



44", 48" and 52" Twin Soft Bagger

Z100 and Z400 Series Z Master

Model No. 78507—Serial No. 250000351 and Up

Operator's Manual

Contents

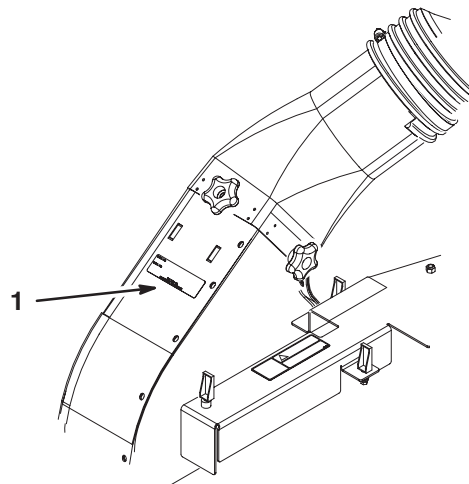
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Introduction

Read this manual carefully to learn how to operate and maintain your product properly. The information in this manual can help you and others avoid injury and product damage. Although Toro designs and produces safe products, you are responsible for operating the product properly and safely.

You may contact Toro directly at www.Toro.com for product and 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 Dealer or Toro Customer Service and have the model and serial numbers of your product ready. Figure 1 illustrates the location of the model and serial numbers on the product.



m-6231

Figure 1

1. Location of the model and serial numbers

Write the product model and serial numbers in the space below:

Model No. _____
Serial No. _____

This manual identifies potential hazards and has special safety messages that help you and others avoid personal injury and even death. **Danger**, **Warning**, and **Caution** are signal words used to identify the level of hazard. However, regardless of the hazard, be extremely careful.

Danger signals an extreme hazard that *will* cause serious injury or death if you do not follow the recommended precautions.

Warning signals a hazard that *may* cause serious injury or death if you do not follow the recommended precautions.

Caution signals a hazard that may cause minor or moderate injury if you do not follow the recommended precautions.

This manual uses two other words to highlight information.

Important calls attention to special mechanical information and **Note:** emphasizes general information worthy of special attention.

Safety

The following list contains safety information specific to Toro products and other safety information you must know.

- Become familiar with the safe operation of the equipment, with the operator controls, and safety signs.
- Use extra care with grass catchers or other attachments. These can change the operating characteristics and the stability of the machine.
- Do not use a grass catcher on steep slopes. A heavy grass catcher could cause loss of control or overturn the machine.
- Slow down and use extra care on hillsides. Be sure to travel in the recommended direction on hillsides. Turf conditions can affect the machine's stability. Use extreme caution while operating near drop-offs.
- Keep all movement on slopes slow and gradual. Do not make sudden changes in speed, directions or turning.
- The grass catcher can obstruct the view to the rear. Use extra care when operating in reverse.
- Use care when loading or unloading the machine into a trailer or truck
- Never operate with the discharge deflector raised or removed and never altered, unless using a grass catcher or mulching baffles.
- Keep hands and feet away from moving parts. Do not make adjustments with the engine running.
- Stop on level ground, disengage drives, set the parking brake, shut off the engine before leaving the operator's position for any reason including emptying the grass catcher or unclogging the chute.
- If you remove the grass catcher, be sure to install any discharge deflector or guard that might have been removed to install the grass catcher. Do not operate the mower without either the entire grass catcher or the grass deflector in place.
- **Turn off the engine and wait for all moving parts to stop before removing the grass catcher or unclogging the chute.**
- Do not use your hands to unclog the chute, blower or bagger.
- Do not leave grass in grass catcher for extended periods of time.
- Grass catcher components are subject to wear, damage and deterioration, which could expose moving parts or allow objects to be thrown. Frequently check components and replace with manufacturer's recommended parts, when necessary.
- Do not leave grass or debris in grass catcher while transporting the machine.

Safety and Instruction Decals



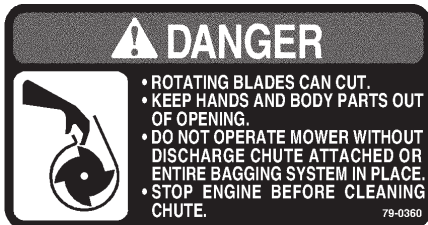
Safety decals and instructions are easily visible to the operator and are located near any area of potential danger. Replace any decal that is damaged or lost.



79-0350



1-653554



79-0360



106-0871



80-8040



88-8950



98-4387

1. Warning—wear hearing protection.



93-1122

Setup

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

Loose Parts

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

Step	Description	Qty.	Use
1	Bagger bracket	1	Installing bagger bracket (All Z100 Mowers and Z400 Mowers with 44in and 48in Mower Decks)
	Bolt, 5/16 x 1 inch	8	
	Flange nut, 5/16 inch	8	
2	Bagger bracket	1	Installing bagger bracket (Z400 Mowers with 52in Mower Decks)
3	Blower assembly	1	Installing the blower assembly
4	Blower belt cover	1	Installing the bagger belt and idler spring
	Idler spring	1	
	Bagger belt	1	
5	Hood assembly	1	Installing the hood assembly and bags
	Bag	2	
	Clevis pin	2	
	Hairpin cotter	2	
6	Bagger tube	1	Installing the bagger tube
	Clamp	1	
	Knob	2	
	Blower adapter	1	
7	No parts needed	—	Checking the tire pressure

Important Bagger model 78507 MUST be paired with either model 78508, 78509, 78511, or 78512 finishing kit. Failure to match the appropriate finishing kit with the appropriate bagger will result in misalignment of the blower assembly relative to the deck, as well as misalignment of the latch components, and potential interference between the blower inlet shelf and the deck baffles.

Before Installation

Prepare the Mower

Perform the following procedure to prepare the mower for attaching the blower and finishing kit.

1. Disengage the PTO, move the motion control levers to the neutral locked position and set the parking brake.
2. Stop the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Clean the mower of any debris on the deck or rear of mower to ease installation.

Positioning the Flow Baffle (Z400 Mowers only)

The middle position or Position B is recommended for bagging.

Move the adjustable flow baffle to the middle position. To adjust the baffle refer to your mower *Operator's Manual*.

Position B

Middle Position

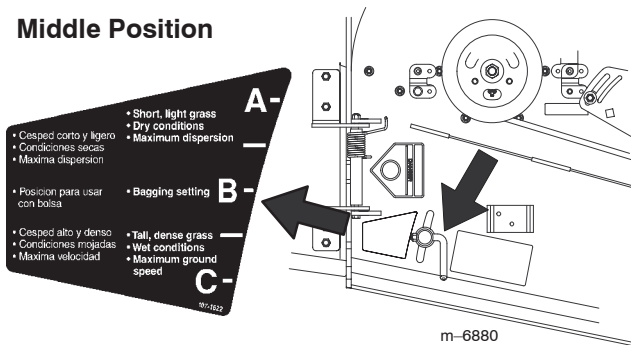


Figure 2



Parts needed for this step:

- 1 Bagger bracket
- 8 Bolts, 5/16 x 1 inch
- 8 Flange nuts, 5/16 inch

Installing the Bagger Bracket (All Z100 Mowers and Z400 Mowers with 44in and 48in Mower Decks)

Note: Determine if machine is equipped with a back mount or back and side mount heat shield. If machine is equipped with a back mount heat shield (Fig. 4), use steps 1 thru 3. If machine has a back and side mount heat shield (Fig. 5), proceed to step 4.

1. Remove the rear heat shield (Fig. 3). Discard the bolts and nuts.

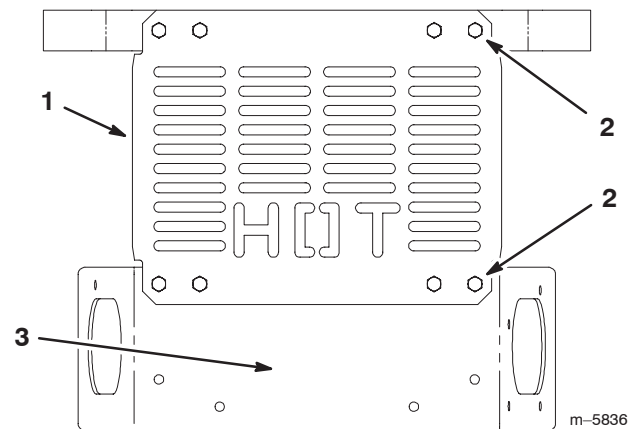


Figure 3

1. Rear heat shield
2. Bolts—remove and discard
3. Rear bumper

2. Position the bagger bracket behind the engine guard straps and rear bumper (Fig. 4).

3. Install the bagger bracket and rear heat shield to the engine guard straps and rear bumper with 8 bolts (5/16 x 1 inch) and 8 flange nuts (5/16 inch) (Fig. 4).

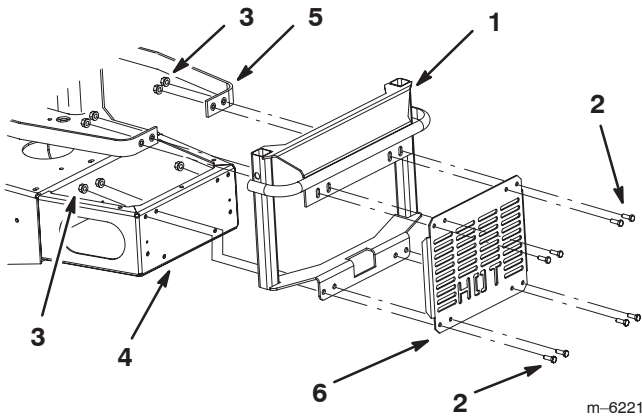


Figure 4

- | | |
|--------------------------|-----------------------|
| 1. Bagger bracket | 4. Rear bumper |
| 2. Bolt, 5/16 x 1 inch | 5. Engine guard strap |
| 3. Flange nut, 5/16 inch | 6. Rear heat shield |

- Remove the 8 bolts and nuts securing the rear of the heat shield to the engine straps and rear bumper (Fig. 5). Discard the bolts and nuts.
- Remove the 4 bolts, washers and nuts securing the sides of the heat shield to the engine straps, tailpipe guard and bumper. Retain the heat shield and these bolts, washers and nuts (Fig. 5).

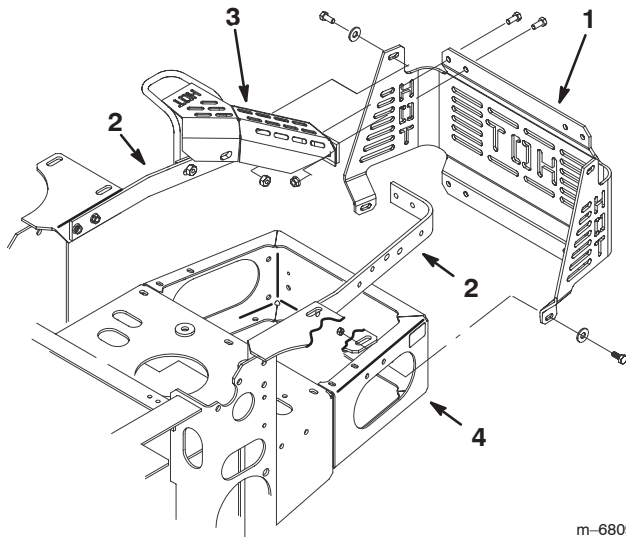


Figure 5

- | | |
|------------------|-------------------|
| 1. Heat shield | 3. Tailpipe guard |
| 2. Engine straps | 4. Rear bumper |

Note: Install the heat shield into the bagger bracket from the **front** of the bracket.

- At an angle, insert the top of the heat shield under the bar of the bagger bracket. Position the bagger bar as far as possible into the heat shield notches (Fig. 6).

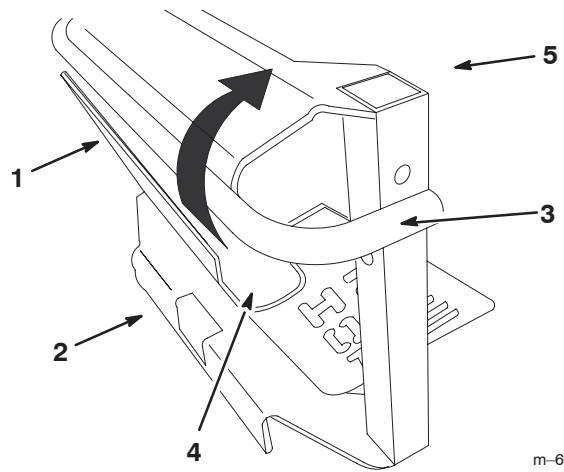


Figure 6

- | | |
|-------------------|----------------------------|
| 1. Heat shield | 4. Heat shield notch |
| 2. Bagger bracket | 5. Front of bagger bracket |
| 3. Bar | |

- With the bagger bar in the heat shield notches, push the bottom of the heat shield towards the rear and past the back of the bagger bracket (Fig. 7).

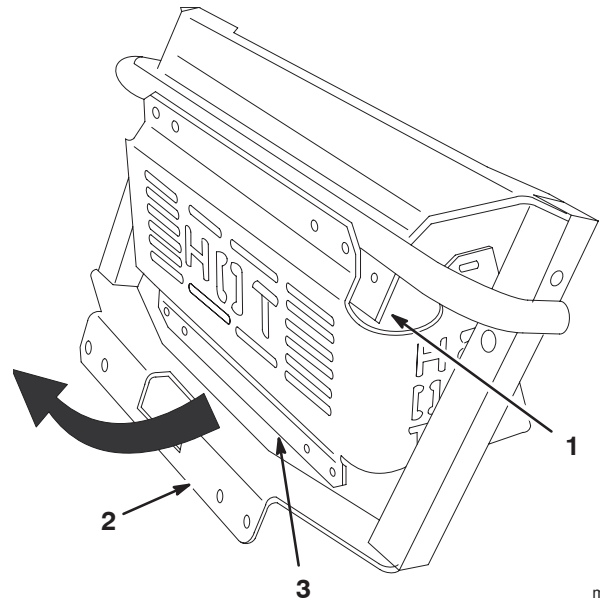


Figure 7

- | | |
|----------------------|--------------------------|
| 1. Heat shield notch | 3. Bottom of heat shield |
| 2. Back of bagger | |

- Slide the heat shield down until the holes align with the bagger bracket holes (Fig. 8).

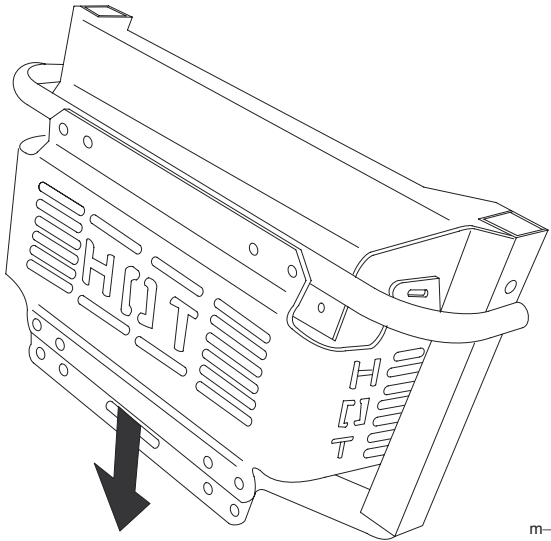
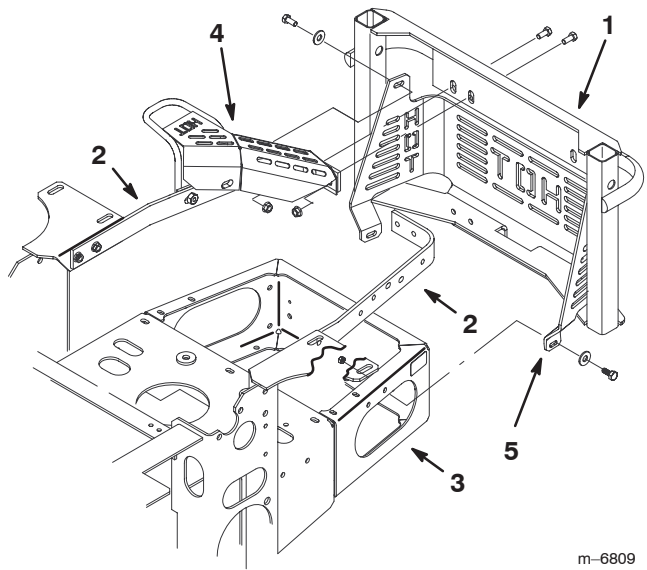


Figure 8

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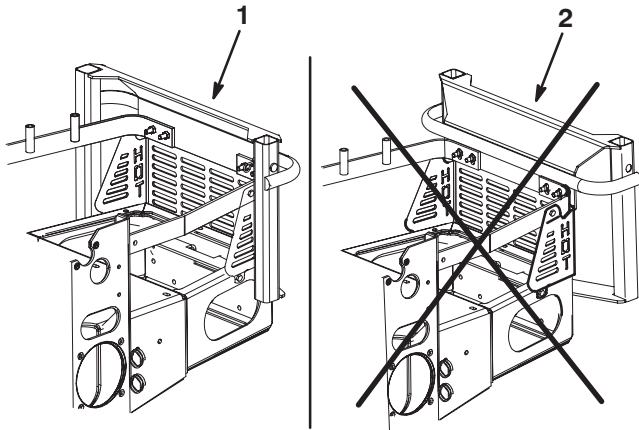


m-6809

Figure 10

- | | |
|-------------------|-------------------|
| 1. Bagger bracket | 4. Tailpipe guard |
| 2. Engine straps | 5. Heat shield |
| 3. Rear bumper | |

Note: Make sure to install the bagger bracket correctly, as shown in figure 9.



m-6805

Figure 9

- | | |
|---------------------|-----------------------|
| 1. Correct position | 2. Incorrect position |
|---------------------|-----------------------|

- Install the bagger bracket and heat shield to the engine straps and rear bumper with 8 new bolts (5/16 x 1 inch) and 8 new flange nuts (5/16 inch) (Fig. 10).
- Install the bagger bracket and heat shield to the engine straps, tailpipe guard and rear bumper with 4 bolts, 4 washers and 4 flange nuts, previously removed (Fig. 10).

Step
2

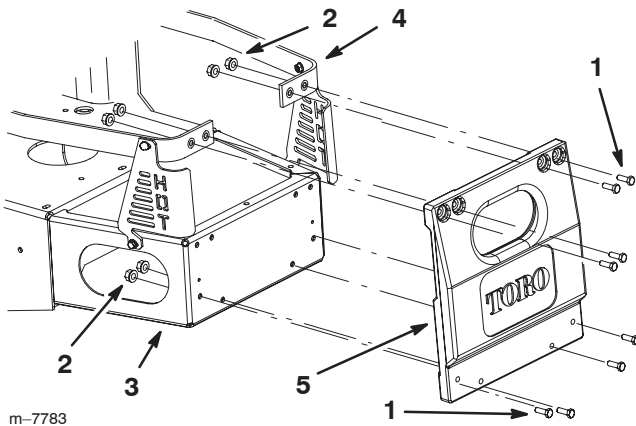
Parts needed for this step:

- 1 Bagger bracket

**Installing the Bagger Bracket
(Z400 Mowers with 52in Mower
Decks)**

Note: Use these instructions if machine is equipped with a rear weight.

1. Remove the rear weight from the back of the machine (Fig. 11). Save the bolts and flange nuts.

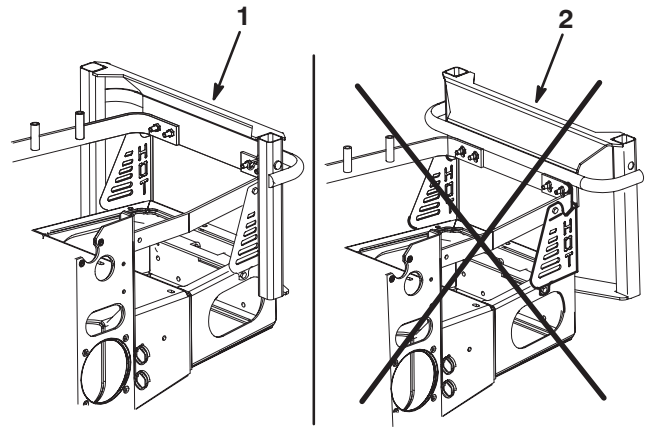


m-7783

Figure 11

- | | |
|----------------|-----------------------|
| 1. Bolt | 4. Engine guard strap |
| 2. Flange nut | 5. Rear weight |
| 3. Rear bumper | |

Note: Make sure to install the bagger bracket correctly, as shown in Figure 12.

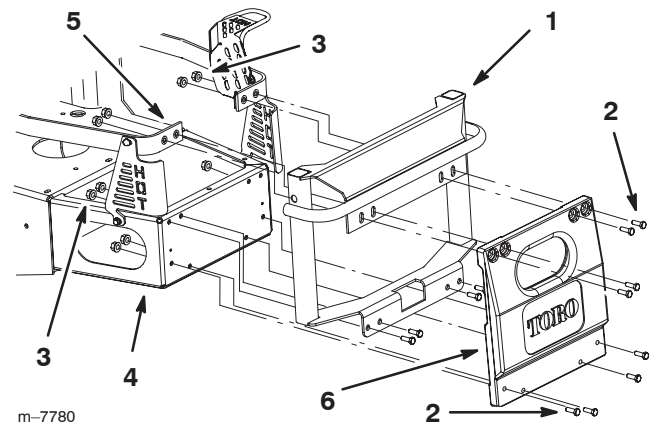


m-7782

Figure 12

1. Correct position
2. Incorrect position

2. Install the bagger bracket and weight to the engine straps, tailpipe guard, and rear bumper with the 8 existing bolts and nuts previously removed (Fig. 13).



m-7780

Figure 13

- | | |
|-------------------|-----------------------|
| 1. Bagger bracket | 4. Rear bumper |
| 2. Bolt | 5. Engine guard strap |
| 3. Flange nut | 6. Rear weight |

Step

3

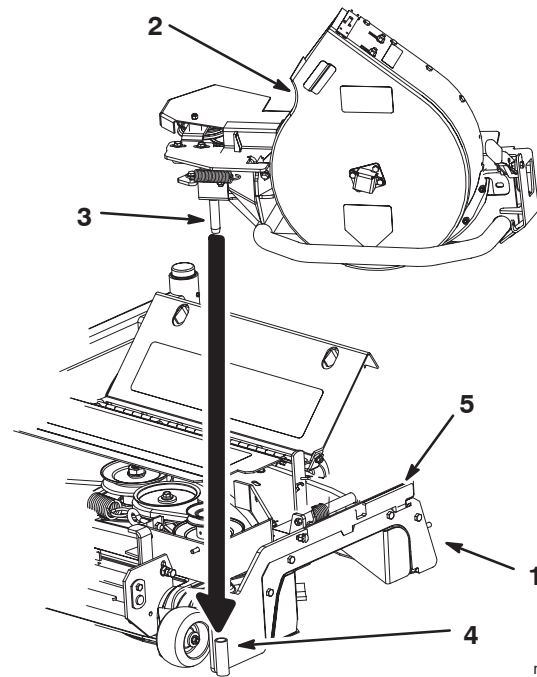
Parts needed for this step:

- 1 Blower assembly

Installing the Blower Assembly

Important Make sure the mounting plate is installed to the mower. Refer to the Finishing Kit.

1. Disengage the PTO, set the parking brake, and chock or block the drive wheels.
2. Turn off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Slide the blower assembly peg into the hole on the mounting plate (Fig. 14).



m-8256

Figure 14

- | | |
|------------------------|------------------------|
| 1. Mower | 4. Mounting plate hole |
| 2. Blower assembly | 5. Mounting plate |
| 3. Blower assembly peg | |

4. Close the blower assembly. (Fig. 18).
5. Check if the latch **fully engages** the front latch peg. Refer to Checking and Adjusting the Blower Latch on page 22.

Note: There must **not** be any gap between the blower assembly and the mounting plate.

Step

4

Parts needed for this step:

- 1 Blower belt cover
- 1 Idler spring
- 1 Bagger belt

Installing the Bagger Belt and Idler Spring

Important The idler spring and bagger belt need to be installed together.

This will create slight tension on both the spring and belt while installing them.

Installing the Idler Spring

1. Disengage the PTO, set the parking brake, and chock or block the drive wheels.
2. Turn off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Open the blower assembly (Fig. 17).
4. Slide the spring into the blower eye bolt (Fig. 15).
5. Install the spring into the idler arm eye bolt (Fig. 15).
6. Close the blower assembly (Fig. 18).

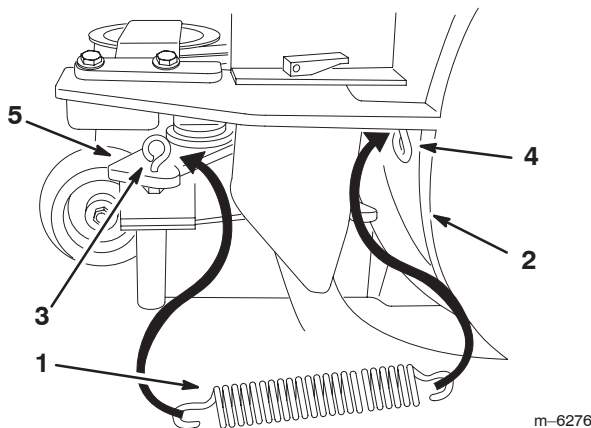


Figure 15

- | | |
|-----------------------|--------------------|
| 1. Idler spring | 4. Blower eye bolt |
| 2. Blower assembly | 5. Idler arm |
| 3. Idler arm eye bolt | |

Installing the Bagger Belt

Note: For 44 inch (112 cm) mowers, make sure the right rear corner of the cover side plate is modified. Refer to the mower Finishing Kit.

1. Disengage the PTO, set the parking brake, and chock or block the drive wheels.

2. Turn off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Lower the deck to the 3 inch height-of-cut.
4. Push down on the front latch (colored red) and open the blower assembly (Fig. 17).
5. **For 52 inch mowers only**, loosely install the belt cover, insert the bagger belt under the belt cover and onto the top mower pulley. Secure the belt cover latch (Fig. 16).

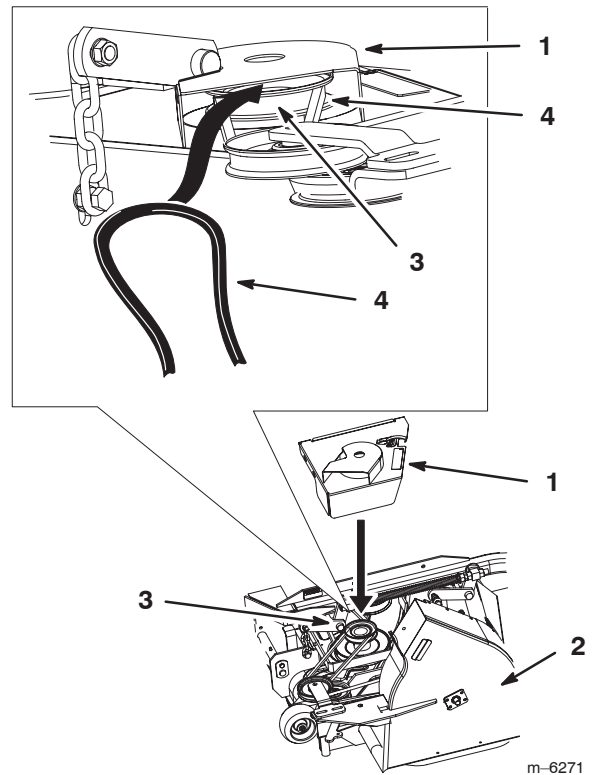


Figure 16

- | | |
|-----------------------------|---------------------|
| 1. 52 inch mower belt cover | 3. Top mower pulley |
| 2. Blower assembly | 4. Bagger belt |

6. Route the bagger belt around the **top pulley of the mower pulley assembly** (Fig. 17).
7. Feed the belt between the idler pulleys (Fig. 17).
8. Route the bagger belt around the **spring-loaded idler pulley** (Fig. 17). The backside of belt will be touching the pulley.
9. Route the bagger belt around the **fixed idler pulley** (Fig. 17).
10. Route the bagger belt around the **blower pulley** (Fig. 17).

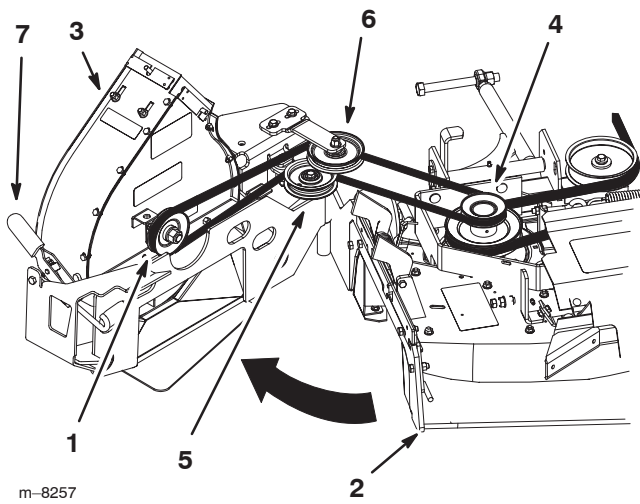


Figure 17

- | | |
|--|--|
| 1. Blower pulley | 5. Spring loaded idler pulley (belt back side touching pulley) |
| 2. Mower | 6. Fixed idler pulley |
| 3. Blower assembly | 7. Front latch |
| 4. Top pulley of mower pulley assembly | |

11. Close the blower assembly and ensure the blower front latch engages onto the front peg (Fig. 18).

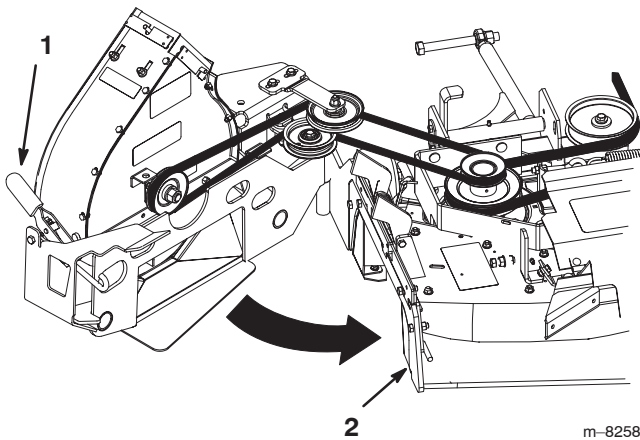


Figure 18

- | | |
|-----------------|--------------|
| 1. Blower latch | 2. Front peg |
|-----------------|--------------|

12. Adjust the bagger belt tension. Refer to Adjusting the Bagger Belt Tension on page 22.

13. Install the belt cover over the pulley assembly and secure the 3 cover latches into the blower (Fig. 20).

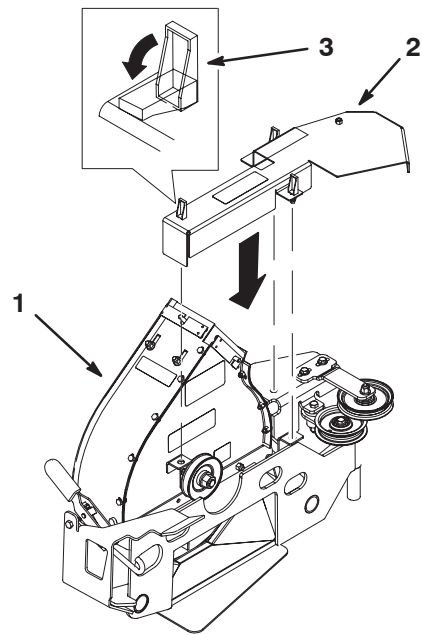


Figure 19

- | | |
|----------------------|----------|
| 1. Blower assembly | 3. Latch |
| 2. Blower belt cover | |

14. For 44 inch (112 cm) mowers, install the new belt cover over the pulley assembly and secure the latch (Fig. 20).

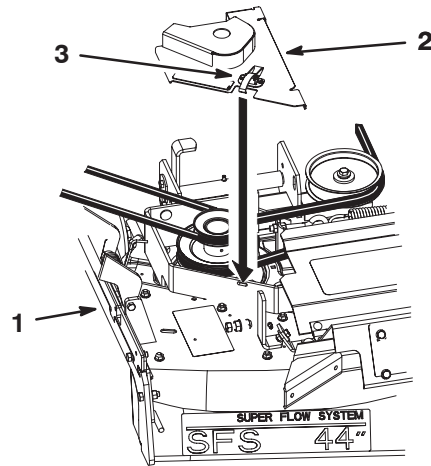


Figure 20

- | | |
|--------------------------------------|----------|
| 1. Mower | 3. Latch |
| 2. 44 inch (112 cm) mower belt cover | |

Step
5

Parts needed for this step:

- 1 Hood assembly
- 2 Bags
- 2 Clevis pins
- 2 Hairpin cotter pins

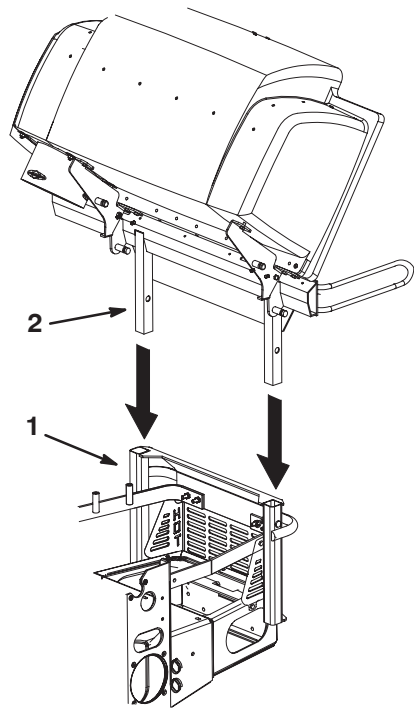
Installing the Hood Assembly and Bags

Warning

Components around engine will be hot if the machine has been running. Touching hot components can cause burns.

- Do not touch engine components when hot.
- Allow engine to cool before performing maintenance.

1. Install the hood assembly into the bagger bracket (Fig. 21).

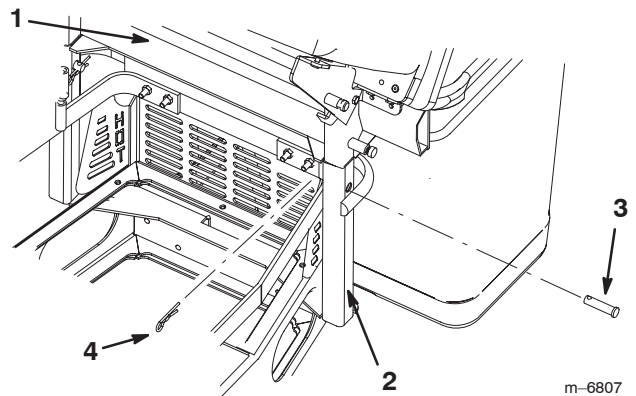


m-6806

Figure 21

1. Bagger bracket
2. Hood assembly

2. Install clevis pins and hairpin cotters into the bagger bracket and hood assembly (Fig. 22).



m-6807

Figure 22

1. Hood assembly
2. Bagger bracket
3. Clevis pin
4. Hairpin cotter

3. Install the bag tab into the notch in the hood assembly (Fig. 23). Do this for both bags.

Note: The bag will rest on the bagger frame (Fig. 23).

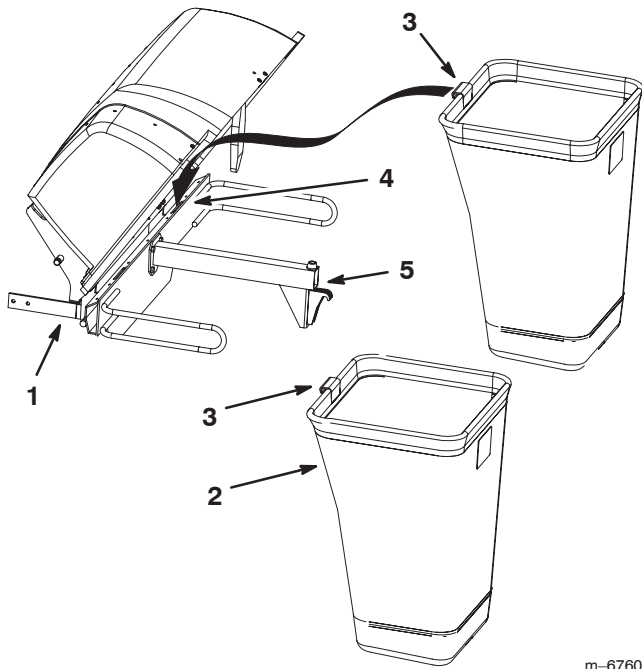


Figure 23

- | | |
|------------------|-----------------|
| 1. Hood assembly | 4. Notch |
| 2. Bag | 5. Bagger frame |
| 3. Bag tab | |

m-6760

4. Lower the bagger hood over the bags.

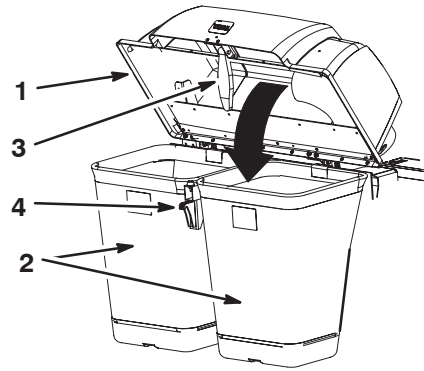


Figure 24

- | | |
|---------|-----------------|
| 1. Hood | 3. Bagger latch |
| 2. Bags | 4. Latch hook |

m-6761

5. Position the bagger latch under the latch hook (Figures 24 and 25).

6. Push down on bagger latch until it locks into place (Fig. 25).

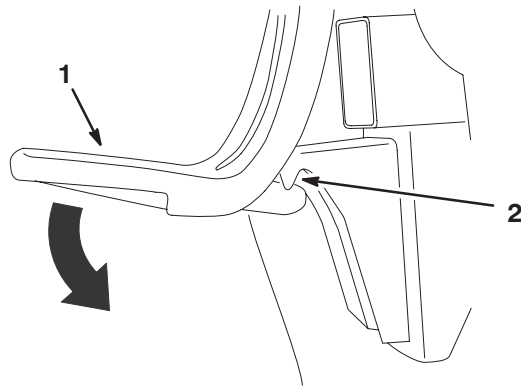


Figure 25

- | | |
|-----------------|---------------|
| 1. Bagger latch | 2. Latch hook |
|-----------------|---------------|

m-6264

Step 6

Parts needed for this step:

- 1 Bagger tube
- 1 Clamp
- 2 Knobs
- 1 Blower adapter

Installing the Bagger Tube

Note: To ease assembly of the bagger tube to the blower adapter, apply soapy water to both the bagger tube and the adapter.

1. Install one end of the tube, 4 to 4-1/2 inches (102 to 114 mm) onto the blower adapter and secure it with a clamp (Fig. 26).

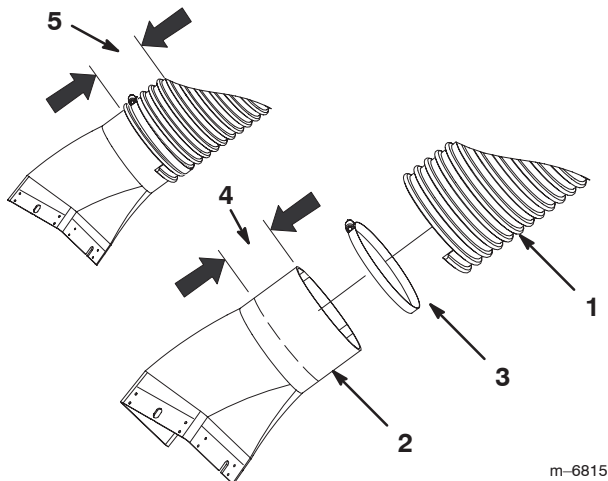
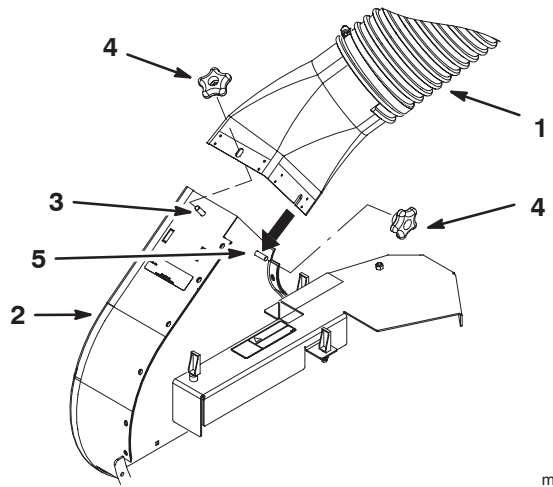


Figure 26

- | | |
|--------------------------------------|--|
| 1. Tube | 5. Tube installed onto the adapter 4 to 4-1/2 inches (102 to 114 mm) |
| 2. Blower adapter | |
| 3. Clamp | |
| 4. 4 to 4-1/2 inches (102 to 114 mm) | |

2. Place the blower adapter over the top blower stud and slide it into the side stud (Fig. 27).
3. Install the knobs onto the top and side stud (Fig. 27). This will secure the lower tube end to the blower assembly.



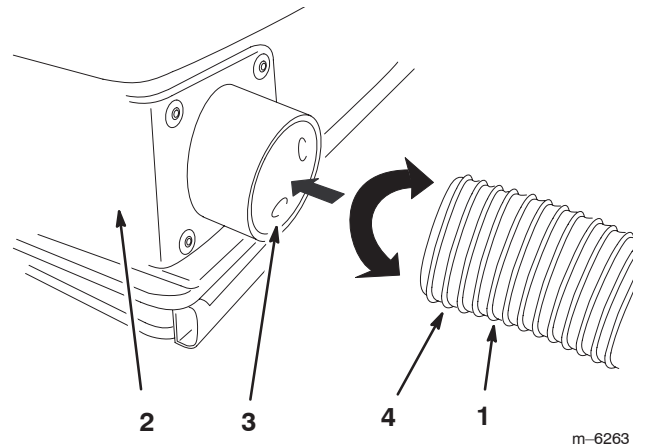
m-6252

Figure 27

- | | |
|--------------------|---------------------|
| 1. Tube | 4. Knob |
| 2. Blower assembly | 5. Side blower stud |
| 3. Top blower stud | |

Note: There are nubs on the inside of the bagger hood that hold the upper end of the bagger tube (Fig. 28).

4. Place the upper tube into the bagger hood (Fig. 28).
5. Move the upper tube back and forth, until at least two ribs engage into the nubs inside the bagger hood (Fig. 28).



m-6263

Figure 28

- | | |
|----------------|---------|
| 1. Tube | 3. Nubs |
| 2. Bagger hood | 4. Ribs |

Step
7

Parts needed for this step:

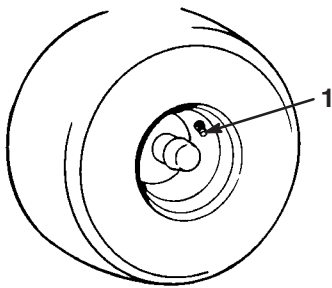
- No parts needed

Checking the Tire Pressure

Note: The tire pressure needs to increase due to the additional weight.

Check and increase the air pressure in the front caster wheels and rear tires (Fig. 29).

Pressure: Rear tires—20 psi (138 kPa)
Front caster wheels—25 psi (172 kPa)



m-1872

Figure 29

1. Valve stem

Check the Level of the Mower

Refer to the mower *Operator's Manual* for the correct procedure.

Operation

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

Important Set the parking brake when leaving the machine unattended, even if just for a few minutes.



Warning



To avoid personal injury, follow these procedures:

- Become familiar with all operating and safety instructions in the operator's manual for your mower before using this attachment.
- Never remove the bagger or bagger tubes while the engine is running.
- Always shut the engine off and wait for all moving parts to stop before clearing an obstruction from the bagging system.
- Never do maintenance or repairs while the engine is running.
- Set the parking brake.



Warning



Without the grass deflector, bagger tubes or complete bagger assembly mounted in place, you and others are exposed to blade contact and thrown debris. Contact with the rotating mower blade(s) and thrown debris will cause injury or death.

- Always install the grass deflector when removing the bagger and changing to side discharge mode.
- If the grass deflector is ever damaged, replace it immediately. The grass deflector routes material down toward the turf.
- Never put your hands or feet under the mower.
- Never try to clear the discharge area or mower blades unless you move the power take off (PTO) to *off* and rotate the ignition key to *off*. Also remove the key and pull the wire off of the spark plug(s).
- Turn off the engine before unclogging the discharge chute.



Caution



Children or bystanders may be injured if they move or attempt to operate the machine while it is unattended.

Always remove the ignition key, set the parking brake and chock or block tires when leaving the machine unattended, even if just for a few minutes.

Positioning the Flow Baffle (Z400 Mowers only)

The middle position or Position B is recommended for bagging.

Move the adjustable flow baffle to the middle position. To adjust the baffle refer to your mower *Operator's Manual*.

Position B

Middle Position

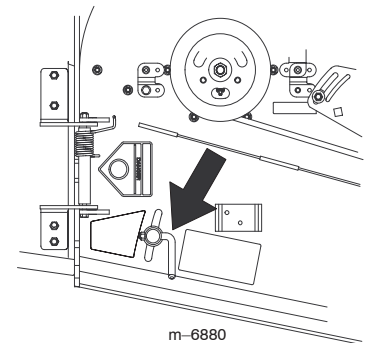


Figure 30

Emptying the Grass Bags

Grass bags are heavy when full. **Be careful when lifting or handling a grass bag that is full.**

1. Disengage the PTO, set the parking brake, and chock or block the tires if on a slope.
2. Unlatch the bagger latch (Fig. 25).
3. Open the bagger hood.
4. Compress the debris into the bags. With both hands, lift up on the bag and unhook it from the bagger bracket.
5. Grab the handle on the bottom of the bag and tip it over to empty the bag (Fig. 31).

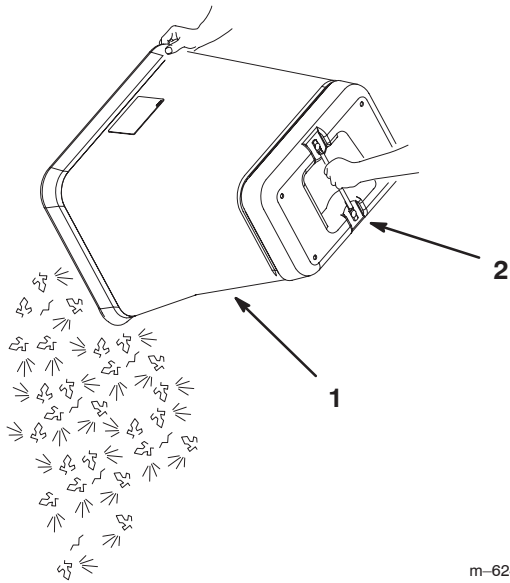


Figure 31

1. Bag
2. Bottom handle

6. Repeat for the other bag.
7. Install the bag tab into the notch in the bagger support frame (Fig. 23). Do this for both bags.
8. Lower the bagger hood over the bags (Fig. 24).
9. Latch the bagger hood (Fig. 25).

Clearing Obstructions From the Bagger System

Danger

When the bagger is in operation, the blower can be rotating and cut off or injure hands.

- Before adjusting, cleaning, repairing and inspecting the blower, and before unclogging the chute, *turn off the engine and wait for all moving parts to stop. Remove the key.*
- Use a stick, *not your hands*, to remove an obstruction from the blower and tube.
- Keep face, hands, feet, and any other part of your body or clothing away from concealed, moving, or rotating parts.

1. Disengage the PTO and set the parking brake.
2. Turn off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Empty the bags.

4. Remove the knobs and then the tube from the blower assembly (Fig. 27).
5. Remove the tube from the bagger hood (Fig. 28).
6. Using a stick or similar object, **not your hands**, to remove and clear the obstruction from the tube assembly.

Note: In most cases, the debris can be shaken out of the tube.

7. If the blower assembly is plugged, unlatch the bagger blower assembly and swing it open (Fig. 17).
8. Using a stick or similar object, **not your hands**, to remove and clear the obstruction from the blower assembly.
9. After you remove the obstruction, install the complete bagger system and resume operation.

Removing the Bagger

Warning



Components around engine will be hot if the machine has been running. Touching hot components can cause burns.

- Do not touch engine components when hot.
- Allow engine to cool before removing the bagger.

1. Disengage the PTO, set the parking brake, and chock or block the drive wheels.
2. Turn off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Remove the knobs and then the tube from the blower assembly (Fig. 27).
4. Remove the tube from the bagger hood (Fig. 28).
5. Unlatch the belt cover over the mower pulley assembly (Fig. 20).
6. Open the blower assembly to release belt tension and remove the bagger belt from the mower (Fig. 17).
7. Remove the blower assembly from the the mounting plate (Fig. 14).
8. If you are changing to side discharge mode, **ensure the grass deflector is installed** and can be lowered into working position.

Using the Grass Deflector

Note: Make sure the grass deflector is installed when the bagger and tubes are removed.

 **Warning** 



Without the grass deflector, bagger tubes or complete bagger assembly mounted in place, you and others are exposed to blade contact and thrown debris. Contact with the rotating mower blade(s) and thrown debris will cause injury or death.

- Always install the grass deflector when removing the bagger and changing to side discharge mode.
- If the grass deflector is ever damaged, replace it immediately. The grass deflector routes material down toward the turf.
- Never put your hands or feet under the mower.
- Never try to clear the discharge area or mower blades unless you move the power take off (PTO) to *off* and rotate the ignition key to *off*. Also remove the key and pull the wire off of the spark plug(s).

1. If the bagger is to be used for a long period of time, leave the grass deflector off the machine. Install the grass deflector when changing to side discharge mode.
2. If the bagger is to be used for a short period of time, leave the grass deflector on the machine. The grass deflector will rest against the belt cover.

Transporting Machines

Do not leave grass or debris in the bagger while transporting the machine.

 **Warning** 

Transporting the machine with grass or debris in the bagger can damage the machine.

Do not leave grass or debris in the bagger while transporting the machine.

Operating and Bagging Tips

Machine Size

Remember that the machine is longer and wider with this attachment installed. By turning too sharply in confined places you may damage the attachment or other property.

Trimming

Always trim with the left side of the mower. Do not trim with the right side of the mower because you could damage the blower assembly and bagging tube.

Cutting Height

For optimum bagging performance, set the deck height—of—cut to remove no more than 2 to 3 inches (51 to 76 mm) or 1/3 of the grass height, which ever is less. Cutting off more than this will reduce the capacity of the vacuum system.

Cutting Frequency

Cut the grass often, especially when it grows rapidly. You will have to cut your grass twice if it gets excessively long. Refer to Bagging Long Grass on page 20.

Cutting Technique

For best lawn appearance, be sure to slightly overlap the mower into the previously cut area. This helps reduce the load on the engine and reduces the chance of plugging the blower assembly and tube.

Bagging Speed

The bagging system may plug if you drive too fast and the engine speed gets too slow. On hills it may be necessary to slow the machines ground speed. Mow down hill whenever possible.



Caution



As the bagger fills, extra weight is added to the back of the machine. If you stop and start suddenly on hills, you may lose steering control or the machine may tip.

- **Do not start or stop suddenly when going uphill or downhill. Avoid uphill starts.**
- **If you do stop the machine when going uphill, disengage the PTO. Then back down the hill using a slow speed.**
- **Do not change speeds or stop on slopes.**

Bagging Long Grass

If the grass is ever allowed to grow longer than normal, or if it contains a high degree of moisture, raise the cutting height higher than usual and cut and bag the grass at this setting. Then cut and bag the grass again using the lower, normal setting.

Excessively long grass is heavy and may not be propelled completely into the bagger. If this happens, the tube and blower assembly may plug.

Bagging Wet Grass

If possible, always try to cut grass when it is dry. Wet grass can cause plugging.

Reducing Plugging

To avoid plugging the bagging system, reduce ground speed and mow the grass at a high height-of-cut, then lower the mower to your normal cutting height and repeat the bagging process.

Signs of Plugging

As you are bagging, a small amount of grass clippings normally blow out the front of the mower. An excessive amount of clipping blow-out indicates that the bagger is full or the tube is plugged.

Bagging Blades

In most mowing conditions, the standard high lift blades will provide the best bagging performance.

The Toro Atomic blade is recommended for bagging leaves in dry conditions. In dry dusty conditions, the medium lift or low lift blades will reduce dust and dirt blowout while providing effective bagging air flow.

Contact an Authorized Service Dealer for the proper blades for different mowing conditions.

Curb Climbing and Loading

Always lift the deck to the highest position when loading the machine on trailers or ascending/descending a curb. Leaving the mower in a lower position can cause damage to mower baffles while loading and going over a curb. If a curb is higher than 6 inches (152 mm), cross it at a sharp angle with the deck fully raised. **Use extreme caution when loading onto a trailer.**

Front Blowout

A bagging enhancement kit is available to reduce grass blowout at the front of the mower deck. Excessive dust in some dry conditions may also be reduced with this kit. This kit is not available for 44 inch mower decks. Contact an Authorized Service Dealer for the proper kit.

Maintenance

Important If the machine is on a slope, set the parking brake and chock or block the wheels to prevent the machine from slowly rolling.

Recommended Maintenance Schedule

Maintenance Service Interval	Maintenance Procedure
Each Use	<ul style="list-style-type: none">• Hood screen—clean
First 8 Hours	<ul style="list-style-type: none">• Bagger—inspect• Bagger belt—check and adjust
8 Hours	<ul style="list-style-type: none">• Bagger—clean
25 Hours	<ul style="list-style-type: none">• Bagger belt—check and adjust• Bagger idler arm—grease
40 Hours	<ul style="list-style-type: none">• Blower liner—inspect
100 Hours	<ul style="list-style-type: none">• Bagger—inspect
Storage Service	<ul style="list-style-type: none">• Belt—check for wear/cracks• Bagger—inspect• Bagger—clean

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

Cleaning the Hood Screen

The screen needs to be cleaned before each use. In wet grass it will need to be cleaned more often.

1. Disengage the PTO, set the parking brake, and chock or block the drive wheels.
2. Turn off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Open the bagger and hold the bagger hood open.
4. Clean the debris from the screen.
5. Close the bagger hood.

Cleaning the Bagger

The screen needs to be cleaned before each use. In wet grass it will need to be cleaned more often.

1. Wash the inside and outside of the bagger hood, tube, and the underside of the mower. Use a mild automotive detergent to remove dirt.
2. Make sure you remove matted grass from all parts.
3. After washing all parts, let them dry thoroughly.

Note: With all parts installed, start and run the machine for a minute to assist in drying.

Checking and Adjusting the Bagger Belt Tension

Check the bagger belt tension every 25 hours.

Note: When checking the belt tension, the spring length needs to be **between 4 inches and 4-3/4 inches** (102 and 121 mm) (Fig. 32).

Important Adjust the bagger belt if the spring length is 4 inches (102 mm) or less or greater than 4-3/4 inches (121 mm).

1. Disengage the PTO and set the parking brake.
2. Turn off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Close the blower assembly and measure between the spring coil ends. See Figure 32 for measuring the spring length and eye hook orientation.

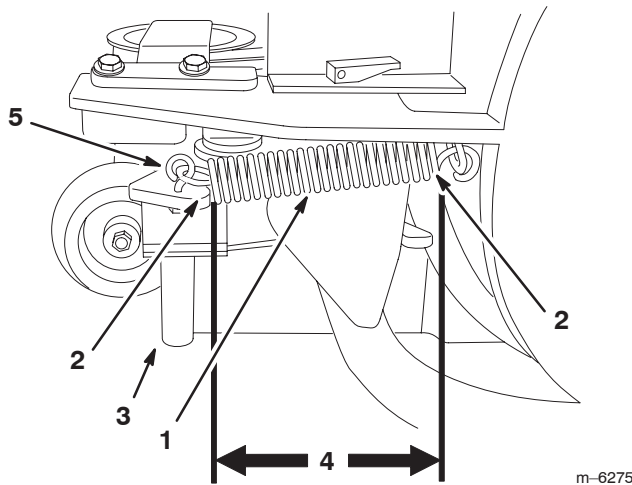


Figure 32

- | | |
|------------------------|--|
| 1. Spring | 4. Distance between spring coil ends, 4 to 4-3/4 inches (102 mm to 121 mm) |
| 2. End of spring coils | |
| 3. Blower assembly peg | |
| 5. Eye bolt | |

Note: When adjustment is needed, set the spring length to **4-3/4 inches (121 mm) +/- 1/4 inch (6 mm)** (Fig. 32).

4. If adjustment is needed, open the blower assembly to remove tension from the bagger belt (Fig. 17).
5. Loosen the two bolts that hold the fixed idler to the blower assembly (Fig. 33).

Important There are two extra holes in the blower assembly that can be used to obtain the correct belt tension. If needed, remove the fixed idler and install it in the extra holes to get more belt tension adjustment (Fig. 33).

6. Adjust the fixed idler towards the rear to **lengthen the spring and increase belt tension** (Fig. 33).
7. Adjust the fixed idler towards the front to **shorten the spring and decrease belt tension** (Fig. 33).
8. Tighten the two bolts that hold the fixed idler to the blower assembly (Fig. 33).
9. Close the blower assembly and measure the spring length again. Adjust the fixed idler until the correct spring length is achieved.

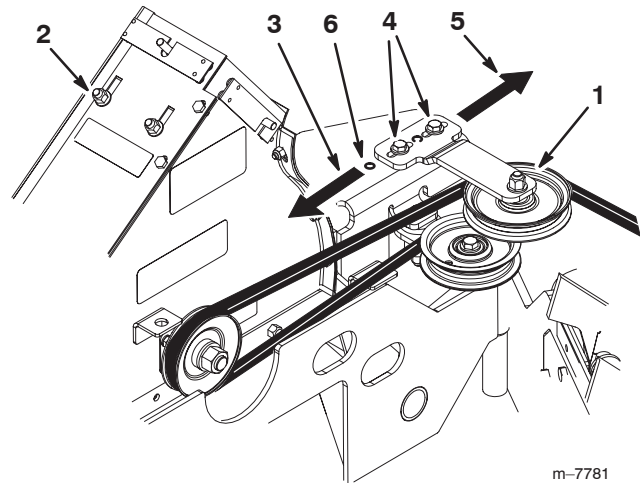


Figure 33

- | | |
|--|--|
| 1. Fixed idler | 5. Adjust idler to the rear to lengthen the spring |
| 2. Blower assembly | 6. Extra holes for adjusting belt tension |
| 3. Adjust idler to the front to shorten the spring | |
| 4. Bolts | |

Checking and Adjusting the Blower Latch

Note: Adjust the blower latch when it does not engage the front peg correctly and there is a visible gap between the mounting plate and blower.

Note: A 9/16 inch thin wall deep socket is recommended for this procedure.

1. Check that the bagger belt is properly installed and routed correctly. Refer to the Belt Routing
2. Guide the rod hook onto the front peg and pull up on the handle to lock the latch. Use the following procedures to ensure the latch engages properly.
3. There must not be a gap between the mounting plate and the blower assembly (Fig. 34). If there is a gap, proceed to item 5 of this procedure and shorten the latch.

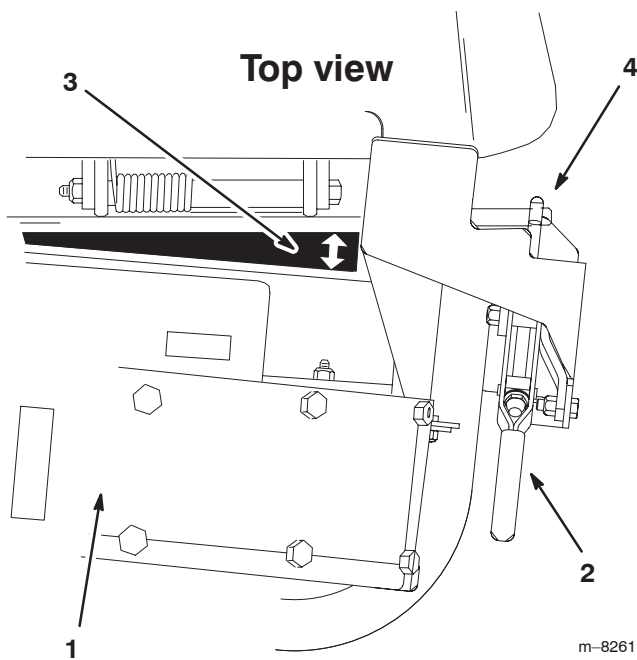


Figure 34

- | | |
|-----------------------------|--------------|
| 1. Blower assembly | 3. Gap shown |
| 2. Blower front latch (Red) | 4. Front peg |

- The blower latch must engage the front peg properly. If it does not, proceed to item 5 of this procedure and lengthen the latch (Fig. 35).

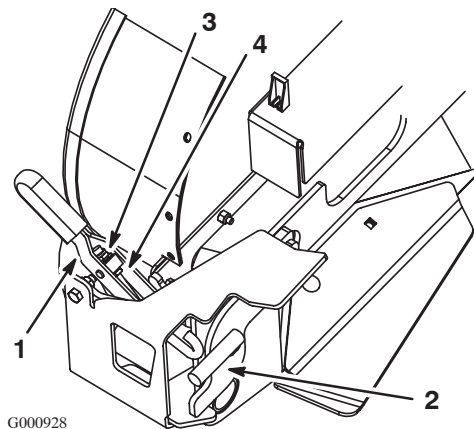


Figure 35

- | | |
|--------------|------------|
| 1. Latch | 3. Locknut |
| 2. Front peg | 4. Jam nut |

- Adjust the lock nut at the end of the rod hook so there is no gap between the blower and mower deck and that it engages the front peg properly (Fig. 35).
- Tighten the jam nut up against the block in the handle (Fig. 35).

- Tighten the lock nut at the end of the rod hook (Fig. 35).
- Check to make sure the latch locks and unlocks properly. Repeat adjustments if needed.

Replacing the Blower Belt

Check the bagger belt for wear and cracks after the first 8 hours and then every 25 hours.

- Disengage the PTO, set the parking brake, and chock or block the drive wheels.
- Turn off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
- Push down on the front latch and open the blower assembly (Fig. 17). This will automatically remove the tension from the blower belt.
- For 52 inch mowers only**, remove the bagger belt between the top mower pulley and the mower belt cover (Fig. 16).
- For 44 inch mowers only**, remove the mower belt cover (Fig. 20).
- Remove the blower belt cover (Fig. 36).
- Remove the bagger belt from the top pulley of the mower pulley assembly (Fig. 37).

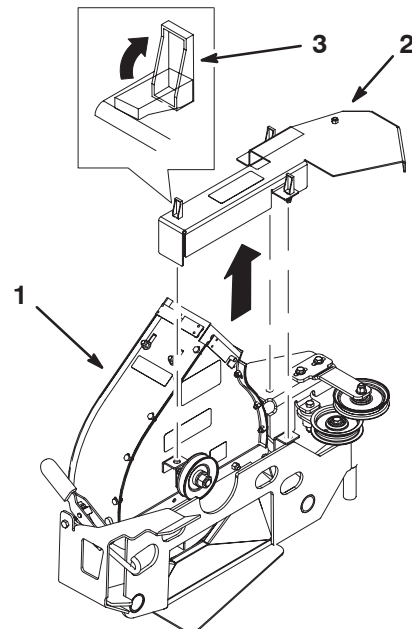


Figure 36

- | | |
|----------------------|----------|
| 1. Blower assembly | 3. Latch |
| 2. Blower belt cover | |

- Remove the bagger belt from the spring-loaded idler pulley and the fixed idler pulley (Fig. 37).

9. Remove the bagger belt from the blower assembly pulley (Fig. 37).
10. Install the new bagger belt. Refer to Installing the Bagger Belt on page 11.

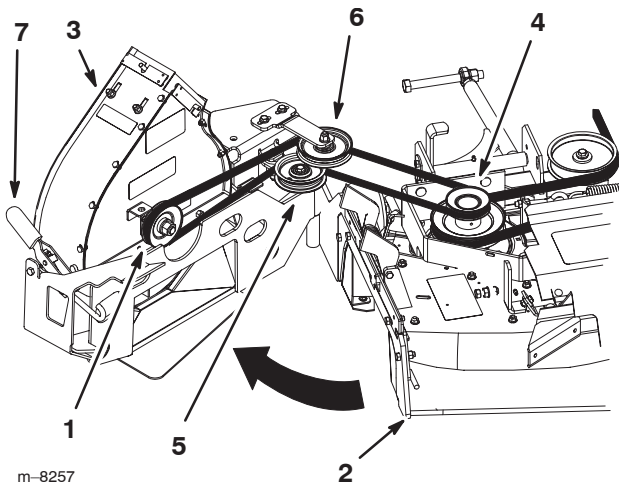


Figure 37

- | | |
|--|-------------------------------|
| 1. Blower pulley | 5. Spring loaded idler pulley |
| 2. Mower | 6. Fixed idler pulley |
| 3. Blower assembly | 7. Front latch |
| 4. Top pulley of mower pulley assembly | |

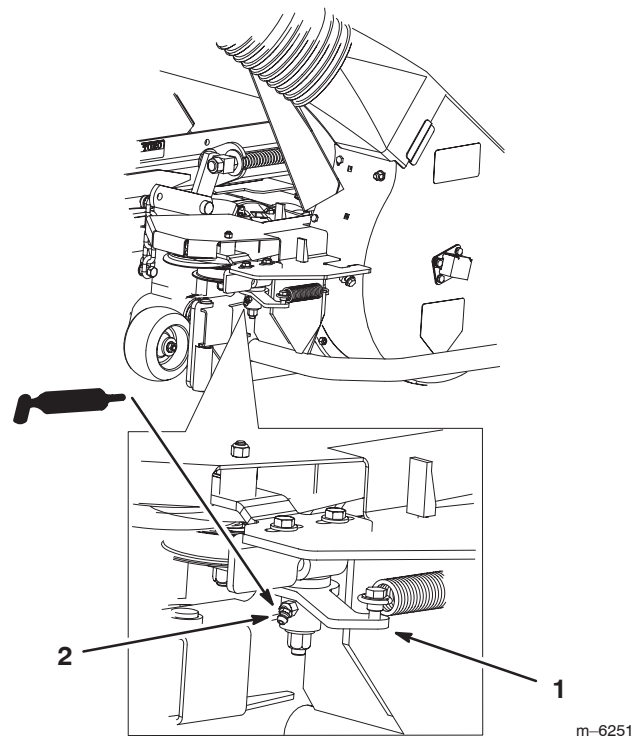


Figure 38

- | | |
|---------------------|----------------|
| 1. Bagger idler arm | 2. Grease zerk |
|---------------------|----------------|

Greasing the Idler Arm

Grease the bagger belt idler arm every 25 hours (Fig. 38).

Checking the Blower Liner

Check the blower liner inside the blower every 40 hours and more often in extreme mowing and bagging conditions.

1. Remove the blower adapter and tube from the blower (Fig. 27).
2. Check the liner for any excessive wear. **Do not** use your hands to check the liner or remove debris.
3. Replace the liner if any excessive wear is noticed.

Replacing the Blower Liner

Contact an Authorized Service Dealer for replacing the blower liner.

Inspecting the Bagger

Inspect the bagger attachment after the first 8 hours of operation and 100 hours thereafter.

1. Disengage the PTO, set the parking brake, and chock or block the drive wheels.
2. Turn off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.

3. Check the tube, blower assembly, and the bagger hood. Replace these parts if they are cracked or broken.
4. Check the bags, bagger frame, and screen. Replace any parts that are cracked, worn or broken.
5. Tighten all nuts, bolts and screws.

Inspecting the Mower Blades and Baffles

1. Inspect the mower blades and baffles regularly and whenever a blade strikes a foreign object.
2. If blades or baffles are badly worn or damaged, install new blades or baffles. Refer to your mower operator's manual for complete blade maintenance.

Installing Mower Blades

In most mowing conditions, the standard high lift blades will provide the best bagging performance.

The Toro Atomic blade is recommended for bagging leaves in dry conditions. In dry dusty conditions, the medium lift or low lift blades will reduce dust and dirt blowout while providing effective bagging air flow.

Contact an Authorized Service Dealer for the proper blades for different mowing conditions.

Refer to the mower *Operator's Manual* for more information on installing blades.

Installing the Grass Deflector

The grass deflector spring will have either an **L** end or a straight end (Fig. 39).

Note: Make sure the grass deflector is installed when the bagger and tubes are removed.



Warning



An uncovered discharge opening could allow the lawn mower to throw objects in the operator's or bystander's direction and result in serious injury. Also, contact with the blade could occur.

Never operate the lawn mower unless you install a cover plate, a mulch plate, grass deflector or a grass chute and catcher.

1. Place spacer and spring onto grass deflector. Place the **L** or the straight end of spring behind deck edge.

Note: Make sure the **L** or the straight end of spring is installed behind deck edge before installing the bolt as shown in figure 39.

2. Install bolt and nut. Place **J** hook end of spring around grass deflector (Fig. 39).

Important The grass deflector must be lowered down into position. Lift the deflector up to test that it lowers into the full down position.

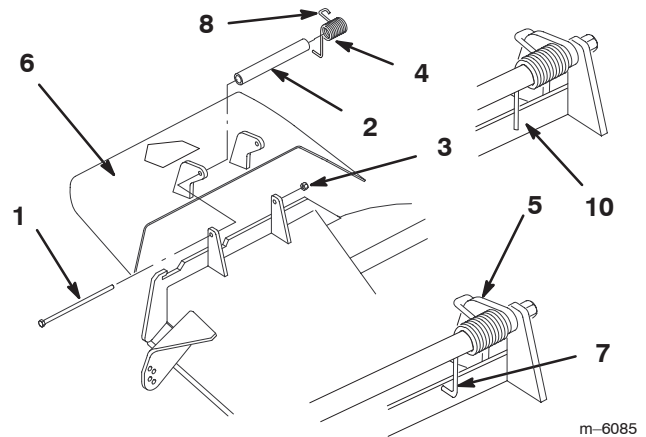


Figure 39

- | | |
|---------------------|--|
| 1. Bolt | 7. L end of spring, place behind mounting bracket before installing bolt |
| 2. Spacer | 8. J hook end of spring |
| 3. Locknut | 9. Mounting bracket |
| 4. Spring | 10. Straight end—possible style of spring |
| 5. Spring installed | |
| 6. Grass Deflector | |

Storage

1. Clean the bagger attachment. Refer to Cleaning the Bagger on page 21.
2. Inspect the bagger attachment for damage. Refer to Inspecting the Bagger on page 21.
3. Make sure the bags are empty and thoroughly dry.
4. Check the belt for wear or cracks.
5. Store the machine in a clean, dry place, out of direct sunlight. If you must store the machine outside, cover it with a weatherproof cover. This protects the plastic parts and extends the life of the machine.

Troubleshooting

Problem	Possible Causes	Corrective Action
Abnormal vibration.	<ol style="list-style-type: none"> 1. Cutting blade(s) bent or unbalanced. 2. Blade mounting bolt is loose. 3. Loose blower pulley or pulley assembly. 4. Blower belt is worn or damaged. 5. Blower impeller is out of balance. 6. Blower impeller is bent. 	<ol style="list-style-type: none"> 1. Install new cutting blade(s). 2. Tighten blade mounting bolt. 3. Tighten the appropriate pulley. 4. Replace the blower belt. 5. Contact Authorized Service Dealer. 6. Do not use machine. Replace bent impeller.
Reduced bagging performance.	<ol style="list-style-type: none"> 1. Low engine speed. 2. Plugged screen. 3. Loose blower belt. 4. A plugged tube. 5. Full bags. 	<ol style="list-style-type: none"> 1. Always operate the bagger at full throttle. 2. Remove debris, leaves or grass clippings from the screen. 3. Adjust the blower belt tension. 4. Locate and remove plugged debris. 5. Empty bags.
Blower and tube plug too frequently.	<ol style="list-style-type: none"> 1. Bags are too full. 2. Low engine speed. 3. Grass is too wet. 4. Grass is too long. 5. Plugged screen. 6. Ground speed is too fast. 7. Worn blower belt. 	<ol style="list-style-type: none"> 1. Dump more frequently. 2. Always operate the bagger at full throttle. 3. Cut grass when dry. 4. Cut no more that 2 to 3 inches (51 to 76 mm) or 1/3 of the grass height, which ever is less. 5. Remove debris, leaves or grass clippings from the screen. 6. Drive slower at full throttle. 7. Replace belt.
Debris blowout.	<ol style="list-style-type: none"> 1. Bags are too full. 2. Ground speed is too fast. 3. Mower is not leveled. 	<ol style="list-style-type: none"> 1. Dump more frequently. 2. Drive slower at full throttle. 3. See the mower operator's manual for leveling the mower.
Blower impeller does not spin freely.	<ol style="list-style-type: none"> 1. Plugged blower. 2. Impeller not aligned. 	<ol style="list-style-type: none"> 1. Remove debris, leaves or grass clippings from the blower impeller. 2. Contact Authorized Service Dealer.



Landscape Contractor
Equipment (LCE)

The Toro Total Coverage Guarantee A Limited Warranty

Conditions and Products Covered

The Toro Company and its affiliate, Toro Warranty Company, pursuant to an agreement between them, jointly promise to repair the listed Toro product if defective in materials or workmanship.

This warranty applies to:

- ProLine Mid-Size Walk Power Mowers and Accessories
- Z Master Mid-Mount ZRTs and Accessories

The following time periods apply from the date of purchase:

<u>Components</u>	<u>Warranty Period</u>
• Engines*	2 years
• Hydraulic Systems	2 years
• Traction Unit Frame	2 years
• Carrier Frame	2 years
• Deck Shells	2 years
• Deck Spindles	3 years Parts, 2 years Labor
• Z500 Series Clutches	2 years
• Remaining Components	1 year

This warranty includes the cost of parts and labor, but you must pay transportation costs.

* Some engines used on Toro LCE products are warranted by the engine manufacturer.

Instructions for Obtaining Warranty Service

If you think that your Toro LCE product contains a defect in materials or workmanship, follow this procedure:

1. Contact any Toro Authorized or Master Service Dealer to arrange service at their dealership. To locate a dealer convenient to you, access our website at www.Toro.com. You may also call our Toro Customer Care Department toll free at 888-865-5676 (U.S. customers) or 888-865-5691 (Canada customers).
2. Bring the product and your proof of purchase (sales receipt) to the Service Dealer.

If for any reason you are dissatisfied with the Service Dealer's analysis or with the assistance provided, call us toll free at the numbers above or write us at:

LCE Customer Care Department
8111 Lyndale Avenue South
Bloomington, MN 55420-1196

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.

Owner Responsibilities

You must maintain your Toro product by following the maintenance procedures described in the *Operator's Manual*. Such routine maintenance, whether performed by a dealer or by you, is at your expense.

Items and Conditions Not Covered

There is no other express warranty except for special emission system coverage on some products. This express warranty does not cover the following:

- Cost of regular maintenance service or parts, such as filters, fuel, lubricants, tune-up parts, blade sharpening, brake and clutch adjustments.
- Any product or part which has been altered or misused or required replacement or repair due to normal wear, accidents, or lack of proper maintenance.
- Repairs necessary due to improper fuel, contaminants in the fuel system, or failure to properly prepare the fuel system prior to any period of non-use over three months.
- Pickup and delivery charges.
- Operational misuse, neglect, or accidents.
- Repairs or attempted repairs by anyone other than an Authorized Toro Service Dealer using Toro approved parts.

General Conditions

All repairs covered by this warranty must be performed by an Authorized Toro Service Dealer using Toro approved replacement parts.

Repair by an Authorized Toro Service 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.

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.

All implied warranties of merchantability (that the product is fit for ordinary use) and fitness for use (that the product is fit for a particular purpose) are limited to the duration of the express warranty.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.