Form No. 3329–140

TORO®

92cm Mower

Proline Mid–Size Traction Unit

Model No. 30138—Serial No. 230000001 and Up

Operator’s Manual

CE

English (GB)

Contents

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.

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.

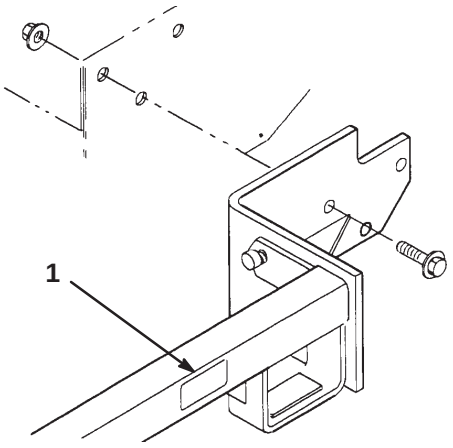


Figure 1

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.

8111 Lyndale Avenue South
Bloomington, MN 55420-1196

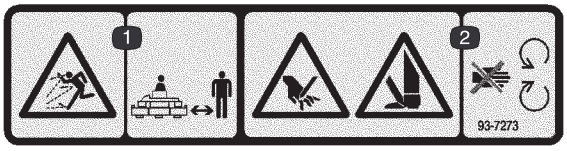
Safety

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.

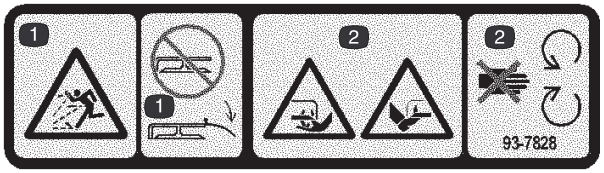
93-7316

1. Thrown object hazard—stay a safe distance from the machine.
2. Thrown object hazard, mower—keep the deflector in place.
3. Cutting/dismemberment of hand or foot—stay away from moving parts.



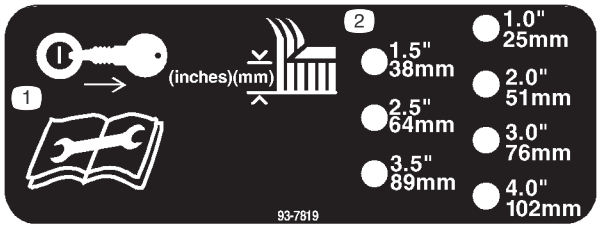
93-7273

1. Thrown object hazard—keep bystanders a safe distance from the machine.
2. Cutting hazard of hand or foot—stay away from moving parts.



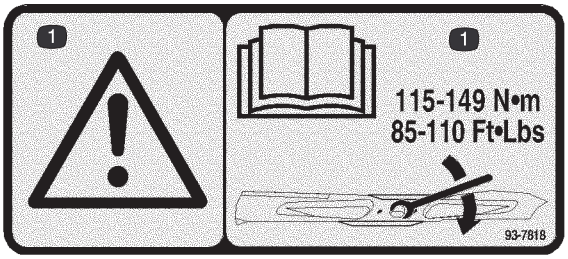
93-7828

1. Thrown object hazard, mower—do not operate the mower with the deflector up or removed; keep the deflector in place.
2. Cutting/dismemberment hazard of hand or foot, mower blade—stay away from moving parts.



93-7819

1. Remove the ignition key and read the instructions before servicing or performing maintenance.
2. Height of cut settings



93-7818

1. Warning—read the *Operator's Manual* for instructions on torquing the blade bolt/nut to 115–149 N·m (85–110 ft.-lb.).

93-7824

1. Thrown object hazard—stay a safe distance from the machine.
2. Thrown object hazard, mower—keep the deflector in place.
3. Cutting/dismemberment of hand or foot—stay away from moving parts.

Setup

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

Loose Parts

Note: Use the chart below to identify parts used for assembly.

DESCRIPTION	QTY.	USE
Caster Wheel Assembly	2	Installing the caster wheels
Thrust Washer	8	
Spacer	2	
Retaining Ring	2	
Carrier Frame	1	Installing the carrier frame to the traction unit
Flange Screw, 1/2 x 25 mm (1 inch)	6	
Flange Nut, 1/2 inch	6	
Front Baffle	1	Installing the front baffle
Bolt, 5/16 x 19 mm (3/4 inch)	6	
Locknut, 5/16 inch	6	
Clevis Pin	4	Install installing the mower
Hairpin Cotter	4	
Adjusting Shaft	2	Installing the drive belt and adjusting shafts
Jam Nut, 1/2 inch	4	
Spacer, 13 mm (1/2 inch)	2	
Spring	2	
Bushing	2	
Operator's Manual	1	Read before operating
Parts Catalog	1	Ordering parts

Installing the Caster Wheels

1. Place 2 thrust washers onto the caster wheel fork (Fig. 2).
2. Insert the caster wheel fork into the carrier frame mounting tube (Fig. 2).
3. Install 2 thrust washers and the spacer onto the caster wheel fork, then secure with a locking pin (Fig. 2).

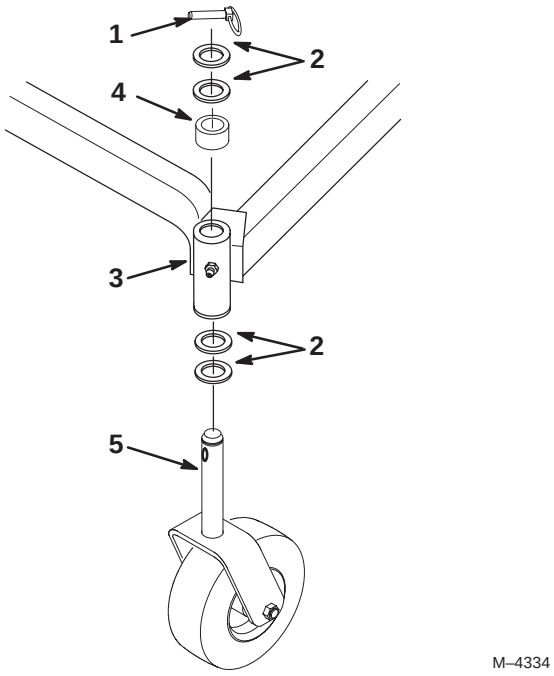


Figure 2

1. Locking Pin
2. Thrust Washer (4)
3. Carrier Frame Mounting Tube
4. Spacer
5. Caster Wheel Fork

Installing the Carrier Frame to the Traction Unit

1. Align the carrier frame holes with the mounting holes in the traction unit frame (Fig. 3).
2. Fasten each side of the carrier frame to the traction unit with 3 flange screws (1/2 x 25 mm (1 inch)) and locknuts. Torque the mounting screws to 81–109 N•m (60–80 ft-lb) (Fig. 3).

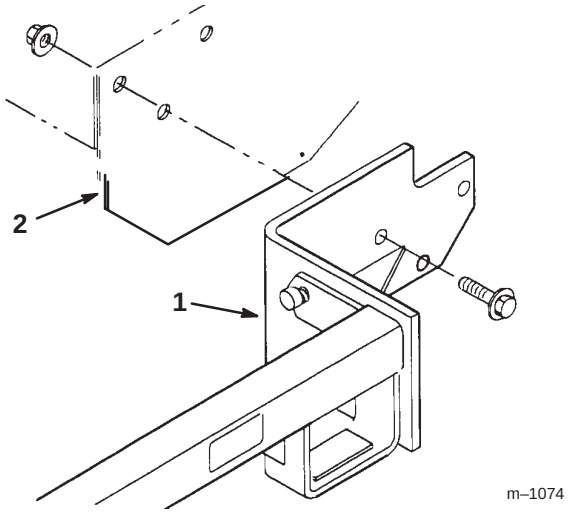


Figure 3

1. Carrier Frame
2. Traction Unit Frame

Installing the Front Baffle

1. Locate the front baffle inside the front of the mower so the left end fits into the angle, and the top fits up against the top front edge (Fig. 4).
2. Using the baffle as a guide, mark and drill six holes (9 mm) in the front of the mower as shown (Fig. 4).
3. Install the front baffle inside the mower with 6 bolts (5/16 x 3/4 inch (19 mm)) from the inside, and secure with 6 thin locknuts (5/16 inch) (Fig. 4).

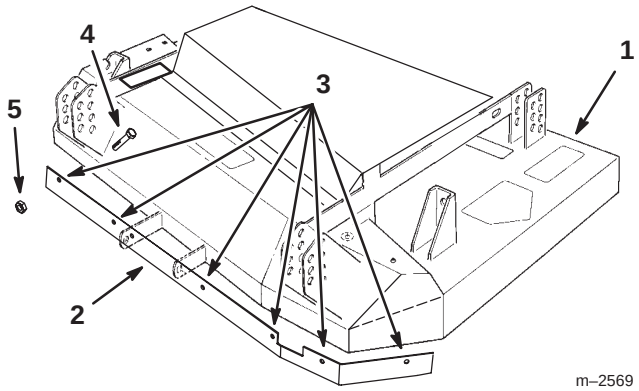


Figure 4

1. Mower
2. Front Baffle
3. Drill 9 mm hole
4. Bolt, 5/16 x 19 mm (3/4 inch)
5. Locknut, 8 mm (5/16 inch) thin

Installing the Mower

1. Position the cutting deck under the carrier frame.
2. Mount the cutting deck to the carrier frame with 4 clevis pins and hairpin cotters (Fig. 5).

Note: All four pins must be in the same hole locations to prevent uneven cutting.

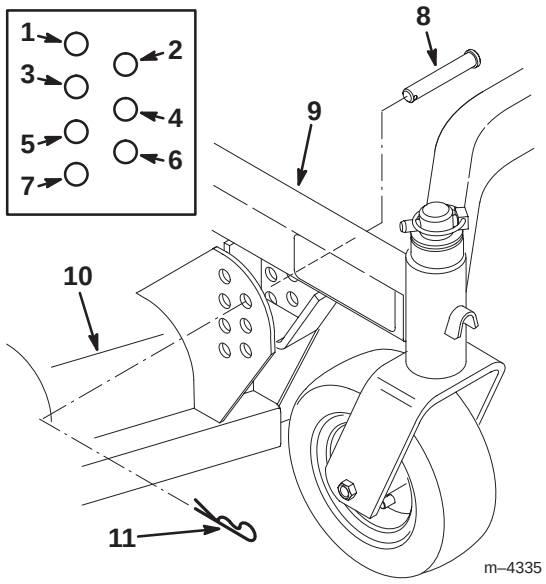


Figure 5

1. 26 mm (1 inch) Cut Height
2. 38 mm (1-1/2 inch) Cut Height
3. 51 mm (2 inch) Cut Height
4. 63 mm (2-1/2 inch) Cut Height
5. 76 mm (3 inch) Cut Height
6. 89 mm (3-1/2 inch) Cut Height
7. 102 mm (4 inch) Cut Height
8. Clevis Pin
9. Carrier Frame
10. Mower
11. Hairpin Cotter

Installing the Drive Belt and Adjusting Shafts

1. Remove the hand knobs holding the deck cover to the top of the cutting unit and remove the deck cover.
2. Install the drive belt around the drive pulley on the traction unit and the upper groove of the left spindle pulley. The belt must be between the belt guides (Fig. 6).

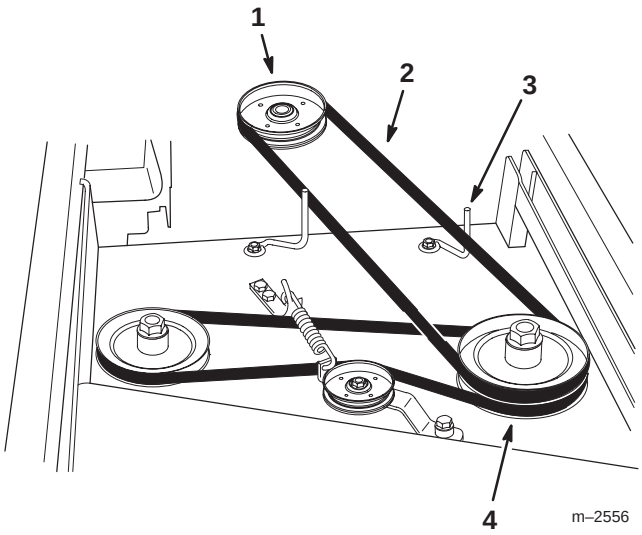


Figure 6

1. Traction unit drive pulley
2. Drive belt
3. Belt guide
4. Left spindle pulley

3. Thread two 2 jam nuts (13 mm (1/2 inch)) approximately 23 cm (9 inch) up on each adjusting shaft (Fig. 7).
4. Slide a spacer (13 mm (1/2 inch)), spring, and bushing onto each adjusting shaft. Make sure to install the bushing with the flange end against the spring (Fig. 7).

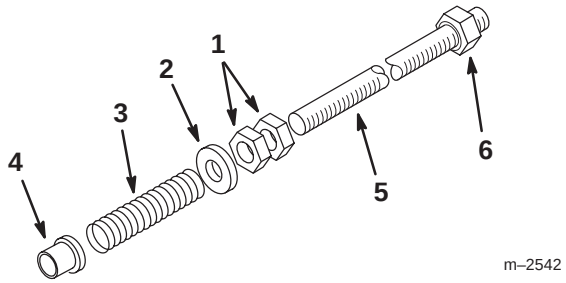


Figure 7

1. Jam nut, 13 mm (1/2 inch)
2. Spacer, 13 mm (1/2 inch)
3. Spring
4. Bushing
5. Adjusting shaft
6. Locknut (already installed on adjusting shaft)

5. Insert the spring end of the adjusting shaft into the hole in the deck mounting bracket. Note that the small end of the bushing fits into the hole in the deck bracket. Insert the locknut end of the adjusting shaft into the carrier frame mounting tab (Fig. 8).

6. To tension the belt, tighten the front jam nut on each adjusting shaft until the springs are compressed to 13 cm (5 inch). Measure the spring compression between the spacer and the bushing (Fig. 8).

7. Tighten the rear jam nuts (Fig. 8).

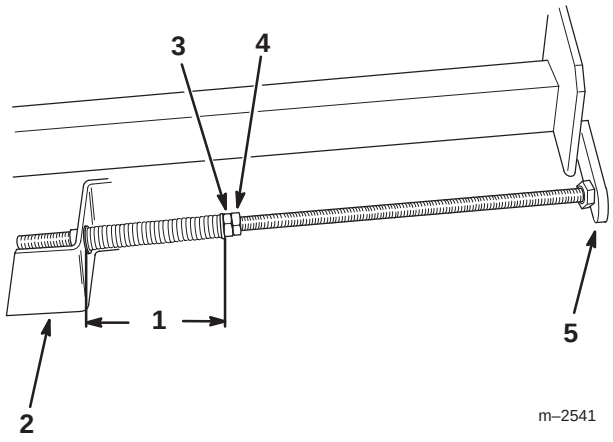


Figure 8

1. 12.7 cm (5 inch) between the spacer and bushing
2. Deck mounting bracket
3. Front jam nut
4. Rear jam nut
5. Carrier frame mounting tab

8. Check the position of the belt guides. The guides should be positioned about 3 mm (1/8 inch) away from the belt (Fig. 9). Adjust the belt guides as necessary.

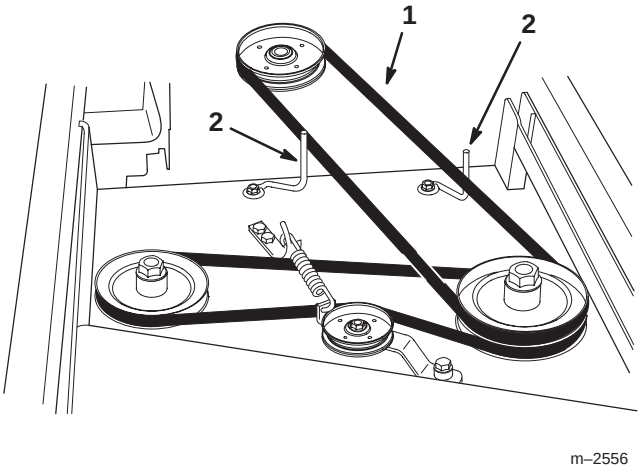


Figure 9

1. Drive belt
2. Belt guide

9. Check the front-to-rear blade pitch. Refer to Setting the Front-to-Rear Pitch in the Maintenance, page 12.

10. Install the deck cover onto the cutting unit, then install and tighten the hand knobs.

Operation

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

Side Discharge or Mulch Grass

The mower has a hinged grass deflector that disperses clippings to the side and down toward the turf.

Danger

Without the grass deflector, discharge cover, or complete grass catcher assembly mounted in place, you and others are exposed to blade contact and thrown debris. Contact with 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 discharge area or mower blades unless you release the bail and the power take off (PTO) is off. Rotate the ignition key to off. Also remove the key and pull the wire off the spark plug(s).**

Engaging the Mower Blades (PTO)

The blade control switch (PTO) in conjunction with the blade control bail engages and disengages power to the electric clutch and mower blades.

1. Pull on the upper control bar to stop the machine (Fig. 10).

2. To engage the blades, squeeze the blade control bail against the upper control bar.

3. Pull the blade control knob up. Hold the blade control bail against the control bar while operating.

Note: Repeat the procedure to engage the mower blades if the blade control bail is released.

4. To disengage the blades, release the blade control bail.

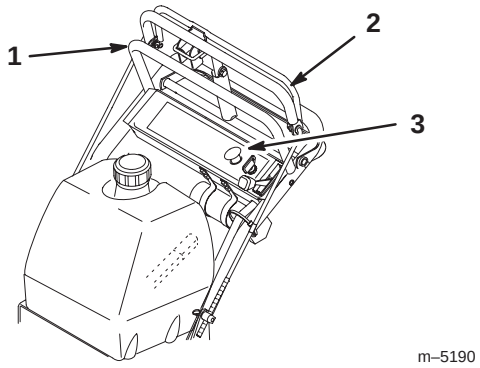


Figure 10

1. Upper Control Bar
2. Blade Control Bail
3. Blade Control Switch (PTO)

Adjusting the Height-of-Cut

The height-of-cut is adjustable from 26 to 102 mm (1 to 4 inch) in 13 mm (1/2 inch) increments by relocating the clevis pins in different hole locations in brackets at each corner of the cutting unit (Fig. 11).

Stop the engine before adjusting the height-of-cut.

Note: All four pins must be in the same hole location for even cutting.

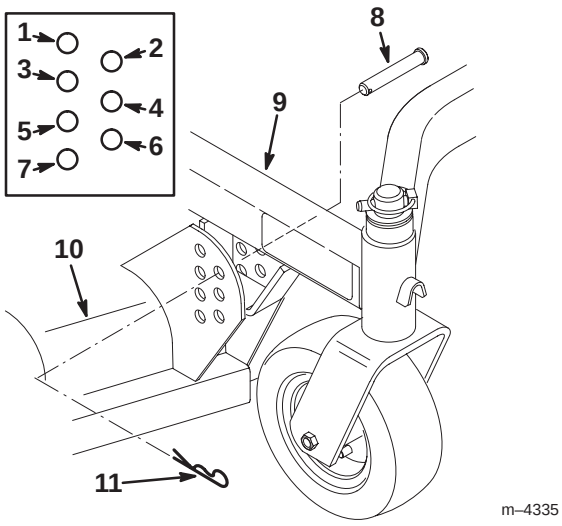


Figure 11

1. 26 mm (1 inch) Cut Height
2. 38 mm (1-1/2 inch) Cut Height
3. 51 mm (2 inch) Cut Height
4. 63 mm (2-1/2 inch) Cut Height
5. 76 mm (3 inch) Cut Height
6. 89 mm (3-1/2 inch) Cut Height
7. 102 mm (4 inch) Cut Height
8. Clevis Pin
9. Carrier Frame
10. Mower
11. Hairpin Cotter

Adjusting Center Gage Wheels

The gage wheels must be adjusted in the proper hole location for each height-of-cut position.

1. After adjusting height-of-cut remove bolt and nut (Fig. 12).
2. Select a hole position so the gage wheel is 10 mm (3/8 inch) off the ground for the height-of-cut to be used (Fig. 12).
3. Reinstall the bolt and nut (Fig. 12).

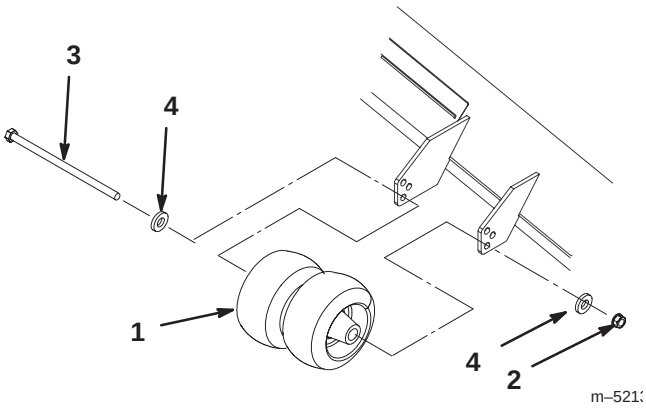


Figure 12

1. Center Gage Wheels and Spacer
2. Nut
3. Bolt
4. Washer

Tips for Mowing Grass

Fast Throttle Setting

For best mowing and maximum air circulation, operate the engine at **fast.** Air is required to thoroughly cut grass clippings, so do not set the height-of-cut so low as to totally surround the mower by uncut grass. Always try to have one side of the mower free from uncut grass, which allows air to be drawn into the mower.

Cutting a Lawn for the First Time

Cut grass slightly longer than normal to ensure the cutting height of the mower does not scalp any uneven ground. However, the cutting height used in the past is generally the best one to use. When cutting grass longer than six inches tall, you may want to cut the lawn twice to ensure an acceptable quality of cut.

Cut 1/3 of the Grass Blade

It is best to cut only about 1/3 of the grass blade. Cutting more than that is not recommended unless grass is sparse, or it is late fall when grass grows more slowly.

Mowing Direction

Alternate mowing direction to keep the grass standing straight. This also helps disperse clippings which enhances decomposition and fertilization.

Mow at Correct Intervals

Normally, mow every four days. But remember, grass grows at different rates at different times. So to maintain the same cutting height, which is a good practice, mow more often in early spring. As the grass growth rate slows in mid summer, mow less frequently. If you cannot mow for an extended period, first mow at a high cutting height; then mow again two days later at a lower height setting.

Cutting Speed

To improve cut quality, use a slower ground speed.

Avoid Cutting Too Low

If the cutting width of the mower is wider than the mower you previously used, raise the cutting height to ensure that uneven turf is not cut too short.

Long Grass

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

When Stopping

If the machine's forward motion must be stopped while mowing, a clump of grass clippings may drop onto your lawn. To avoid this, move onto a previously cut area with the blades **engaged**.

Keep the Underside of the Mower Clean

Clean clippings and dirt from the underside of the mower after each use. If grass and dirt build up inside the mower, cutting quality will eventually become unsatisfactory.

Blade Maintenance

Maintain a sharp blade throughout the cutting season because a sharp blade cuts cleanly without tearing or shredding the grass blades. Tearing and shredding turns grass brown at the edges, which slows growth and increases the chance of disease. Check the cutter blades daily for sharpness, and for any wear or damage. File down any nicks and sharpen the blades as necessary. If a blade is damaged or worn, replace it immediately with a genuine TORO replacement blade.

Maintenance

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

Recommended Maintenance Schedule

Maintenance Service Interval	Maintenance Procedure
Each Use	• Mower Housing—clean
8 Hours	• Cutting Blades—check • Mower Housing—clean • Blade spindle bearings—grease
25 Hours	• Caster wheels—grease
At storage	• Belts—check • Cutting Blades—check • Mower Housing—clean • Chipped Surfaces—paint

Important Refer to your engine operator's manual for additional maintenance procedures.

Servicing the Cutting Blades

To ensure a superior quality of cut, keep the blades sharp. For convenient sharpening and replacement, you may want to keep extra blades on hand.

Danger

A worn or damaged blade can break, and a piece of the blade could be thrown into the operator's or bystander's area, resulting in serious personal injury or death.

- **Inspect the blade periodically for wear or damage.**
- **Replace a worn or damaged blade.**

Before Inspecting or Servicing the Blades

Park the machine on a level surface, disengage the blade control (PTO) and set the parking brake. Turn the ignition key to off to stop the engine. Remove the key and disconnect the spark plug wire(s) from the spark plug(s).

Inspecting the Blades

1. Inspect the cutting edges (Fig 13). If the edges are not sharp or have nicks, remove and sharpen the blades. Refer to Sharpening the Blades on page 11.
2. Inspect the blades, especially the curved area (Fig. 13). If you notice any damage, wear, or a slot forming in this area (item 3 in Fig. 13), immediately install a new blade.

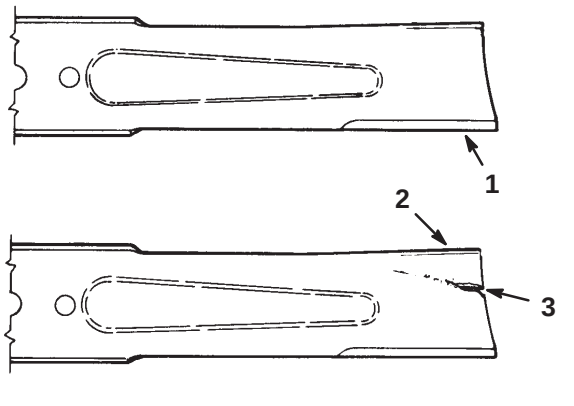
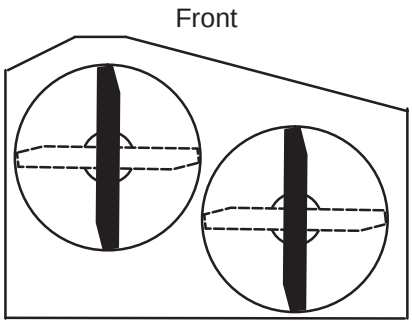


Figure 13

1. Cutting Edge
2. Curved Area
3. Wear/slot Forming

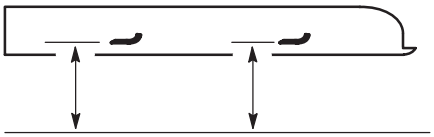
Checking for Bent Blades

1. Rotate the blades until the ends face forward and backward (Fig. 14). Measure from a level surface to the cutting edge of the blades (Fig. 15). Note this dimension.



m–2466

Figure 14



MEASURE FROM CUTTING EDGE TO A LEVEL SURFACE

m–1087

Figure 15

2. Rotate the opposite ends of the blades forward.
3. Measure from a level surface to the cutting edge of the blades at the same position as in step 1 above. The difference between the dimensions obtained in steps 1 and 2 must not exceed 3 mm(1/8 inch). If this dimension exceeds 3 mm (1/8 inch) 1/8 inch (3 mm), the blade is bent and must be replaced. Refer to Removing the Blades, and Installing the Blades on page 12.

Warning

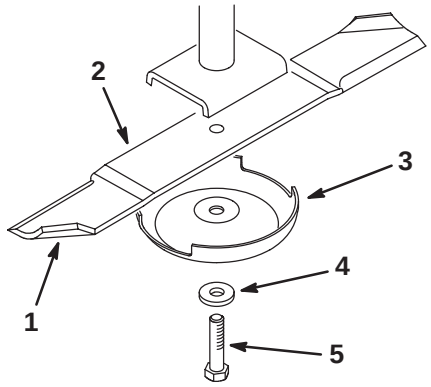
A blade that is bent or damaged could break apart and could seriously injure or kill you or bystanders.

- **Always replace bent or damaged blade with a new blade.**
- **Never file or create sharp notches in the edges or surfaces of blade.**

Removing the Blades

Blades must be replaced if a solid object is hit, if the blade is out of balance or is bent. To ensure optimum performance and continued safety conformance of the machine, use genuine TORO replacement blades. Replacement blades made by other manufacturers may result in non-conformance with safety standards.

Hold the blade end using a rag or thickly-padded glove. Remove the blade bolt, lock washer, anti–scalp cup and blade from the spindle shaft (Fig. 16).



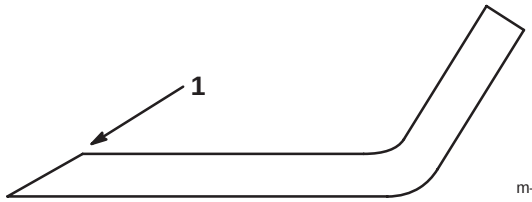
1082

Figure 16

1. Sail Area of Blade
2. Blade
3. Anti–scalp Cup
4. Lock Washer
5. Blade Bolt

Sharpening the Blades

1. Use a file to sharpen the cutting edge at both ends of the blade (Fig. 17). Maintain the original angle. The blade retains its balance if the same amount of material is removed from both cutting edges.



m–1854

Figure 17

1. Sharpen at original angle

2. Check the balance of the blade by putting it on a blade balancer (Fig. 18). If the blade stays in a horizontal position, the blade is balanced and can be used. If the blade is not balanced, file some metal off the end of the sail area only (Fig. 16). Repeat this procedure until the blade is balanced.

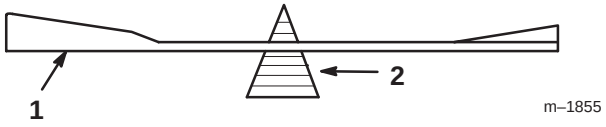


Figure 18

1. Blade
2. Balancer

Installing the Blades

1. Install the blade onto the spindle shaft (Fig. 16).

Important The curved part of the blade must be pointing upward toward the inside of the mower to ensure proper cutting.

2. Install the anti–scalp cup, lock washer and blade bolt (Fig. 16). Torque the blade bolt to 115–149 N•m (85–110 ft-lb).

Correcting Cutting Unit Mismatch

If one cutter blade cuts lower than the other, correct as follows:

1. Stop the engine, remove the key and disconnect the spark plug wire(s) from the spark plug(s).

2. Adjust the tire pressure in all tires to specifications and check that the blades are not bent. Refer to Checking for Bent Blades on page 11.

3. Set the height-of-cut to the 64 mm (2-1/2 inch) position. Refer to Adjusting the Height-Of-Cut in the Operation section. Make sure the clevis pins are resting on the frame cushions.

4. Rotate the blades so the tips line up with one another. The tips of both blades must be within 3 mm (1/8 inch) of each other. If the blade tips are not within 3 mm (1/8 inch) of each other, add shim washers (Part No. 3256-24) between the appropriate spindle housing and the bottom of the cutting unit to align the blades.

Setting the Front-to-Rear Pitch

1. Check the tire pressure.

2. Position the blades front-to-rear (Fig. 19). Measure at **C** and **D** locations (Fig. 19) from a level surface to the cutting edge of the blades (Fig. 20).

3. The mower should be 3–16 mm (1/8–5/8 inch) lower in front **C** than in the rear **D**.

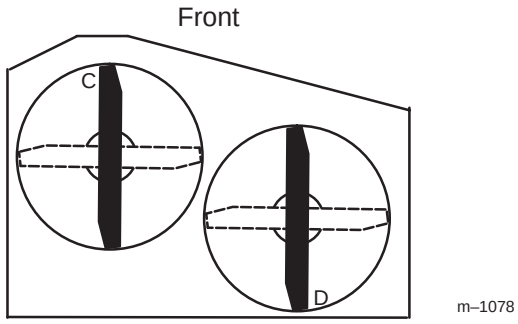
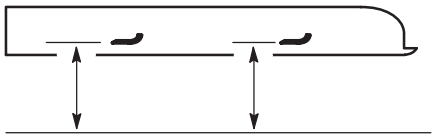


Figure 19



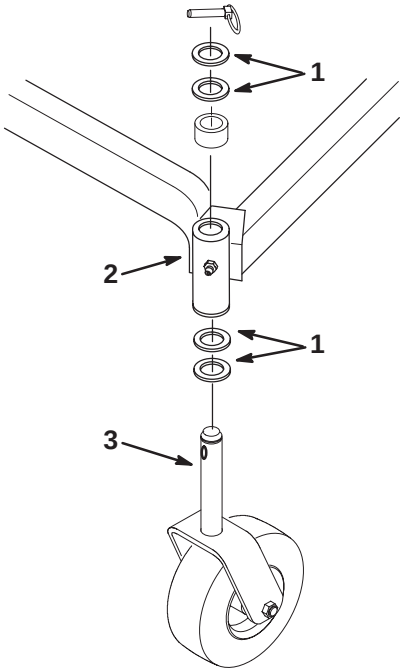
MEASURE FROM CUTTING EDGE TO A LEVEL SURFACE

m–1087

Figure 20

4. To change the front-to-rear pitch, move an equal number of thrust washers on both caster wheel forks. Move the thrust washers from the top of the carrier frame mounting tube to the bottom to raise the front of the mower. Move the thrust washers from the bottom of the mounting tube to the top to lower the front of the mower (Fig. 21).

5. Check the side-to-side leveling of the cutting unit.



M–4334

Figure 21

1. Thrust Washers (locate as required)
2. Carrier Frame Mounting Tube
3. Caster Wheel Fork

Setting the Side-to-Side Leveling

1. Check the tire pressure.

2. Position the blades side-to-side (Fig. 22). Measure at **A** and **B** locations (Fig. 22) from a level surface to the cutting edge of blades (Fig. 23).

3. The difference between measurements **A** and **B** should be no more than 1/4 inch (6 mm).

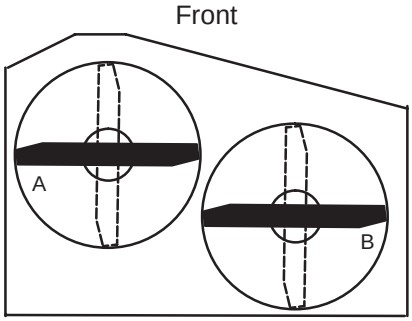


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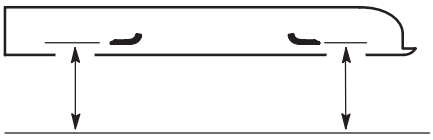
Figure 22



MEASURE FROM CUTTING EDGE TO A LEVEL SURFACE

m–2558

Figure 23

4. To change the side-to-side leveling, move the thrust washers on one caster wheel fork only. Move the thrust washers from the top of the carrier frame mounting tube to the bottom to raise the corresponding side of the mower. Move the thrust washers from the bottom of the mounting tube to the top to lower the corresponding side of the mower (Fig. 21).

5. Recheck the front-to-rear pitch of the cutting unit.

Greasing the Bearings and Bushings

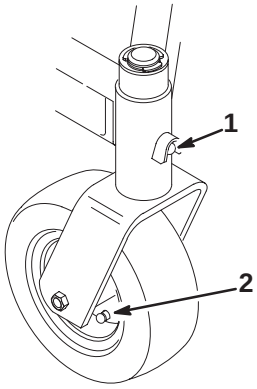
The cutting unit must be lubricated regularly. Refer to the Recommended Maintenance Schedule on page 10. Grease with No. 2 general purpose lithium base or molybdenum base grease.

1. Stop the engine, remove the key and disconnect the spark plug wire(s) from the spark plug(s).

2. Grease the fittings on both spindle bearings (Fig. 25).

Note: You can access the spindle grease fittings through the holes in the mower deck cover.

3. Grease the fittings on the carrier frame mounting tubes and caster wheels (Fig. 24).



m–2547

Figure 24

1. Carrier Frame Mounting Tube Grease Fitting
2. Caster Wheel Grease Fitting

Replacing the Deck Belt

Squealing when the belt is rotating, blades slipping when cutting grass, frayed belt edges, burn marks and cracks are signs of a worn deck belt. Replace the deck belt if any of these conditions are evident.

1. Stop the engine, remove the key and disconnect the spark plug wire(s) from the spark plug(s).
2. Remove the hand knobs holding the deck cover to the top of the cutting unit and remove the deck cover.
3. Remove the drive belt. Refer to Replacing the Drive Belt, steps 3 and 4 on page 14.
4. Disconnect the idler arm spring to relieve tension on the idler arm and idler pulley, then remove the worn deck belt (Fig. 25).
5. Install the new deck belt around the right spindle pulley, idler pulley, and in the lower groove of the left spindle pulley (Fig. 25).
6. Reconnect the idler arm spring (Fig. 25).

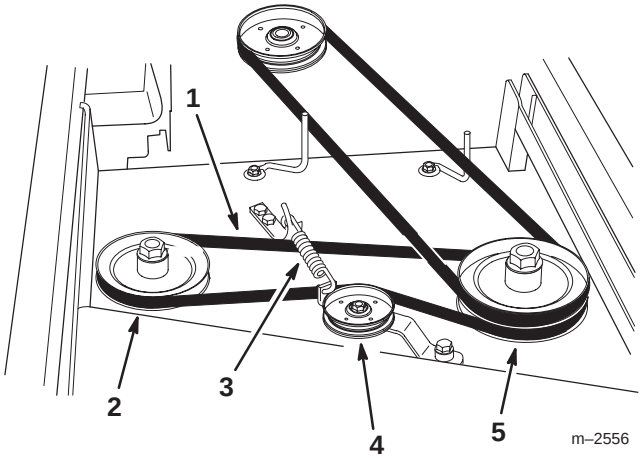


Figure 25

1. Deck Belt
2. Right Spindle Pulley
3. Idler Arm Spring
4. Idler Pulley
5. Left Spindle Pulley

7. Reinstall the drive belt. Refer to Replacing the Drive Belt, steps 5 and 6 on page 14.
8. Reinstall the deck cover onto the cutting unit, then reinstall and tighten the hand knobs.

Replacing the Drive Belt

Squealing when the belt is rotating, blades slipping when cutting grass, frayed belt edges, burn marks and cracks are signs of a worn drive belt. Replace the drive belt if any of these conditions are evident.

1. Stop the engine, remove the key and disconnect the spark plug wire(s) from the spark plug(s).
2. Remove the hand knobs holding the deck cover to the top of the cutting unit and remove the deck cover.
3. Loosen the jam nuts on each adjusting shaft to loosen the tension on the drive belt (Fig 26).

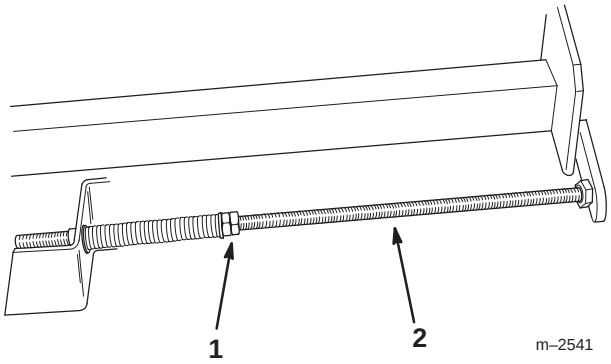


Figure 26

1. Jam Nuts
2. Adjusting Shaft

4. Remove the worn drive belt (Fig. 27).
5. Install the new drive belt onto the traction unit drive pulley and the top groove of the left spindle pulley (Fig. 27).

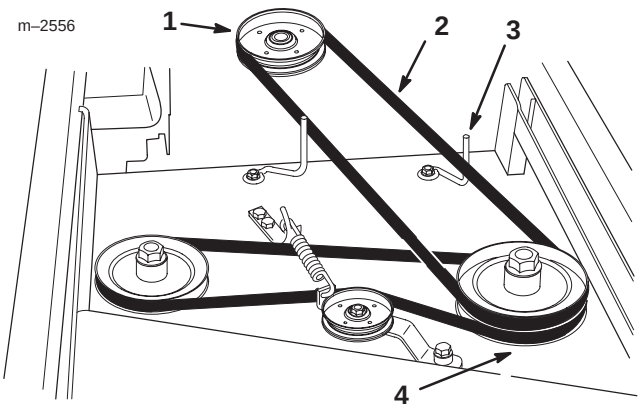


Figure 27

1. Traction unit drive pulley
2. Drive belt
3. Belt guide
4. Left spindle pulley

6. Tighten the jam nuts on the adjusting shafts until the springs are compressed to a length of 13 cm (5 inch) (Fig 28).

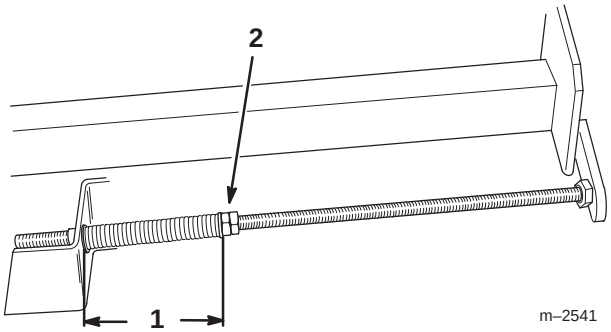


Figure 28

1. 5 inch (13 cm) between the Spacer and Bushing
2. Jam Nuts

7. Reinstall the deck cover onto the cutting unit, then reinstall and tighten the hand knobs.

Replacing the Caster Wheel Fork Bushings

The caster wheel forks are mounted in bushings pressed into the top and bottom of the carrier frame mounting tubes. To check the bushings, move the caster forks back and forth and side-to-side. If a caster fork is loose, the bushings are worn and must be replaced.

1. Raise the cutting unit so the caster wheels are off the floor, then block up the front of the mower with jack stands.

2. Remove the retaining ring, thrust washer(s) and spacer from the top of the caster wheel fork (Fig. 29).

3. Pull the caster wheel fork out of the mounting tube, leaving the thrust washer(s) on the bottom of the fork. Remember the location of the thrust washers and spacer on each fork to ensure correct installation, and to maintain a level deck.

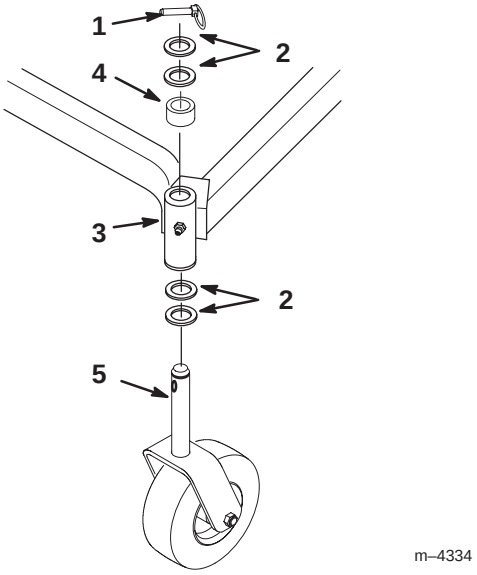


Figure 29

1. Locking Pin
2. Thrust Washers (locate as required)
3. Spacer
4. Carrier Frame Mounting Tube
5. Caster Wheel Fork

4. Insert a pin punch into the mounting tube and carefully drive out the bushings (Fig. 30). Clean the inside of the mounting tube.

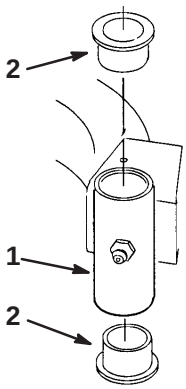
5. Grease the inside and outside of the new bushings. Use a hammer and flat plate to carefully drive the bushings into the mounting tube.

6. Inspect the caster wheel fork for wear and replace if necessary (Fig. 29).

7. Slide the caster wheel fork through the bushings in the mounting tube. Replace the spacer and thrust washer(s) onto the fork and secure with the locking pin (Fig 29).

Important The inside diameter of the bushings may collapse slightly when installed. If the caster wheel fork does not slide into the new bushings, ream both bushings to an inside diameter of 28.6 mm (1.126 inch).

8. Grease the fitting on the carrier frame mounting tube using No. 2 general purpose lithium base or molybdenum base grease.



m–1076

Figure 30

1. Carrier Frame Mounting Tube
2. Bushing

Servicing the Caster Wheels and Bearings

The caster wheels rotate on a roller bearing supported by a spanner bushing. If the bearing is kept well lubricated, wear will be minimal. Failure to keep the bearing well lubricated will cause rapid wear. A wobbly caster wheel usually indicates a worn bearing.

1. Remove the locknut and wheel bolt holding the caster wheel to the caster fork (Fig. 31).

2. Remove the bushing, then pull the spanner bushing and roller bearing out of the wheel hub (Fig. 31).

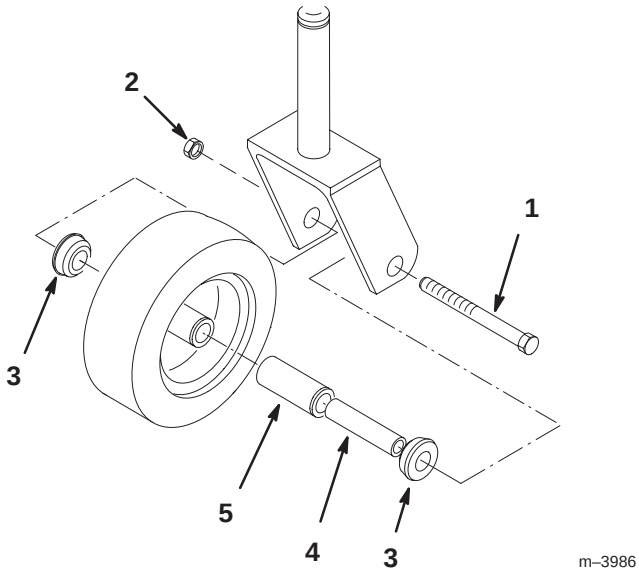
3. Remove the other bushing from the wheel hub and clean any grease and dirt from the wheel hub (Fig. 31).

4. Inspect the roller bearing, bushings, spanner bushing and inside of the wheel hub for wear. Replace any defective or worn parts (Fig. 31).

5. To assemble, place 1 bushing into the wheel hub. Grease the roller bearing and spanner bushing and slide them into the wheel hub. Place the second bushing into the wheel hub (Fig. 31).

6. Install the caster wheel into the caster fork and secure with the wheel bolt and locknut. Tighten the locknut until the spanner bushing bottoms against the inside of the caster forks (Fig. 31).

7. Grease the fitting on the caster wheel.



m–3986

Figure 31

1. Locknut
2. Wheel Bolt
3. Bushing
4. Spanner Bushing
5. Roller Bearing

Replacing the Grass Deflector

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, or a grass chute and catcher.

1. Remove the locknut, bolt, spring and spacer holding the deflector to the pivot brackets (Fig. 32). 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 32.

3. Install bolt and nut. Place the **J** hook end of spring around grass deflector (Fig. 32).

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.

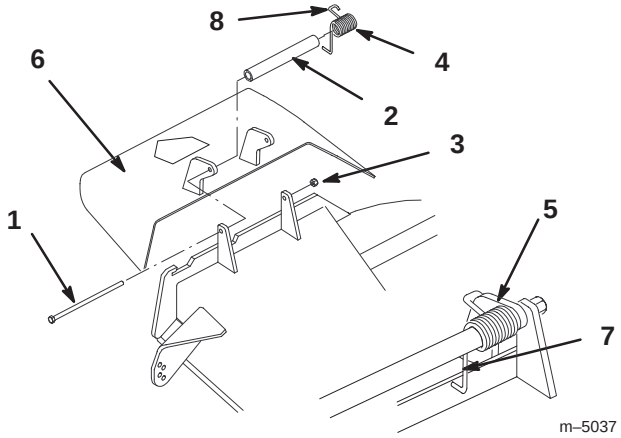


Figure 32

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

Storage

1. Clean any dirt and chaff from the top of the mower.
2. Scrape any heavy buildup of grass and dirt from the underside of the mower, then wash the mower with a garden hose.
3. Check the condition of the blades. Refer to Cutting Blades on page 10.
4. Check the condition of the drive and deck belts.
5. Check and tighten all bolts, nuts and screws. Repair or replace any part that is damaged or defective.
6. Paint all scratched or bare metal surfaces. Paint is available from your Authorized Service Dealer.
7. Store the machine in a clean, dry garage or storage area. Cover the machine to protect it and keep it clean.

Troubleshooting

Problem	Possible Causes	Corrective Action
Abnormal vibration.	1. Cutting blade(s) is/are bent or unbalanced.	1. Install new cutting blade(s).
	2. Blade mounting bolt is loose.	2. Tighten blade mounting bolt.
	3. Engine mounting bolts are loose.	3. Tighten engine mounting bolts.
	4. Loose engine pulley, idler pulley, or blade pulley.	4. Tighten the appropriate pulley.
	5. Engine pulley is damaged.	5. Contact Authorized Service Dealer.
	6. Blade spindle bent.	6. Contact Authorized Service Dealer.

Problem	Possible Causes	Corrective Action
Uneven cutting height.	1. Blade(s) not sharp.	1. Sharpen blade(s).
	2. Cutting blade(s) is/are bent.	2. Install new cutting blade(s).
	3. Mower is not level.	3. Level mower from side-to-side and front-to-rear.
	4. Underside of mower is dirty.	4. Clean the underside of the mower.
	5. Tire pressure is incorrect.	5. Adjust tire pressure.
	6. Blade spindle bent.	6. Contact Authorized Service Dealer.
Blades do not rotate.	1. Drive belt is worn, loose or broken.	1. Install new drive belt.
	2. Drive belt is off pulley.	2. Install drive belt and check adjusting shafts and belt guides for correct position.
	3. Deck belt is worn, loose or broken.	3. Install new deck belt.
	4. Deck belt is off pulley.	4. Install deck pulley and check the idler pulley, idler arm and spring for correct position and function.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