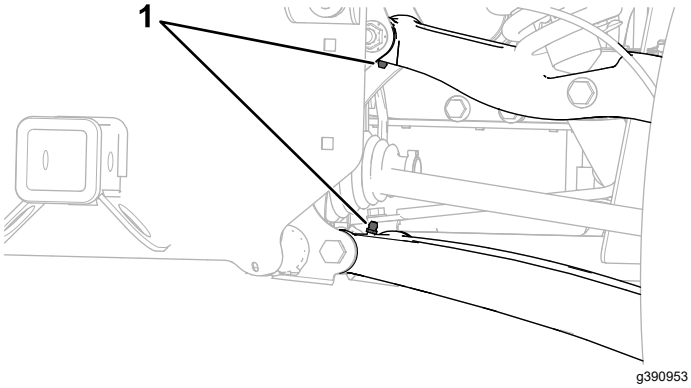


Figure 93
Right side shown

1. Rear control arm pivots grease fittings

- **Ball joints (2)**; refer to Figure 94

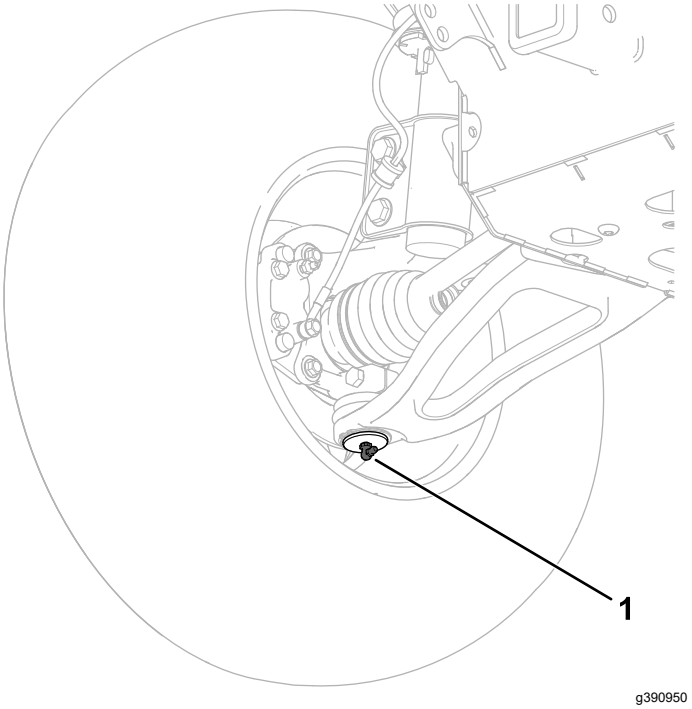


Figure 94
Right side shown

1. Ball joint grease fitting

- **Rear knuckle pivots (4)**; refer to Figure 95

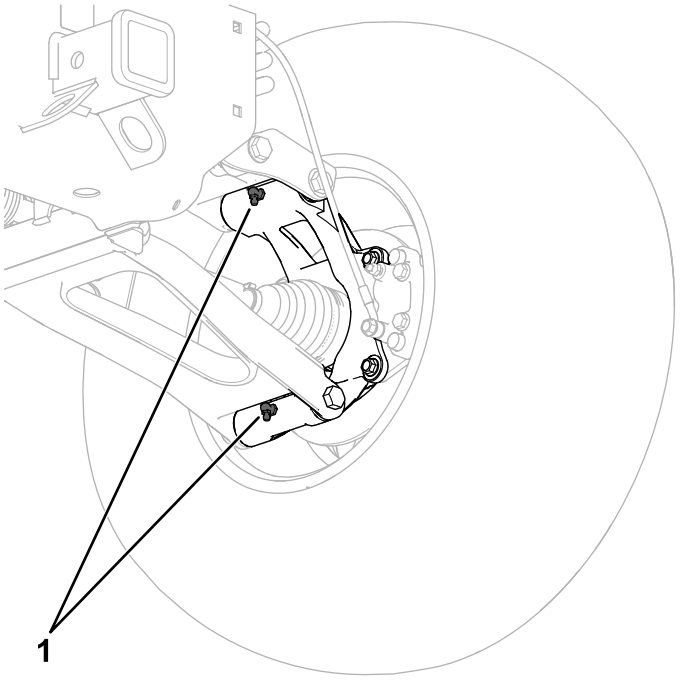


Figure 95
Right side shown

1. Rear knuckle pivots grease fittings

- **Drive shaft (2)**; refer to Figure 96

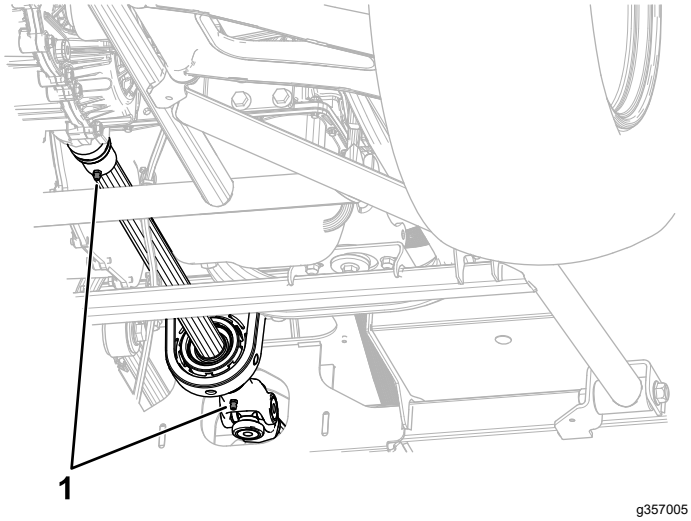


Figure 96

1. Drive shaft grease fittings

Engine Maintenance

Engine Safety

- Shut off the engine, remove the key, and wait for all moving parts to stop before checking the oil or adding oil to the crankcase.
- Keep your hands, feet, face, clothing, and other body parts away from the muffler and other hot surfaces.

Servicing the Air Cleaner

Service Interval: Every 250 hours—Change the air-cleaner filter (more frequently in dusty or dirty conditions).

Inspect the air cleaner and hoses periodically to maintain maximum engine protection and to ensure maximum service life. Check the air-cleaner body for damage that could possibly cause an air leak. Replace a damaged air-cleaner body.

1. Release the latches on the air cleaner and pull the air-cleaner cover off the air-cleaner body (Figure 97).

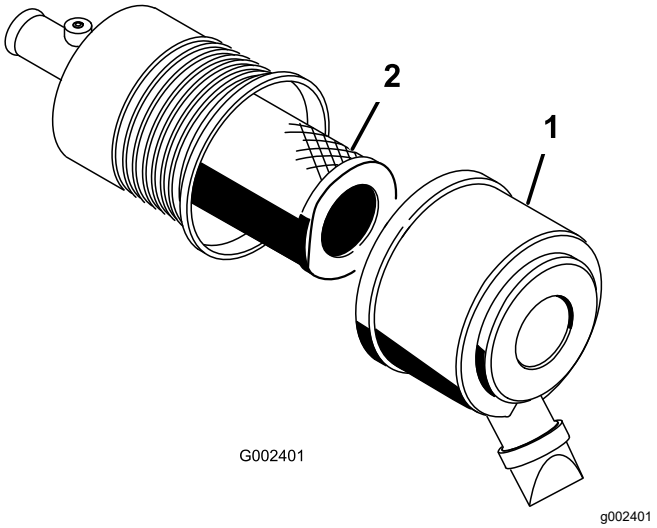


Figure 97

1. Air-cleaner cover
2. Filter

2. Squeeze the dust cap sides to open it and knock the dust out.
3. Gently slide the filter out of the air-cleaner body (Figure 97).

   Note: Avoid knocking the filter into the side of the body.

   Note: Do not attempt to clean the filter.
4. Inspect the new filter for damage by looking into the filter while shining a bright light on the outside of the filter.

   Note: Holes in the filter appear as bright spots. Inspect the element for tears, an oily film, or damage to the rubber seal. If the filter is damaged, do not use it.

   Note: To prevent engine damage, always operate the engine with the air filter and cover installed.
5. Carefully slide the filter over the body tube (Figure 97).

   Note: Ensure that it is fully seated by pushing on the outer rim of the filter while installing it.
6. Install the air-cleaner cover with the side facing up, and secure the latches (Figure 97).

Servicing the Engine Oil

Service Interval: Before each use or daily

Every 250 hours—Change the engine oil and filter.

Note: Change the oil more frequently when operating conditions are extremely dusty or sandy.

Note: Dispose of the used engine oil and oil filter at a certified recycling center.

Engine-Oil Specifications

The engine ships with oil in the crankcase; however, check the oil level before you first start the engine. Check the oil level before operating the machine each day or each time you use the machine.

Oil Type: API rating of SJ or higher

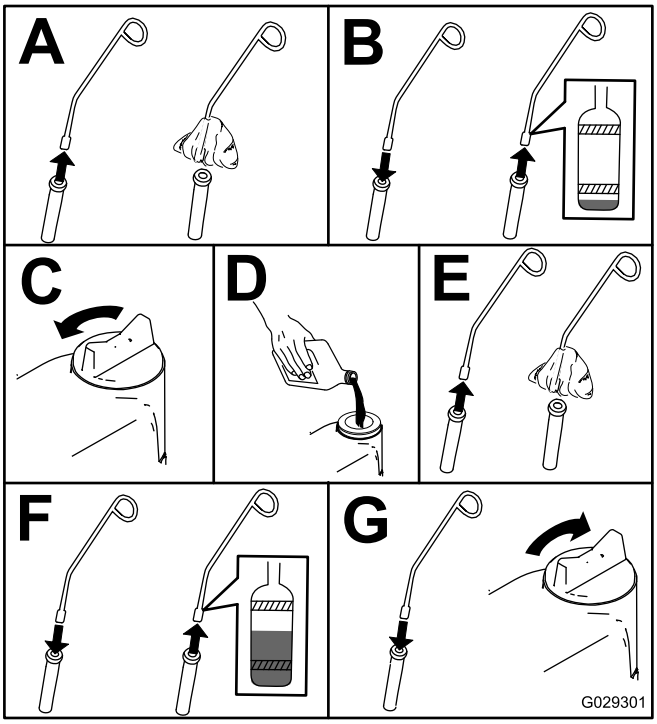
Crankcase Capacity: 2.8 L (3 US qt) when the filter is changed

Oil Viscosity/Grade:

- SAE 15W-40 engine oil for ambient temperatures above -20℃ (-4°F)
- SAE 5W-30 engine oil for ambient temperatures below -20℃ (-4°F)

Checking the Engine-Oil Level

1. Park the machine on a level surface.
2. Shift the transmission lever to the P (PARK) position.
3. Shut off the engine and remove the key.
4. Raise the cargo bed.
5. Check the engine-oil level as shown in Figure 98.



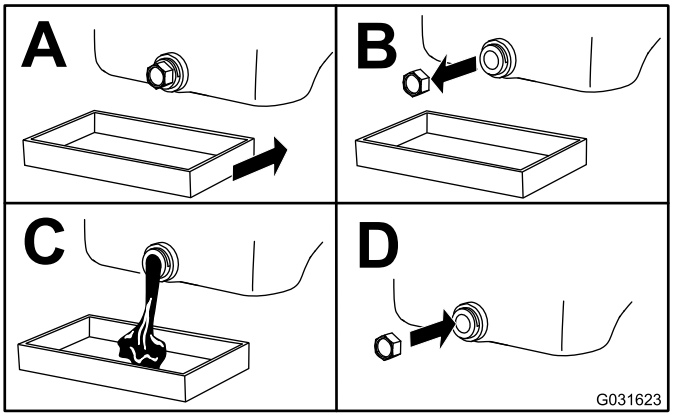
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Figure 98

Changing the Engine Oil and Filter

If possible, run the engine just before changing the oil because warm oil flows better and carries more contaminants than cold oil.

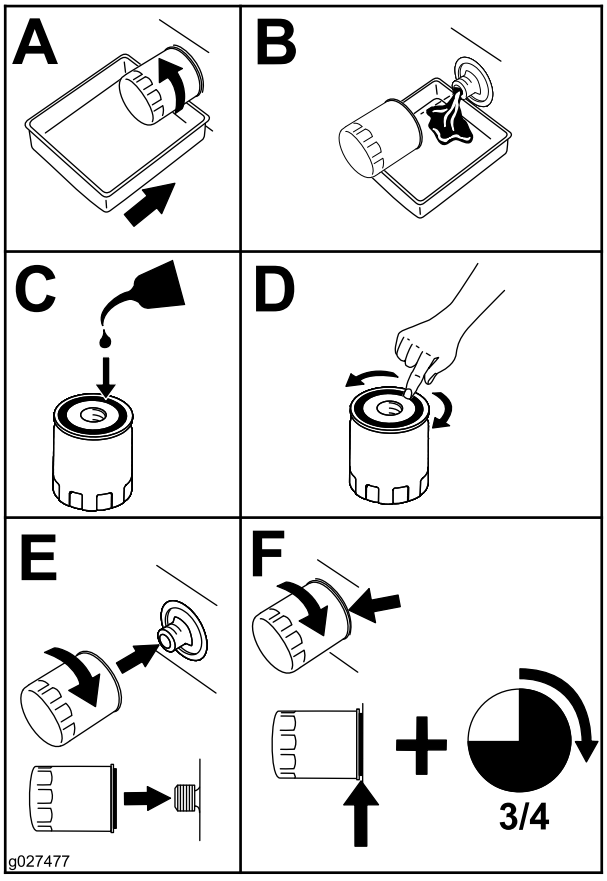
1. Park the machine on a level surface.
2. Shift the transmission lever to the P (PARK) position.
3. Shut off the engine and remove the key.
4. Raise the cargo bed.
5. Change the engine oil as shown in Figure 99.



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Figure 99

6. Replace the engine-oil filter as shown in Figure 100.



g027477

Figure 100

7. Fill the crankcase with oil; refer to Engine-Oil Specifications (page 87).

Servicing the Spark Plugs

Service Interval: Every 750 hours—Change the spark plugs.

Type: Toro Part 145-2128; refer to your authorized Toro distributor.

Air Gap: 1 mm (0.04 inch)

Important: **A cracked, fouled, dirty, or malfunctioning spark plug must be replaced. Do not sand-blast, scrape, or clean electrodes by using a wire brush because grit may eventually release from the plug and fall into the cylinder. The result is usually a damaged engine.**

Note: The plug should be removed and checked whenever the engine malfunctions.

1. Clean the area around the spark plug so that foreign matter cannot fall into the cylinder when you remove the spark plug.
2. Pull the wire off the terminal of the spark plug.
3. Remove the plug from the cylinder head.
4. Check the condition of the side electrode, center electrode, and center electrode insulator to ensure that there is no damage (Figure 101).

   Note: Do not use a damaged or worn spark plug. Replace it with a new spark plug of the specified type.
5. Set the air gap between the center and side of the electrodes at 1 mm (0.04 inch) as shown in Figure 101.
6. Install the spark plug into the cylinder head, and torque the plug to 20 to 28 N·m (15 to 21 ft-lb).
7. Install the spark-plug wire.
8. Repeat steps 1 through 7 for the other spark plug.

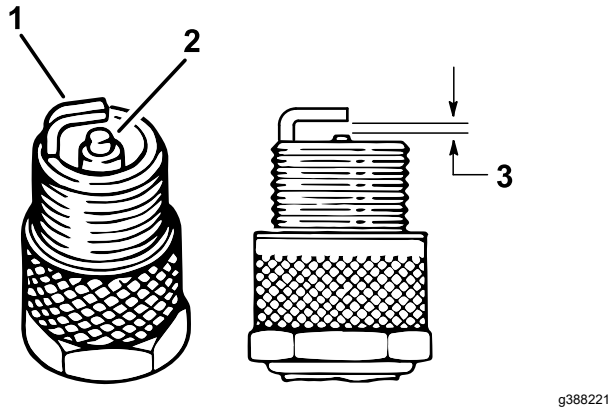


Figure 101

1. Side electrode
2. Center electrode insulator
3. Air gap (not to scale)—1 mm (0.04 inch)

Checking and Adjusting the Alternator Belt

Service Interval: After the first 50 hours—Check the tension of the alternator belt. If necessary, adjust the belt tension.

Every 250 hours—Check the tension of the alternator belt. If necessary, adjust the belt tension. If the belt is worn or damaged, replace the belt.

1. Measure the belt deflection by applying 98 N (22 lbf) to the belt between the fan pulley and alternator pulley (Figure 102).

   The belt needs to deflect 8 to 10 mm (5/16 to 3/8 inch).

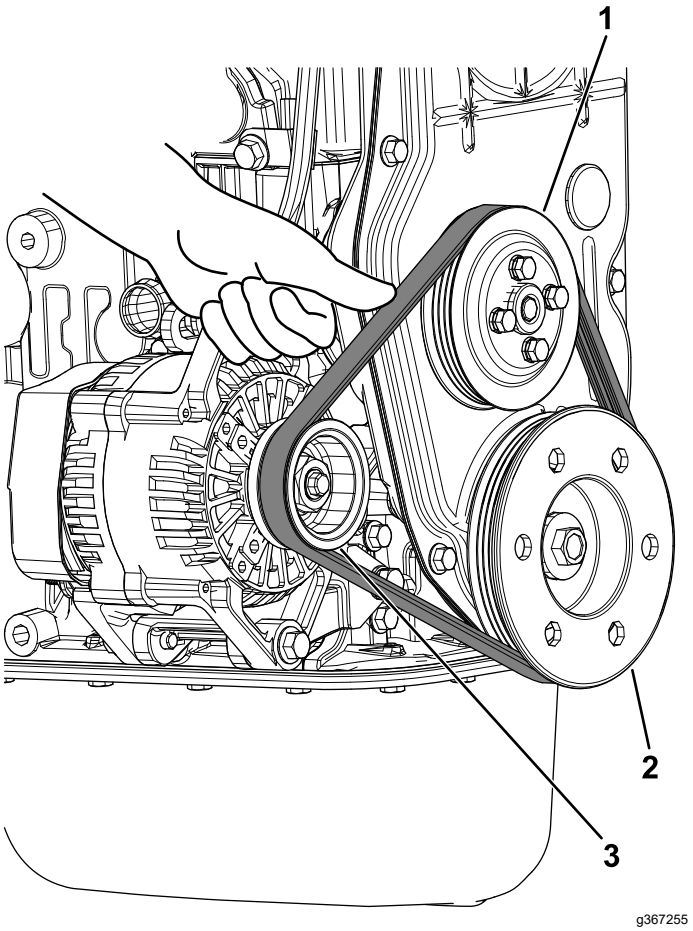


Figure 102

1. Fan pulley
2. Crankshaft pulley
3. Alternator pulley

2. If needed, adjust the belt tension as follows:
3. Loosen the upper alternator adjusting bolt.
4. Adjust the alternator until the belt is tensioned correctly.

   You may use a pry bar to assist in this step.
5. Tighten the upper alternator adjusting bolt.
6. Measure the belt deflection by applying 98 N (22 lbf) to the belt between the fan pulley and alternator pulley (Figure 102).

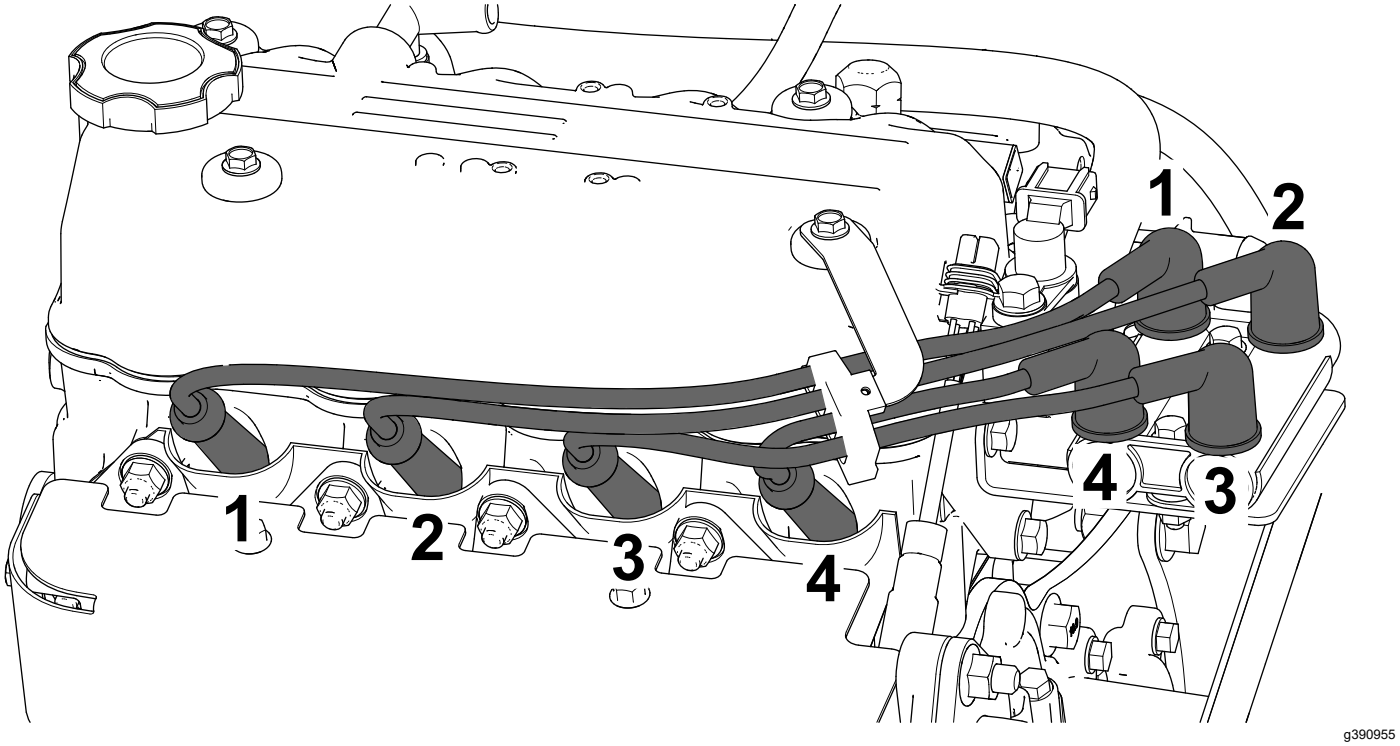
   The belt needs to deflect 8 to 10 mm (5/16 to 3/8 inch).
7. If the belt tension is not correct, repeat steps 3 through 6.

Checking the Spark-Plug Wires

Service Interval: Every 500 hours

Check the spark-plug wires for cuts, abrasions, hardening, and/or cracking.

Replace, if necessary.



g390955

Figure 103

1. Spark-plug wire routing for cylinder 1
2. Spark-plug wire routing for cylinder 2
3. Spark-plug wire routing for cylinder 3
4. Spark-plug wire routing for cylinder 4

Checking the Positive Crankcase Ventilation (PCV) Valve

Service Interval: Every 250 hours—Check the positive crankcase ventilation (PCV) valve. Clean, if necessary.

1. Slide the spring clamps and remove the PCV valve from the rubber hoses.
2. Shake the valve and ensure that you can hear loose parts in the valve.

   If you do not hear loose parts in the valve, clean or replace the valve; refer to the *Service Manual*.

   Note: When installing the new valve, ensure that the valve is installed with the ventilation going in the correct direction.

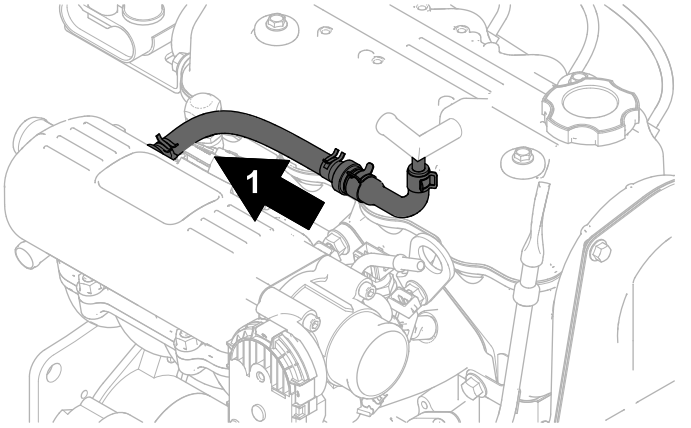


Figure 104

1. Ventilation flow direction

Checking the Timing Belt

Service Interval: Every 500 hours—Check the timing belt. Replace, if necessary.

Every 2,000 hours—Replace the timing belt.

1. Remove the rubber plug.
2. Using a flashlight, check the timing belt for cracks, excessive wear, or damage.
3. Ensure that the belt is tensioned to 29 N (6.5 lbf) at 6 mm (1/4 inch).

   If it is not tensioned properly or if you need to replace the belt, refer to the *Service Manual*.
4. Install the rubber plug.

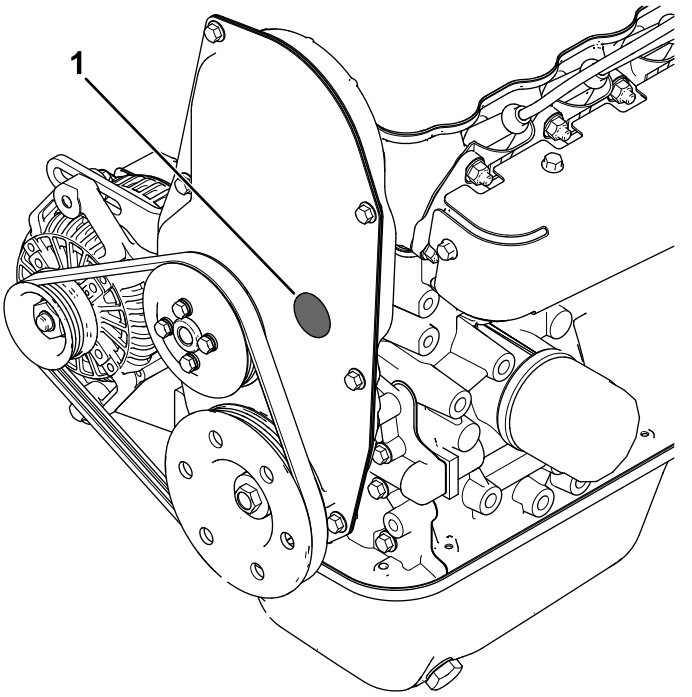


Figure 105

1. Rubber plug

Checking/Adjusting the Intake/Exhaust-Valve End Clearance

Service Interval: After the first 50 hours—Check the intake/exhaust-valve end clearance. Adjust, if necessary.

Every 500 hours—Check the intake/exhaust-valve end clearance. Adjust, if necessary.

Checking/Adjusting the Intake-Valve End Clearance

Ensure that the engine is cool to touch before starting this procedure.

If the valve end clearance is in the following range, you **do not** need to adjust the end clearance.

0.127 to 0.178 mm (0.005 to 0.007 inch) — Cold

1. Remove the 4 bolts shown in Figure 106 from the engine.

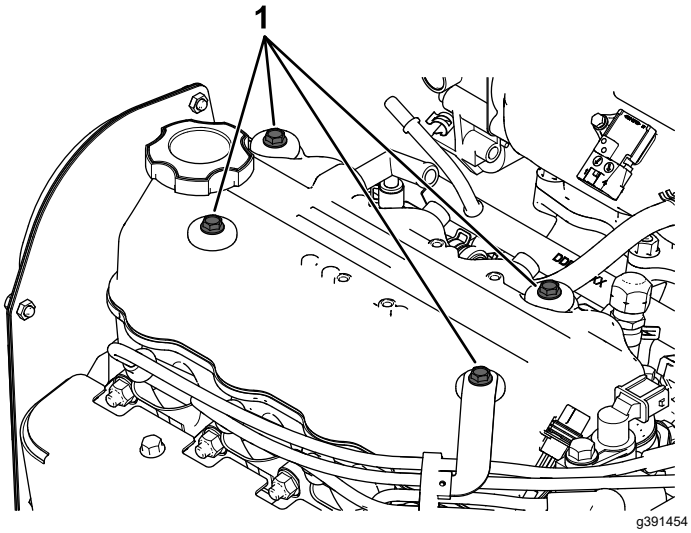


Figure 106

1. Remove these 4 bolts.

2. Remove the valve cover to access the intake and exhaust valves.

   Important: **If the seal inside the valve cover sticks, we recommend using a flat-head screwdriver to assist with removing the valve cover.**

   If the seal is damaged, replace it before you install the valve cover.

3. To rotate the engine camshaft, remove the drive belt cover to expose the primary clutch; refer to Checking the Drive Belt and Cleaning the Clutches (page 111).

4. Rotate the primary clutch (Figure 107) until the exhaust valve on cylinder 1 (Figure 108) is completely open.

   The exhaust valve is completely open when the exhaust rocker arm is in the lowest position and the exhaust valve spring is compressed (Figure 109).

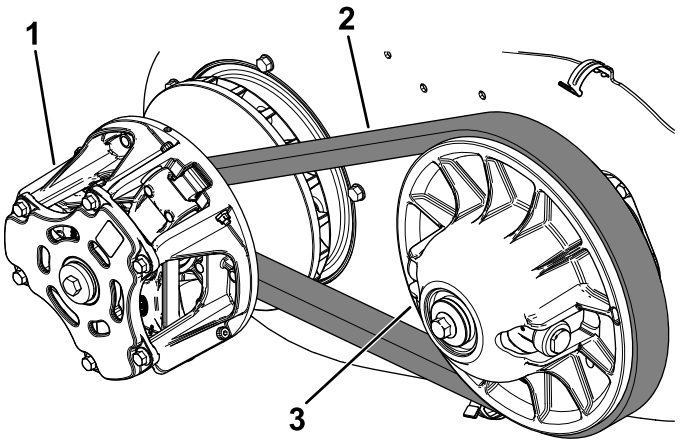


Figure 107

1. Primary clutch
2. Drive belt
3. Secondary clutch

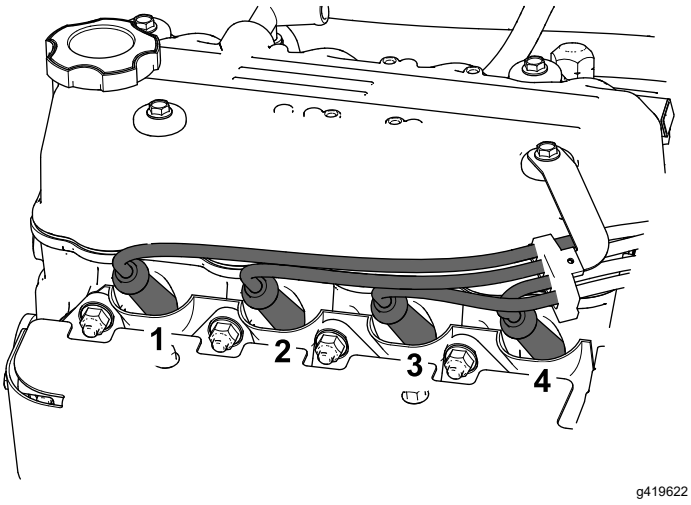


Figure 108

1. Cylinder 1
2. Cylinder 2
3. Cylinder 3
4. Cylinder 4

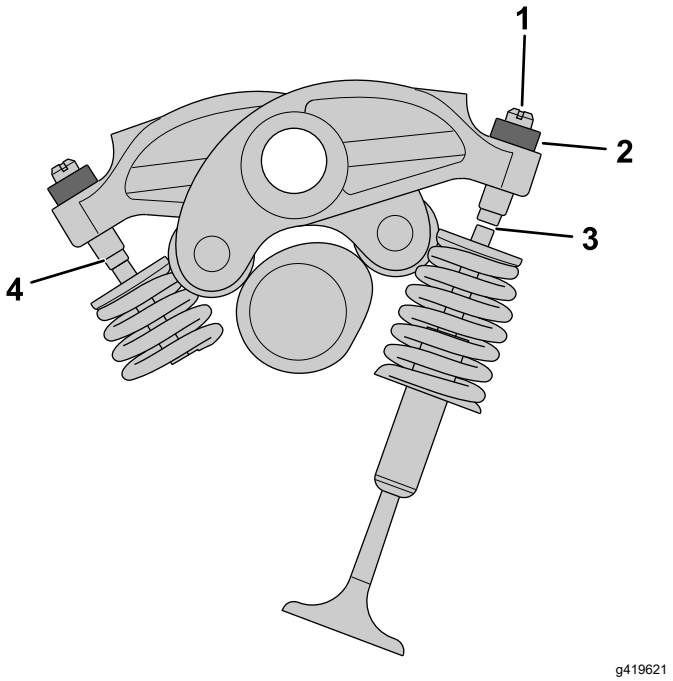


Figure 109
Exhaust valve in the lowest position

1. Adjustment screw
2. Jam nut
3. Intake-valve end clearance (valve closed)
4. Exhaust-valve end suppression (valve open)

5. With the exhaust rocker arm in the lowest position, the intake rocker arm will be relaxed.

   Using a feeler gauge, check the clearance between the intake-valve end and the adjustment screw.

   Refer to the clearance range at the beginning of this procedure.

   Note: If the intake clearance range is within specification, you **do not** need to perform the adjustment.

6. To adjust the clearance, loosen the jam nut and rotate the adjustment screw to the correct clearance range.

   Once the valve clearance is within the correct range, hold the adjustment screw in place and tighten the jam nut.

   Check the clearance again after you tighten the jam nut and ensure that it is within range.

7. Check and/or adjust the remaining intake valves by repeating this procedure for cylinders 2, 3, and 4.

Checking/Adjusting the Exhaust-Valve End Clearance

Ensure that the engine is cool to touch before starting this procedure.

If the valve end clearance is in the following range, you **do not** need to adjust the end clearance.

0.229 to 0.279 mm (0.009 to 0.011 inch) — Cold

1. Rotate the primary clutch (Figure 107) until the intake valve on cylinder 1 (Figure 108) is completely open.

   The intake valve is completely open when the intake rocker arm is in the lowest position and the intake valve spring is compressed (Figure 110).

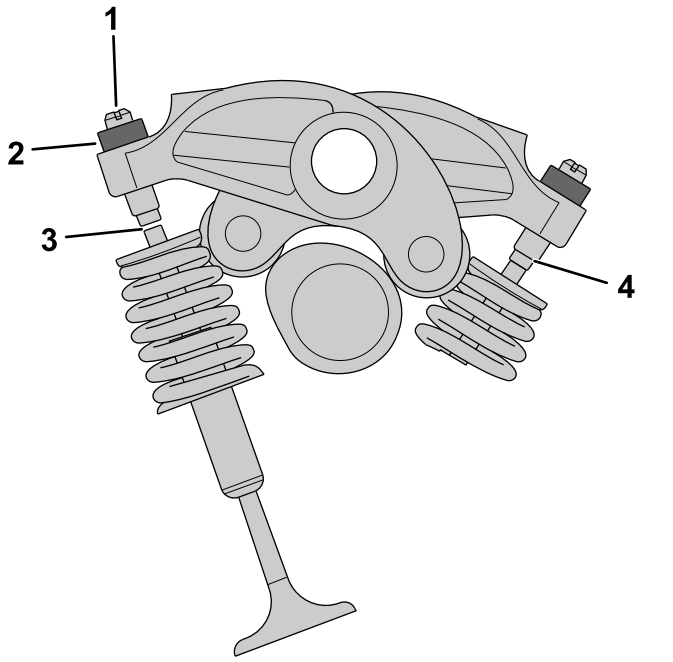


Figure 110
Intake valve in the lowest position

1. Adjustment screw
2. Jam nut
3. Exhaust-valve end clearance (valve closed)
4. Intake-valve end suppression (valve open)

2. With the intake rocker arm in the lowest position, the exhaust rocker arm will be relaxed.

   Using a feeler gauge, check the clearance between the exhaust-valve end and the adjustment screw.

   Refer to the clearance range at the beginning of this procedure.

   Note: If the exhaust clearance range is within specification, you **do not** need to perform the adjustment.

3. To adjust the clearance, loosen the jam nut and rotate the adjustment screw to the correct clearance range.

   Once the valve clearance is within the correct range, hold the adjustment screw in place and tighten the jam nut.

   Check the clearance again after you tighten the jam nut and ensure that it is within range.

4. Check and/or adjust the remaining intake valves by repeating this procedure for cylinders 2, 3, and 4.

5. Install the previously removed valve cover and torque the bolts to 6 to 8 N·m (53 to 71 in-lb).

6. Install the previously removed drive belt cover; Checking the Drive Belt and Cleaning the Clutches (page 111).

Fuel System Maintenance

Checking the Fuel Lines and Connections

Service Interval: Every 500 hours/Yearly (whichever comes first)

Check the fuel lines, fittings, and clamps for signs of leaking, deterioration, damage, or loose connections.

Note: Repair any damaged or leaking fuel system component before using the machine.

Electrical System Maintenance

Electrical System Safety

- Disconnect the battery before repairing the machine. Disconnect the negative terminal first and the positive last. Connect the positive terminal first and the negative last.
- Charge the battery in an open, well-ventilated area, away from sparks and flames. Unplug the charger before connecting or disconnecting the battery. Wear protective clothing and use insulated tools.

Servicing the Battery

Battery voltage: 12 V with 300 A (cold-cranking) at -18°C (0°F).

- Always keep the battery clean and fully charged.
- If the battery terminals are corroded, clean them with a solution of 4 parts water and 1 part baking soda.
- Apply a light coating of grease to the battery terminals to prevent corrosion.

⚠ DANGER

Battery electrolyte contains sulfuric acid, which is fatal when consumed and causes severe burns.

- **Do not drink electrolyte and avoid contact with skin, eyes, or clothing. Wear eye protection and rubber gloves.**
- **Fill the battery wherever clean water is available for flushing the skin.**
- **Charge the battery in a well-ventilated place so that the gasses produced while charging can dissipate.**
- **Since the gasses are explosive, keep open flames and electrical sparks away from the battery; do not smoke near the battery.**
- **Nausea may result if you inhale the gasses.**
- **Unplug the charger from the electrical outlet before connecting the charger leads to or disconnecting them from the battery posts.**

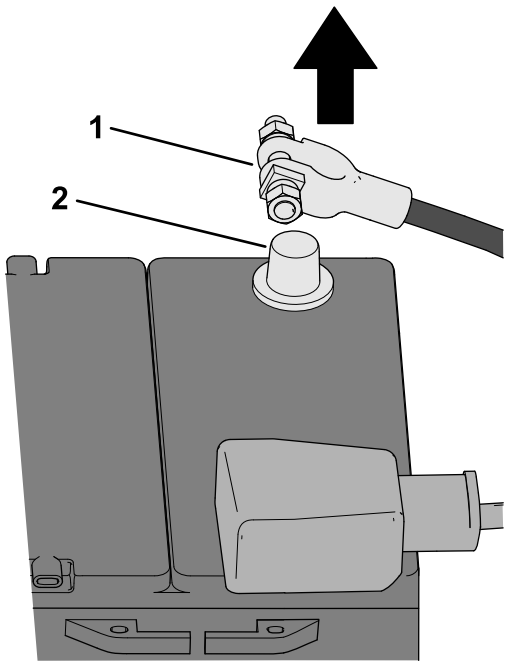
Disconnecting the Battery

⚠ WARNING

Battery terminals or metal tools could short against metal machine components, causing sparks. Sparks can cause the battery gasses to explode, resulting in personal injury.

- **When removing or installing the battery, do not allow the battery terminals to touch any metal parts of the machine.**
- **Do not allow metal tools to short between the battery terminals and metal parts of the machine.**

Disconnect the negative (-) battery cable from the battery post (Figure 111).



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Figure 111

1. Negative (-) battery cable
2. Battery post

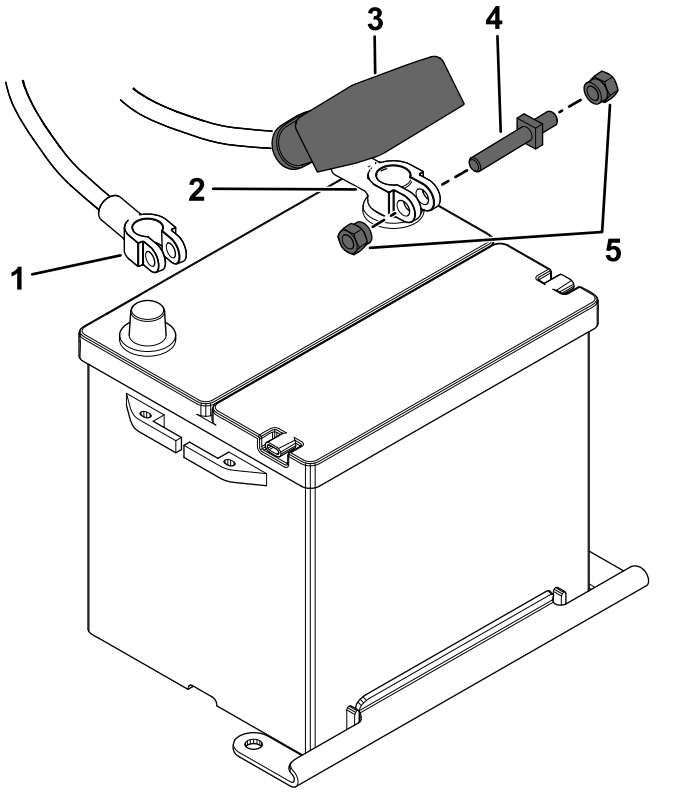
Removing the Battery

⚠ WARNING

Incorrect battery cable routing could damage the machine and cables, causing sparks. Sparks can cause the battery gases to explode, resulting in personal injury.

- **Always disconnect the negative (black) battery cable before disconnecting the positive (red) cable.**
- **Always connect the positive (red) battery cable before connecting the negative (black) cable.**

1. Disconnect the battery cables (Figure 112).



g464081

Figure 112

1. Negative battery cable (black)
2. Positive battery cable (red)
3. Insulator boot (positive battery cable)
4. Bolt
5. Nuts

2. Loosen the locknut securing the battery retainer and remove the battery from the tray (Figure 113).

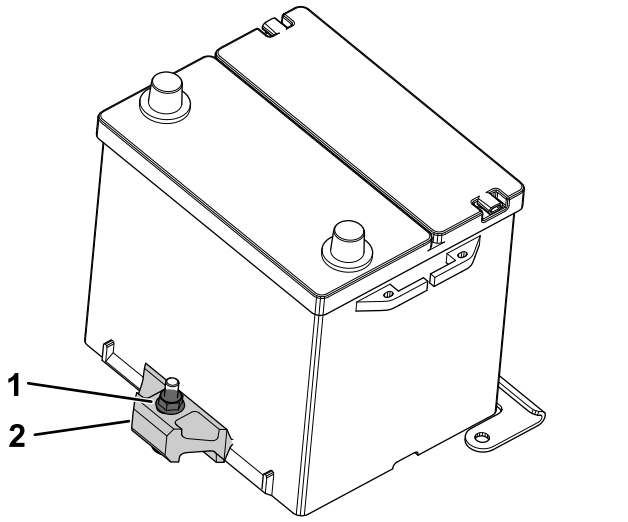


Figure 113

1. Locknut
2. Battery retainer

Installing the Battery

1. Place the battery on the battery tray and secure the battery to the retainer by tightening the locknut (Figure 113).
2. Connect the battery cables (Figure 112).

Connecting the Battery

Connect the negative (-) battery cable to the battery post (Figure 114).

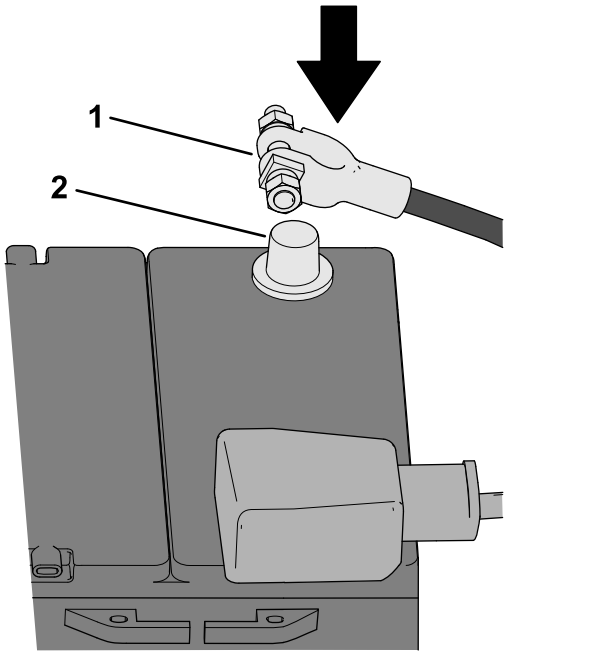


Figure 114

1. Negative (-) battery cable
2. Battery post

Charging the Battery

⚠ WARNING

Charging the battery produces gasses that can explode.

- **Keep sparks and flames away from the battery.**
- **Never smoke near the battery.**

Important: **Always keep the battery fully charged. This is especially important to prevent battery damage when the temperature is below 0°C (32°F).**

1. Remove the battery from the machine; refer to Removing the Battery (page 97).
2. Connect a 3 to 4 A battery charger to the battery posts. Charge the battery at a rate of 3 to 4 A for 4 to 8 hours (12 V).

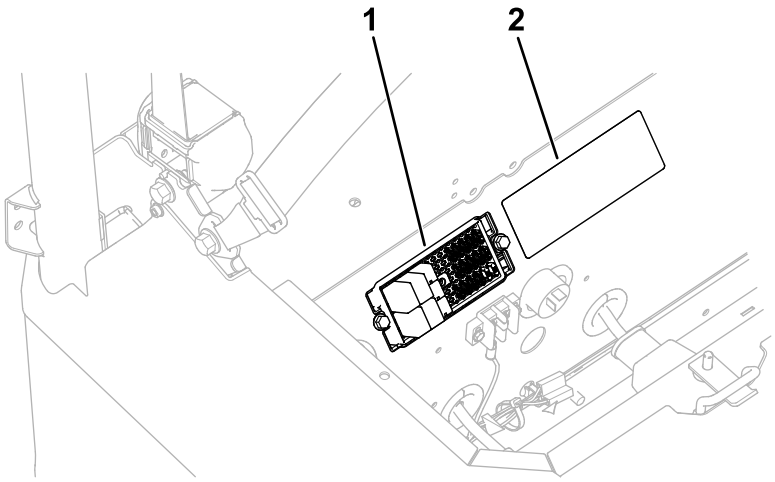
   Note: Do not overcharge the battery.
3. Install the battery; refer to Installing the Battery (page 98).

Storing the Battery

If you store the machine for more than 30 days, remove the battery and charge it fully. Either store it on the shelf or on the machine. Leave the cables disconnected if it is stored on the machine. Store the battery in a cool atmosphere to avoid quick deterioration of the charge in the battery. To prevent the battery from freezing, make sure it is fully charged.

Servicing the Fuses

The fuses for the electrical system are located underneath the seat (Figure 115).

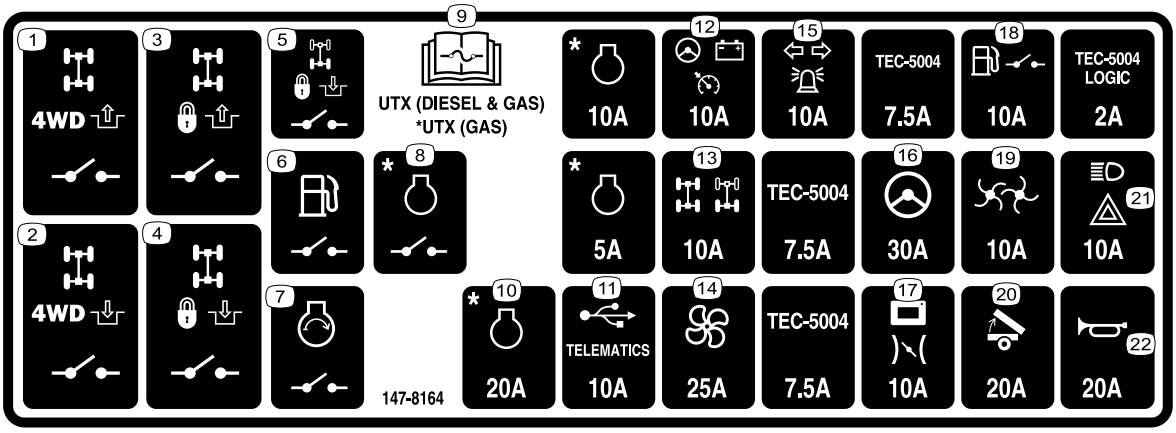


g388509

Figure 115

1. Fuse block
2. Fuse decal

Refer to Figure 116 for the fuse locations.



g463444

Figure 116

1. Front differential lock and 4-wheel drive disengage relay
2. Front differential lock and 4-wheel drive engage relay
3. Front differential lock disengage relay
4. Front differential lock engage relay
5. Rear differential lock engage relay
6. Fuel relay
7. Starter relay
8. Engine relay
9. Read the *Operator's Manual* for fuse information.
10. Engine power (gasoline machines only)
11. USB/telematics
12. Alternator, power steering, and speed sensor enable
13. Front and rear differentials
14. Cooling fan
15. Position lights and turn-signal lights
16. Power steering
17. Display and throttle
18. Fuel relay
19. Salt spreader
20. Bed lift
21. Headlights and hazard lights
22. Horn

Drive System Maintenance

Maintaining the Tires

Service Interval: Every 100 hours—Check the condition of the wheels and tires.

After the first 50 hours—Torque the wheel-lug nuts.

Every 250 hours—Torque the wheel-lug nuts.

1. Inspect the tires and rims for signs of wear and damage.

   Note: Operating accidents, such as hitting curbs, can damage a tire or rim and also disrupt wheel alignment, so inspect tire condition after an accident.

2. Torque the wheel lug nuts to 108 to 122 N·m (80 to 90 ft-lb).

Checking the Steering and Suspension Components

Service Interval: Every 100 hours—Check the steering and suspension for loose or damaged components.

With the steering wheel at the centered position (Figure 117), turn the steering wheel to the left or right. If you turn the steering wheel more than 13 mm (1/2 inch) to the left or right, and the tires do not turn, check the following steering and suspension components to ensure that they are not loose or damaged:

- Steering shaft to the steering-rack assembly joint

  Important: **Check the condition and security of the pinion-shaft seal (Figure 118).**

- Steering-rack assembly tie rods

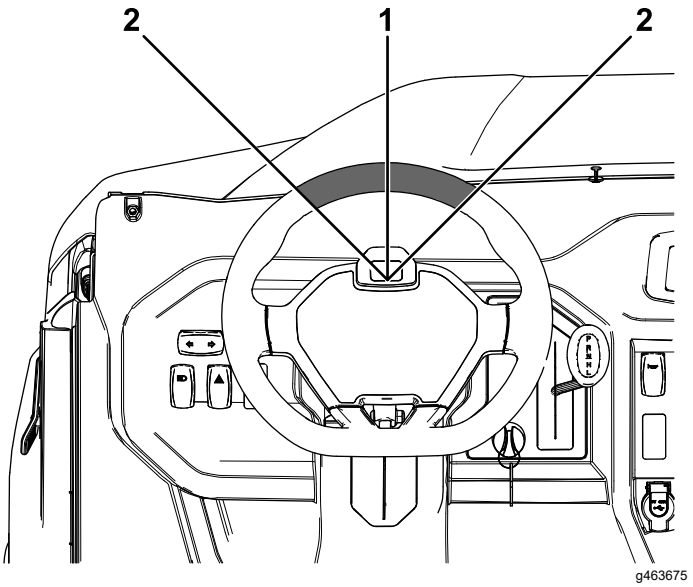


Figure 117

1. Steering wheel at the centered position
2. 13 mm (1/2 inch) from the center of the steering wheel

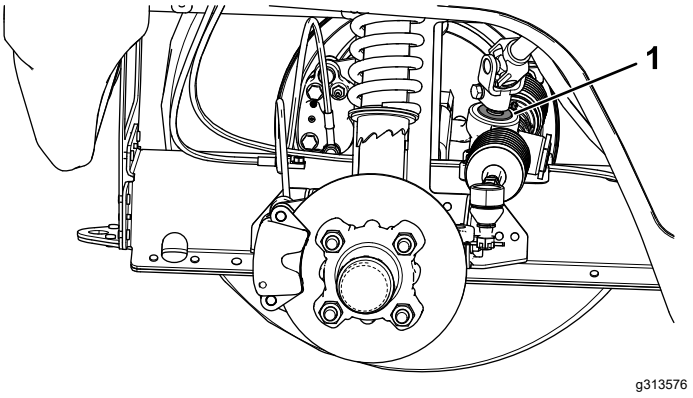


Figure 118

1. Pinion-shaft seal

Checking/Adjusting the Front Wheel Alignment

Service Interval: Every 100 hours/Yearly (whichever comes first)—Check the front wheel alignment.

Checking the Front Wheel Alignment

1. Check the tire pressure to ensure that the front tires are inflated properly; refer to Checking the Tire Pressure (page 65).
2. Either add weight to the driver's seat equal to the average operator who will run the machine, or have an operator sit on the seat. The weight or operator must remain on the seat for the duration of the adjustment procedure.
3. On a level surface, roll the machine straight back 2 to 3 m (6 to 10 ft) and then straight forward to the original starting position. This allows the suspension to settle into the operating position.
4. Ensure that the front tires are facing straight ahead.
5. Measure the distance between both of the front tires at the axle height at both the front and rear of the front tires (Figure 119).

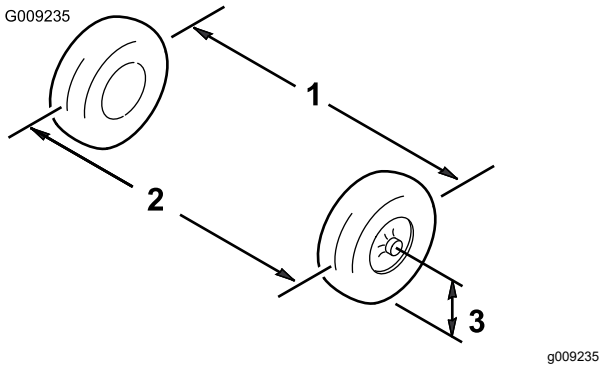


Figure 119

1. Tire center line—back
2. Tire center line—front
3. Axle center line

6. If the measurement is not within +/– 6 mm (+/– 1/4 inch) from neutral (zero), proceed to Adjusting the Front Wheel Alignment (page 102).

Adjusting the Front Wheel Alignment

Important: **Before adjusting the alignment, ensure that the height of the machine is as close to neutral as possible; refer to Adjusting the Front Ride Height (page 103).**

1. Loosen the jam nuts at the outer end of the tie rods (Figure 120).
2. Rotate both tie rods to move the front of the tire inward or outward.
3. Tighten the tie rod jam nuts when the adjustment is correct.
4. Ensure that there is full travel of the steering wheel in both directions.

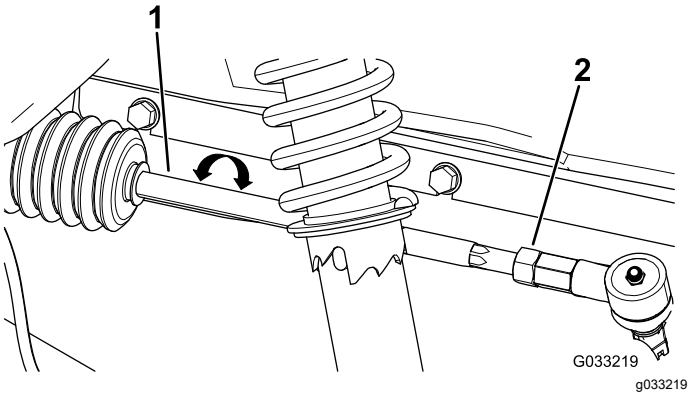


Figure 120

1. Tie rod
2. Jam nut

5. Check the measurement; refer to Checking the Front Wheel Alignment (page 102).

   If the measurement is not within +/– 6 mm (+/– 1/4 inch) from neutral (zero), repeat the steps for adjusting the front wheel alignment.

Adjusting the Front Ride Height

Owner-provided tools: spring-adjuster wrench, Toro Part 139-4678; refer to your authorized Toro distributor.

Important: **Make height adjustments only if there is uneven tire wear or if you are adding additional weight to the front of the machine (e.g., adding a BOSS plow).**

1. If you are adding weight to the front of the machine, adjust the ride height.

   Check the tire pressure to ensure that the front tires are inflated properly; refer to Checking the Tire Pressure (page 65).

   The ground clearance should be 23 cm (9 inches) for standard wheels and tires or 25 cm (10 inches) for the larger accessory wheels and tires.

2. If the ground clearance is not correct, use the spring-adjuster wrench to rotate the collar on the shock absorber to align the wheel (Figure 121).

   Note: If the collar is difficult to rotate, raise the front of the machine; Raising the Machine (page 82).

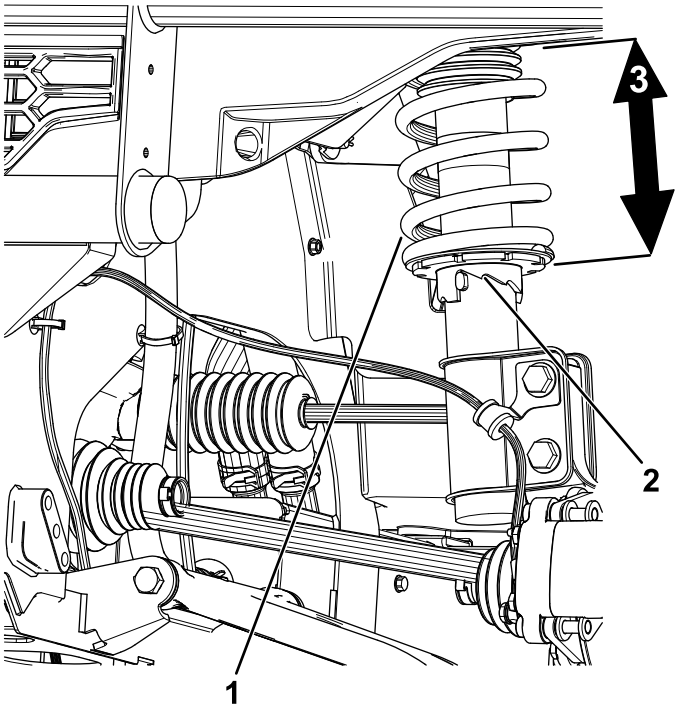


Figure 121

1. Shock-absorber spring
2. Collar
3. Spring length

Checking the Transaxle-Fluid Level

Service Interval: Every 250 hours

Fluid Type: Toro Premium Synthetic Transaxle Fluid **(Toro Part 145-2048)**

1. Park the machine on a level surface.
2. Shift the transmission lever to the P (PARK) position.
3. Shut off the engine and remove the key.
4. Remove the fill plug on the transaxle (Figure 122).

   Note: The fluid level should be even with the bottom of the fill plug.
5. If the fluid level is low, remove the fill plug and add the specified fluid until it runs out of the hole (Figure 122).
6. Replace the fill plug and torque it to 14 to 30 N·m (10 to 22 ft-lb).

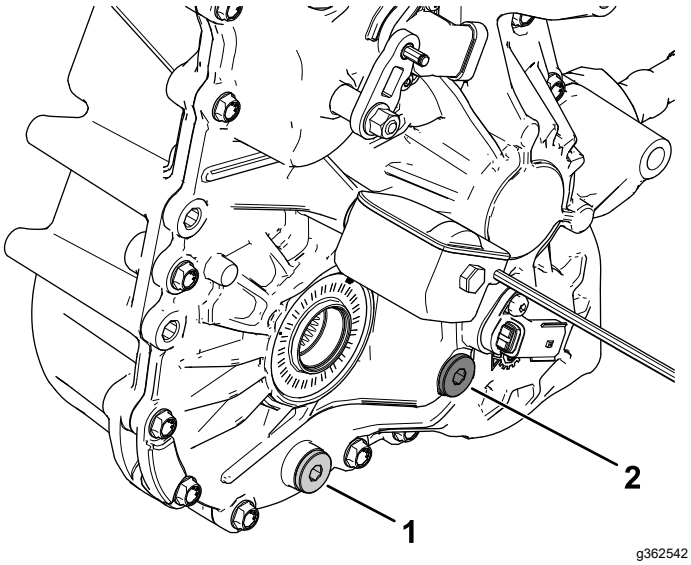


Figure 122

1. Drain plug
2. Fill plug

Changing the Transaxle Fluid

Service Interval: Every 500 hours

Fluid Type: Toro Premium Synthetic Transaxle Fluid **(Toro Part 145-2048)**

Fluid Capacity: 1.21 L (41 fl oz)

1. Align a drain pan under the drain plug (Figure 122).
2. Remove the fill plug (Figure 122).

   Note: Retain the fill plug and seal for installation in step 6.
3. Remove the drain plug, and allow the fluid to drain completely (Figure 122).

   Note: Retain the drain plug for installation in step 4.
4. Install the drain plug and torque it to 14 to 30 N·m (10 to 22 ft-lb).
5. Fill the transaxle with the specified fluid and capacity until it is even with the fill hole.
6. Install the fill plug and torque it to 14 to 30 N·m (10 to 22 ft-lb).

Checking the Front Differential Oil Level

Service Interval: Every 500 hours—Check the front differential oil level.

Fluid Type: 80W-90 Gear Oil

1. Park the machine on a level surface.
2. Shift the transmission lever to the P (PARK) position.
3. Shut off the engine and remove the key.
4. Remove the check plug on the front differential (Figure 123).

   Note: The oil level should be even with the bottom of the check plug.
5. If the oil level is low, you may add the specified oil through the check plug opening (Figure 123).
6. Replace the check plug and torque it to 15 to 25 N·m (11 to 18 ft-lb).

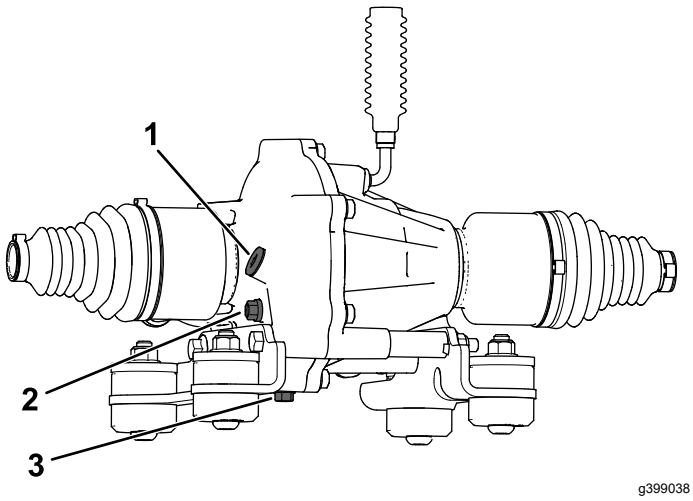


Figure 123

1. Fill plug
2. Check plug
3. Drain plug

Changing the Front Differential Oil

Service Interval: Every 1,000 hours—Change the front differential oil.

Fluid Type: 80W-90 Gear Oil

Fluid Capacity: 0.15 L (5 fl oz)

1. Park the machine on a level surface.
2. Shift the transmission lever to the P (PARK) position.
3. Shut off the engine and remove the key.
4. Align a drain pan under the drain plug (Figure 123).
5. Remove the fill plug (Figure 123).

   Note: Retain the fill plug and seal for installation in step 9.
6. Remove the drain plug and allow the fluid to drain completely (Figure 123).

   Note: Retain the drain plug for installation in step 7.
7. Install the drain plug and torque it to 15 to 25 N·m (11 to 18 ft-lb).
8. Fill the front differential with the specified fluid and capacity.
9. Install the fill plug and torque it to 15 to 25 N·m (11 to 18 ft-lb).
10. Allow the oil to settle for approximately 5 minutes, then check the level; Checking the Front Differential Oil Level (page 105).

Cooling System Maintenance

Cooling System Safety

- Swallowing engine coolant can cause poisoning; keep out of reach from children and pets.
- Discharge of hot, pressurized coolant or touching a hot radiator and surrounding parts can cause severe burns.
  - Always allow the engine to cool at least 15 minutes before removing the radiator cap.
  - Use a rag when opening the radiator cap, and open the cap slowly to allow steam to escape.
- Do not operate the machine without the covers in place.
- Keep your fingers, hands and clothing clear of rotating fan and drive belt.
- Shut off the engine and remove the key before performing maintenance.

Checking the Engine-Coolant Level

Service Interval: Before each use or daily—Check the level of the coolant.

Coolant type: 50% ethylene-glycol with organic additive technology (OAT) 50% distiller water

⚠ WARNING

If the engine has been running, the pressurized, hot coolant can escape and cause burns.

- **Do not open the radiator cap when the engine is running.**
- **Use a rag when opening the radiator cap, and open the cap slowly to allow steam to escape.**

1. Park the machine on a level surface.
2. Shift the transmission lever to the P (PARK) position.
3. Shut off the engine and remove the key.
4. Check the coolant level in the coolant tank (Figure 124).

   Note: The fill level depends on the coolant temperature.

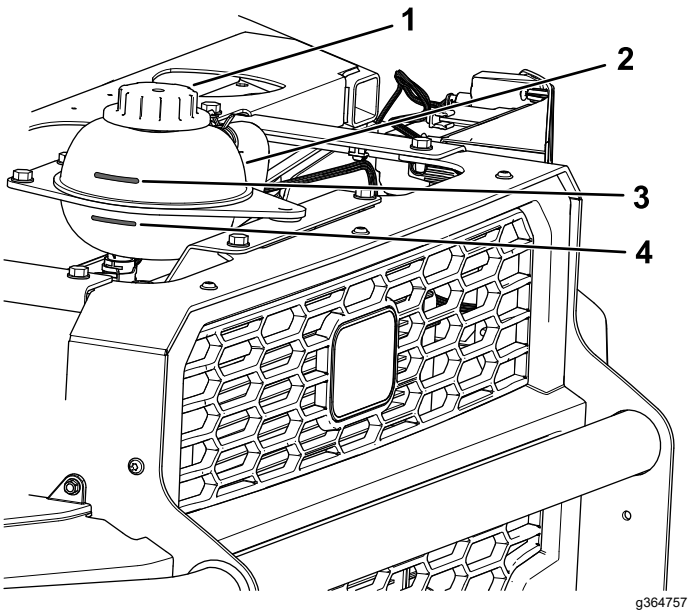


Figure 124

1. Coolant-tank cap
2. Coolant tank
3. Fill level when the coolant is hot
4. Fill level when the coolant is cold

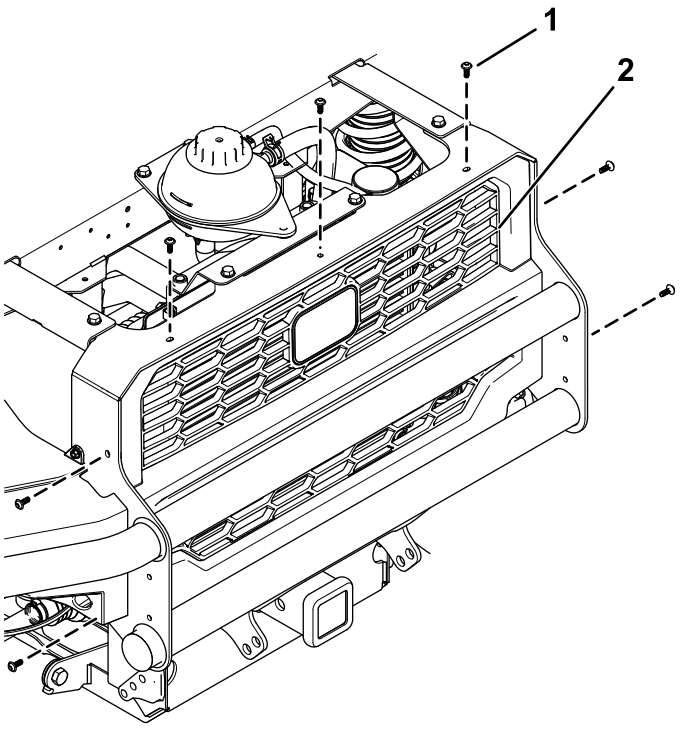
5. If coolant is low, remove the coolant-tank cap and add a 50% ethylene-glycol with organic additive technology (OAT) 50% distiller water antifreeze.

   Do not overfill.
6. Hand-tighten the coolant-tank cap until you hear it click.

Removing Debris from the Cooling System

Service Interval: Before each use or daily—Remove debris from the engine area and radiator.

1. Park the machine on a level surface.
2. Shift the transmission lever to the P (PARK) position.
3. Shut off the engine and remove the key.
4. Clean the engine area thoroughly of all debris.
5. Remove the 7 screws securing the grill and remove the grill (Figure 125).



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Figure 125

1. Screw
2. Grill

6. Clean the radiator assembly using compressed air.

   Note: Blow debris away from the radiator.

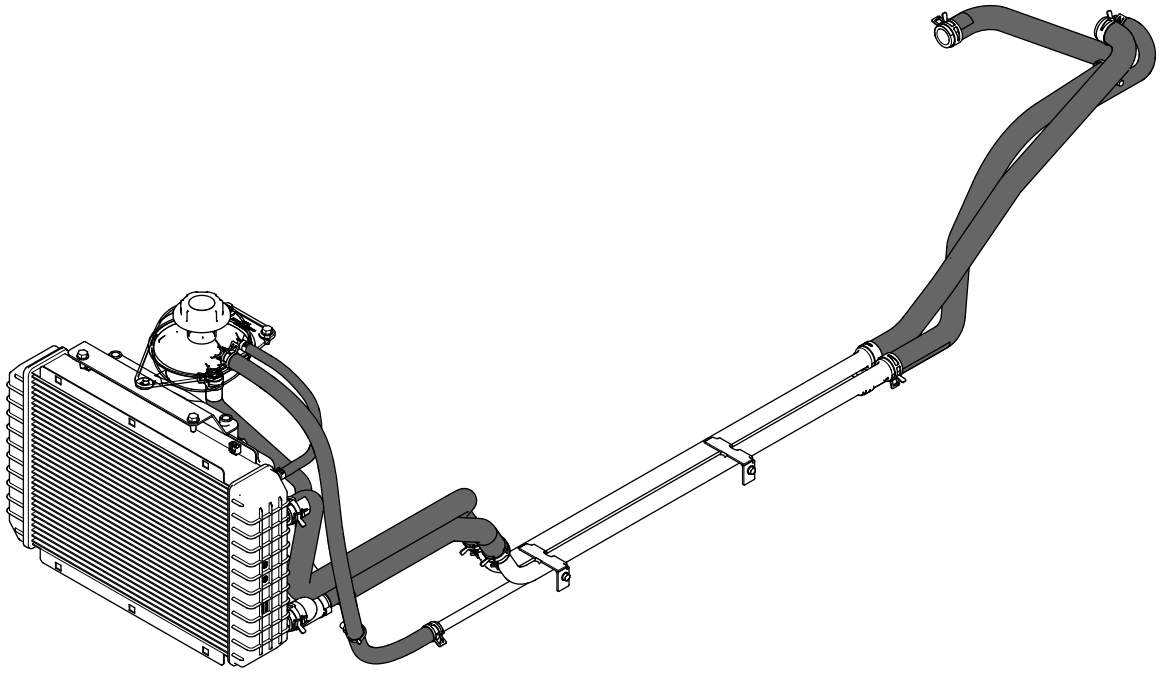
7. Install the grill using the previously removed 7 screws (Figure 125).

Checking the Coolant Hoses

Service Interval: Every 500 hours

Check the coolant hoses for cracks, swelling, or deterioration.

Replace the hoses if there are cracks, swelling, or deterioration.



g391147

Figure 126

Changing the Engine Coolant

Service Interval: Every 1,000 hours/Every 5 years (whichever comes first)—Change the engine coolant.

Contact your authorized Toro distributor.

Brake Maintenance

Checking the Brakes

Service Interval: Every 100 hours

⚠ CAUTION

After operating the machine, the brake components may be hot. Touching hot brake components may burn you.

Before checking the brakes, wait for the brake components to cool down.

Important: **Brakes are a critical safety component of the machine. Closely inspect them at the recommended service interval to ensure optimum performance and safety.**

- Check the brake lining for wear or damage. If the lining (brake pad) thickness is less than 1.6 mm (1/16 inch), replace the brake lining.
- Check the backing plate and other components for signs of excessive wear or deformation. Replace any deformed components.
- Check the brake-fluid level; refer to Checking the Brake-Fluid Level (page 109).

Checking the Brake-Fluid Level

Service Interval: Before each use or daily—Check the brake-fluid level. Check the brake-fluid level before you start the engine.

Brake-fluid type: DOT 3

1. Park the machine on a level surface.
2. Shift the transmission lever to the P (PARK) position.
3. Shut off the engine and remove the key.
4. Raise the hood to access to the master brake cylinder and reservoir (Figure 127).

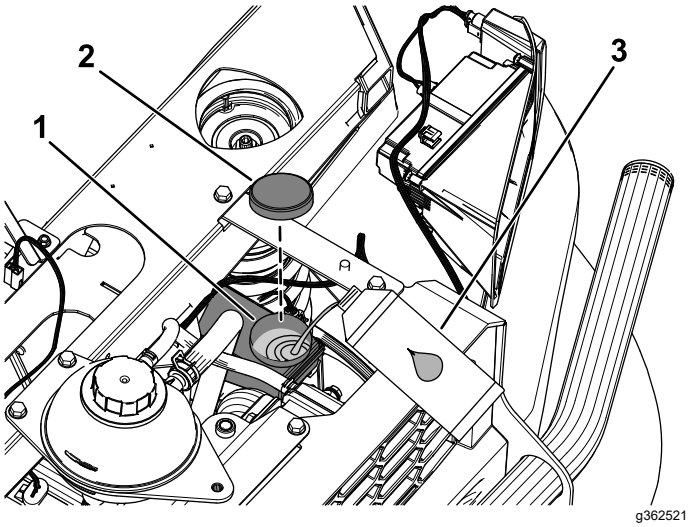


Figure 127

1. Filler neck (reservoir)
2. Reservoir cap
3. DOT 3 brake fluid

5. Look at the outline of the fluid level at the side of the reservoir (Figure 128).

   Note: The level should be above the Minimum line.

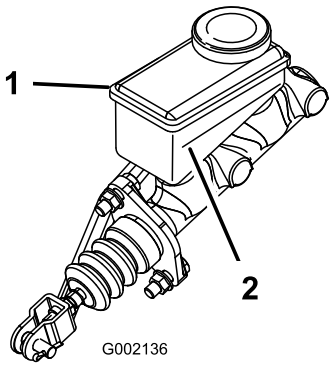


Figure 128

1. Brake-fluid reservoir
2. Minimum line

6. If the fluid level is low, preform the following:
   A. Clean the area around the reservoir cap and remove the cap (Figure 127).
   B. Add DOT 3 brake fluid to the reservoir until the fluid level is above the Minimum line (Figure 128).

      Note: Do not overfill the reservoir with brake fluid.

   C. Install the reservoir cap (Figure 127).
7. Close the hood.

Changing the Brake Fluid

Service Interval: Every 1,000 hours/Every 5 years (whichever comes first)—Change the brake fluid.

Contact your authorized Toro distributor.

Belt Maintenance

Servicing the Drive Belt

Checking the Drive Belt and Cleaning the Clutches

Service Interval: Every 250 hours

1. Park the machine on a level surface.
2. Shift the transmission lever to the P (PARK) position.
3. Shut off the engine and remove the key.
4. Raise the cargo bed.
5. Unlatch the 6 spring clips securing the belt cover and remove the cover (Figure 129).

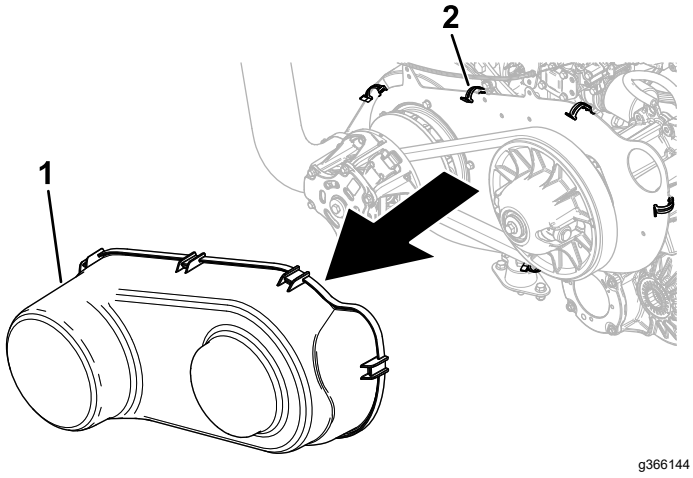


Figure 129

1. Belt cover
2. Spring clip

6. Rotate and inspect the belt (Figure 130) for signs of excessive wear or damage.

   Note: Replace the belt if it is excessively worn or damaged; refer to Replacing the Drive Belt (page 111).

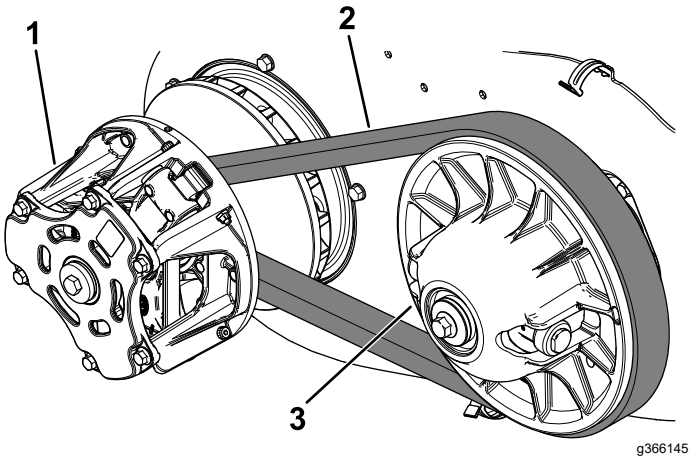


Figure 130

1. Primary clutch
2. Drive belt
3. Secondary clutch

7. Using compressed air, clean the clutches thoroughly of all debris (Figure 130).
8. Install the belt cover (Figure 129).
9. Lower the cargo bed.

Replacing the Drive Belt

Service Interval: Every 500 hours—Replace the drive belt.

1. Park the machine on a level surface.
2. Shift the transmission lever to the P (PARK) position.
3. Shut off the engine and remove the key.
4. Raise the cargo bed.
5. Unlatch the 6 spring clips securing the belt cover and remove the cover (Figure 129).
6. Pull up on the top of the belt to spread out the secondary clutch, then rotate and route the belt over the secondary clutch (Figure 130).
7. Remove the belt from the primary clutch (Figure 130).

   Note: Discard the old belt.
8. Align the new belt over the primary clutch (Figure 130).
9. Rotate and route the belt over the secondary clutch (Figure 130).
10. Install the belt cover (Figure 129).
11. Lower the cargo bed.

Cleaning

Washing the Machine

Wash the machine as needed using water alone or with a mild detergent. You may use a rag when washing the machine.

Important: **Do not use brackish or reclaimed water to clean the machine.**

Important: **Do not use power-washing equipment to wash the machine. Power-washing equipment may damage the electrical system, loosen important decals, or wash away necessary grease at friction points. Avoid excessive use of water near the control panel, engine, and battery.**

Important: **Do not wash the machine with the engine running. Washing the machine with the engine running may result in internal engine damage.**

Storage

Storage Safety

- Shut off the engine, remove the key, and wait for all movement to stop before you leave the operator's position. Allow the machine to cool before adjusting, servicing, cleaning, or storing it.
- Do not store the machine or fuel container where there is an open flame, spark, or pilot light, such as on a water heater or other appliance.

Storing the Machine

1. Position the machine on a level surface, shift the transmission lever to the P (PARK) position, shut off the engine, and remove the key from the key switch.
2. Clean dirt and grime from the entire machine, including the engine area.

   Important: **You can wash the machine with mild detergent and water. Do not use high-pressure water to wash the machine. Pressure washing the machine may damage the electrical system or wash away necessary grease at friction points. Avoid excessive use of water, especially near the control panel, lights, engine, and battery.**
3. Service the air cleaner; refer to Servicing the Air Cleaner (page 86).
4. Grease the machine; refer to Greasing the Machine (page 84).
5. Change the engine oil and filter; refer to Servicing the Engine Oil (page 87).
6. Check the tire pressure; refer to Checking the Tire Pressure (page 65).
7. For storage over 30 days, prepare the fuel system as follows:

   A. Add a petroleum based stabilizer/conditioner to the fuel in the tank. Do not use an alcohol-based stabilizer (ethanol or methanol).

      Important: **Do not store fuel containing stabilizer/conditioner longer than the duration recommended by the fuel stabilizer manufacturer.**

   B. Run the engine to distribute conditioned fuel through the fuel system for 5 minutes.

   C. Shut off the engine, allow it to cool, and drain the fuel tank.

   D. Start the engine and run it until it stops.

   E. Start and run the engine again until it does not start again.

   F. Dispose of drained fuel properly. Recycle as per local codes.
8. Remove the spark plugs and check their condition; refer to Servicing the Spark Plugs (page 89).
9. With the spark plugs removed from the engine, pour 15 ml (2 tablespoons) of engine oil into the spark-plug hole.
10. Use the starter to crank the engine and distribute the engine oil inside the cylinder.
11. Install the spark plugs and tighten each one to the recommended torque; refer to Servicing the Spark Plugs (page 89).

    Note: Do not install the spark-plug wires on the spark plugs.
12. Check the anti freeze protection and add a 50/50 solution of water and anti freeze as needed for expected minimum temperature in your area.
13. Remove the battery from the chassis, and charge it fully; refer to Removing the Battery (page 97).

    Note: Do not connect the battery cables to the battery posts during storage.

    Important: **The battery must be fully charged to prevent it from freezing and being damaged at temperatures below 0°C (32°F). A fully charged battery maintains its charge for about 50 days at temperatures lower than 4°C (40°F). If the temperatures will be above 4°C (40°F), check the water level in the battery and charge it every 30 days.**
14. Check and tighten all fasteners. Repair or replace any part that is damaged.
15. Paint all scratched or bare metal surfaces with paint available from your authorized Toro distributor.
16. Store the machine in a clean, dry garage or storage area.
17. Remove the key from the key switch and put it in a safe place that is out of the reach of children.
18. Cover the machine to protect it and keep it clean.

Troubleshooting

Problem	Possible Cause	Corrective Action
The engine does not crank over.	1. Your foot is not on the brake pedal. 2. The battery is dead and/or there is a bad battery connection.	1. Put your foot on the brake pedal. 2. Check the battery connections. If the battery is dead, replace the battery.
The engine cranks, but does not start.	1. The fuel tank is empty. 2. There is dirt, water, or stale fuel in the fuel system. 3. The air cleaner is dirty or plugged. 4. The spark plug(s) are fouled or gapped improperly.	1. Fill the fuel tank. 2. Contact your authorized Toro distributor. 3. Clean or replace the air cleaner. 4. Replace the spark plug(s).
The power steering moves hard.	1. There is a blown fuse in the electrical system. 2. The power steering controller is disconnected. 3. The power steering motor and/or controller is bad.	1. Inspect and replace the fuse. 2. Connect the power steering controller. 3. Replace the power steering motor and/or controller; contact your authorized Toro distributor.
The throttle is not responding.	1. The transmission lever is in the P (PARK) position, N (NEUTRAL) position, or between gears. 2. The “no seat belt” feature is set to 0 km/h or mph. 3. The gear position sensor is non-functional or damaged.	1. Shift the transmission lever into a drive position. 2. Secure your seat belt. 3. Contact your authorized Toro distributor.
The 4-wheel drive/differential locks are not working.	1. There is a blown fuse in the electrical system. 2. The feature was disabled during software setup. 3. The switches and/or differential(s) are unplugged. 4. The actuator/solenoid is bad.	1. Inspect and replace the fuse. 2. Contact your authorized Toro distributor. 3. Inspect and reconnect the harness. 4. Contact your authorized Toro distributor.
The cruise control feature does not engage.	1. Your seat belt is not secured. 2. You are not traveling at the minimum machine speed.	1. Secure your seat belt. 2. Increase the machine speed to set the cruise control.
The clutch engagement is abrupt.	1. The belt is new. 2. The clutches are dirty.	1. Allow 10 hours of normal operation for the belt break-in period. 2. Clean the clutches.
The acceleration seems too slow when the engine is at maximum speed (rpm).	1. The belt is slipping and/or damaged. 2. The clutches are dirty.	1. Check the belt; replace, if needed. 2. Clean the clutches.
The battery is not charging.	1. The alternator belt is loose, worn, and/or damaged. 2. There is a bad electrical connection to the alternator. 3. The alternator is bad. 4. The battery is dead and/or there is a bad battery connection.	1. Check the tension of the alternator belt. If necessary, adjust the belt tension. If the belt is worn or damaged, replace the belt. 2. Check the harness connection. 3. Contact your authorized Toro distributor. 4. Check the battery connections. If the battery is dead, replace the battery.

Problem	Possible Cause	Corrective Action
The alternator belt is making a squealing noise.	1. The alternator belt is loose, worn, and/or damaged.	1. Check the tension of the alternator belt. If necessary, adjust the belt tension. If the belt is worn or damaged, replace the belt.
	2. The engine pulleys and/or bearings may be loose or damaged.	2. If needed, replace the engine pulleys and/or bearings; refer to the *Service Manual* or contact your authorized Toro distributor.

Machine Fault Codes

Problem	Possible Cause	Corrective Action
A fault code appears on the display.	1. There is an issue with the machine.	1. Do not operate the machine if a fault code appears; otherwise, serious damage could occur. Contact your authorized Toro distributor.

Notes:

Notes:

California Proposition 65 Warning Information

What is this warning?

You may see a product for sale that has a warning label like the following:



WARNING: Cancer and Reproductive Harm—www.p65Warnings.ca.gov.

What is Prop 65?

Prop 65 applies to any company operating in California, selling products in California, or manufacturing products that may be sold in or brought into California. It mandates that the Governor of California maintain and publish a list of chemicals known to cause cancer, birth defects, and/or other reproductive harm. The list, which is updated annually, includes hundreds of chemicals found in many everyday items. The purpose of Prop 65 is to inform the public about exposure to these chemicals.

Prop 65 does not ban the sale of products containing these chemicals but instead requires warnings on any product, product packaging, or literature with the product. Moreover, a Prop 65 warning does not mean that a product is in violation of any product safety standards or requirements. In fact, the California government has clarified that a Prop 65 warning "is not the same as a regulatory decision that a product is 'safe' or 'unsafe.'" Many of these chemicals have been used in everyday products for years without documented harm. For more information, go to https://oag.ca.gov/prop65/faqs-view-all.

A Prop 65 warning means that a company has either (1) evaluated the exposure and has concluded that it exceeds the "no significant risk level"; or (2) has chosen to provide a warning based on its understanding about the presence of a listed chemical without attempting to evaluate the exposure.

Does this law apply everywhere?

Prop 65 warnings are required under California law only. These warnings are seen throughout California in a wide range of settings, including but not limited to restaurants, grocery stores, hotels, schools, and hospitals, and on a wide variety of products. Additionally, some online and mail order retailers provide Prop 65 warnings on their websites or in catalogs.

How do the California warnings compare to federal limits?

Prop 65 standards are often more stringent than federal and international standards. There are various substances that require a Prop 65 warning at levels that are far lower than federal action limits. For example, the Prop 65 standard for warnings for lead is 0.5 µg/day, which is well below the federal and international standards.

Why don't all similar products carry the warning?

- Products sold in California require Prop 65 labelling while similar products sold elsewhere do not.
- A company involved in a Prop 65 lawsuit reaching a settlement may be required to use Prop 65 warnings for its products, but other companies making similar products may have no such requirement.
- The enforcement of Prop 65 is inconsistent.
- Companies may elect not to provide warnings because they conclude that they are not required to do so under Prop 65; a lack of warnings for a product does not mean that the product is free of listed chemicals at similar levels.

Why does Toro include this warning?

Toro has chosen to provide consumers with as much information as possible so that they can make informed decisions about the products they buy and use. Toro provides warnings in certain cases based on its knowledge of the presence of one or more listed chemicals without evaluating the level of exposure, as not all the listed chemicals provide exposure limit requirements. While the exposure from Toro products may be negligible or well within the "no significant risk" range, out of an abundance of caution, Toro has elected to provide the Prop 65 warnings. Moreover, if Toro does not provide these warnings, it could be sued by the State of California or by private parties seeking to enforce Prop 65 and subject to substantial penalties.

EEA/UK Privacy Notice

Toro's Use of Your Personal Information

The Toro Company ("Toro") respects your privacy. When you purchase our products, we may collect certain personal information about you, either directly from you or through your local Toro company or dealer. Toro uses this information to fulfil contractual obligations - such as to register your warranty, process your warranty claim or to contact you in the event of a product recall - and for legitimate business purposes - such as to gauge customer satisfaction, improve our products or provide you with product information which may be of interest. Toro may share your information with our subsidiaries, affiliates, dealers or other business partners in connection these activities. We may also disclose personal information when required by law or in connection with the sale, purchase or merger of a business. We will never sell your personal information to any other company for marketing purposes.

Retention of your Personal Information

Toro will keep your personal information as long as it is relevant for the above purposes and in accordance with legal requirements. For more information about applicable retention periods please contact legal@toro.com.

Toro's Commitment to Security

Your personal information may be processed in the US or another country which may have less strict data protection laws than your country of residence. Whenever we transfer your information outside of your country of residence, we will take legally required steps to ensure that appropriate safeguards are in place to protect your information and to make sure it is treated securely.

Access and Correction

You may have the right to correct or review your personal data, or object to or restrict the processing of your data. To do so, please contact us by email at legal@toro.com. If you have concerns about the way in which Toro has handled your information, we encourage you to raise this directly with us. Please note that European residents have the right to complain to your Data Protection Authority.

The Toro Warranty

Two-Year or 1,500 Hours Limited Warranty

Conditions and Products Covered

The Toro Company warrants your Toro Commercial product (“Product”) to be free from defects in materials or workmanship for 2 years or 1,500 operational hours*, whichever occurs first. This warranty is applicable to all products with the exception of Aerators (refer to separate warranty statements for these products). Where a warrantable condition exists, we will repair the Product at no cost to you including diagnostics, labor, parts, and transportation. This warranty begins on the date the Product is delivered to the original retail purchaser.
* Product equipped with an hour meter.

Instructions for Obtaining Warranty Service

You are responsible for notifying the Commercial Products Distributor or Authorized Commercial Products Dealer from whom you purchased the Product as soon as you believe a warrantable condition exists. If you need help locating a Commercial Products Distributor or Authorized Dealer, or if you have questions regarding your warranty rights or responsibilities, you may contact us at:

Toro Commercial Products Service Department
8111 Lyndale Avenue South
Bloomington, MN 55420-1196

952–888–8801 or 800–952–2740
E-mail: commercial.warranty@toro.com

Owner Responsibilities

As the product owner, you are responsible for required maintenance and adjustments stated in your *Operator's Manual*. Repairs for product issues caused by failure to perform required maintenance and adjustments are not covered under this warranty.

Items and Conditions Not Covered

Not all product failures or malfunctions that occur during the warranty period are defects in materials or workmanship. This warranty does not cover the following:

- Product failures which result from the use of non-Toro replacement parts, or from installation and use of add-on, or modified non-Toro branded accessories and products.
- Product failures which result from failure to perform recommended maintenance and/or adjustments.
- Product failures which result from operating the Product in an abusive, negligent, or reckless manner.
- Parts consumed through use that are not defective. Examples of parts which are consumed, or used up, during normal Product operation include, but are not limited to, brake pads and linings, clutch linings, blades, reels, rollers and bearings (sealed or greasable), bed knives, spark plugs, castor wheels and bearings, tires, filters, belts, and certain sprayer components such as diaphragms, nozzles, flow meters, and check valves.
- Failures caused by outside influence, including, but not limited to, weather, storage practices, contamination, use of unapproved fuels, coolants, lubricants, additives, fertilizers, water, or chemicals.
- Failure or performance issues due to the use of fuels (e.g. gasoline, diesel, or biodiesel) that do not conform to their respective industry standards.
- Normal noise, vibration, wear and tear, and deterioration. Normal “wear and tear” includes, but is not limited to, damage to seats due to wear or abrasion, worn painted surfaces, scratched decals or windows.

Parts

Parts scheduled for replacement as required maintenance are warranted for the period of time up to the scheduled replacement time for that part. Parts replaced under this warranty are covered for the duration of the original product warranty and become the property of Toro. Toro will make the final decision whether to repair any existing part or assembly or replace it. Toro may use remanufactured parts for warranty repairs.

Deep Cycle and Lithium-Ion Battery Warranty

Deep cycle and Lithium-Ion batteries have a specified total number of kilowatt-hours they can deliver during their lifetime. Operating, recharging, and maintenance techniques can extend or reduce total battery life. As the batteries in this product are consumed, the amount of useful work between charging intervals will slowly decrease until the battery is completely worn out. Replacement of worn out batteries, due to normal consumption, is the responsibility of the product owner.
Note: (Lithium-Ion battery only): Refer to the battery warranty for additional information.

Lifetime Crankshaft Warranty (ProStripe 02657 Model Only)

The Prostripe which is fitted with a genuine Toro Friction Disc and Crank-Safe Blade Brake Clutch (integrated Blade Brake Clutch (BBC) + Friction Disc assembly) as original equipment and used by the original purchaser in accordance with recommended operating and maintenance procedures, are covered by a Lifetime Warranty against engine crankshaft bending. Machines fitted with friction washers, Blade Brake Clutch (BBC) units and other such devices are not covered by the Lifetime Crankshaft Warranty.

Maintenance is at Owner’s Expense

Engine tune-up, lubrication, cleaning and polishing, replacement of filters, coolant, and completing recommended maintenance are some of the normal services Toro products require that are at the owner’s expense.

General Conditions

Repair by an Authorized Toro Distributor or Dealer is your sole remedy under this warranty.

The Toro Company is not liable for indirect, incidental or consequential damages in connection with the use of the Toro Products covered by this warranty, including any cost or expense of providing substitute equipment or service during reasonable periods of malfunction or non-use pending completion of repairs under this warranty. Except for the Emissions warranty referenced below, if applicable, there is no other express warranty. All implied warranties of merchantability and fitness for use are limited to the duration of this express warranty.

Some states do not allow exclusions of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions and limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Note Regarding Emissions Warranty

The Emissions Control System on your Product may be covered by a separate warranty meeting requirements established by the U.S. Environmental Protection Agency (EPA) and/or the California Air Resources Board (CARB). The hour limitations set forth above do not apply to the Emissions Control System Warranty. Refer to the Engine Emission Control Warranty Statement supplied with your product or contained in the engine manufacturer’s documentation.

Countries Other than the United States or Canada

Customers who have purchased Toro products exported from the United States or Canada should contact their Toro Distributor (Dealer) to obtain guarantee policies for your country, province, or state. If for any reason you are dissatisfied with your Distributor's service or have difficulty obtaining guarantee information, contact your Authorized Toro Service Center.