Form No. 3353–222

15 CU. FT. HOPPER Kit

Groundsmaster® 3320 and 3380–D

Model No. 30356–250000001 and Up

Installation Instructions

Safety

Before Operating

- Read and understand the contents of this manual before starting and operating the machine. Become familiar with all controls and know how to stop quickly.
- Never allow children to operate the machine. Do not allow adults to operate the machine without proper instruction. Only trained operators, skilled in slope operation and who have read this manual should operate this machine.
- Never operate machine when under the influence of drugs or alcohol.
- Remove all debris or other objects that might be picked up and thrown by cutter blades. Keep all bystanders away from the operating area.
- Keep all shields and safety devices in place. If a shield, safety device, or decal is defective or damaged, repair or replace it before operation is commenced. Also, tighten any loose nuts, bolts, and screws to insure machine is in safe operating condition.
- Do not wear loose–fitting clothing because it could get caught in moving parts. Always wear long pants and substantial shoes. Wearing safety glasses, safety shoes, and a helmet is advisable and required by some local ordinances and insurance regulations.
- Be sure interlock switches are adjusted correctly so engine cannot be started unless traction pedal is released–neutral position–and PTO switch is in DISENGAGED position.
- Fill fuel tank before starting the engine. Avoid spilling any fuel. Since fuel is flammable, handle it carefully.
  - Use an approved fuel container.
  - Do not fill fuel tank when engine is hot or running.
  - Do not smoke while handling fuel.
  - Fill fuel tank outdoors and only to the bottom of the filler neck.
  - Wipe up any spilled fuel.

While Operating

- Sit on the seat when starting the engine and operating the machine.
- Before starting the engine:
  - Engage parking brake.
  - Make sure traction pedal is in neutral and PTO is in DISENGAGE position.
  - After engine is started, release parking brake and keep foot off traction pedal. Machine must not move. If movement is evident, the neutral return mechanism is adjusted incorrectly. Shut engine off and adjust until machine does not move when traction pedal is released.
- Do not run the engine in a confined area without adequate ventilation. Exhaust fumes are hazardous and could possibly be deadly.
- Maximum seating capacity is one person. Therefore, never carry passengers.
- Check carefully for overhead clearances before driving under any objects.
- The grass deflector or complete blower assembly must always be installed on cutting unit.
- To maintain machine control, 75 lb. of weight must be mounted on left front wheel of traction unit before using the 15 cu. ft. Hopper kit. Refer to traction Unit Operator's Manual for additional weight requirements.
- Operator must be skilled and trained in how to drive on hillsides. Failure to use caution on slopes or hills may cause loss of control and vehicle to tip or roll possibly resulting in personal injury or death.
- Traverse slopes carefully. Do not start or stop suddenly when traversing slopes or when traveling uphill or downhill.
- If engine stalls or machine loses headway and cannot make it to the top of a slope, do not turn machine around. Always back slowly straight down the slope.
- Using the machine demands the operator's complete attention. To prevent loss of control:
  - Operate only in daylight or when there is good artificial light.
  - Drive slowly.

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  - Avoid sudden stops and starts.
  - Look behind machine before backing up.
  - Watch for holes or other hidden hazards.
  - Do not drive close to a sand trap, ditch, creek, or hazard.
  - Reduce speed when making sharp turns and when turning on a hillside.
  - The cutting deck must be lowered when going down slopes for steering control.
- The grass deflector must always be installed and in lowest position on the cutting unit when blower assembly is removed. This product is designed to drive objects into the ground where they lose energy quickly in grassy areas. However. don't take an injury risk!! When a person or pet appears unexpectedly in or near the mowing area, STOP MOWING. Careless operation, combined with terrain angles, ricochets, or improperly positioned guards, can lead to thrown object injuries. Do not resume mowing until area is cleared.
- Never raise the cutting unit while the blades or other parts are rotating.
- If cutting blades strike a solid object or the machine vibrates abnormally, disengage PTO, move throttle to SLOW, set parking brake, and shut engine off. Remove key from switch to prevent possibility of accidental starting. Check cutting unit, blower assembly and traction unit for damage and defective parts. Repair any damage before restarting the engine and operating the cutting unit. Assure cutting unit blades are in good condition and blade bolts are torqued to proper specifications (See Cutting Deck Operator's Manual).
- If the cutting unit discharge area or blower assembly ever plugs, disengage PTO and shut engine off before removing the obstruction.
- To stop machine, remove foot from traction pedal and use brakes. Gradually reversing the traction pedal can provide additional braking.
- Do not touch engine, muffler, or radiator while engine is running or soon after it has stopped. These areas could be hot enough to cause a burn.
- Before raising hopper:
  - Make sure machine is on level ground.
  - Disengage the PTO.
  - Clear bystanders from area around hopper and hopper linkage.
  - Check overhead clearance.
- Do not attempt to dump clippings over an embankment.
- Hopper must be fully lowered before driving machine.
- Lower the cutting unit and hopper to their lowest positions and remove key from switch whenever machine is left unattended.
- Before getting off the seat:
  - Move traction pedal to neutral position and remove foot from pedal.
  - Set the parking brake and disengage the PTO.
  - Shut the engine off and remove key from ignition switch. Wait for all movement to stop before getting off the seat.
- Never operate collection system with hopper covers open.

Maintenance

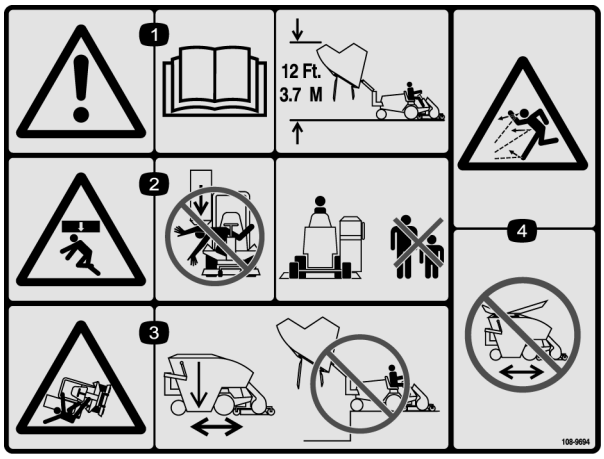
- Remove key from ignition switch to prevent accidental starting of the engine when servicing, adjusting, or storing the machine.
- Stay away from hopper and hopper linkage during operation.
- Do not walk under hopper or service machine unless hopper is fully raised and empty, with hydraulic lines disconnected at quick couplers or fully lowered.
- Do not remove any hydraulic line unless hopper is fully lowered or fully raised and empty.
- If major repairs are ever needed or assistance is desired, contact an Authorized TORO Distributor.
- To reduce potential fire hazard, keep the engine free of excessive grease, grass, leaves, and accumulations of dirt.
- Make sure machine is in safe operating condition by keeping nuts, bolts, and screws tight. Check all cutting unit blade mounting bolts frequently to assure they are torqued to proper specifications (See Cutting Deck Operator's Manual).
- Make sure all hydraulic line connectors are tight, and all hydraulic hoses and lines are in good condition before applying pressure to the system.
- Keep body and hands away from pin hole leaks or nozzles that eject hydraulic fluid under high pressure. Use paper or cardboard, not hands, to search for leaks. Hydraulic fluid escaping under pressure can have sufficient force to penetrate skin and do serious damage. If fluid is ejected into the skin, it must be surgically removed within a few hours by a doctor familiar with this form of injury or gangrene may result.
- Before disconnecting or performing any work on the hydraulic system, all pressure in system must be relieved by stopping engine and lowering implement to the ground.

- If the engine must be running to perform maintenance or an adjustment, keep clear of PTO shaft, cutting unit blades, and other moving parts.
- At the time of manufacture, the machine conformed to safety standards in effect for riding mowers. To ensure optimum performance and continued safety certification of the machine, use genuine TORO replacement parts and accessories. Replacement parts and accessories made by other manufacturers may result in non–conformance with the safety standards, and the warranty may be voided.

Safety and Instruction Decals

107-2931

1. Warning—read the *Operator's Manual.*
2. Crushing hazard—do not get under the hopper as it lowers and keep bystanders a safe distance from the machine.



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1. Warning—read the *Operator's Manual*; 12 ft (3.7 m) clearance is required for dumping.
2. Crushing hazard—do not get under the hopper as it lowers and keep bystanders a safe distance from the machine.
3. Tipping hazard—keep the hopper lowered while moving the machine and do not dump the hopper over a drop-off or embankment.
4. Thrown objects hazard—do not move the machine with the hopper open.

Set Up

LOOSE PARTS CHART

Note: Use this chart as a checklist to assure all parts necessary for assembly have been received. Without these parts, total set-up cannot be completed. Some parts may have already been assembled at factory.

Description	Qty.	Use
Control Valve Assembly	1	Mount Control Valve to Fender
Control Valve Handle	1	
Control Valve Pivot Lever	1	
Socket Head Screw 10–24 x 1–1/4" lg.	1	
Locknut #10–24	1	
Clevis Pin	1	
Cotter Pin	1	
Hydraulic Hose	1	
Capscrew 1/4 – 20 x 2–3/4" lg.	3	
Flange Locknut 1/4–20	3	
Frame Assembly	1	Install Frame Assembly
Hopper Mounting Bracket – Left	1	
Capscrew #10–24	4	
Locknut #10–24	4	
Capscrew 5/16 – 18 x 1–1/4" lg.	4	
Locknut 5/16–18	4	
Hopper Mounting Bracket – Right	1	
Coupler Bracket	1	
Capscrew 3/8 – 16 x 1" lg.	4	
Lockwasher – 3/8	2	
Locknut 3/8 – 16	2	
Hopper Mounting Bracket – Rear	1	
Strap	2	
Capscrew 1/2 – 13 x 1–1/4" lg.	2	
Capscrew 1/2 – 13 x 1–1/2" lg.	2	
Flatwasher 1/2	2	
Locknut 1/2–13	4	
Disconnect Pin	1	
Welded Mounting Pin – Long	1	
Welded Mounting Pin – Short	1	
Self Tapping Screw 1/4–20– x 3/4" lg.	2	
Wire Harness	1	Connect Wire Harness
Cable Ties	6	

Description	Qty.	Use
Hydraulic Hoses	2	
Protective Sleeve	1	
Retaining Ring	1	
Retaining Ring	1	Connect Hydraulic Lines
Dust Plug	1	
Dust Cap	1	
Quick Disconnect (nipple & coupler)	1	
Hopper Assembly	1	
Welded Mounting Pin	2	
Hair Pin Cotter – for 1/2" Shaft	2	Install Hopper Assembly
Hair Pin Cotter – for 1/4" Shaft	2	
Carriage Bolt 5/16 – 18 x 1" lg.	2	
Flange Locknut 5/16–18	2	
Shield – Top	1	
Shield – Wide	1	
Shield – Narrow	1	
Flat – Short	1	Install in Chute Opening of Hopper
Flat – Long	2	
Screw #10 – 24 x 1" lg.	8	
Flange Nut #10 – 24	8	
Wheel Weight	1	
Threaded Rod	2	
Lockwasher	4	
Flatwasher	2	Mount to Left Wheel
Hex Nut	6	
Installation Instructions	1	
Parts Catalog	1	

Note: Refer to Traction Unit Operator's Manual for left side weight requirements.

Optional Equipment

Bracket Kit	Part No. 92–9670
Weight Kit	Part No. 24–5780

Mount the Control Valve

1. Remove the seat and the seat base from the machine.
2. Loosen the fuel tank mounting fasteners so the fuel tank can be elevated enough to gain access to the right fender.
3. Locate the (3) holes in the right fender.
   - If the rear hole is located 3.74 inches from the edge of the fender as shown in figure 1, proceed to to step 4.

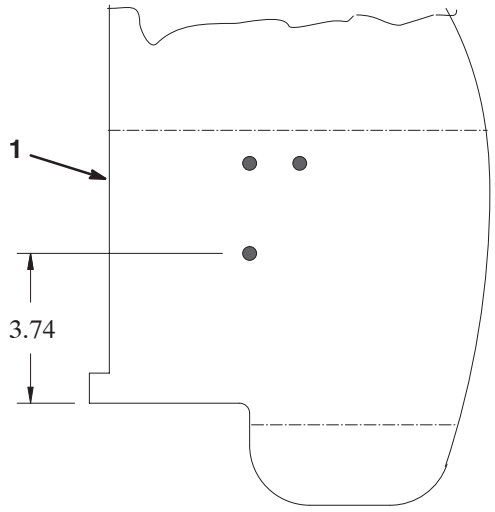

Figure 1

1. Right fender

   - If the rear hole is located 2.74 inches from the edge of the fender as shown in figure 2, the holes must be relocated. Use the dimensions in figure 3 to locate, mark and drill (3) .344 in. dia. holes in the fender.

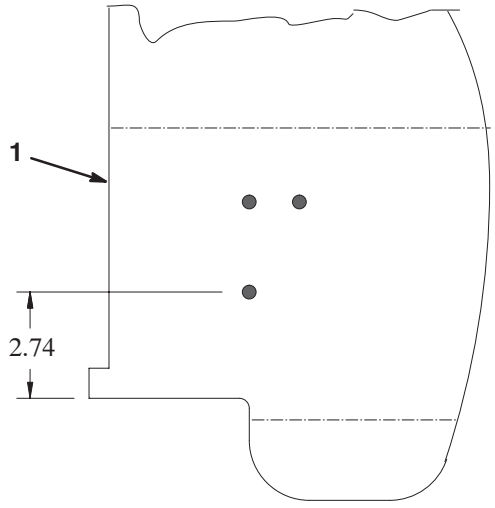

Figure 2

1. Right fender 2.

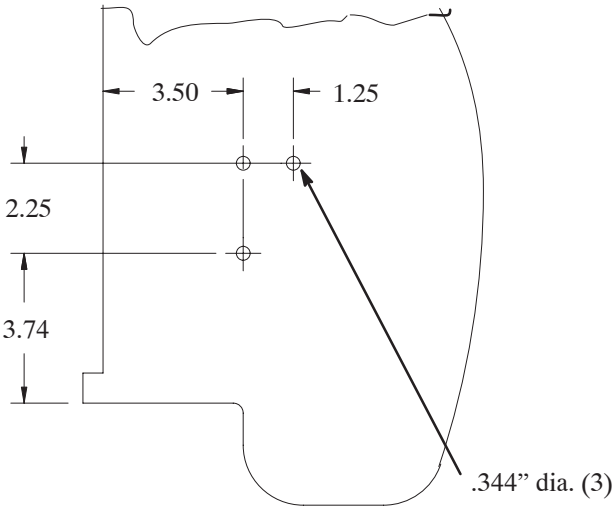

Figure 3

4. Mount the control valve and the pivot lever to the right fender with (3) 1/4–20 x 2–3/4” lg. capscrews and 1/4–20 flange locknuts as shown in figure 4.

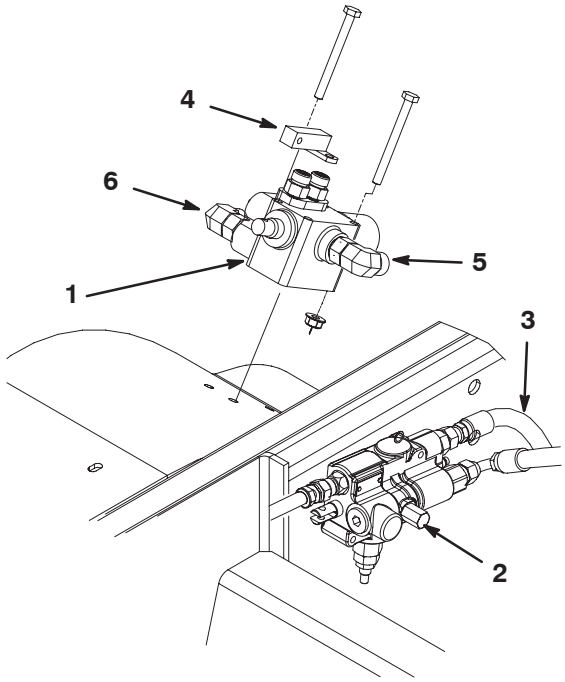

Figure 4

1. Control valve
2. Lift valve
3. Steering hose
4. Pivot lever
5. 90° fitting (operator side of valve)
6. 90° fitting (outer side of valve)

5. Place a drain pan under the lift valve (Fig. 4).
6. Disconnect the steering hose (Fig. 4), from the “P” port (upper rear port) of the lift valve (hose comes from the steering valve).

7. Connect the steering hose (from the lift valve “P” port) to the 90° fitting on the operator side of the control valve (Fig. 4).

8. Connect the hydraulic hose (included in the kit) to the “P” port of the lift valve and to the 90° fitting on the outer side of the control valve (Fig. 4).

9. Connect the (2) hydraulic hose assemblies to the fittings on the top of the control valve (Fig. 5). Make sure the O–rings are in position.

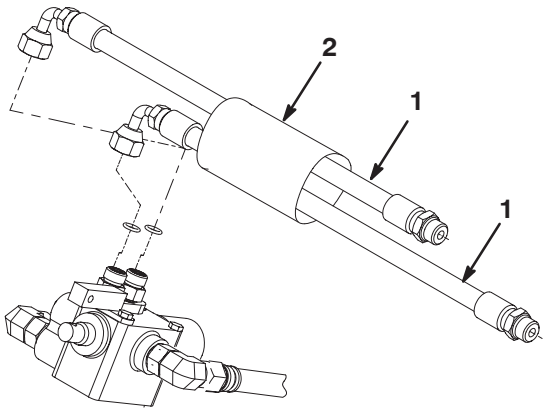

Figure 5

1. Hydraulic hoses
2. Protective sleeve

Note: Make sure the (2) hydraulic hoses are oriented so they point straight out the left side of the control valve, as shown in figure 6. This will eliminate the chance of the hoses interfering with the fuel tank.

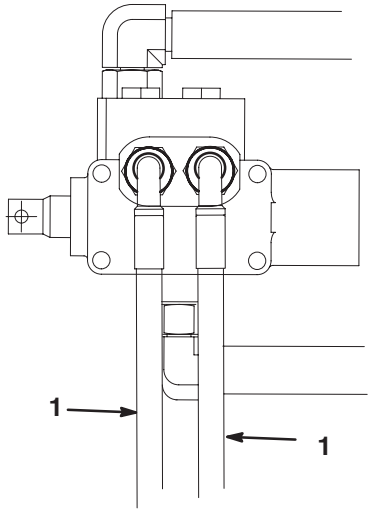

Figure 6

1. Hydraulic hose (2)

10. Install the protective sleeve over the hoses (Fig. 5). The remainder of the hose installation will be completed after the hopper frame is installed.

11. Remove the drain pan from under machine.

12. Remove the knock–out plug, under the decal, in the lower control panel (Fig. 7).

Figure 7

1. Knock–out plug location

13. Mount the control valve handle to the valve spool with a clevis pin and cotter pin. Mount the pivot lever to the handle with a socket head screw and lock nut (Fig. 8).

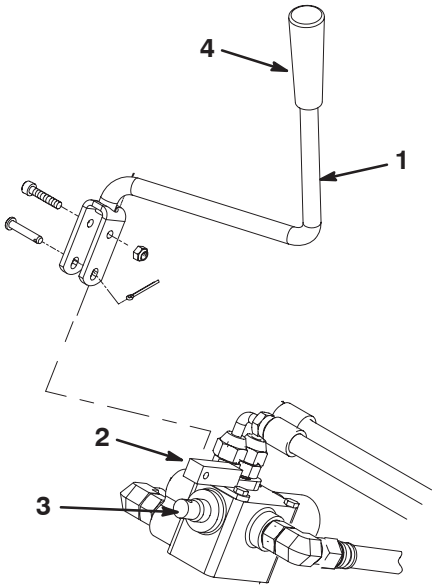

Figure 8

1. Control valve handle
2. Pivot lever
3. Valve spool
4.

14. Install the control knob to the handle (Fig. 8).

15. Install the fuel tank fasteners.

16. Install the seat base and the seat.

Mount the Hopper Frame

Note: Remove the hairpin cotter and pin securing the right side of the ROPS to the pivot bracket. Re–install the pin from the left side of the pivot bracket and secure with the hairpin cotter.

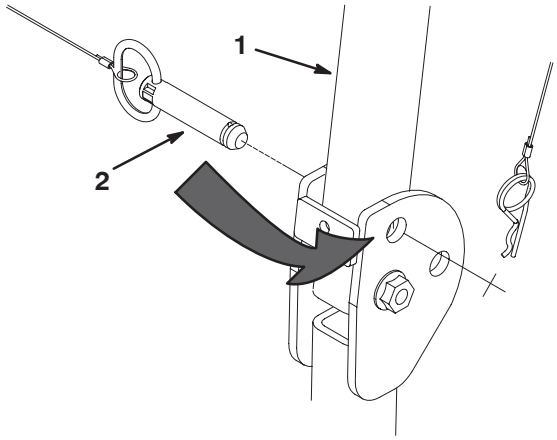

Figure 9

1. ROPS (right side)
2. Pin

1. Using the mounting holes in the left side of the frame, secure the left hopper mounting bracket to the frame with (4) 5/16 – 18 x 1–1/4" capscrews and locknuts (Fig. 10). The notch in the bracket is to fit around the hood latch.

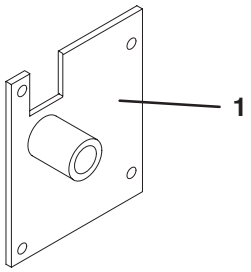

Figure 10

1. Left hopper mounting bracket

2. Secure the top of the right hopper mounting bracket to the right side of the machine with (2) 3/8–16 x 1" lg. capscrews and 3/8" lockwashers (Fig. 11). The notch in the bracket is to fit around the hood latch.

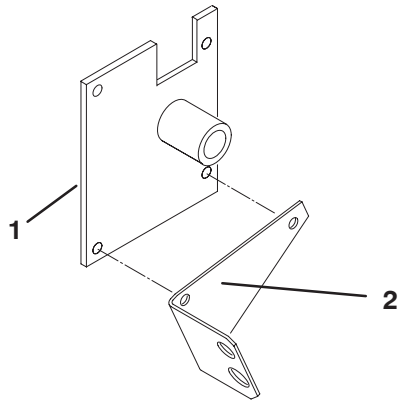

Figure 11

1. Right hopper mounting bracket
2. Coupler bracket

3. Secure the bottom of the bracket and coupler bracket to the frame with (2) 3/8–16 x 1" lg. capscrews and locknuts (Fig. 11).

4. Position the rear hopper bracket on the rear frame, as shown in figure 12, while aligning the (2) bottom mounting holes with the holes in the frame. Using the bracket as a guide, locate, mark and drill the remaining (2) 9/16" dia. holes in the rear frame.

5. Mount the top of the rear hopper bracket to the frame using (2) 1/2–13 x 1–1/4" lg. capscrews, mounting strap and (2) 1/2 – 13 locknuts (Fig. 12). The strap is to be positioned between the frame and the bracket.

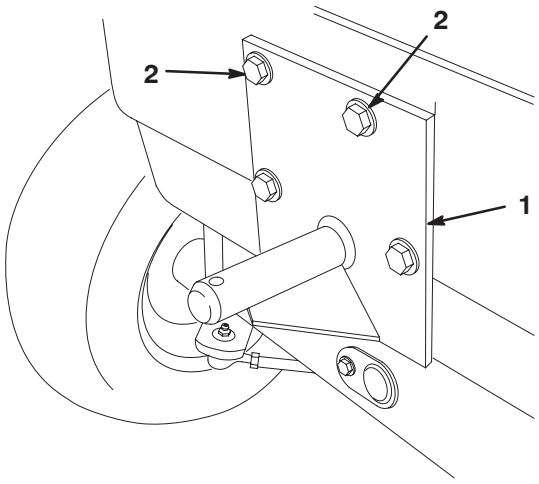

Figure 12

1. Rear hopper mounting bracket
2. Drill the holes for these capscrews

6. Mount the bottom of the bracket to the frame with (2) 1/2–13 x 1–1/2" lg. capscrews, mounting strap, 1/2 flatwashers and locknuts. The strap is to be positioned between the frame and the bracket.

7. From the rear of the machine, slide the front of the hopper frame onto the side mounting bracket pins and the rear of the frame over the rear bracket pin.

8. Secure the rear of the frame to the bracket pin with the disconnect pin (Fig. 13).

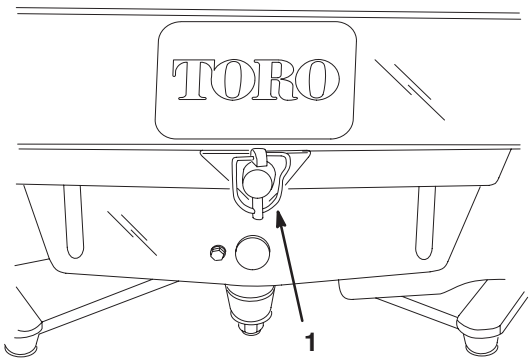

Figure 13

1. Disconnect pin

9. Install the short and the long welded mounting pins through the arm assembly and the main lift arm assembly (Fig. 14). Secure with 1/4–20 x 3/4" lg. self tapping screws.

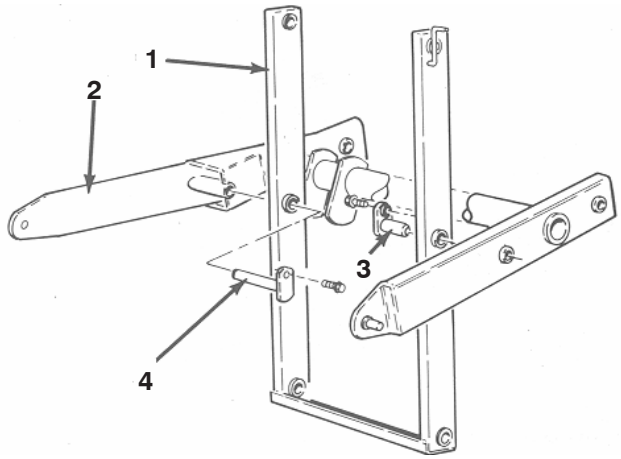

Figure 14

1. Arm assembly
2. Main lift arm assembly
3. Short pin (on left side)
4. Long pin (on right side)

Connect the Hydraulic Hoses

1. Slide the loop end of the dust plug over the end of hydraulic hose from front valve fitting. Insert the female coupler thru the bottom hole in the coupler bracket and secure with a retaining ring.

2. Secure the hose assembly to the female coupler (Fig. 15).

3. Slide the loop end of the dust cap (Fig. 15) over the end of the hydraulic hose coming from the rear valve fitting. Install the male nipple to the hose end.

4. Insert the end of the hose thru the top hole in the coupler bracket (Fig. 15). Secure the hose assembly to the bracket with a retaining ring.

5. Connect the appropriate hydraulic hose from the hopper assembly to the hoses installed to the coupler bracket.

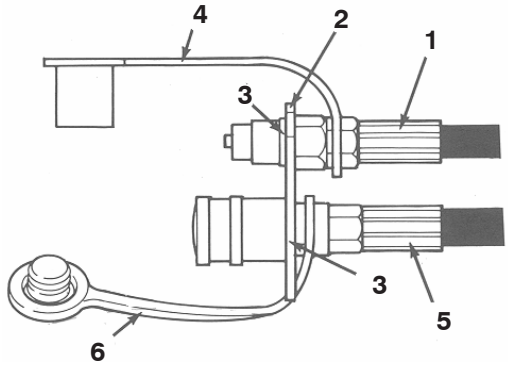

Figure 15

1. Top hydraulic hose
2. Coupler bracket
3. Retaining ring
4. Dust cap
5. Bottom hydraulic hose
6. Dust plug

Connect the Wire Harness

1. Unplug the wire harness connector from the seat switch.

2. Plug the tee end of the hopper switch harness into the seat switch and the seat switch harness.

3. Route the harness to the hopper switch mounted to the frame tube (Fig. 16). Plug the harness into the switch.

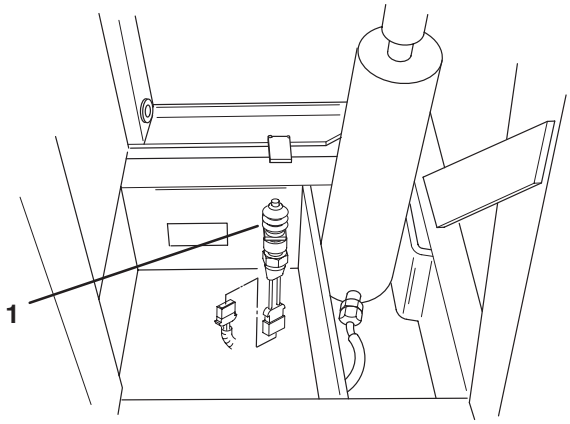

Figure 16

1. Hopper switch

4. Secure the harness to stationary frame components with cable ties.

Mount Hopper Assembly

1. Remove the tie straps securing the tie rods to the hopper arms. Install (2) 5/16 – 18 x 1" lg. carriage bolts and flange nuts in hopper arm holes where tie straps previously were.
2. Slide the hopper assembly (hopper cover to rear) into the side frame while aligning the mounting holes in hopper with the holes in frame (Fig. 17).

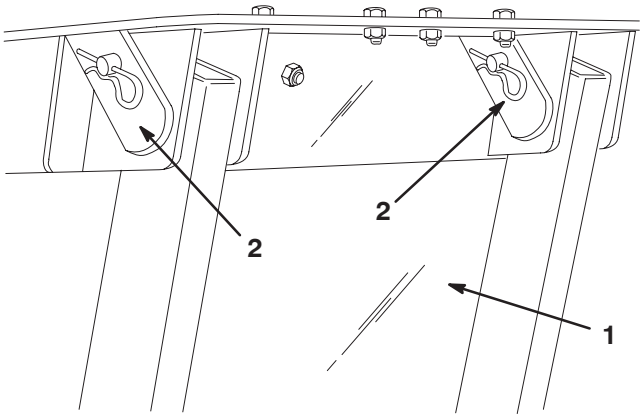

Figure 17

1. Hopper assembly
2. Mounting pins

3. Secure the hopper to the frame with (2) welded mounting pins and hair pin cotters (Fig. 17).
4. Secure the hopper tie rods to the frame with hair pin cotters (Fig. 18).

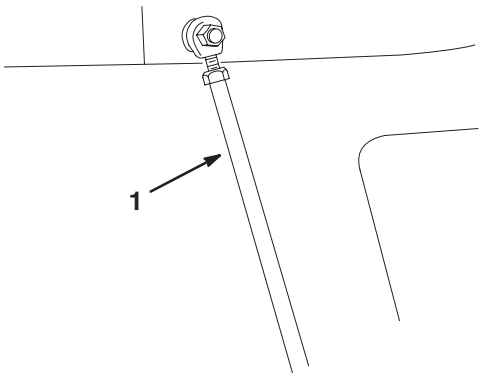

Figure 18

1. Hopper tie rod

5. Adjust the tie rods up or down to make sure the hopper is level with the machine and it does not contact the machine during operation.

Install Front Blowout Shields

Note: The following instructions are as viewed from the front of the machine.

When hopper is used with a 52" Deck

1. Secure the wide shield to the left inside lip of the hopper opening with a long flat, (3) #10 – 24 X 1" lg. screws and #10 – 24 flange nuts (Fig. 19).

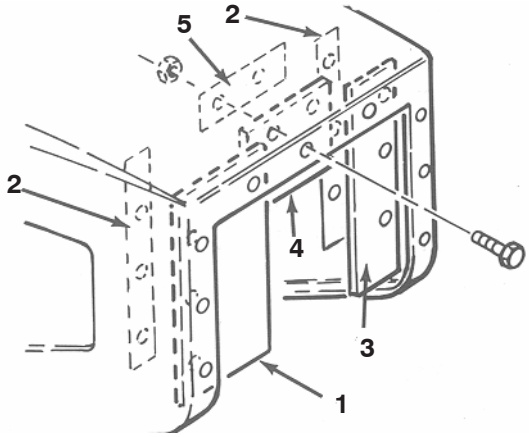

Figure 19

1. Wide shield
2. Long flat
3. Narrow shield
4. Narrow shield
5. Short flat

2. Secure the narrow shield to the right inside lip of the hopper opening with a long flat, (3) #10 – 24 X 1" lg. screws and #10 – 24 flange nuts (Fig. 19).
3. Secure the top shield to the upper inside lip of the hopper opening with a short flat, (2) #10 – 24 X 1" lg. screws and #10 – 24 flange nuts (Fig. 19). Use the (2) mounting holes on the right side of the opening only.

When hopper is used with a 60" Deck

1. Secure the wide shield to the right inside lip of the hopper opening with a long flat, (3) #10 – 24 X 1" lg. screws and #10 – 24 flange nuts (Fig. 20).
2. Secure the narrow shield to the left inside lip of the hopper opening with a long flat, (3) #10 – 24 X 1" lg. screws and #10 – 24 flange nuts (Fig. 20).
3. Cut 1–1/2" of material off the bottom edge of the top shield. Secure the top shield to the upper inside lip of hopper opening with a short flat, (2) #10 – 24 X 1". lg. screws and #10–24 flange nuts (Fig. 20). Use the (2) mounting holes on the left side of the opening only.

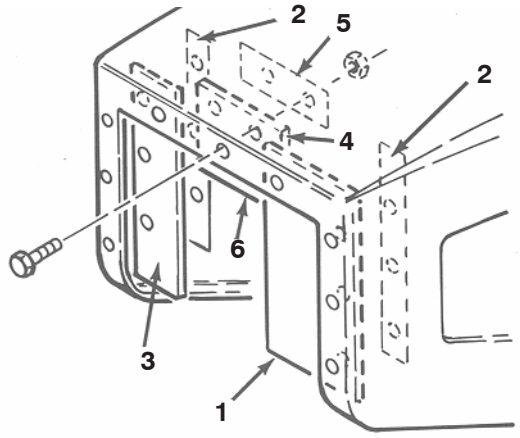

Figure 20

1. Wide shield
2. Long flat
3. Narrow shield
4. Narrow shield
5. Short flat
6. Cut off 1–1/2”

Mount Wheel Weight

1. Measure the depth of the wheel rim. This is achieved by measuring the distance from the hole to the outside edge of the rim.

2. Add 3–7/8” to the measurement attained. This becomes dimension ”A” in figure 21.

3. Thread a hex nut onto each threaded rod to the ”A” dimension.

4. Insert the threaded rods through two opposite holes in the rim and secure them in place with 1/2” lockwashers and hex nuts (Fig. 21).

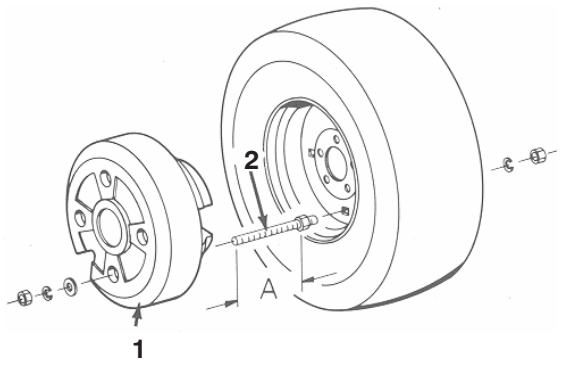

Figure 21

1. Wheel weight
2. Threaded rod

5. Place the wheel weight over the ends of the threaded rods and secure in place with flatwashers, lockwashers and hex nuts (Fig. 21). Do not overtighten the hex nuts or damage to the plastic housing of the weight may occur.

Note: If there is excess thread protruding from the nuts or inside of wheel, cut it off with a hacksaw. The threaded rod must not contact any parts of the machine when the wheel is rotating.

Important Refer to the weight chart in the Traction Unit Operator’s Manual for additional weight requirements.

Operation

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

Before Operating Hopper

1. Start the engine. Raise and lower the hopper several times. Move the control valve lever forward to lower the hopper and in reverse direction to raise the hopper)
2. Check the interlock switch operation as follows:

- Raise the hopper and engage the PTO switch while the engine is running. The engine should stop within 2 seconds. If the engine stops, the switch is operating correctly; thus, proceed to next step. If the engine does not stop, there is a malfunction in the interlock system.
- Raise the hopper and depress the traction pedal while the engine is running and the PTO lever is disengaged. The engine should stop within 2 seconds. If the engine stops, the switch is operating correctly; thus, continue operation. If the engine does not stop, there is a malfunction in the interlock system.

3. Stop the engine. Check for hydraulic leaks. Check the hydraulic fluid level in the front axle and replenish it as necessary. (Refer to the Traction Unit Operator's Manual for specifications).

Hopper Operation

(When used with a 52" or 60" Blower Kit)

1. Move the control valve lever forward to lower the hopper and in the reverse direction to raise the hopper.

Operating Characteristics

Caution

When the grass collector is removed, NEVER operate without the deflector in place.

For the best performance, regulate the traction pedal to keep engine rpm high and somewhat constant. A good rule to follow is: decrease the ground speed as the load on the cutting blade increases; and increase the ground speed as the load on the blade decreases. This allows the engine, working with the transmission, to sense the proper ground speed while maintaining high blade tip speed necessary for good quality–of–cut, vacuuming action, and to throw grass into the hopper. If the blower speed drops too low, plugging may result. Refer to the Cutting Unit and Traction Unit Operator's Manual for operation of each.

Caution

Use care to avoid a collision between the hopper and any stationary objects. Always trim with the left side of the cutting unit.

1. Inflate all the tires on the traction unit to 18–20 psi.
2. This grass collector is designed for use in wet or dry conditions. Do not collect extremely long grass as the hopper will fill too quickly.
3. When collecting wet, heavy grass, some clippings may not be thrown completely through the chute. The hole in the bottom of the chute allows these clippings to drop out without plugging the chute. When this happens, reduce ground speed.

Caution

Never place hands or feet in chute, blower, or cutting unit.

4. The bumper which protects the blower housing doesn't extend far enough to eliminate the chance of the hopper or hopper frame striking a stationary object. Stay far enough away from obstructions to avoid collisions. Trim with the left side of the cutting unit only.
5. While operating, check frequently for excessive clippings left on the turf or uncut grass. If those conditions occur, the blower or cutting unit may be plugged. Stop the unit, disengage the PTO, set the brake and shut off the ignition. Check for obstructions in the chute, blower or cutting unit. Clear any obstruction using a stick or similar tool. Check blower belt tension. If slipping, readjust.
6. The grass collector hopper is designed to exhaust air beside the chute. This allows the hopper to fill completely without decreasing performance. Grass will fall through the opening in the front of the hopper when hopper is full. Immediately disengage the power take off and empty the hopper.
7. Cut the grass often, especially when the turf growth is rapid. If shorter turf is desired, cut the grass again. Overlap the swaths to produce an even cutting pattern.

Important When transporting, hopper must be in down position with rear cover latched over large cover.

Hopper & Frame Removal

1. Stop the unit, disengage the PTO, set the brake and shut off the ignition.
2. Move the hopper control valve lever forward and reverse a few times to release the pressure in the hydraulic system.
3. Disconnect the hydraulic line quick couplers.
4. Remove the (2) hair pin cotters securing the tie rods to the frame.
5. Remove the (2) welded mounting pins and hair pin cotters securing the hopper to the frame. Remove the hopper from the frame.
6. Disconnect the wire harness from the switch on the hopper frame or seat and remove from the traction unit. Keep harness with hopper.

Note: The hopper frame is heavy. Support the frame when removing it or have a helper assist you.

7. Remove the disconnect pin securing the rear of the frame to the machine. Slide the frame off the machine.
8. To prevent the contamination of the hydraulic lines, connect the hopper lines together.
9. Insert the dust caps over the hydraulic fittings on the machine.

Maintenance

Adjusting the Rear Cover Latch

1. Adjust the latch assembly (Fig. 22) up or down if the cover does not seal properly or if the cover does not latch when operating.

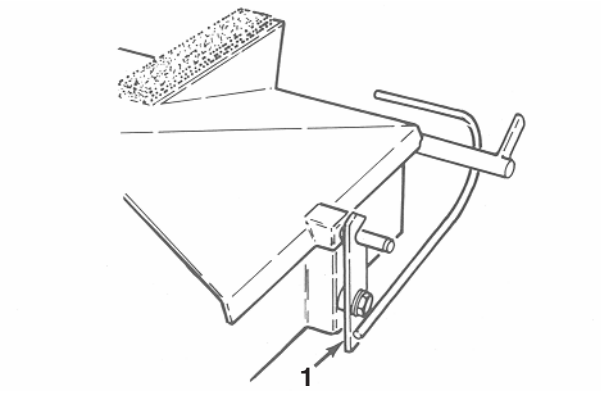

Figure 22

1. Latch assembly

Caution

Never work on hopper unless it is in the lowered position.

General Practices

1. Keep the unit clean, checking that engine is free of dirt and chaff. Make sure all fasteners are tight. Check the deflectors, baffles and shields for wear and replace as needed.
2. Clean grass clippings from the hopper, chute, blower and cutting unit after each use. Wash the underside of the cutting unit daily with a hose. An excessive buildup of clippings will impair the collection system performance.
3. Refer to Cutting Unit and Traction Unit Operator's Manuals for service requirements of each.

Lubrication

After every 25 hours of operation, grease the cylinder and all pivot points with No. 2 multi–purpose lithium base grease. There are (8) grease fittings at various pivot points and (1) fitting on each end of cylinder (Fig. 23).

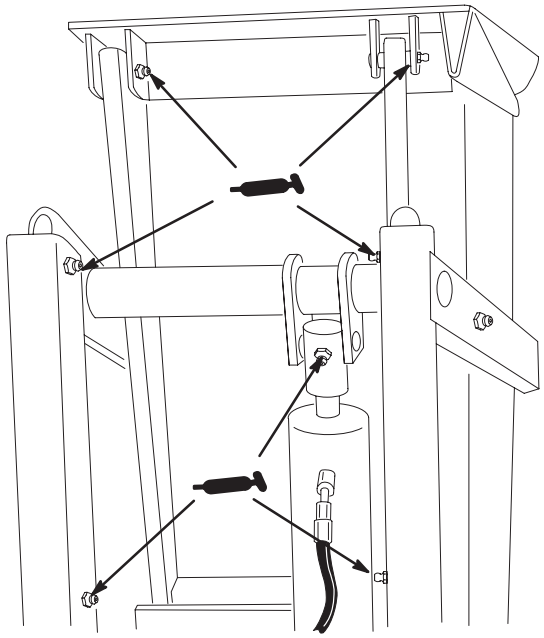

Figure 23

The Toro General Commercial Products Warranty

A Two-Year Limited Warranty

Conditions and Products Covered

The Toro Company and its affiliate, Toro Warranty Company, pursuant to an agreement between them, jointly warrant your Toro Commercial Product ("Product") to be free from defects in materials or workmanship for two years or 1500 operational hours*, whichever occurs first. Where a warrantable condition exists, we will repair the Product at no cost to you including diagnosis, labor, parts, and transportation. This warranty begins on the date the Product is delivered to the original retail purchaser.

* Product equipped with 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
Toro Warranty Company
8111 Lyndale Avenue South
Bloomington, MN 55420-1196
952-888-8801 or 800-982-2740
E-mail: commercial.service@toro.com

Owner Responsibilities

As the Product owner, you are responsible for required maintenance and adjustments stated in your operator's manual. Failure to perform required maintenance and adjustments can be grounds for disallowing a warranty claim.

Items and Conditions Not Covered

Not all product failures or malfunctions that occur during the warranty period are defects in materials or workmanship. This express 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, modified, or unapproved accessories
- Product failures which result from failure to perform required maintenance and/or adjustments
- Product failures which result from operating the Product in an abusive, negligent or reckless manner
- Parts subject to consumption through use unless found to be defective. Examples of parts which are consumed, or used up, during normal Product operation include, but are not limited to, blades, reels, bedknives, tines, spark plugs, castor wheels, tires, filters, belts, and certain sprayer components such as diaphragms, nozzles, and check valves, etc.
- Failures caused by outside influence. Items considered to be outside influence include, but are not limited to, weather, storage practices, contamination, use of unapproved coolants, lubricants, additives, or chemicals, etc.
- Normal "wear and tear" items. 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, etc.

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 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 factory remanufactured parts rather than new parts for some warranty repairs.

General Conditions

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

Neither The Toro Company nor Toro Warranty Company is 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 engine 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 printed in your operator's manual or contained in the engine manufacturer's documentation for details.

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 the Toro importer. If all other remedies fail, you may contact us at Toro Warranty Company.

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