



36" Side Discharge Mower

Proline Mid–Size Attachment

Model No. 30135—Serial No. 230000001 and Up

Operator's Manual

Contents

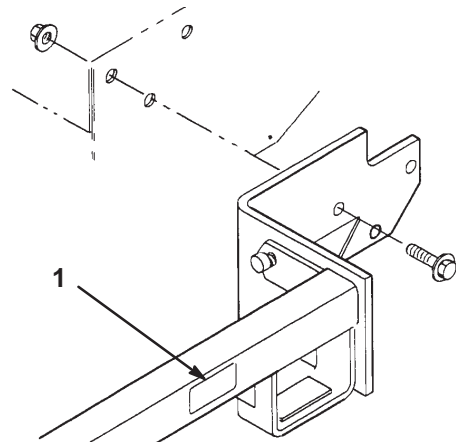
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Introduction

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.

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-1074

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

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.



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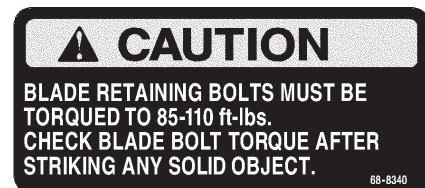
54-9220



66-1340



67-5360



68-8340



85-7450



85-7460

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	Install carrier frame to traction unit
Flange Screw, 1/2 x 1 inch	6	
Flange Nut, 1/2 inch	6	
Adjusting Shaft	2	Install adjusting shafts
Jam Nut, 1/2 inch	4	
Spacer, 1/2 inch	2	
Spring	2	
Bushing	2	
Clevis Pin	4	Install cutting unit to carrier frame
Hairpin Cotter	4	
Operator's Manual	1	Read before operating
Parts Catalog	1	Ordering parts

Installing the Caster Wheels

1. Place the spacer and 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 onto the caster wheel fork and then secure with a locking pin (Fig. 2).
4. Set the caster wheel tire pressure to 25–30 psi (172–207 kPa).

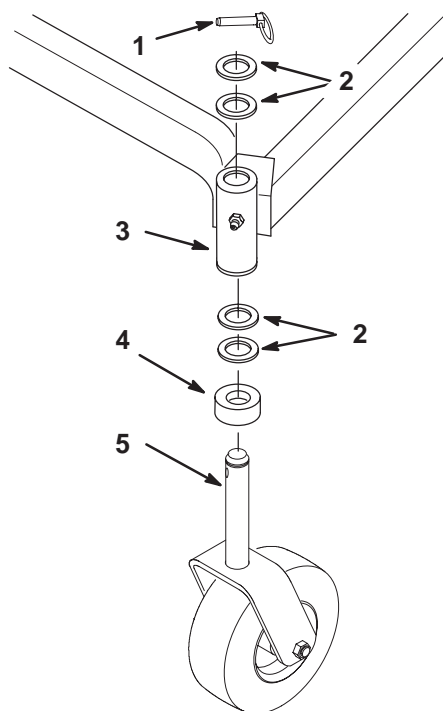


Figure 2

- | | |
|--------------------------------|----------------------|
| 1. Locking Pin | 4. Spacer |
| 2. Thrust Washers | 5. Caster Wheel Fork |
| 3. Carrier Frame Mounting Tube | |

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 bolts (1/2 x 1 inch) and 3 locknuts (1/2 inch) (Fig. 3).
3. Torque the flange bolts to 60–80 ft-lb (81–109 N•m) (Fig. 3).

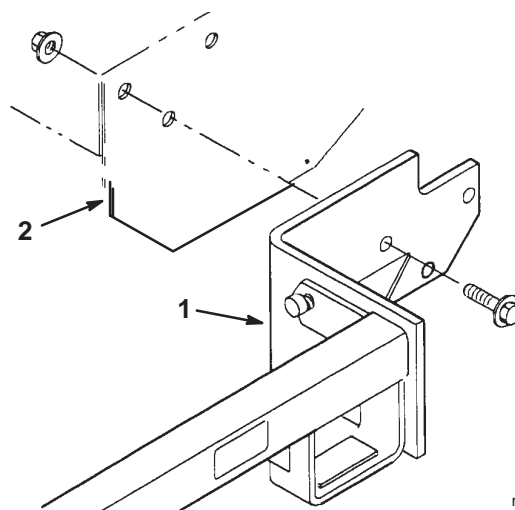


Figure 3

- | | |
|------------------|------------------------|
| 1. Carrier Frame | 2. Traction Unit Frame |
|------------------|------------------------|

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. 4).

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

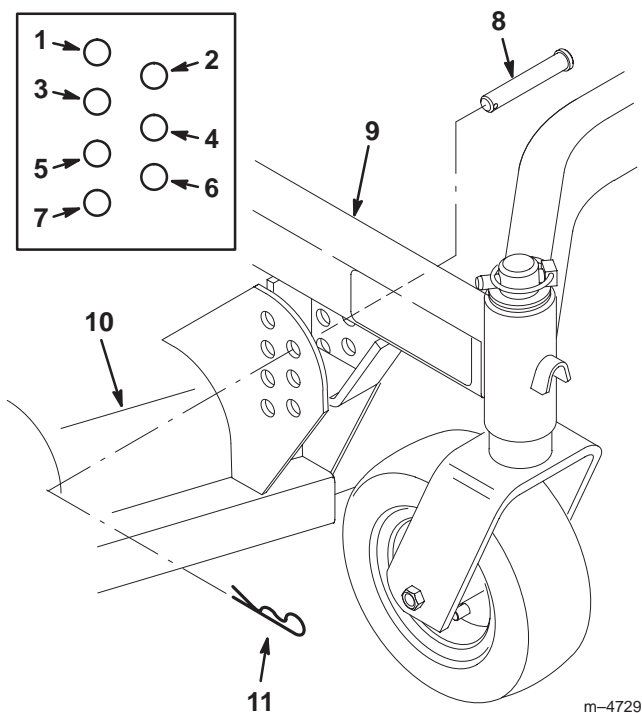


Figure 4

- | | |
|----------------------------------|-----------------------------------|
| 1. 2 inch (51 mm) Cut Height | 6. 4-1/2 inch (114 mm) Cut Height |
| 2. 2-1/2 inch (64 mm) Cut Height | 7. 5 inch (127 mm) Cut Height |
| 3. 3 inch (76 mm) Cut Height | 8. Clevis Pin |
| 4. 3-1/2 inch (89 mm) Cut Height | 9. Carrier Frame |
| 5. 4 inch (102 mm) Cut Height | 10. Cutting Deck |
| | 11. Hairpin Cotter |

Installing the Drive Belt

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. 5).
3. Reinstall the deck cover onto the cutting unit, then reinstall and tighten the hand knobs.

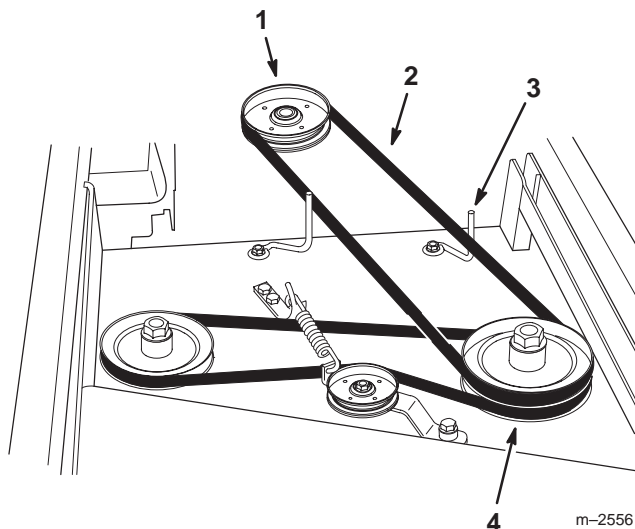


Figure 5

- | | |
|-------------------------------|------------------------|
| 1. Traction Unit Drive Pulley | 3. Belt Guide (2) |
| 2. Drive Belt | 4. Left Spindle Pulley |

4. Thread 2 jam nuts (1/2 inch) approximately 9 inches (23 cm) up on each adjusting shaft (Fig. 6).
5. Slide a spacer (1/2 inch), spring, and bushing onto each adjusting shaft. Make sure to install the bushing with the flange end against the spring (Fig. 6).

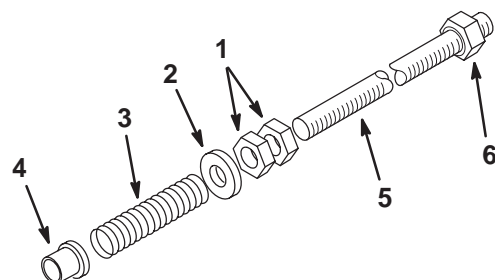


Figure 6

- | | |
|----------------------|---|
| 1. Jam Nut, 1/2 inch | 5. Adjusting Shaft |
| 2. Spacer, 1/2 inch | 6. Locknut (already installed on adjusting shaft) |
| 3. Spring | |
| 4. Bushing | |
6. 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. 7).

7. To tension the belt, tighten the front jam nut on each adjusting shaft until the springs are compressed to 5 inch (13 cm). Measure the spring compression between the spacer and the bushing (Fig. 7).
8. Tighten the rear jam nuts (Fig. 7).

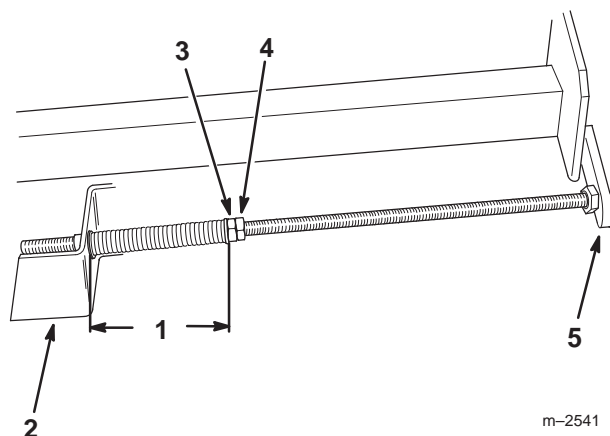


Figure 7

- | | |
|--|-------------------------------|
| 1. 5 inch between the Spacer and Bushing | 4. Rear Jam Nut |
| 2. Deck Mounting Bracket | 5. Carrier Frame Mounting Tab |
| 3. Front Jam Nut | |

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

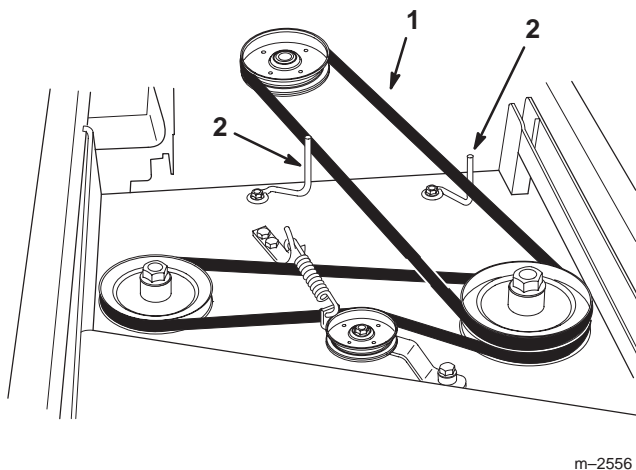


Figure 8

- | | |
|---------------|---------------|
| 1. Drive Belt | 2. Belt Guide |
|---------------|---------------|

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

Operation

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

Side Discharge or Catch 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.

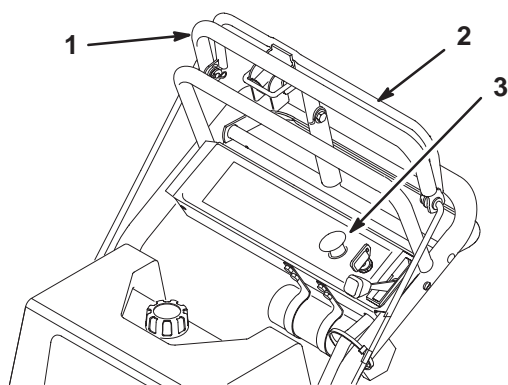
- **Never remove the grass deflector from the mower because the grass deflector routes material down toward the turf. If the grass deflector is ever damaged, replace it immediately.**
- **Never put your hands or feet under the mower.**
- **Never try to clear discharge area or mower blades unless you 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).**

Operating Mower Blade Control (PTO)

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

Engaging the Mower Blades (PTO)

1. To engage blade, squeeze blade control bail against upper control bar (Fig. 9).
2. Pull blade switch (PTO) up and release. Hold blade control bail against the upper control bar while operating.
3. Repeat procedure to engage mower blades if blade control bail is released.



m-6306

Figure 9

1. Upper control bar
2. Blade control bail
3. Blade control switch (PTO)

Disengaging the Mower Blades (PTO)

1. Releasing blade control bail to disengage blades (Fig. 9).

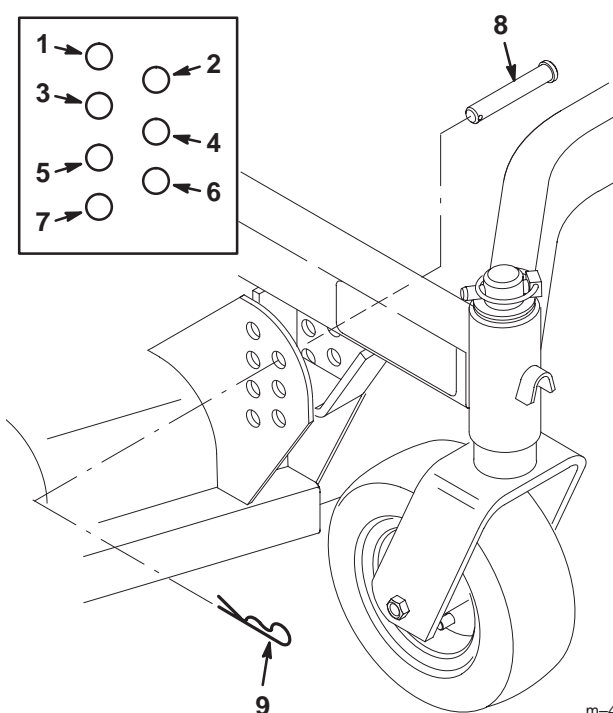
Adjusting the Height-of-Cut

The height-of-cut is adjustable from 2 to 5 inch (51 to 127 mm) in 1/2-inch (13 mm) increments (Fig. 10).

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

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

1. Stop the engine.
2. Remove the hairpin cotter pin and clevis pin (Fig. 10).
3. Select the desired mower height and install the clevis pin and hairpin cotter pin (Fig. 10).
4. Perform steps 2 and 3 at each corner of the mower.



m-4729

Figure 10

- | | |
|----------------------------------|-----------------------------------|
| 1. 2 inch (51 mm) Cut Height | 5. 4 inch (102 mm) Cut Height |
| 2. 2-1/2 inch (64 mm) Cut Height | 6. 4-1/2 inch (114 mm) Cut Height |
| 3. 3 inch (76 mm) Cut Height | 7. 5 inch (127 mm) Cut Height |
| 4. 3-1/2 inch (89 mm) Cut Height | 8. Clevis Pin |
| | 9. Hairpin Cotter |

Adjusting the Gage Wheels

1. Disengage the power take off (PTO) and turn the ignition key to off. Move controllers to neutral locked position and apply parking brake.
2. After adjusting height-of-cut, remove bolt and nut (Fig. 11).
3. Select hole so gage wheel is positioned to the nearest corresponding height-of-cut desired (Fig. 11).

Note: Do not adjust rollers to support the deck.

4. Reinstall the bolt, center rollers and nut (Fig. 11).

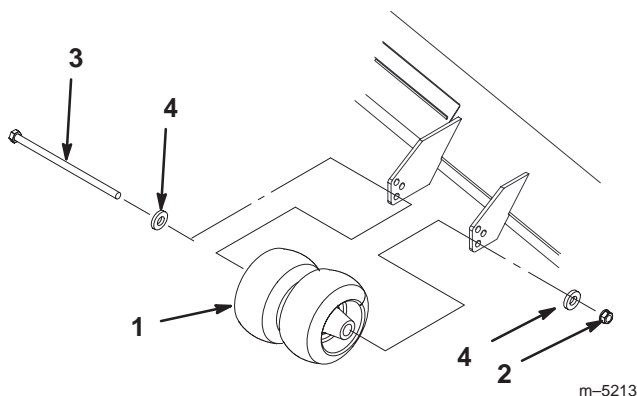


Figure 11

- | | |
|-------------------------------------|-----------|
| 1. Center Gage Wheels and
Spacer | 3. Bolt |
| 2. Nut | 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	<ul style="list-style-type: none"> Mower housing—clean
8 Hours	<ul style="list-style-type: none"> Blade spindle bearings – grease Cutting blades – check Mower housing—clean
25 Hours	<ul style="list-style-type: none"> Caster Wheels—grease
At storage	<ul style="list-style-type: none"> Chipped Surfaces—paint Belts—check for wear/cracks Cutting blades – check Mower housing—clean

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.

! **Warning** !

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.

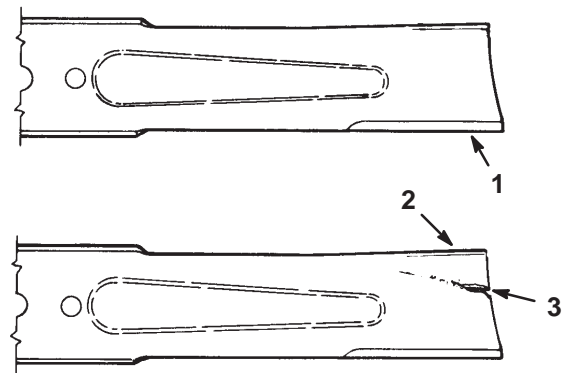
- Inspect the blade periodically for wear or damage.
- Replace a worn or damaged blade.

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. Remove the key and disconnect the spark plug wire(s) from the spark plug(s).

Inspecting the Blades

- Inspect the cutting edges (Fig 12). If the edges are not sharp or have nicks, remove and sharpen the blades. Refer to Sharpening the Blades on page 11.
- Inspect the blades, especially the curved area (Fig. 12). If you notice any damage, wear, or a slot forming in this area (item 3 in Fig. 12), immediately install a new blade.



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Figure 12

- Cutting Edge
- Curved Area
- Wear/slot Forming

Checking for Bent Blades

1. Rotate the blades until the ends face forward and backward (Fig. 13). Measure from a level surface to the cutting edge, position A, of the blades (Fig. 14). Note this dimension.

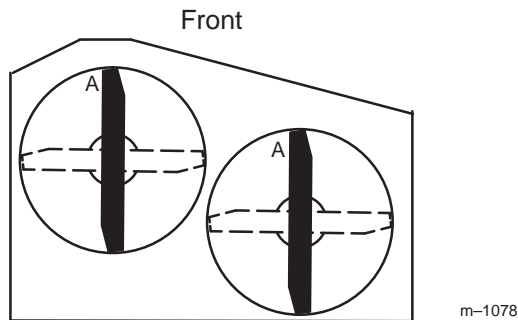
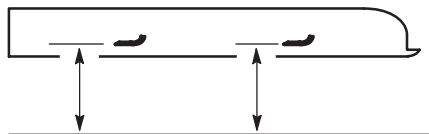


Figure 13



MEASURE FROM
CUTTING EDGE TO A
LEVEL SURFACE

Figure 14

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. The difference between the dimensions obtained in steps 1 and 2 must not exceed 1/8 inch (3 mm). If this dimension exceeds 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. 15).

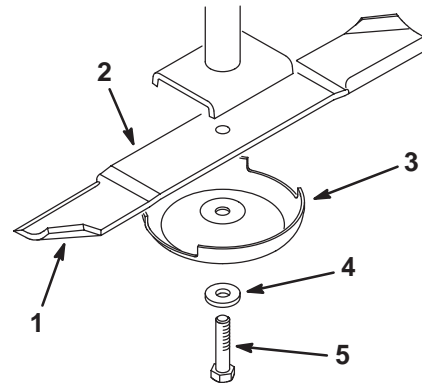


Figure 15

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

Sharpening the Blades

1. Use a file to sharpen the cutting edge at both ends of the blade (Fig. 16). Maintain the original angle. The blade retains its balance if the same amount of material is removed from both cutting edges.

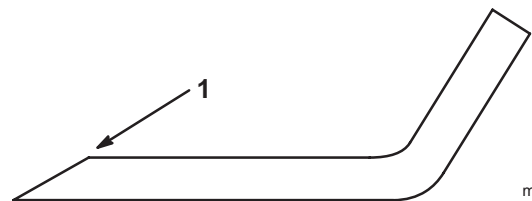


Figure 16

1. Sharpen at original angle

2. Check the balance of the blade by putting it on a blade balancer (Fig. 17). 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. 15). Repeat this procedure until the blade is balanced.

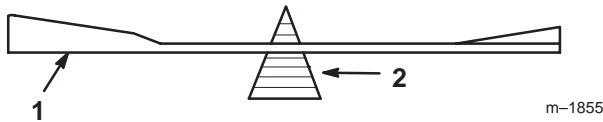


Figure 17

1. Blade
2. Balancer

Installing the Blades

1. Install the blade onto the spindle shaft (Fig. 15).

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. 15). Torque the blade bolt to 85–110 ft-lb (115–149 N•m).

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 2-1/2 inch (64 mm) 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 1/8 inch (3 mm) of each other. If the blade tips are not within 1/8 inch (3 mm) of each other, add shim washers (Part number 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. 18). Measure at **C** and **D** locations (Fig. 18) from a level surface to the cutting edge of the blades (Fig. 19).
3. The mower should be 1/8–5/8 inch (3–16 mm) lower in front **C** than in the rear **D**.

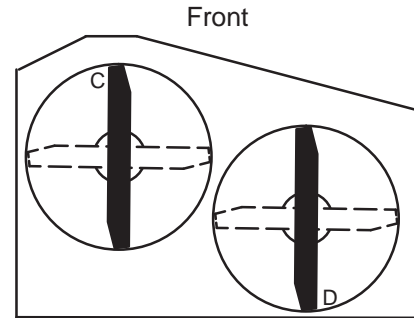
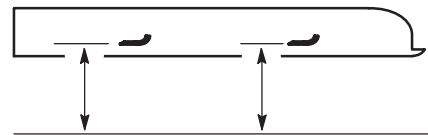


Figure 18



MEASURE FROM
CUTTING EDGE TO A
LEVEL SURFACE

Figure 19

4. To change the front-to-rear pitch, move an equal number of thrust washers on both caster wheel forks. To change the front-to-rear pitch, move an equal number of thrust washers on both caster wheel forks (Fig. 20).
 - Move the thrust washers from the top of the carrier frame mounting tube to the bottom, to raise the front of the mower (Fig. 20).
 - Move the thrust washers from the bottom of the mounting tube to the top, to lower the front of the mower (Fig. 20).
5. Check the side-to-side leveling of the cutting unit.

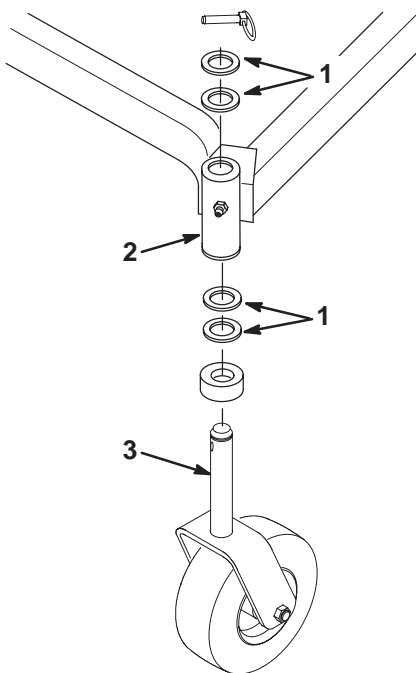


Figure 20

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

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Setting the Side-to-Side Leveling

1. Check the tire pressure.
2. Position the blades side-to-side (Fig. 21). Measure at **A** and **B** locations (Fig. 21) from a level surface to the cutting edge of blades (Fig. 22).
3. The difference between measurements **A** and **B** should be no more than 1/4 inch (6 mm).

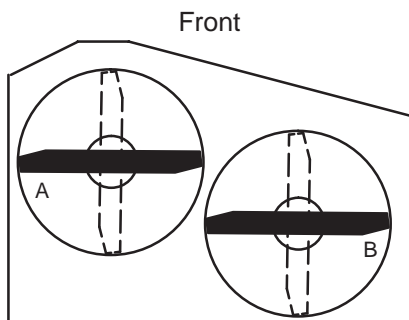
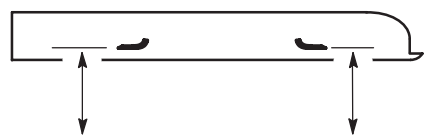


Figure 21

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**MEASURE FROM
CUTTING EDGE TO A
LEVEL SURFACE**

Figure 22

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4. To change the side-to-side leveling, move the thrust washers on one castor 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. 20).
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. 24).

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 castor wheels (Fig. 23).

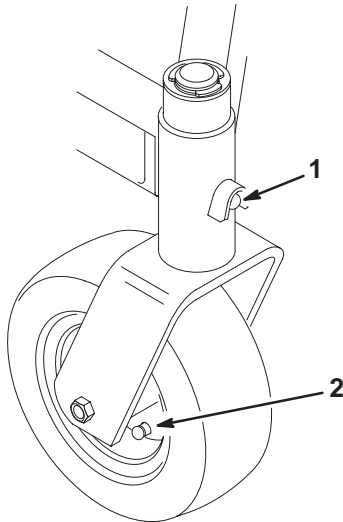


Figure 23

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

Replacing the Mower 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. 24).
5. Install the new deck belt around the right spindle pulley, idler pulley, and in the lower groove of the left spindle pulley (Fig. 24).
6. Reconnect the idler arm spring (Fig. 24).

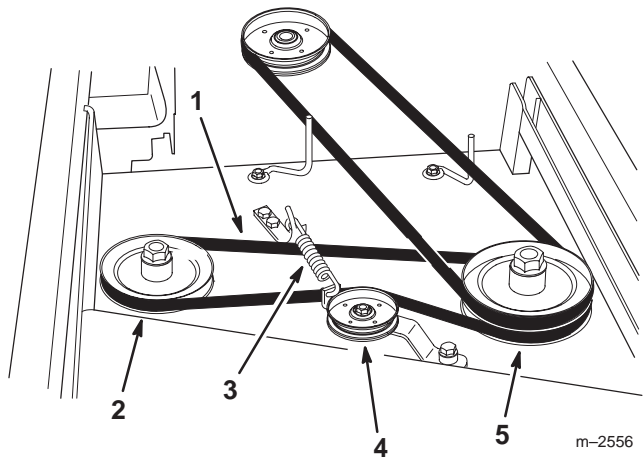


Figure 24

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

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 25).

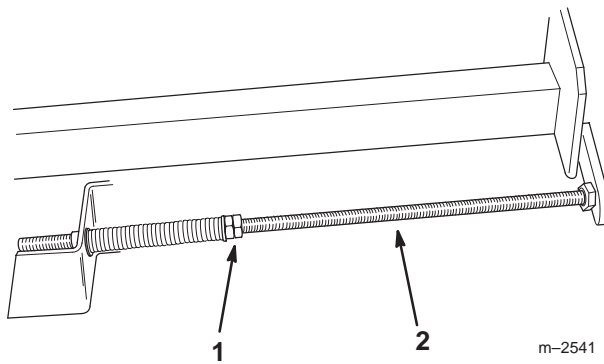


Figure 25

1. Jam Nuts
2. Adjusting Shaft

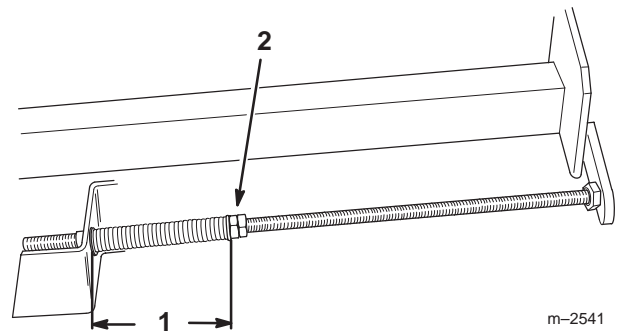


Figure 27

1. 5 inch between the Spacer and Bushing
2. Jam Nuts

4. Remove the worn drive belt (Fig. 26).
5. Install the new drive belt onto the traction unit drive pulley and the top groove of the left spindle pulley (Fig. 26).

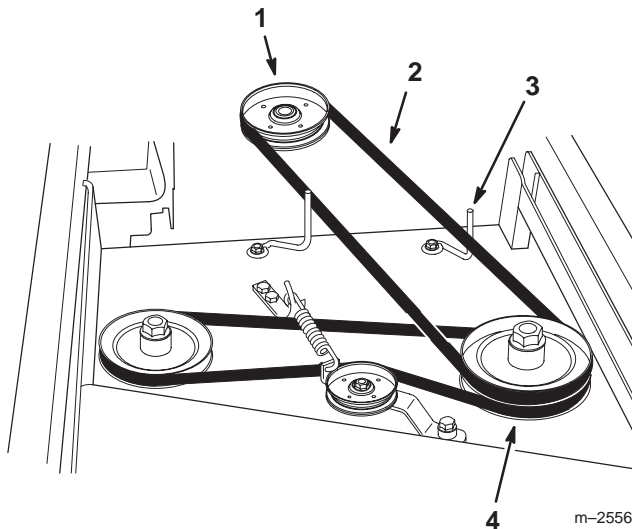


Figure 26

1. Traction Unit Drive Pulley
2. Drive Belt
3. Belt Guide (2)
4. Left Spindle Pulley

6. Tighten the jam nuts on the adjusting shafts until the springs are compressed to a length of 5 inches (13 cm) (Fig 27).

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 locking pin and thrust washer(s) from the top of the caster wheel fork (Fig. 28).
3. Pull the caster wheel fork out of the mounting tube, leaving the thrust washer(s) and spacer 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 (Fig. 28).

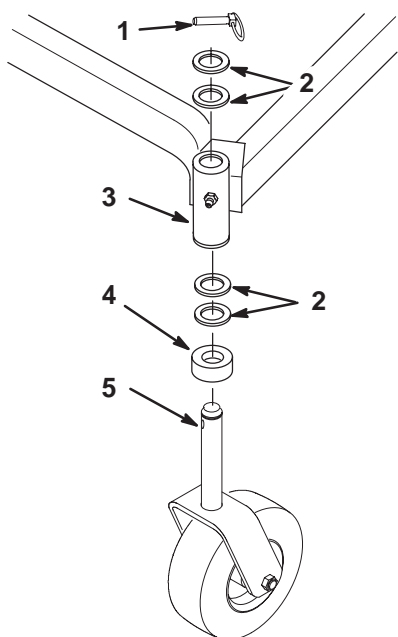
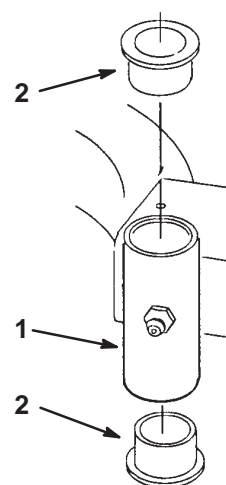


Figure 28

- | | |
|--------------------------------|----------------------|
| 1. Locking Pin | 4. Spacer |
| 2. Thrust Washers | 5. Caster Wheel Fork |
| 3. Carrier Frame Mounting Tube | |

m-4225



m-1076

Figure 29

- | | |
|--------------------------------|------------|
| 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.

4. Insert a pin punch into the mounting tube and carefully drive out the bushings (Fig. 29). 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. 28).
7. Slide the caster wheel fork through the bushings in the mounting tube. Replace the thrust washer(s) onto the fork and secure with the retaining ring (Fig. 28).

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 1.126 inch (29 mm).

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

1. Remove the locknut and wheel bolt holding the caster wheel to the caster fork (Fig. 30).
2. Remove one bushing, then pull the spanner bushing and roller bearing out of the wheel hub (Fig. 30).
3. Remove the other bushing from the wheel hub and clean any grease and dirt from the wheel hub (Fig. 30).
4. Inspect the roller bearing, bushings, spanner bushing and inside of the wheel hub for wear. Replace any defective or worn parts (Fig. 30).

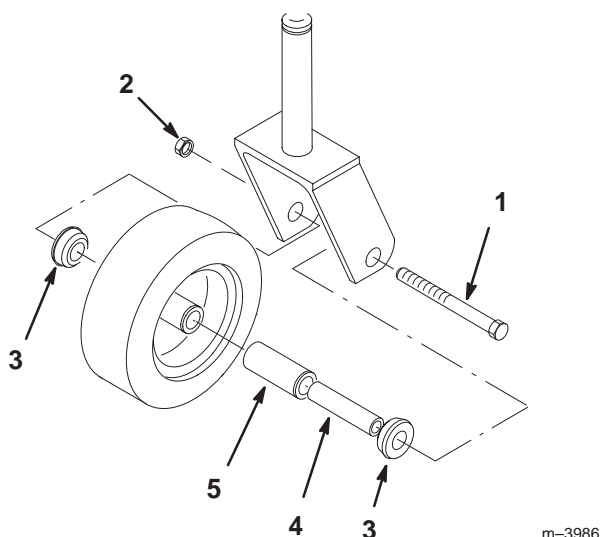


Figure 30

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

- 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. 30).
- Install the washers on the outsides of the bushings, then 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. 30).
- Grease the fitting on the caster wheel.

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.

- Remove the locknut, bolt, spring and spacer holding the deflector to the pivot brackets (Fig. 31). Remove damaged or worn grass deflector.

- Place spacer and spring onto grass deflector. Place the **L** end of spring behind deck edge (Fig. 31).

Note: Make sure the **L** end of spring is installed behind deck edge before installing the bolt as shown in figure 31.

- Install bolt and nut. Place **J** hook end of spring around grass deflector (Fig. 31).

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.

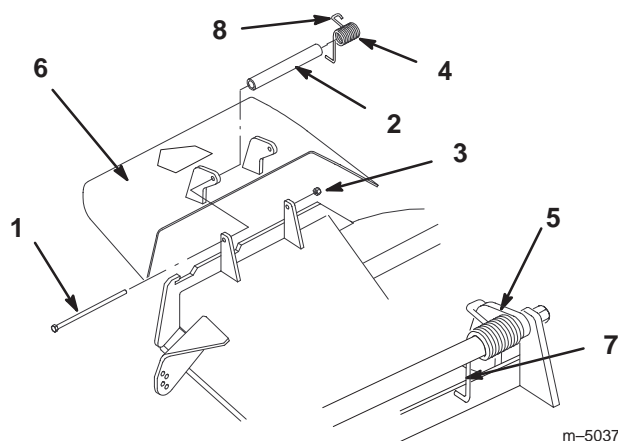


Figure 31

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

Storage

- Clean any dirt and chaff from the top of the mower.
- Scrape any heavy buildup of grass and dirt from the underside of the mower, then wash the mower with a garden hose.
- Check the condition of the blades. Refer to Cutting Blades on page 10.
- Check the condition of the drive and deck belts.
- Check and tighten all bolts, nuts and screws. Repair or replace any part that is damaged or defective.
- Paint all scratched or bare metal surfaces. Paint is available from your Authorized Service Dealer.
- 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.	<ol style="list-style-type: none"> 1. Cutting blade(s) is/are bent or unbalanced. 2. Blade mounting bolt is loose. 3. Engine mounting bolts are loose. 4. Loose engine pulley, idler pulley, or blade pulley. 5. Engine pulley is damaged. 6. Blade spindle bent. 	<ol style="list-style-type: none"> 1. Install new cutting blade(s). 2. Tighten blade mounting bolt. 3. Tighten engine mounting bolts. 4. Tighten the appropriate pulley. 5. Contact Authorized Service Dealer. 6. Contact Authorized Service Dealer.
Uneven cutting height.	<ol style="list-style-type: none"> 1. Blade(s) not sharp. 2. Cutting blade(s) is/are bent. 3. Mower is not level. 4. Underside of mower is dirty. 5. Tire pressure is incorrect. 6. Blade spindle bent. 	<ol style="list-style-type: none"> 1. Sharpen blade(s). 2. Install new cutting blade(s). 3. Level mower from side-to-side and front-to-rear. 4. Clean the underside of the mower. 5. Adjust tire pressure. 6. Contact Authorized Service Dealer.
Blades do not rotate.	<ol style="list-style-type: none"> 1. Drive belt is worn, loose or broken. 2. Drive belt is off pulley. 3. Deck belt is worn, loose or broken. 4. Deck belt is off pulley. 	<ol style="list-style-type: none"> 1. Install new drive belt. 2. Install drive belt and check adjusting shafts and belt guides for correct position. 3. Install new deck belt. 4. Install deck pulley and check the idler pulley, idler arm and spring for correct position and function.

