Form No. 3355-269 Rev A

TORO®

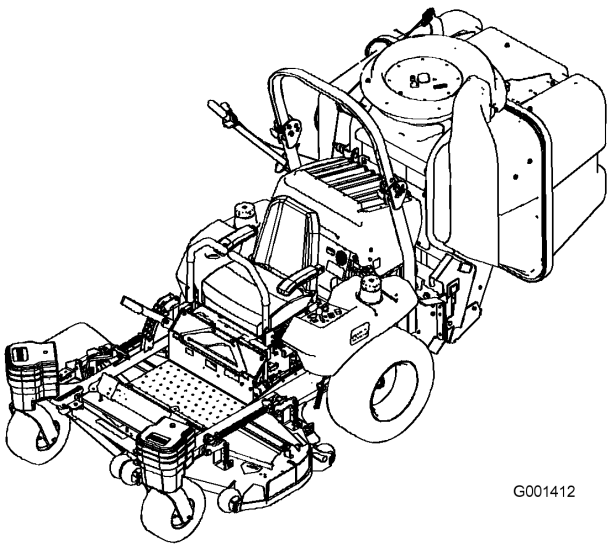
Count on it.

Operator's Manual

Mounting Kit

for DFS Vac Collection System on a Z593 and Z595 Series Z Masters

Model No. 110–0891



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Introduction

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

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 identifies the location of the model and serial numbers on the product. Write the numbers in the space provided.

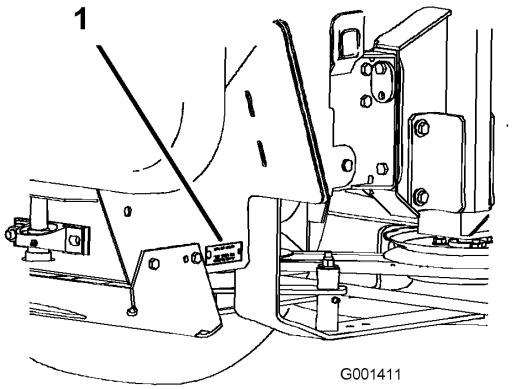

Figure 1

1. Model and serial number location

Model No. _____

Serial No. _____

This manual identifies potential hazards and has safety messages identified by the safety alert symbol (Figure 2), which signals a hazard that may cause serious injury or death if you do not follow the recommended precautions.

Figure 2

1. Safety alert symbol

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

Contents

8111 Lyndale Avenue South
Bloomington, MN 55420

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.
- Follow the manufacturer's recommendations for adding or removing wheel weights or counterweights to improve stability.
- 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, removed or altered, unless using a grass catcher.
- Keep hands and feet away from moving parts. Do not make adjustments with the engine running.
- Stop on level ground, disengage drives, chock or block wheels, shut off 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.
- Stop the engine before removing the grass catcher or unclogging the chute.
- 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.

Safety and Instructional Decals

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

107-1613

104-8569

106-3339

Setup

Loose Parts

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

Procedure	Description	Qty.	Use
1	No parts required	–	Remove the existing bagger, mounting bracket, and weights.
2	Side bracket—right Side bracket—left Bolt, (3/8 x 2–1/2) Bolt, (3/8 x 3/4 inch) Flange Locknut, (3/8 inch) Spacers	1 1 2 2 4 2	Install the bagger mounting bracket.
3	No parts required	–	Tighten all mounting bolts.
4	Bagger drive pulley Pulley spacer Bolt, (3/8 x 1-3/4 inches) Flange nut, (3/8 inch)	1 3 4 4	Install the bagger drive pulley
5	Spring loaded idler pulley Idler arm Carriage bolt, (3/8 x 2 inches) Bolt, (3/8 x 4–1/2 inches) Lock nut, (3/8 inch) Washer, 7/16 inch Washer, 13/32 inch Long round spacer Flange nut, (3/8 inch) Spring anchor, (3/8 inch)	1 1 1 1 2 1 1 1 1 1	Install the spring loaded idler pulley
6	Fixed idler pulley Fixed idler bracket Bolt, (3/8 x 1-1/2 inches) Bolt, (3/8 x 3/4 inch) Lock nut, (3/8 inch) Flange nut, (3/8 inch) Washer, 13/32 inch	1 1 1 2 1 2 1	Install the fixed idler pulley
7	Idler arm bracket Bolt, (3/8 x 3/4 inch) Flange nut, (3/8 inch)	1 2 2	Install the idler arm bracket.
8	Bagger (from previous bagger) Clevis pin (from previous bagger) Hairpin cotter (from previous bagger)	1 2 2	Install the bagger
9	Bagger belt Spring	1 1	Install the bagger belt.
10	No parts required	–	Check and adjust the bagger belt.
11	Large top weight Bolt, (1/2 x 5 inches) (for top weights)	1 2	Install the weights

Procedure	Description	Qty.	Use
12	Boot (from previous bagger) Middle tube (from previous bagger) Upper tube (from previous bagger) Clamp (from previous bagger)	1 1 1 1	Install the boot and discharge tubes
13	No parts required	–	Adjust the bagger dump lever.
14	No parts required	–	Check the tire pressure.

Note: Use this manual when the DFS bagger is installed and used on a Z593–D Z Master. Save the previous DFS bagger manual and parts not used for when the bagger is installed again on a gas engine Z Master.

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

1

Removing the Existing Bagger, Mounting Bracket, and Weights

No Parts Required

Procedure

This procedure is for air cooled machines and liquid cooled machines.

1. Remove the spring from the eyebolt (Figure 36).

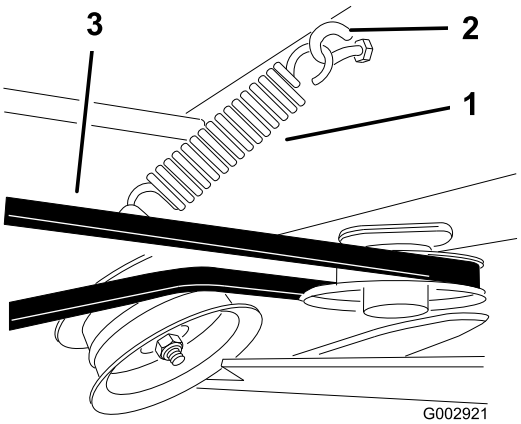

Figure 3

1. Idler spring
2. Eyebolt
3. Belt

2. Remove the idler arm and pulley from the bagger and store it (Figure 4).

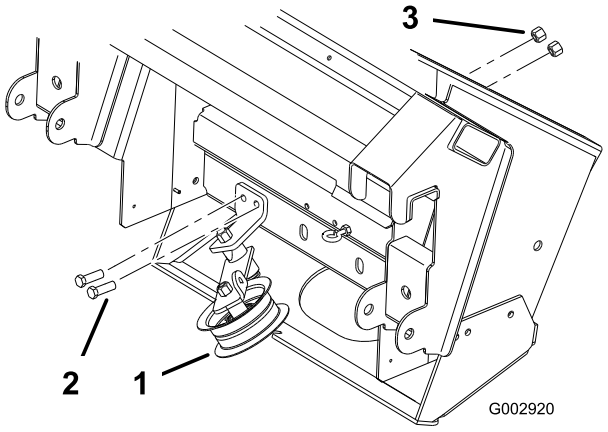

Figure 4

1. Idler arm and pulley
2. Bolts
3. Nuts

3. Remove the 2 clevis pins and 2 hairpin cotter pins from the bagger and bagger mounting bracket (Figure 5). Save this hardware.
4. Remove the bagger from the bagger mounting bracket Figure 5

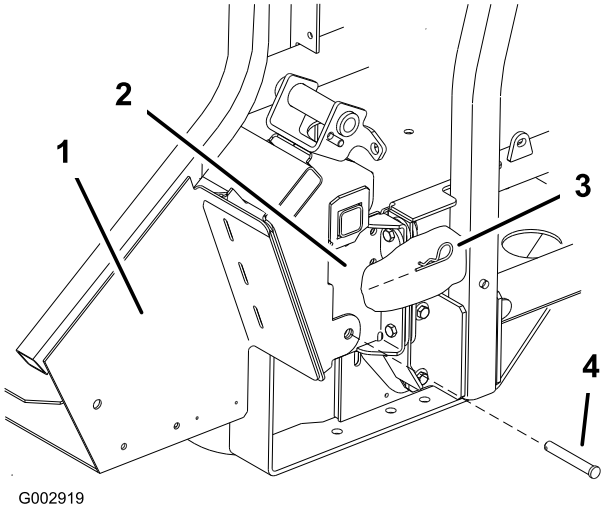

Figure 5

1. Bagger
2. Bagger mounting bracket
3. Hairpin cotter
4. Clevis pin

5. Remove the existing bagger mounting bracket hardware from the back of the existing Z Master. Discard this hardware (Figure 6).
6. For air cooled machines only, remove the frame spacer and store it (Figure 6).

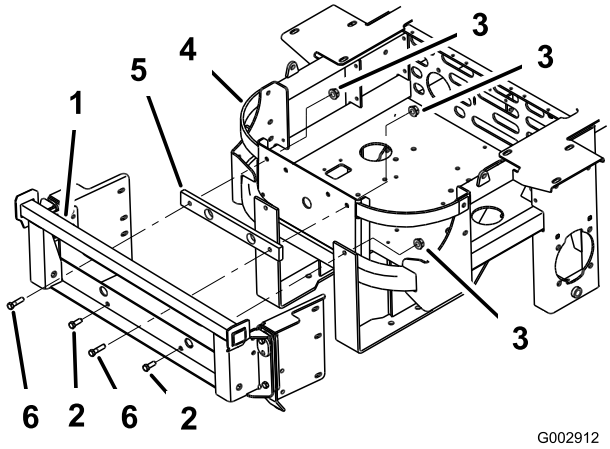

Figure 6

1. Bagger mounting bracket
2. Bolt, (3/8 x 1-1/4 inches)
3. Flange nut, (3/8 inch)
4. Bumper
5. Air cooled frame spacer
6. Bolt, (3/8 x 1-3/4 inches)

7. Remove the ROPS, bagger mounting bracket, and side brackets by removing the bolts, curved washers, and nuts (Figure 7).
8. Retain this hardware. This hardware will be used again when installing the bagger onto a Z593 Z Master.

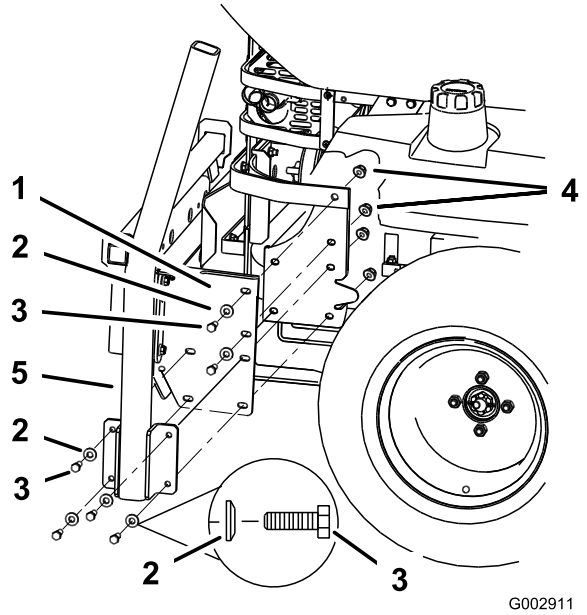

Figure 7

1. Bagger mounting bracket
2. Curved washer, (3/8 inch)
3. Bolt, (3/8 x 1-1/2 inches)
4. Flange nut, (3/8 inch)
5. ROPS

9. Remove the side brackets from the bagger mounting bracket and store them. Do not remove the bracket stiffener from the bagger mounting bracket (Figure 8).
10. Retain this hardware. This hardware will be used again when installing the bagger onto a Z593 Z Master.

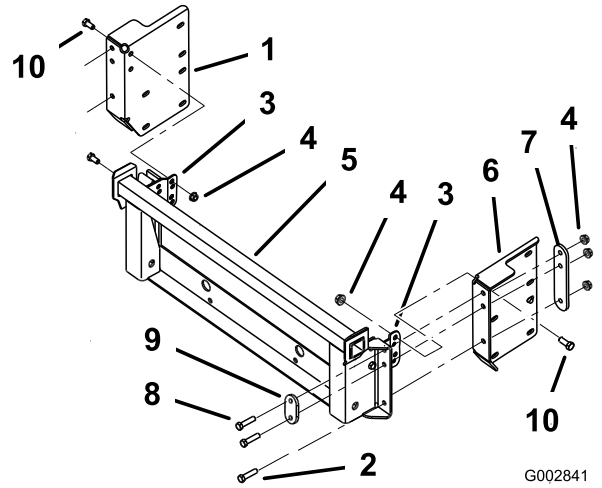

Figure 8

1. Left side bracket
2. Bolt, (3/8 x 1-1/4 inches)
3. Bracket stiffener
4. Flange nut, (3/8 inch)
5. Bagger mounting bracket
6. Right side bracket
7. Long frame spacer
8. Bolt, (3/8 x 1-1/2 inches)
9. Short frame spacer
10. Bolt, (3/8 x 3/4 inch)

11. Remove bolt and the 2 small top weights from each front caster weight (Figure 9).

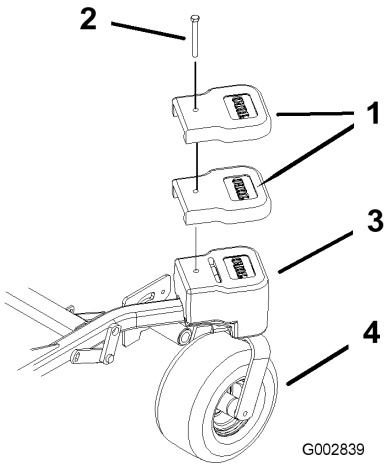

Figure 9

1. Top weight
2. Bolt, (1/2 x 4 inches)
3. Front caster weight
4. Front caster wheel

12. Remove the plate, nuts (1/2 inch), and lock washer (1/2 inch) under the frame and weight (Figure 10).
13. Remove the caster weights on the front casters.

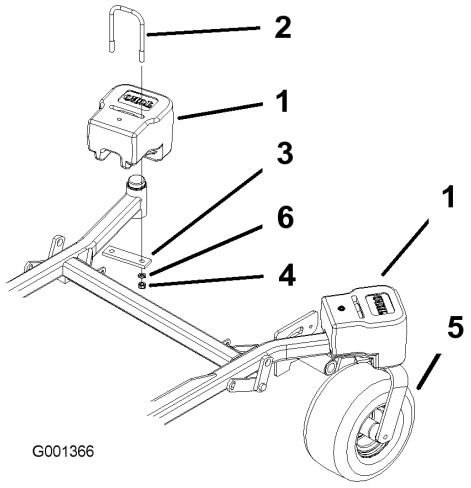

Figure 10

1. Front caster weight
2. U-bolt
3. Plate
4. Nut
5. Front caster
6. Lock washer

2

Installing the Bagger Mounting Bracket

Parts needed for this procedure:

1	Side bracket—right
1	Side bracket—left
2	Bolt, (3/8 x 2–1/2)
2	Bolt, (3/8 x 3/4 inch)
4	Flange Locknut, (3/8 inch)
2	Spacers

Procedure

Important: Do not tighten any bolts until both side brackets and bagger mounting bracket are fit loose on the machine.

Refer to Tightening the Mounting Bolts for the correct procedure to tighten the bolts.

Important: Use the existing hardware when the bagger mounting bracket was removed.

1. Install the side brackets to the bagger mounting bracket (Figure 11).
2. In the top two holes, install 2 bolts (3/8 x 1-1/2 inches), 2 flange nuts (3/8 inch), 2 long frame spacers, and one short frame spacer (Figure 11).

   Note: Make sure the long frame spacers are installed as shown in Figure 11).
3. In the bottom hole, install a bolt (3/8 x 1-1/4 inches) and a flange nut (3/8 inch) (Figure 11).
4. Install a bracket stiffener to the side bracket and bagger mounting bracket. Use 4 bolts (3/8 x 3/4 inch) and 4 flange nuts (3/8 inch) (Figure 11).
5. Repeat the previous steps for the opposite side (Figure 11).

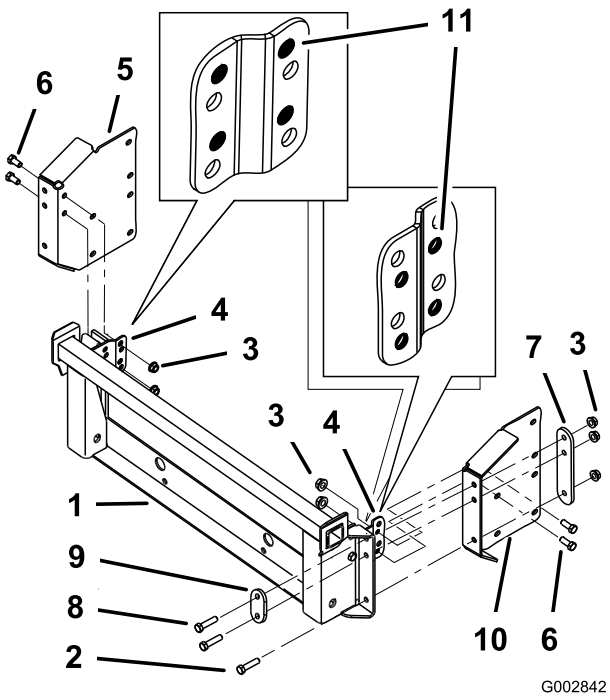

Figure 11

1. Bagger mounting bracket
2. Bolt, (3/8 x 1-1/4 inches)
3. Flange nut, (3/8 inch)
4. Bracket stiffener
5. Left side bracket
6. Bolt, (3/8 x 3/4 inch)
7. Long frame spacer
8. Bolt, (3/8 x 1-1/2 inches)
9. Short frame spacer
10. Right side bracket
11. Use these holes in the bracket stiffener

6. Remove the bolts, nuts, and washers holding the roll bar to one side of the machine. Discard the nuts, bolts, and washers (Figure 12).
7. Install the bagger side plate and the roll bar section to the side of the machine using 4 bolts (3/8 x 1-1/2 inches), 4 curved washers (3/8 inch), and 4 flange nuts (3/8 inch) (Figure 12).
8. Repeat the steps above for the opposite side (Figure 12).

   Note: Make sure the curved washer are installed as shown in Figure .

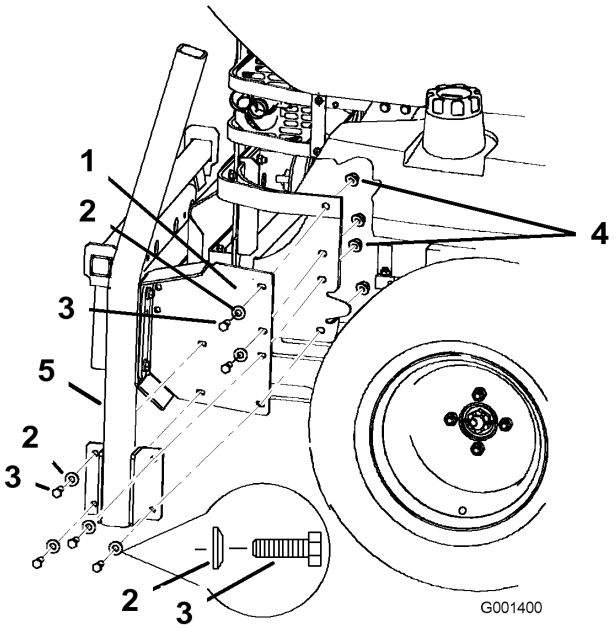

Figure 12

1. Side bracket
2. Curved washer, 3/8 inch
3. Bolt, 3/8 x 1-1/2 inch
4. Flange nut, 3/8 inch
5. ROPS

9. Install the bagger mounting bracket to the rear frame of the machine (Figure 13).
10. In the top two holes, install 2 bolts (3/8 x 2-1/2), 2 round spacers, and 2 flange nuts (3/8 inch).
11. In the bottom two holes, install 2 bolts (3/8 x 3/4 inch) and a 2 flange nuts (3/8 inch)(Figure 13).

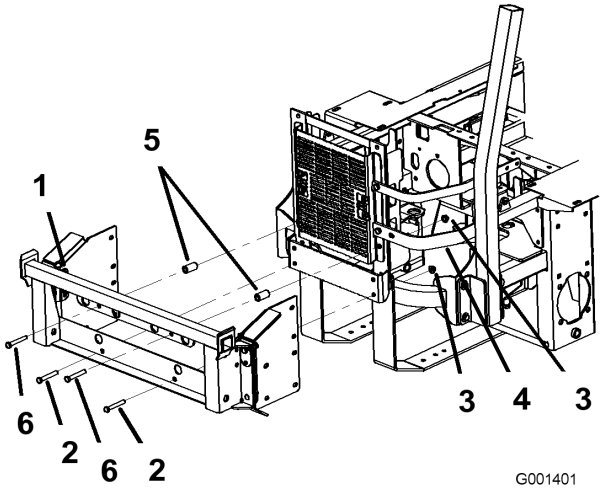

Figure 13

1. Bagger mounting bracket
2. Bolt, (3/8 x 3/4 inch)
3. Flange nut, (3/8 inch)
4. Bumper
5. Round spacer
6. Bolt, (3/8 x 2-1/2)

3

Tightening all Mounting Bolts

No Parts Required

Procedure

The following steps are the correct sequence to tighten the side brackets and the bagger mounting bracket.

All 3/8 inch mounting bolts need to be torqued to 35 ft-lb (48 N·m).

1. Tighten the bagger mounting bracket to the rear frame first (Figure 13).
2. Tighten the bagger mounting bracket to the side brackets (Figure 11).
3. Tighten the bracket stiffeners to both the side plates and the bagger mounting bracket (Figure 11).
4. Tighten the side brackets to the side of the mower (Figure 12).

4

Installing the Bagger Drive Pulley

Parts needed for this procedure:

1	Bagger drive pulley
3	Pulley spacer
4	Bolt, (3/8 x 1-3/4 inches)
4	Flange nut, (3/8 inch)

Procedure

1. Remove the mower belt from the gearbox pulley assembly (Figure 14).
2. Remove the 2 set screws, square key, and gearbox pulley from the gearbox.

   Note: Make sure the pulley that is removed has 4 holes around the center hole. If it does not, contact an Authorized Service Dealer for the correct pulley.
3. Install the bagger drive pulley to the gearbox pulley with 3 bolts (3/8 x 1-3/4 inches), 3 spacers, and 3 flange nuts (3/8 inch) (Figure 14).
4. Install the gearbox pulley and bagger drive pulley to the gearbox with 2 set screws and a square key (Figure 14). The pulley hub needs to be flush with the end of the gearbox shaft.
5. Install the mower belt back onto the upper gearbox pulley (Figure 14).

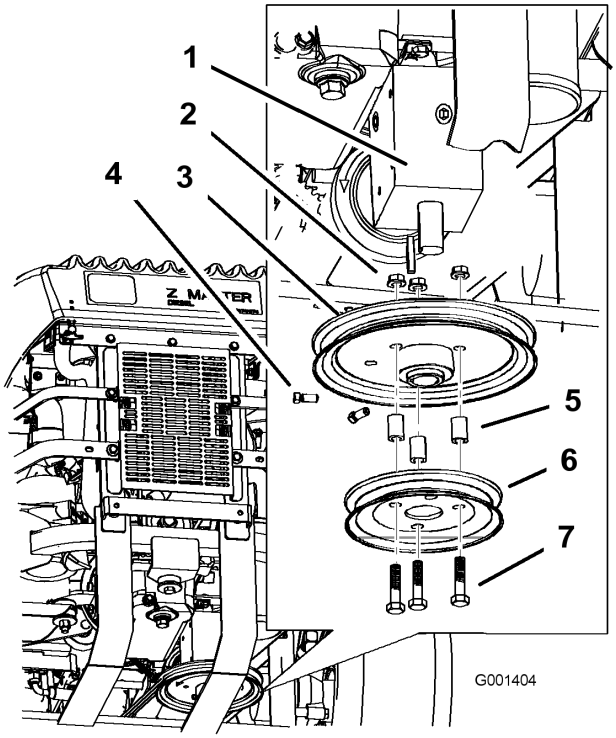

Figure 14

1. Gearbox
2. Flange nut, 3/8 inch
3. Gearbox drive pulley
4. Set screw
5. Spacer
6. Bagger drive pulley
7. Bolt, 1/2 x 1-3/4 inch

5

Installing the Spring Loaded Idler Pulley and Spring Anchor

Parts needed for this procedure:

1	Spring loaded idler pulley
1	Idler arm
1	Carriage bolt, (3/8 x 2 inches)
1	Bolt, (3/8 x 4–1/2 inches)
2	Lock nut, (3/8 inch)
1	Washer, 7/16 inch
1	Washer, 13/32 inch
1	Long round spacer
1	Flange nut, (3/8 inch)
1	Spring anchor, (3/8 inch)

Procedure

1. Install the spring loaded idler assembly to the idler arm with a carriage bolt (3/8 x 2 inches), washer (13/32 inches), and a locknut (3/8 inch).
2. Install the spring anchor to the left rear bottom frame with a flange nut (3/8 inch)(Figure 15).
3. Install the spring loaded idler pulley to the right rear bottom frame with a bolt (3/8 x 4 inches), long spacer, washer (7/16 inches), and a locknut (3/8 inch) (Figure 15).

   Important: Make sure the idler arm and spring anchor is installed in the correct holes shown in Figure 15 .

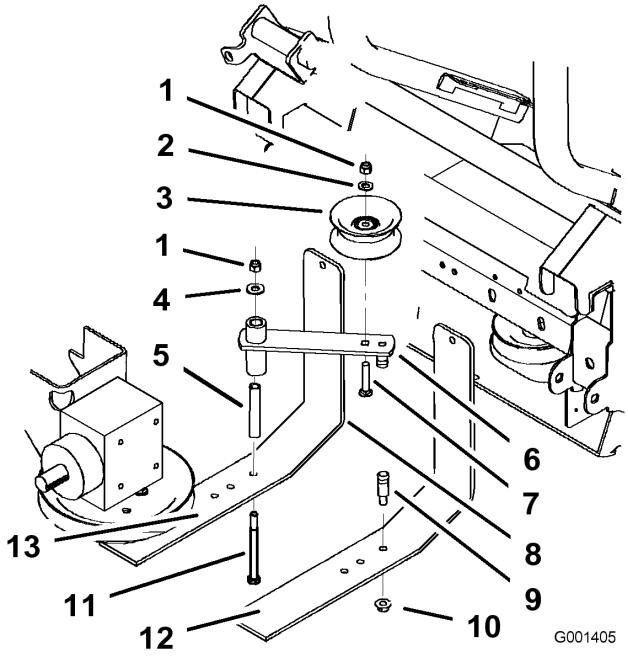

Figure 15

1. Lock nut, (3/8 inch)
2. Washer, 7/16 inch
3. Spring loaded idler pulley
4. Washer, 13/32 inch
5. Long round spacer
6. Idler arm
7. Carriage bolt, (3/8 x 2 inches)
8. Right rear bottom frame
9. Spring anchor
10. Flange nut, (3/8 inch)
11. Bolt, (3/8 x 4–1/2 inch)
12. Left rear bottom frame

6

Installing the Fixed Idler Pulley

Parts needed for this procedure:

1	Fixed idler pulley
1	Fixed idler bracket
1	Bolt, (3/8 x 1-1/2 inches)
2	Bolt, (3/8 x 3/4 inch)
1	Lock nut, (3/8 inch)
2	Flange nut, (3/8 inch)
1	Washer, 13/32 inch

Procedure

1. Install the fixed idler pulley to the fixed idler bracket with a bolt (3/8 x 1-1/2 inches), washer (13/32 inches), and a locknut (3/8 inch).
2. Install the fixed idler assembly to the left rear bottom frame with 2 bolts (3/8 x 3/4 inch) and 2 flange nuts (3/8 inch) (Figure 16).

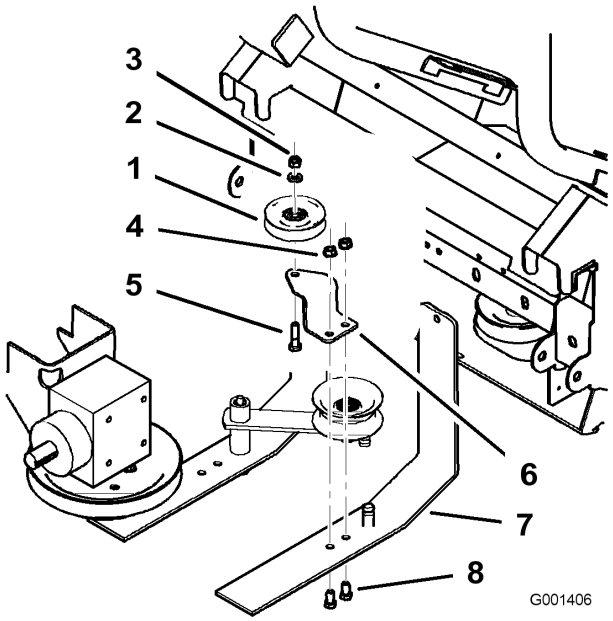

Figure 16

1. Fixed idler pulley
2. Washer,
3. Nut,
4. Nut,
5. Bolt,
6. Fixed Idler pulley bracket
7. Left rear bottom frame
8. Bolt, (3/8 x 3/4 inch)

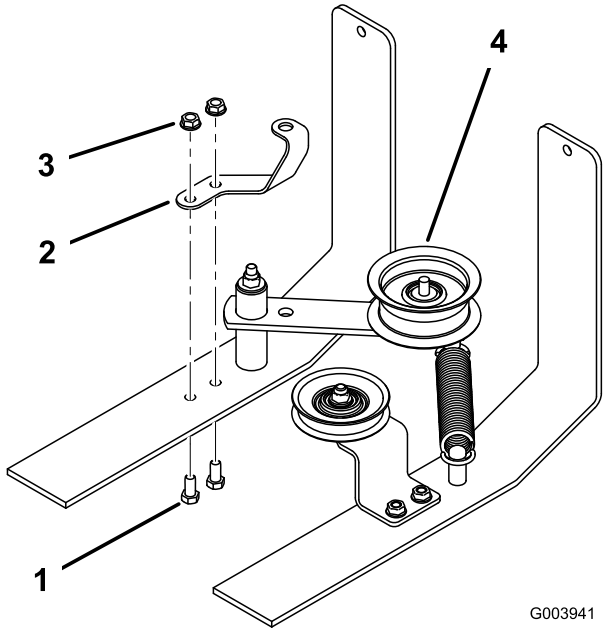

Figure 17

1. Bolt, (3/8 x 3/4 inch)
2. idler arm bracket
3. Nut, (3/8 inch)
4. Idler pulley

7

Installing the Idler Arm Bracket

Parts needed for this procedure:

1	Idler arm bracket
2	Bolt, (3/8 x 3/4 inch)
2	Flange nut, (3/8 inch)

Procedure

Install the idler arm bracket to the right rear bottom frame with 2 bolts (3/8 x 3/4 inch) and 2 flange nuts (3/8 inch) (Figure 17).

8

Installing the Bagger

Parts needed for this procedure:

1	Bagger (from previous bagger)
2	Clevis pin (from previous bagger)
2	Hairpin cotter (from previous bagger)

Procedure

1. Locate template number 1 in the back of this manual. Cut out template number 1 as indicated on the template (Figure 18).
2. Position the template on the right-hand side of the engine shroud (Figure 18).
3. Line up the circles on the template with the rivets on the shroud and the template bottom is flush with the bottom of shroud (Figure 18).
4. Tape the template to the engine shroud. Mark the outer edge of the template. (Figure 18).
5. Cut the engine shroud at the marked line. This will prevent damage to the engine shroud while using the bagger dump lever (Figure 18).

   Note: Make sure to follow the template outline. Do not create any sharp corners.

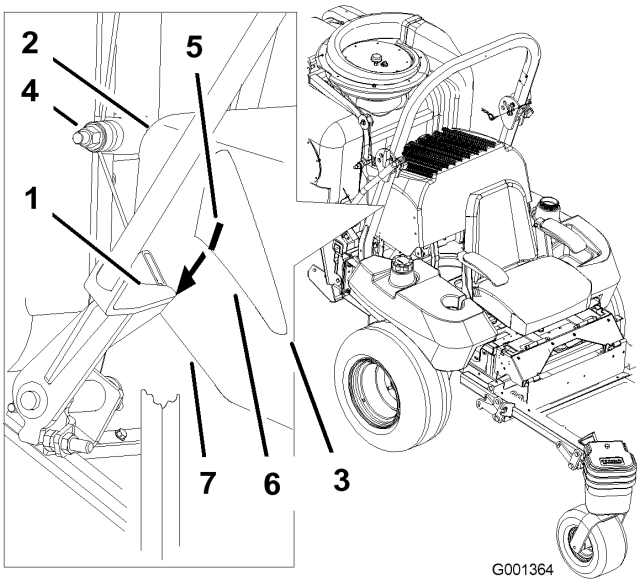

Figure 18

1. Bagger dump lever
2. Engine shroud
3. Template
4. Cable guide
5. Mark on template
6. Template bottom
7. Shroud bottom

6. Install the bagger onto the bagger mounting bracket Figure 19
7. Install the 2 clevis pins into the bagger and bagger mounting bracket. Secure them with 2 hair pin cotters Figure 19

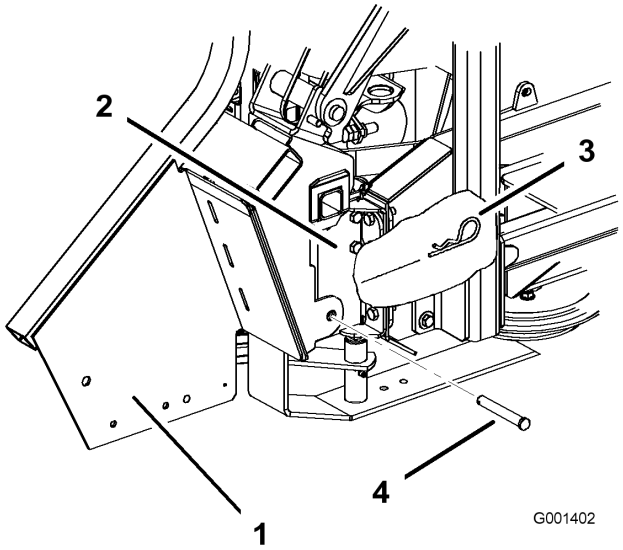

Figure 19

1. Bagger
2. Bagger mounting bracket
3. Hairpin cotter
4. Clevis pin

8. Remove the cable guide and bolt from the frame of the bagger (Figure 18).
9. Install the cable guide, bolt, and nut with the cable behind the cable guide (Figure 18).

Note: Make sure the cable guide can rotate.

9

Installing the Bagger Belt

Parts needed for this procedure:

1	Bagger belt
1	Spring

Procedure

1. Remove the 4 bolts in the skid plate and remove the skid plate (Figure 20).

   This will make it easier to install the bagger belt.

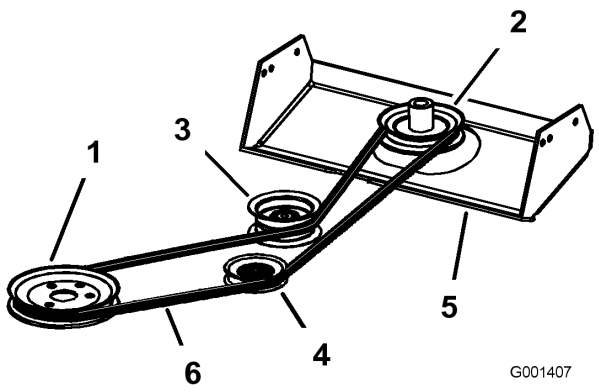

Figure 20

1. Gearbox drive pulley
2. Bagger pulley
3. Spring loaded idler pulley
4. Fixed idler pulley
5. Skid plate
6. Bagger belt

2. Route the bagger belt around the gearbox drive pulley and the bagger pulley (Figure 20).
3. Route the bagger belt around the spring loaded idler pulley and the fixed idler pulley (Figure 21).
4. Install the spring onto the idler arm (Figure 21).
5. Install the spring onto the spring anchor attached to the left rear bottom frame (Figure 21).
6. Install the skid plate (Figure 20).

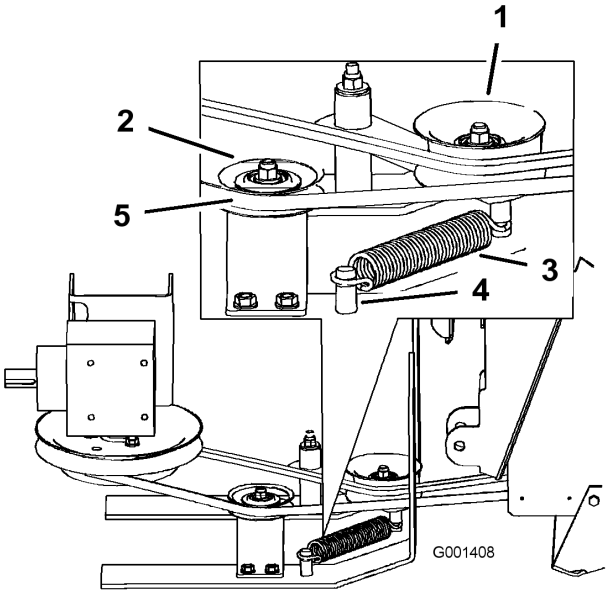

Figure 21

1. Spring loaded idler pulley
2. Fixed idler pulley
3. Spring
4. Spring Anchor
5. Belt

10

Checking and Adjusting the Bagger Belt Tension

No Parts Required

Procedure

1. Measure the gap, at the bagger spring loaded idler pulley, between the tight and slack side of the belt when the bagger idler pulley and spring are installed (Figure 21). There needs to be a gap of 1-1/8 inch ± 1/8 inch (29 mm ± 3 mm) between the belt strands (Figure 22).

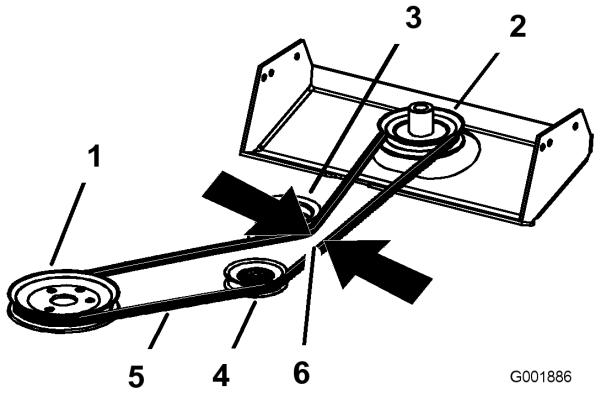

Figure 22

1. Drive pulley
2. Bagger pulley
3. Spring loaded idler pulley
4. Fixed idler pulley
5. Bagger belt
6. 1–1/8 inch ± 1/8 inch (29 mm ± 3 mm)

2. If the gap is not enough, remove the spring.
3. To adjust the belt tension complete the following:
   A. Loosen the 2 nuts on the lower fan shaft pillow block (Figure 23).
   B. Insert a spacer behind the pillow block (Figure 23).
   C. Tighten the nuts.
   D. Check the belt gap and repeat procedure as required.

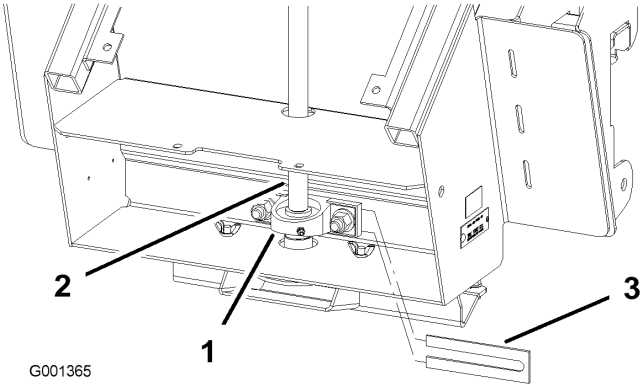

Figure 23

1. Pillow block
2. Fan shaft
3. Spacer

11

Installing the Weights

Parts needed for this procedure:

1	Large top weight
2	Bolt, (1/2 x 5 inches) (for top weights)

Procedure

To comply with ANSI/OPEI B71.4-2004 Standard, weights must be added to the machine.

The bagger adds a lot of weight to the rear of the machine and may cause an unstable condition which could result in a loss of control.

1. Place previously removed caster weights on the front casters.
2. Install the plate, nuts (1/2 inch) and lock washer (1/2 inch) under the frame and weight (Figure 24).
3. Repeat for opposite side.

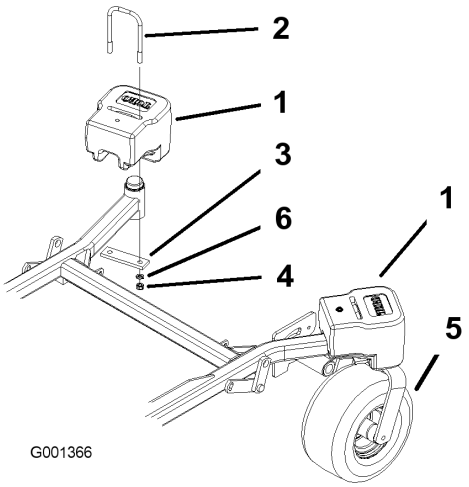

Figure 24

1. Front caster weight
2. U-bolt
3. Plate
4. Nut, (1/2 inch)
5. Front caster
6. Lock washer,

4. Install a large top weight on top of each caster weight (Figure 25).
5. Install the 2 small top weights on top of each large top weight and secure them with a bolt (1/2 x 5 inches) (Figure 25).

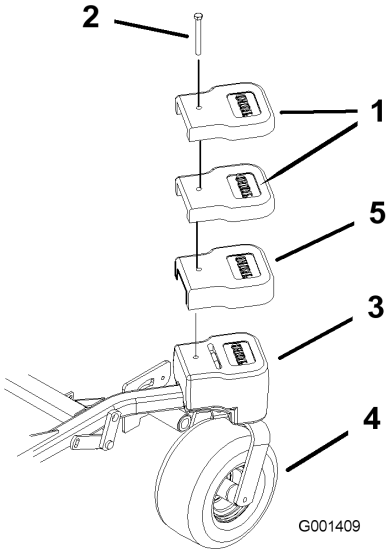

Figure 25

1. Small top weight
2. Bolt, (1/2 x 4 inches)
3. Front caster weight
4. Front caster wheel
5. Large top weight

12

Installing the Boot and Discharge Tubes

Parts needed for this procedure:

1	Boot (from previous bagger)
1	Middle tube (from previous bagger)
1	Upper tube (from previous bagger)
1	Clamp (from previous bagger)

Procedure

Note: Remember to replace the **L** or the straight end of the spring when in side discharge mode. Refer to Replacing the Grass Deflector.

1. Disengage the PTO 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. To relieve the spring tension on the grass deflector, place the L or the straight end of the spring in front of the mounting bracket.
4. Lift the grass deflector all the way back.
5. Position the boot's front hook into the front slot on the mounting bracket (Figure 26).

Note: If the grass deflector interferes with the boot, grind off part of the grass deflector frame. See Figure 26 for the correct part to grind off.

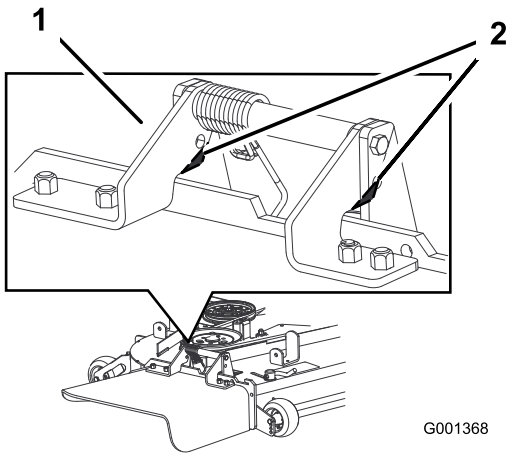

Figure 26

1. Grass deflector frame
2. Grind this part off

6. Place the rear hook over the rear of the mounting bracket (Figure 27).
7. Install the upper tube into the bagger (Figure 27).
8. Slide the clamp onto the middle tube (Figure 27).
9. Align the knob on the middle tube with the notch in the upper tube. Slide the middle tube into the upper tube and twist the middle tube 60 degrees (Figure 27).
10. Tighten the clamp around the upper and middle tube connection (Figure 27).
11. Slide the middle tube onto the boot and latch them together (Figure 27).

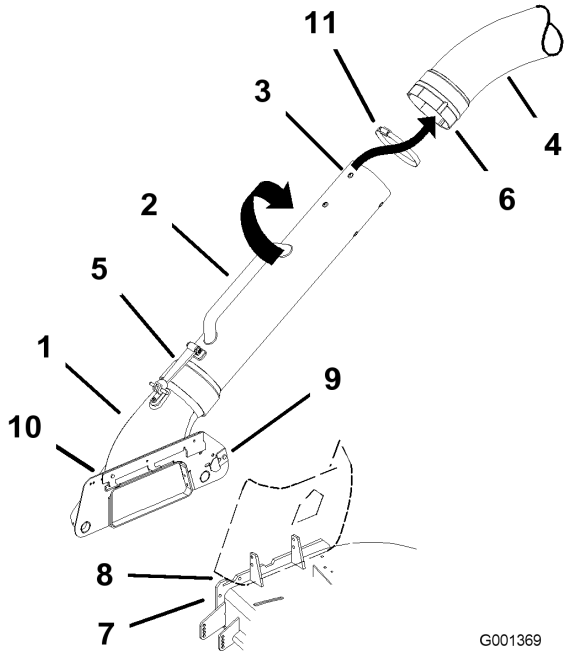

Figure 27

1. Boot
2. Middle tube
3. Knob
4. Upper tube
5. Latch
6. Notch in upper tube
7. Mounting bracket
8. Front slot
9. Rear hook
10. Front hook
11. Clamp

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Adjusting the Bagger Dump Lever

No Parts Required

Procedure

The bagger lever needs to be adjusted to remove slack in the bagger cable.

1. Loosen the nuts on both sides of the stop bracket (Figure 28).
2. Adjust the stop bolt until there is no slack in the bagger cable (Figure 28).
3. Tighten the nuts on both sides of the stop bracket (Figure 28).

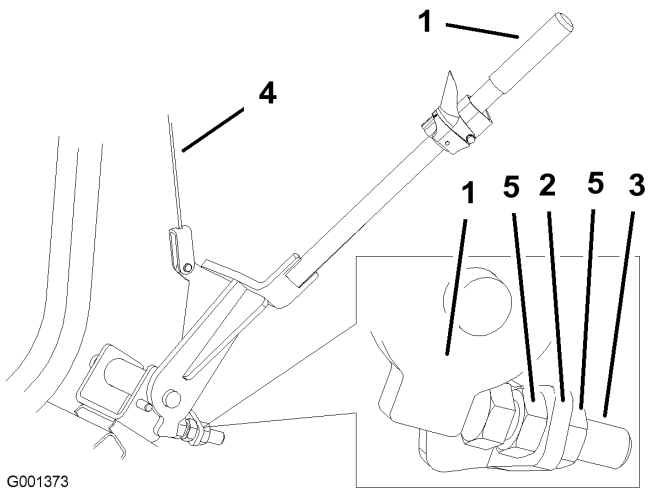

Figure 28

1. Bagger dump lever
2. Stop bracket
3. Stop bolt
4. Bagger cable
5. Nut

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Checking the Tire Pressure

No Parts Required

Procedure

Note: Increase the tire pressure due to the additional weight.

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

Pressure: Rear tires-20 psi (90 kPa)

Front caster wheels-25 psi (90 kPa)

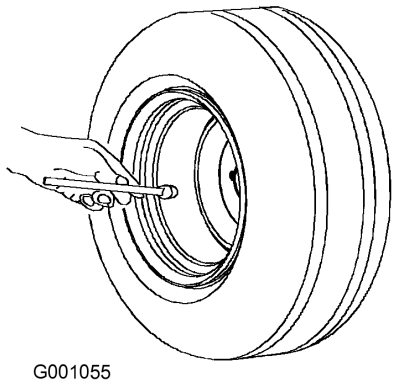


Figure 29

1. Valve stem

Operation

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

Important: If the machine is on a slope, chock or block the wheels to prevent the machine from slowly rolling.

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.**

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.

- **Never remove the grass deflector from the mower because the grass deflector routes material down toward the turf. If the grass deflector is ever damaged, replace it immediately.**
- **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).**

Positioning the Adjustable Baffle

Adjust the baffle to position B (middle position) for bagging. Refer to the machine's *Operator's Manual* for the baffle adjustment procedure.

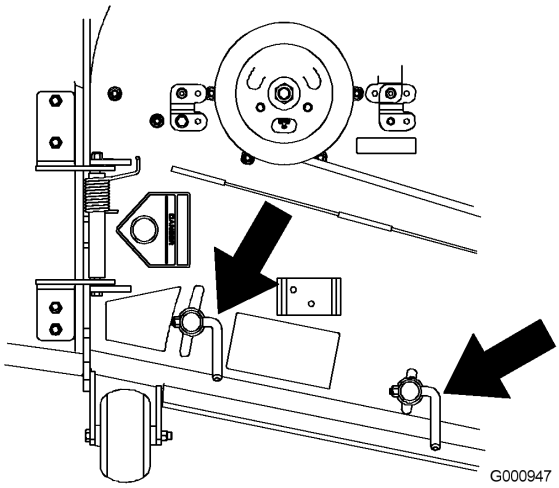


Figure 30

Opening the Bagger

1. Disengage the PTO.
2. Reach back, squeeze and release the latch lever against the bagger lever (Figure 31). This will open the latch that secures the bagger door.
3. Pull down on the bagger arm to allow the grass to fall out of the bagger (Figure 31).
4. Return the bagger arm to upright position in one quick motion. Make sure the bagger door fully engages into the latch (Figure 31).

   Note: Make sure the bagger latch is fully engaged before collecting grass.

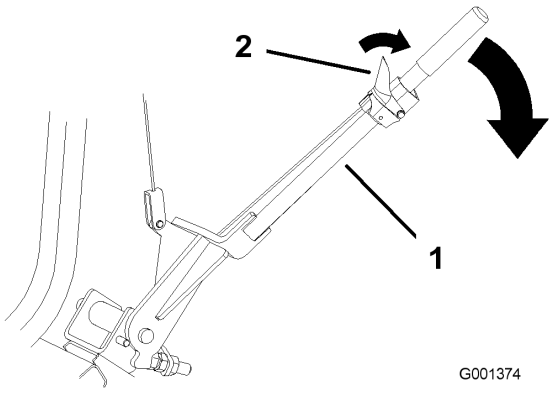


Figure 31

1. Bagger lever
2. Latch lever

Holding the Bagger Door Open

Hands, fingers and arms can get pinched between the back and front sections of the collector.

- **Keep people away from collector while emptying it.**
- **If working on the inside, use the holding pin to hold the collector door open.**

1. Disengage the PTO, set the parking brake, and chock or block the tires.
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; refer to Opening the Bagger.
4. With the bagger open, pull out the holding pin and insert into the hole in the hinge (Figure 32).

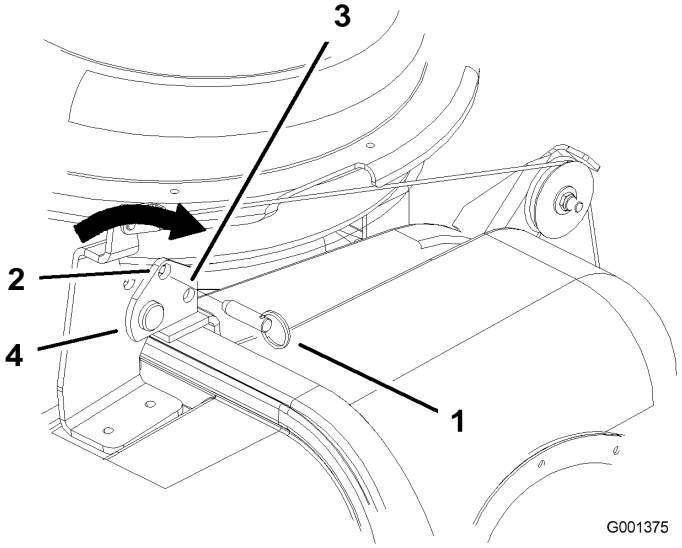


Figure 32

1. Holding pin
2. Hole in hinge (open)
3. Hole in hinge (storage)
4. Hinge

Adjusting the Bagger Door Opening and Cable

Adjusting the cable at the top of the bagger, can allow the door to open farther for your desire conditions.

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

2. Turn off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Close the bagger.
4. Remove the cotter pin and clevis pin (Figure 33).
5. Adjust the bagger cable to the desired hole position (Figure 33).

   Note: The lower hole will allow the door to open higher. The upper hole will allow less force to open the door while using the handle.
6. Install the clevis pin and cotter pin into the bagger and cable end (Figure 33).

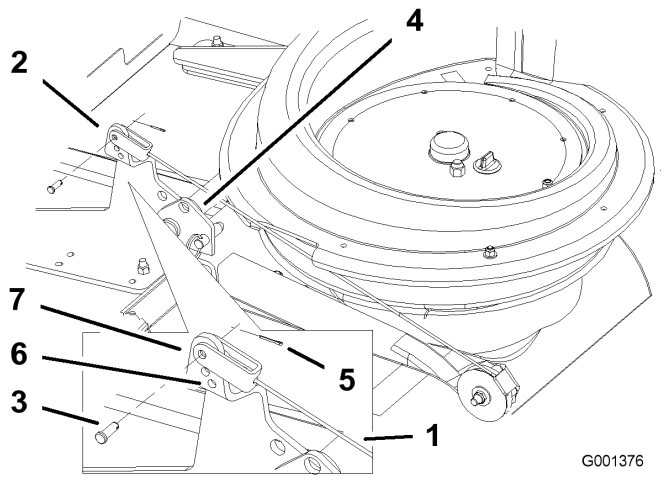


Figure 33

1. Bagger cable
2. Holes in bagger door hinge
3. Clevis pin
4. Hinge
5. Cotter pin
6. Lower hole-allows door to open higher
7. Upper hole-allows less force to open door

Clearing Obstructions From the Bagger System

1. Empty the bagger.
2. Disengage the PTO and set the parking brake.
3. Stop the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
4. Remove the complete tube assembly from the bagger and boot.
5. Remove the boot from the mower.
6. Using a stick or similar object, carefully remove and clear the obstruction from the mower, upper tube, middle tube, or boot assembly.
7. After you remove the obstruction, install the complete bagger system and resume operation. Refer to Installing the Discharge Tubes.

Removing the Discharge Tubes

Note: Remember to replace the **L** end of the spring when in side discharge mode. Refer to Replacing the Grass Deflector.

1. Disengage the PTO 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. Unlatch the middle tube from the boot and slide apart (Figure 34).
4. Remove the tube assembly from the bagger (Figure 34).
5. Remove the boot from the mounting bracket (Figure 34).
6. Lower the grass deflector back into place.
7. If you are changing to side discharge mode, install the grass deflector spring. Refer to Replacing the Grass Deflector.

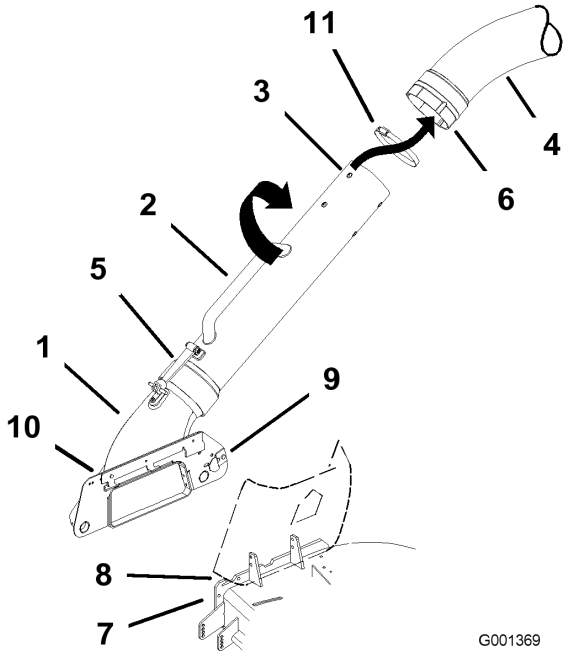


Figure 34

1. Boot
2. Middle tube
3. Knob
4. Upper tube
5. Latch
6. Notch in upper tube
7. Mounting bracket
8. Front slot
9. Rear hook
10. Front hook
11. Clamp

Removing the Bagger

If you operate mower without the bagger installed or with the discharge tubes and boot removed, you and others may be injured by thrown debris or cut by the blade.

Always operate the mower with either the complete bagger mounted in place or use the mower in side discharge.

1. Disengage the power take off (PTO), set the parking brake, turn the ignition key to off and remove the key.
2. Remove the discharge tubes. Refer to Removing the Discharge Tubes.
3. Remove hairpin cotters and clevis pins from the bagger and bagger bracket.
4. Remove the bagger belt. Remove the idler pulley arm only if the machine frame does not have a tab to hold the idler arm (Figure 36). Refer to Securing the Bagger Idler Pulley.
5. Remove the bagger from the bagger mounting bracket.
6. Replace the grass deflector spring; refer to Replacing the Grass Deflector Spring.
7. Remove both the top weights and caster weights.

Securing the Bagger Idler Pulley

For this procedure, use one of the clevis pins and hairpin cotter pins used to attach the bagger to the bagger mounting bracket.

Note: Only secure the bagger idler pulley when you are removing the bagger.

1. Check the bagger idler arm for a hole next to the pivot. If there is no hole, follow steps 2 and 3 for drilling a hole.
2. Measure 1–1/4 inches (31.75 mm) from the center of the pivot and mark the location (Figure 36).
3. Drill a 17/32 inch diameter hole into the bagger idler arm at the marked location.

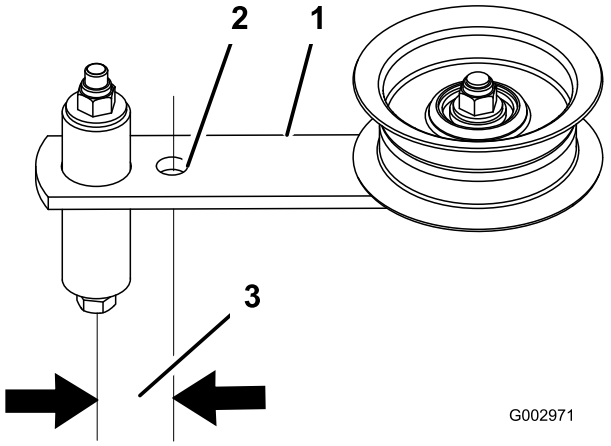


Figure 35

1. Bagger idler arm
2. Drill a 17/32 inch diameter hole here
3. 1–1/4 inches (31.75 mm)

4. Using the clevis pin from the bagger mount, secure the idler arm by inserting the clevis pin through the idler arm and idler arm bracket (Figure 36).
5. Install the hairpin cotter pin to secure the clevis pin (Figure 36).

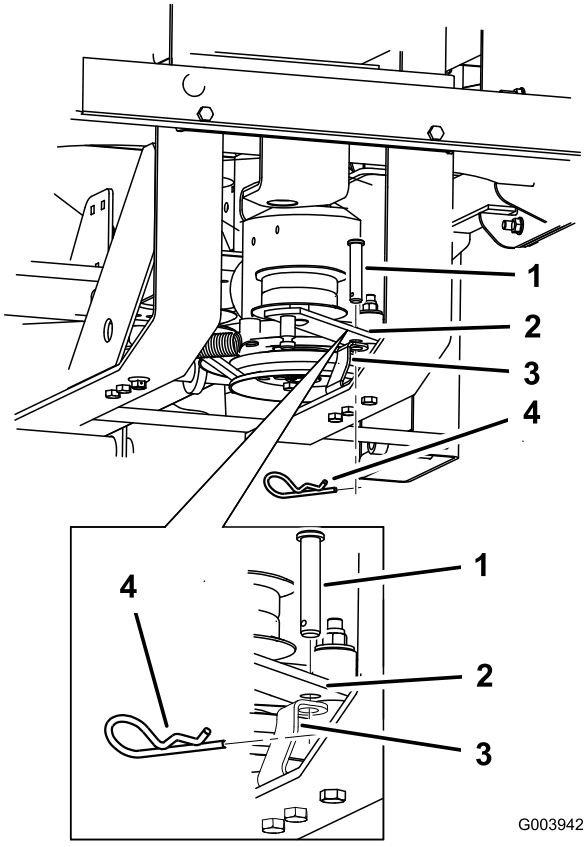


Figure 36

1. Clevis pin
2. Bagger idler arm
3. Idler arm bracket
4. Hairpin cotter pin

Replacing the Grass Deflector

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, or a grass chute and catcher.

1. Remove the locknut, bolt, spring and spacer holding the deflector to the pivot brackets (Figure 37). Remove damaged or worn grass deflector.
2. Place spacer and spring onto grass deflector. Place the L end of spring behind deck edge.

   Note: Make sure the L end of spring is installed behind deck edge before installing the bolt as shown in Figure 37.
3. Install bolt and nut. Place J hook end of spring around grass deflector (Figure 37).

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

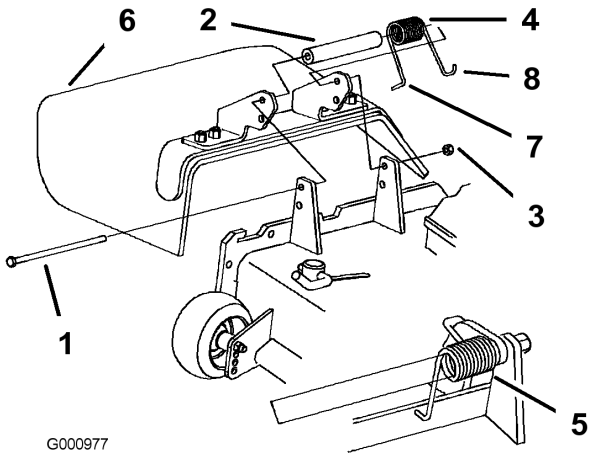


Figure 37

1. Bolt
2. Spacer
3. Locknut
4. Spring
5. Spring installed
6. Grass Deflector
7. L end of spring, place behind deck edge before installing bolt
8. J hook end of spring

Operating 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 bagging tubes.

Cutting Height

For optimum bagging performance, set the deck height-of-cut to remove no more that 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).

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 boot 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.

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

Excessively long grass is heavy and may not be propelled completely into the bagger. If this happens, the tube and boot may plug. To avoid plugging the bagging system, mow the grass at a high height-of-cut, then lower the mower to your normal cutting height and repeat the bagging process.

Bagging Wet Grass

If possible, always try to cut grass when it is dry.

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 boot is plugged.

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.

- **Never remove the grass deflector from the mower because the grass deflector routes material down toward the turf. If the grass deflector is ever damaged, replace it immediately.**
- **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).**

Fan Vacuum

The bagging system operates by vacuum created by a rotating fan mounted in the top of the hopper. If the vacuum action is reduced, bagging performance will diminish. Refer to Troubleshooting for causes of reduced performance.

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 the mower 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.

Maintenance

Recommended Maintenance Schedule(s)

Maintenance Service Interval	Maintenance Procedure
After the first 10 hours	• Check the bagger belt. • Inspect the bagger.
Before each use or daily	• Clean the screens. • Clean the bagger.
Every 50 hours	• Grease the idler arm.
Every 100 hours	• Grease the fan shaft bearings. • Inspect the bagger.

Cleaning the Screens

Service Interval: Before each use or daily

The screens need to be cleaned before each use. In wet grass they will need to be cleaned more often.

1. Disengage the power take off (PTO), set the parking brake, turn the ignition key to off and remove the key.
2. Open the bagger and hold the bagger door open. Refer to Holding the Bagger Door Open.
3. Clean the debris from the screens.
4. Close the bagger door.

Cleaning the Bagger

Service Interval: Before each use or daily

The bagger needs to be cleaned daily.

1. Wash the inside and outside of the bagger, upper tube, lower tube, boot assembly 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.

Checking the Bagger Belt

Service Interval: After the first 10 hours

The bagger belt tension needs to be checked after the first 10 hours.

Check the belt tension. Refer to Adjusting the Bagger Belt.

Greasing the Idler Arm

Service Interval: Every 50 hours

Grease the bagger belt idler arm (Figure 38) every 50 hours.

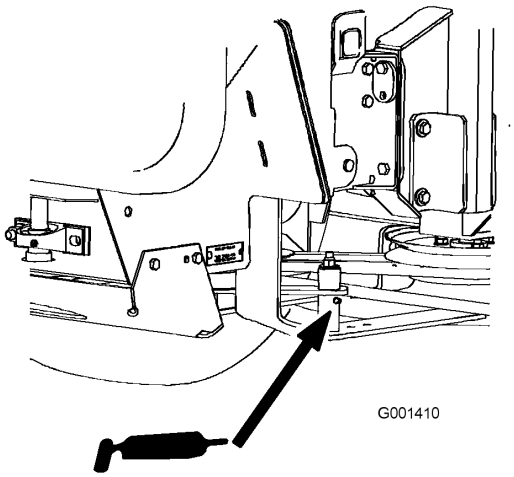


Figure 38

Greasing the Fan Shaft Bearings

Service Interval: Every 100 hours

Grease the upper and lower bagger fan shaft bearings (Figure 39 & Figure 40) every 100 hours.

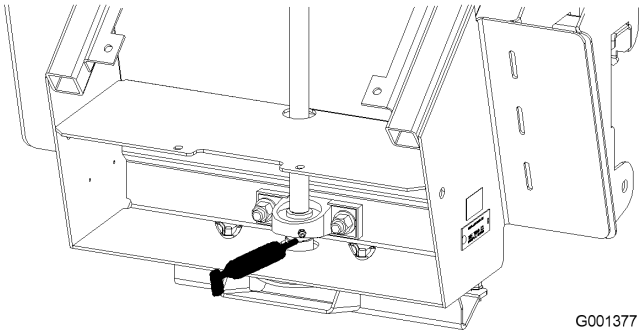


Figure 39

Remove rubber plug to expose grease fitting.

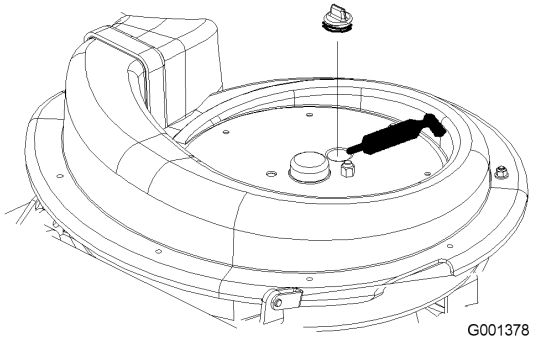


Figure 40

Inspecting the Bagger

Service Interval: Every 100 hours

After the first 10 hours

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

1. Disengage the power take off (PTO), set the parking brake, turn the ignition key to off and remove the key.
2. Check the upper tube, lower tube, and the boot assembly. Replace these parts if they are cracked or broken.
3. Check the bagger, bagger frame, and screens. Replace any parts that are cracked or broken.
4. Tighten all nuts bolts and screws.

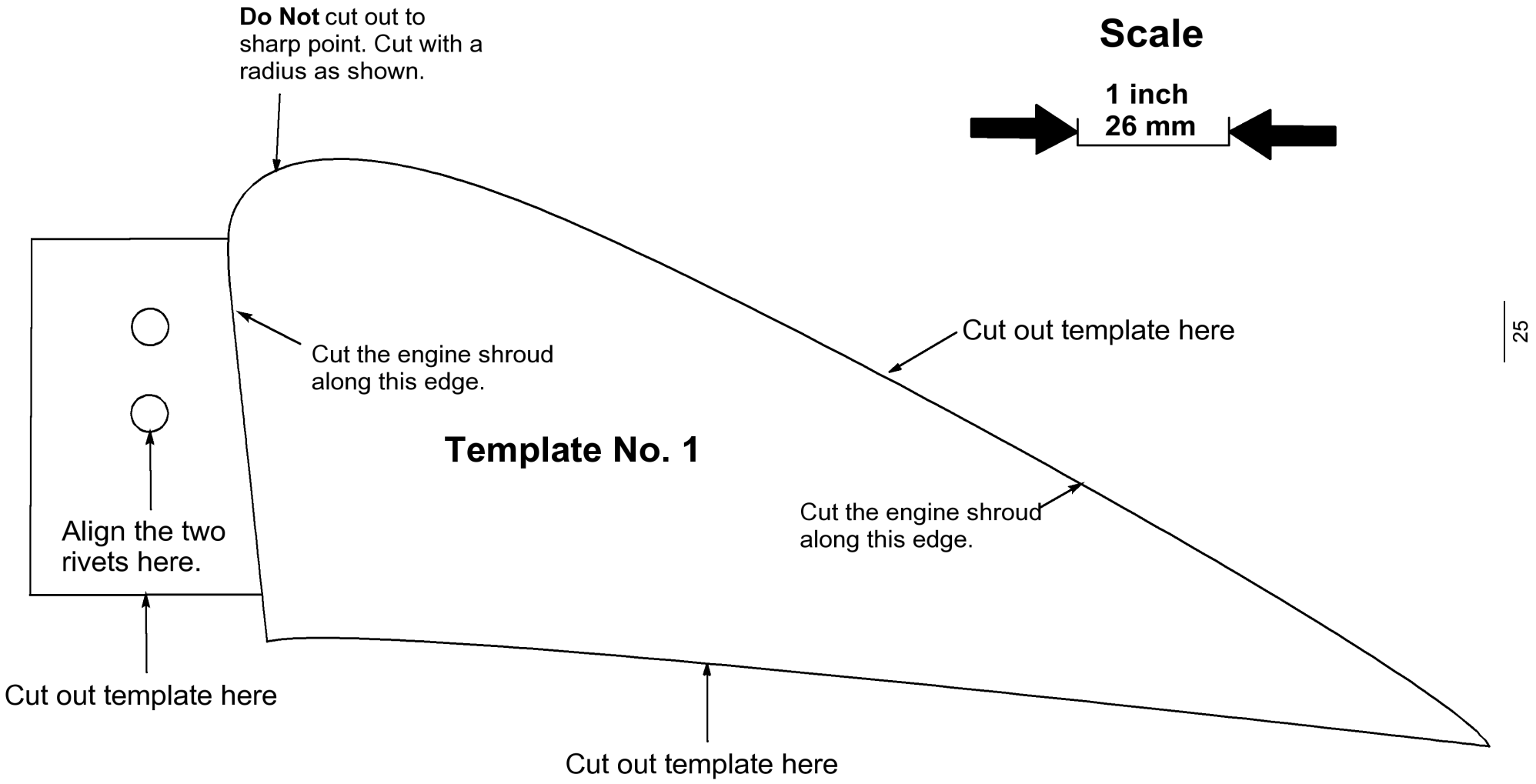
Inspecting the Mower Blades

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

Troubleshooting

Problem	Possible Cause	Corrective Action
Abnormal vibration.	1. Cutting blade(s) is/are bent or unbalanced. 2. Blade mounting bolt is loose. 3. Engine mounting bolts are loose. 4. Loose bagger or pulley assembly. 5. Bagger belt is worn or damaged.	1. Install new cutting blade(s). 2. Tighten the blade mounting bolt. 3. Tighten the engine mounting bolts. 4. Tighten the appropriate pulley. 5. Contact an Authorized Service Dealer.
Reduced bagging performance.	1. Low engine speed. 2. Plugged fan screen. 3. Loose bagger belt. 4. Broken seal between the hopper and rear door. 5. A plugged boot. 6. Improper seal around the upper tube going into the hopper. 7. Full hopper.	1. Always operate the bagger at full throttle. 2. Remove debris, leaves or grass clippings from the fans screen.. 3. Tighten the bagger belt. 4. Ensure the rear door is latched. 5. Locate and remove plugged debris. 6. Ensure that there is a good seal at the hopper. 7. Empty the hopper.
Boot and tubes plug too frequently.	1. Hopper is too full. 2. Low engine speed. 3. Grass is too wet. 4. Grass is too long. 5. Plugged fan screen. 6. Ground speed is too fast.	1. Dump more frequently. 2. Always operate the bagger at full throttle. 3. Cut grass when it is dry. 4. Cut no more than 2-3 inches or 1/3 of the grass height, which ever is less. 5. Remove debris, leaves or grass clippings from the fan screen. 6. Drive slower at full throttle.
Debris blowout.	1. Hopper is too full. 2. Ground speed is too fast. 3. Mower deck is not leveled.	1. Dump more frequently. 2. Drive slower at full throttle. 3. See the mower operator’s manual for leveling the mower deck.

Template No. 1



Notes:

Notes:

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 Products if defective in materials or workmanship. The following time periods apply from the date of purchase:

This warranty applies to:

- ProLine Mid-Size Mowers and Attachments — 1 year
- Z Master Mid-Mount ZRTs and Attachments — 1 year

Components	Warranty Period
Traction Unit Frame and Carrier Frame	2 year
All Spindles	3 years Parts 2 years Labor
Engines* and /Hydraulic System	2 years
Deck Shells (34²-72²)	2 years
Z500 Series Electric Clutch	2 years
Remaining Components	1 year

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

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

Instructions for Obtaining Warranty Service

If you think that your Toro 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, contact us at:

LCB Customer Service Department
Toro Warranty Company
8111 Lyndale Avenue South
Bloomington, MN 55420-1196

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.

General Conditions

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

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.

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.